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Boeing Isaacson-Thompson Site, Port of Seattle Sliver Data Summary Report

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3190 – 160th Avenue SE
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Introduction

Kennedy/Jenks Consultants has prepared this Data Summary Report which summarizes the results of a subsurface soil investigation conducted for the Washington State Department of Ecology (Ecology) at the Port of Seattle (POS) Parcel (Sliver Property) located west of the Boeing Isaacson property at 8625-8811 East Margin Way South, Tukwila, King County, Washington, on 13 and 14 May 2015. This investigation was performed for Ecology in support of design activities for installation of a sheet pile bulkhead and provides information to support waste characterization needed for soil removal activities that are planned for the site.

The Sliver Property, hereinafter, the site, is a narrow 1/2-acre parcel, approximately 400 feet long and approximately 60 feet wide. The site is bounded on the west and the south by the eastern bank of the Lower Duwamish Waterway (LDW), on the east by the Boeing Thompson and the Boeing Isaacson parcels, and on the north by the Jorgensen Forge Company property. A site vicinity map is shown on Figure 1 (attached).

Numerous investigations have been performed by The Boeing Corporation (Boeing) on the upland portions of the property (Boeing Isaacson and Thompson sites) since 1983 and have been summarized in multiple reports by Landau Associates (Landau Associates 2009, 2011, 2013). The results of these investigations were used to help focus investigations at the Sliver Property site.

Site Investigation Activities

Field Investigation

The field investigation consisted of advancing 10 soil borings (SDP-01 to SDP-10) to a maximum depth of 25 feet below ground surface (bgs) with a track-mounted Geoprobe® direct-push drill rig operated by Cascade Drilling, L.P., of Woodinville, Washington under the supervision of a Kennedy/Jenks Consultants geologist. Soil boring locations are shown on Figure 2 (attached).

A macro-core sampling system was used to recover continuous soil core while drilling. Soil was logged following the Standard Practice for the Description and Identification of Soil, ASTM D2488-09a, and field screened for evidence of chemical impact, including visible staining, odor, and organic vapor headspace monitoring using a photoionization detector (PID). Borehole logging, field screening, and soil sampling were conducted following the standard operating guidelines (SOGs) presented in the *Port of Seattle Sliver Property Soil Characterization Investigation Quality Assurance Project Plan* (QAPP) (Kennedy/Jenks Consultants 2015). Lithologic boring logs are included as Attachment A.

Prior to drilling, a one-call utility locate request was made for the proposed investigation area, and a private utility locator was contracted to identify potential underground utilities within a 10-foot radius of each drilling location.

Forty-one soil samples were collected where physical changes in the soil, such as color, texture, odor, or potential signs of contamination, were observed, as defined in the QAPP. In accordance with the QAPP, soil samples were named with the boring location (e.g., SDP-01) and the soil sample depth interval (e.g., 3.0 to 4.0 feet). In this example, the sample name was SDP-01 (3.0-4.0).

Samples were submitted to Analytical Resources, Incorporated (ARI) of Tukwila, Washington, under chain-of-custody procedures. Upon collection, sample jars were immediately labeled and placed in an ice-chilled cooler. Twenty soil samples were identified as vertically and spatially representative of site soil and analyzed for target analytes (as defined in next section); the remaining 21 soil samples were frozen and held by ARI on direction provided by Kennedy/Jenks Consultants following laboratory receipt of the original samples. The soil samples, requested laboratory analyses, and brief soil sample descriptions are summarized in Table 1 (attached).

Two equipment rinsate blanks (one per day) were collected using laboratory-provided water and sample containers and submitted to ARI for analysis of target analytes.

Soil Sampling Analytical Summary

Review of available data for the adjacent Boeing Isaacson-Thompson Site indicated the soil may be contaminated with heavy metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and diesel- and oil-range total petroleum hydrocarbon (TPH) compounds. In accordance with the QAPP, soil samples were submitted to ARI for analysis of the following target analytes:

- PAHs using U.S. Environmental Protection Agency (EPA) Method 8270 with select ion monitoring (SIM).
- Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) plus copper and zinc, using EPA Method 6020. (Note: Mercury was analyzed using EPA Method 7471.)
- PCBs as Aroclors using EPA Method 8082.
- Oil-range and diesel-range TPH using Northwest TPH Diesel Extended (NWTPH-Dx) Method.

As shown in Table 1, 20 samples were submitted for analysis of PAHs, RCRA metals, and PCBs. Ten of the samples were also submitted for analysis of oil-range TPH (i.e., TPH as lube oil) and diesel-range TPH. In accordance with the QAPP, soil samples collected at the water table interface in five soil boring locations (SDP-02, SDP-04, SDP-06, SDP-08, and SDP-10) were analyzed for TPH. Five additional soil samples were analyzed for TPH based on field observations of potential petroleum hydrocarbon impacts (e.g., positive water-sheen test, odors, staining) or for quality control purposes (e.g. matrix spikes, evaluate extent of potential impacts).

Based on review of available data for the adjacent Boeing properties, volatile organic compounds (VOCs) were not included as target analytes in the investigation design. However, two soil samples were analyzed for VOCs using EPA Method 8260C based on organic vapor

headspace PID readings of 351 parts per million (ppm) and 35.7 ppm for soil samples SDP-02 (16.0-17.5) and SDP-06 (12.5-13.5), respectively. The VOCs analysis was requested by Kennedy/Jenks Consultants after the samples had been received by the laboratory. The PID readings indicated the possible presence of VOCs in the soil samples.

Following receipt of laboratory results, Kennedy/Jenks Consultants further requested four soil samples [SDP-01(8.0-9.0), SDP-04(10.5-12.0), SDP-07(1.5-3.0), and SDP-10(15.5-16.5)] be analyzed for toxicity characteristic leaching procedure (TCLP) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) based on elevated detections of metals by the total metals methods (EPA Methods 6020 and 7471).

Data Quality Review

A limited data quality review was performed to evaluate the usability of analytical results produced during this investigation. Laboratory analytical reports are provided in Attachment B. Findings from the data quality checklists are presented in Attachment C.

Analytical data for the target analytes (PAHs, metals, PCBs, and TPHs) are deemed usable for reporting and quantitative evaluations.

Based on review of available soil analytical data for the Boeing Isaacson-Thompson site, VOCs were not a target analyte for this investigation. As a result, containers with applicable chemical preservatives had not been requested nor provided by the laboratory. The laboratory reported there may have been loss of volatiles during normal laboratory sample homogenization and there was potential for cross-contamination from other VOCs used in the laboratory (e.g., methylene chloride used as an extraction solvent for PAHs, PCBs, and TPH analyses). As a result, the analytical data for VOCs are deemed usable for qualitative purposes only.

The following summarizes the primary findings of the laboratory data verification and validation for the target analytes and VOCs:

- Chains of custody (COCs) were filled out in accordance with the QAPP. Sample names and depths, dates and time of collection, and requested analytical methods or designation as “Hold” samples were identified on the COCs. Analyses of VOCs and TCLP metals were requested after soil samples had been delivered to the laboratory. Therefore, these analyses do not appear on the original COCs dated 13 May 2015 and 14 May 2015.

- Coolers were received at temperatures of 7.4 degrees Celsius (°C) and 8.8°C on 13 May 2015 and of 6.5°C and 7.9°C on 14 May 2015, above 6°C. Coolers were delivered to laboratory on same day of sample collection (13 May 2015, 14 May 2015). No further qualification of data was deemed required.

- For metals analyses, the relative percent differences (RPDs) for barium, cadmium, chromium, copper, and/or mercury for the laboratory duplicates analyzed exceeded the control limit of 20 percent. The associated results were flagged with a J-qualifier in accordance with EPA (2014) National Functional Guidelines for Inorganic Data Review.

- Several matrix spike (MS) recoveries and MS/matrix spike duplicate (MSD) RPDs were outside acceptable limits for metals and PAH soil analysis. Initial sample concentrations in the spiked sample were high relative to the spike amount. The laboratory control sample (LCS) recoveries were within acceptable limits. No corrective action is required for MS recovery or MS/MSD RPDs.

- Low levels of several metals were detected at concentrations below the reporting limit in both the method blanks and the equipment rinsate blanks. Sample concentrations were more than five times the concentrations detected in the method blanks. No further qualification of data was deemed required.

Based on the preliminary total metals analysis results, selected samples were submitted for soluble metals analysis using TCLP extracting procedures. The TCLP mercury analysis (by Method SW1311/7470A) was completed outside the method recommended holding time of 28 days. Based on professional judgment, considering the samples were frozen for archiving prior to the TCLP analysis and the holding time was exceeded by less than 1 week, the TCLP mercury non-detect results were qualified as usable. No other significant data quality items were identified. The holding time for analysis of the other TCLP metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) by Method SW1311/6010C was met, and the analytical data are deemed usable.

Summary of Investigation Results

This section provides a brief summary of the investigation results, including a summary of lithologic conditions encountered and discussion of soil analytical results.

Lithologic Conditions

A site map showing boring locations is included as Figure 2, and an interpretive geologic cross-section is included as Figure 3 (attached). Lithologic boring logs are included as Attachment A. The contact between native and fill material was observed between 10.5 feet (SDP-08) and 21 feet bgs (SDP-01), generally becoming shallower to the north. Fill material is characterized as gravel or gravel with sand and varying amounts of silt. Assorted anthropogenic materials including bricks and native material generally consists of silty sand, sandy silt, or poorly-graded sand. Borings were drilled to at least 20 feet bgs, with the exception of boring SDP-09, which was abandoned after hitting refusal at depths of 9.5 feet, 7.5 feet, and 5.0 feet bgs in three attempted locations, and boring SDP-08, which was stopped at 15 feet after native soil was encountered at 10.5 feet bgs. Groundwater was encountered in the soil borings between approximately 8 feet bgs (SDP-07) and 17 feet bgs (SDP-02 and SDP-10).

Laboratory Analytical Results

Soil analytical results for target analytes and VOCs are provided in Tables 2 and 3 (attached), respectively, and compared to respective draft RI Preliminary Cleanup Levels (RIPCLs). Tabulated results for TCLP metals analysis are provided in Table 4 (attached). Figure 4 (attached) displays sample locations and depths with detections of target analytes above

respective RIPCLs. In general, the lowest concentrations of target analytes were detected in soil samples collected at boring location SDP-06.

The RIPCL values are based on Upland Preliminary Cleanup Levels from Table 5 of the Draft Remedial Investigation (RI) Report for the Boeing Isaacson-Thompson Site (Landau Associates 2013). It was noted in the RI Report the preliminary cleanup levels were to be adjusted to no less than laboratory reporting limits or natural background concentrations following completion of the RI. In this investigation for the Sliver Property, analytical reporting limits were generally below the respective RIPCL values, with the exception of PCB Aroclors.

The following summarizes the analytical results for the target analytes detected in the 20 soil samples analyzed:

Metals. Arsenic, cadmium, copper, lead, and zinc were detected in one or more soil samples at concentrations exceeding the RIPCLs.

- Arsenic was detected at concentrations above the RIPCL of 20 milligrams per kilogram (mg/kg) in six samples. Highest detection: 75.4 mg/kg in SDP-02 (22.0-23.5).
- Cadmium was detected at concentrations above the RIPCL of 4.0 mg/kg in three samples. Highest detection: 6.0 mg/kg in SDP-07 (1.5-3.0).
- Copper was detected at concentrations above the RIPCL of 80 mg/kg in seven samples. Highest detection: 284 mg/kg in SDP-04 (1.5-3.0).
- Lead was detected at concentrations above the RIPCL of 250 mg/kg in four samples. Highest detection: 2,120 mg/kg in SDP-04 (10.5-12.0).
- Zinc was detected at a concentration above the RIPCL of 1,400 mg/kg in one sample. Highest detection: 2,650 mg/kg in SDP-07 (1.5-3.0).

TCLP Metals. Barium was detected in the four samples analyzed for TCLP metals and chromium was detected in one soil sample. Arsenic, cadmium, lead, mercury, selenium, and silver were not detected in any of the soil samples. None of the detected concentrations were equal to or greater than its respective Dangerous Waste (DW) Threshold listed in Washington Administrative Code (WAC) 173-303-090(8)(c) Toxicity Characteristics List. The highest detected TCLP barium concentration was 0.85 milligrams per liter (mg/L) in sample SDP-04 (10.5-12.0) compared to a DW Threshold of 100 mg/L. The highest detected TCLP chromium concentration was 0.03 mg/L in sample SDP-07 (1.5-3.0) compared to a DW Threshold of 5.0 mg/L.

PAHs. The carcinogenic PAHs (cPAH) total toxicity equivalent concentration (TTEC) was calculated for each sample result in accordance with WAC 173-340-708(8)(e). For TTEC calculations, non-detect cPAH concentrations were incorporated at half the reporting limit. The calculated cPAH TTEC concentrations in 11 soil samples exceeded the RIPCL of 15 micrograms per kilogram (µg/kg). The highest calculated cPAH TTEC concentration (366 µg/kg) was detected in sample SDP-07 (1.5-3.0).

TPHs. Oil-range TPH (i.e., TPH as lube oil) was detected at a concentration above the RIPCL of 2,000 mg/kg in one sample, SDP-02 (16.0-17.5), at a concentration of 2,400 mg/kg. Diesel-range TPH was not detected at concentrations above the RIPCL of 2,000 mg/kg.

PCBs. PCBs were detected as Aroclor 1254 and Aroclor 1260. As noted previously, the reporting limits for PCBs exceeded the respective RIPCL values. PCBs as Aroclor 1254 were detected at concentrations above the RIPCL of 0.29 µg/kg in 11 samples; the highest detected concentration was 470 µg/kg in sample SDP-01 (8.0-9.0). PCBs as Aroclor 1260 were detected at concentrations above the RIPCL of 5.4 µg/kg in eight samples; the highest detected concentration was 120 µg/kg in sample SDP-01 (3.0-4.0).

The RIPCL value for Total PCBs in the RI Report was 1.8 µg/kg (Landau Associates 2013). Total PCBs were calculated as the sum of detected concentrations and half the reporting limit for non-detect concentrations. The calculated Total PCBs concentrations for 10 soil samples were above the RIPCL value (Table 2), with the highest concentration of 593 µg/kg in sample SDP-01 (8.0-9.0).

VOCs. VOCs detected in the two soil samples included acetone, 2-butanone, carbon disulfide, and methylene chloride. All detections were below respective RIPCL values. Acetone and 2-butanone are common laboratory contaminants, and based on qualification from the laboratory, the detection of methylene chloride may also be a result of cross-contamination from laboratory sample handling procedures.

Comparison to Previous Investigations

In August 2012, Landau Associates conducted a soil and groundwater investigation along the eastern portion of the site. The investigation included advancing soil borings in four locations (SB-1 to SB-4) to depths ranging between 15 and 20 feet bgs. Soil samples were collected from four depth intervals from each borehole: 2 to 3 feet bgs, 5 to 6 feet bgs, 8 to 9 feet bgs, and 13 to 14 feet bgs. Soil samples were analyzed for priority pollutant metals and hexavalent chromium. One groundwater sample was collected from each borehole and analyzed for total and dissolved priority pollutant metals. Attachment D includes a summary of the investigation sampling plan, a figure showing sample locations, and tables summarizing analytical results which were originally included as Appendix F in Landau Associates 2013.

Arsenic, barium, cadmium, hexavalent chromium, copper, lead, and zinc were detected in one or more August 2012 soil samples at concentrations above the RIPCLs. These results are similar to the May 2015 soil boring samples which included arsenic, cadmium, copper, lead, and zinc detections above the RIPCLs.

Groundwater samples were not collected from the May 2015 soil borings. In August 2012, groundwater was typically encountered between 13 and 15 feet bgs. Groundwater samples were collected from temporary well points [4-foot-long, wire-wrapped, stainless-steel screen (0.010-inch slot size)] installed in each borehole. Low-flow purging was performed for 10 minutes or until purge water was clear, using a peristaltic pump. Groundwater samples were collected directly into appropriate containers; samples for dissolved arsenic were collected last and were field-filtered through a 0.45-micron, in-line disposable filter.

Dissolved arsenic was detected in three groundwater samples (SB-1, SB-2, SB-3) at concentrations exceeding the RIPCL. As shown on Figure F-1 in Attachment D, soil borings SB-1, SB-3, and SB-4 were advanced to the west (downgradient) of monitoring wells MW-20, MW-19, and PZ-7, respectively, located on the Boeing Isaacson property. Groundwater sampling data collected in 2011 and 2012 by Landau Associates (Landau Associates 2013) included arsenic concentrations above RIPCL in wells MW-20 and MW-19 but not in PZ-7, consistent with the August 2012 groundwater sampling results for soil borings SB-1, SB-3, and SB-4.

Waste Characterization Summary

Laboratory analytical results from the May 2015 investigation indicate the following:

- TCLP metals concentrations were less than DW Threshold criteria in four soil samples with elevated total metals concentrations.

- Calculated Total PCB concentrations were less than 50 ppm (50 mg/kg or 50,000 µg/kg) for all soil samples analyzed. According to regulation 40 CFR Part 761, wastes containing less than 50 ppm PCBs may be disposed in a municipal waste landfill or equivalent (U.S. Department of Energy 1994).

Kennedy/Jenks Consultants contacted Republic Services, operators of the Roosevelt Landfill, in Roosevelt, Washington, for information regarding waste profiling and potential disposal of the Sliver soil. The laboratory analytical data discussed in this data summary report were provided to representatives of Republic Services for review. Republic Services indicated based on the laboratory analytical data provided, the material may be acceptable; however, final approval of the soil for disposal at the Roosevelt Landfill requires completion of a profile sheet and acceptance thereof (email communication 25 June 2015). Additional information is required prior to submittal of the waste profile sheet for final approval by Republic Services.

Conclusion

The May 2015 Sliver investigation confirmed the presence of target analytes in site soils. Soil samples collected from near the ground surface (1.5 feet bgs) to depths of approximately 25 feet bgs contained concentrations above respective RIPCL for metals (arsenic, cadmium, copper, lead, and zinc), cPAHs, TPH as lube oil, and/or PCBs. TCLP metals analysis of four soil samples resulted in concentrations less than DW Threshold criteria. Based on review of the available analytical data, the site soil (waste) was conditionally approved (pending submittal and approval of a completed profile sheet) by Republic Services for disposal in a municipal waste landfill (Roosevelt Landfill). If the site soil were to be removed and disposed of offsite as part of the interim action for the POS Sliver property, additional characterization may be required based on soil/fill materials encountered during the removal action.

References

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U.S. Department of Energy. 1994. Disposal Requirements for PCB Waste. Toxic Substances Control Act (TSCA) Information Brief. EH-231-056/1294. December 1994.

U.S. Department of Environmental Protection. 2014. National Functional Guidelines for Inorganic Superfund Data Review (ISM02.2), OSWER 9355.0-131, EPA 540-R-013-001. August 2014.

List of Attachments

Tables 1 through 4
Figures 1 through 4
Attachment A – Lithologic Boring Logs
Attachment B – Laboratory Analytical Reports
Attachment C – Data Verification Reports
Attachment D – 2012 POS Sliver Characterization Data

Tables

TABLE 1

SUMMARY OF SOIL SAMPLES COLLECTED AND ANALYSES PERFORMED
Port of Seattle Parcel (Sliver)

Sample Designation	Depth Interval	Metals	PAHs[a]	PCBs[b]	NWTPH-Dx[c]	VOCs[d]	MS/MSD[e]	Hold[f]	Sample Lithology Description
SDP-01 (3.0-4.0)	0-5 ft	X	X	X					Fill material
SDP-01 (8.0-9.0)	5-10 ft	X	X	X					Gravel with silt and sand mottled with unknown white material, Fill material
SDP-01 (11.0-12.5)	10-15 ft							Hold	Gravel with silt and sand, abundant unknown white material, Fill, crosses water table
SDP-01 (22.5-24.0)	20-25 ft							Hold	Native, slight marine odor, black
SDP-02 (7.0-8.5)	5-10 ft							Hold	Gravel with sand and silt, burnt fill material
SDP-02 (12.5-13.5)	10-15 ft							Hold	Fill material
SDP-02 (16.0-17.5)	15-20 ft	X	X	X	X	X			Gravel and sand, sheen, odor, PID up to 351 ppm, base of fill, water table sample
SDP-02 (18.5-19.5)	15-20 ft	X	X	X	X				Sand with silt, odor, sheen, PID up to 17.6, Native
SDP-02 (20.0-21.5)	20-25 ft							Hold	Silt with sand, no PID, slight odor, no sheen, Native
SDP-02 (22.0-23.5)	20-25 ft	X	X	X	X				Poorly graded sand, Native
SDP-03 (2.0-3.5)	0-5 ft							Hold	Gravel and sand, fill material
SDP-03 (6.5-8.0)	5-10 ft	X	X	X					Gravel and sand, burnt material, unknown white material, fill
SDP-03 (21.0-22.0)	20-25 ft							Hold	Poorly graded sand, Native
SDP-03 (23.5-24.5)	20-25 ft	X	X	X					Native sand, coarser than above
SDP-04 (1.5-3.0)	0-5 ft	X	X	X	X		X		Gravel and sand, sample includes discrete sand lens, MS/MSD, Fill
SDP-04 (8.0-9.0)	5-10 ft							Hold	Fill, burnt material, unknown purple/pinkish gray material
SDP-04 (10.5-12.0)	10-15 ft	X	X	X	X				Fill, white crystalline layer, some metallic debris, water table sample for Dx
SDP-04 (16.0-17.0)	15-20 ft							Hold	Native
SDP-04 (18.0-19.5)	15-20 ft							Hold	Poorly graded sand, Native

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TABLE 1

SUMMARY OF SOIL SAMPLES COLLECTED AND ANALYSES PERFORMED
Port of Seattle Parcel (Sliver)

Sample Designation	Depth Interval	Metals	PAHs[a]	PCBs[b]	NWTPH-Dx[c]	VOCs[d]	MS/MSD[e]	Hold[f]	Sample Lithology Description
SDP-05 (1.0-2.5)	0-5 ft							Hold	Shallow fill material, gravel and sand
SDP-05 (6.5-7.5)	5-10 ft	X	X	X					silty sand, Fill
SDP-05 (13.0-14.0)	10-15 ft							Hold	Sand, darker color than 6.5-7.5, Fill
SDP-05 (17.5-19.0)	15-20 ft	X	X	X					Poorly graded sand, Native
SDP-06 (1.5-3.0)	0-5 ft							Hold	Shallow fill material, gravel and sand
SDP-06 (10.0-11.0)	10-15 ft	X	X	X	X				silty sand, Fill, water table sample for Dx
SDP-06 (12.5-13.5)	10-15 ft	X	X	X	X	X			Silty sand, PID hits up to 35.7 ppm, no sheen, faint odor
SDP-06 (17.0-18.0)	15-20 ft							Hold	Poorly graded sand, Native
SDP-07 (1.5-3.0)	0-5 ft	X	X	X	X		X		Shallow fill material, gravel and sand, MS/MSD
SDP-07 (8.5-9.5)	5-10 ft	X	X	X					Sandy silt, near water table
SDP-07 (12.5-13.5)	10-15 ft							Hold	Lean clay
SDP-07 (19.0-20.0)	15-20 ft							Hold	Poorly graded sand, Native
SDP-08 (3.5-5.0)	0-5 ft							Hold	Burnt fill material, gravel with silt and sand
SDP-08 (6.0-7.0)	5-10 ft							Hold	Sandy silt, color change from above
SDP-08 (12.0-13.5)	10-15 ft	X	X	X	X				Poorly graded sand, Native, sample for Dx just below water table
SDP-09 (2.5-4.0)	0-5 ft	X	X	X					Gravel with sand, Fill material
SDP-09 (5.0-6.5)	5-10 ft							Hold	Fill material, including brick debris

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TABLE 1

SUMMARY OF SOIL SAMPLES COLLECTED AND ANALYSES PERFORMED
Port of Seattle Parcel (Sliver)

Sample Designation	Depth Interval	Metals	PAHs[a]	PCBs[b]	NWTPH-Dx[c]	VOCs[d]	MS/MSD[e]	Hold[f]	Sample Lithology Description
SDP-10 (2.0-3.5)	0-5 ft							Hold	Sand with silt and gravel, shallow fill material
SDP-10 (7.0-8.0)	5-10 ft							Hold	Color change to gray, sandy gravel fill material
SDP-10 (13.5-15.0)	10-15 ft	X	X	X					Unknown white material, base of sand and silt fill material
SDP-10 (15.5-16.5)	15-20 ft	X	X	X	X				Native. Water table sample for Dx
SDP-10 (16.5-17.5)	15-20 ft	X	X	X					Native sand
Analysis Count		**20**	**20**	**20**	**10**		**2**	**21**	

Depth Intervals	Sample Count	Analysis Count
0-5 ft	9	4
5-10 ft	9	4
10-15 ft	9	5
15-20 ft	9	5
20-25 ft	5	2
Totals	**41**	**20**

Notes:

(a) PAHs = polynuclear aromatic hydrocarbons.
(b) PCBs = polychlorinated biphenyls.
(c) NWTPH-Dx = Northwest Total Petroleum Hydrocarbons as Diesel Extended.
(d) VOCs = volatile organic compounds. Analysis requested for two samples based on field screening results.
(e) MS/MSD = Matrix spike/Matrix Spike Duplicate.
(f) Hold = sample frozen by analytical laboratory until analyses requested.

Sample count = total number of samples collected
Analysis count = total number of samples submitted for analysis.
Soil samples collected on 13 and 14 May 2015.
ft = feet.
PID = photoionization detector.

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TABLE 2

SUMMARY OF SOIL ANALYTICAL RESULTS FOR TARGET ANALYTES
Port of Seattle Parcel (Sliver)

Analyte	Remedial Investigation Preliminary Cleanup Levels[a]	SDP-01		SDP-02			SDP-03		SDP-04		SDP-05	
		SDP-01(3.0-4.0)	SDP-01(8.0-9.0)	SDP-02(16.0-17.5)	SDP-02(18.5-19.5)	SDP-02(22.0-23.5)	SDP-03(6.5-8.0)	SDP-03(23.5-24.5)	SDP-04(1.5-3.0)	SDP-04(10.5-12.0)	SDP-05(6.5-7.5)	SDP-05(17.5-19.0)
		3.0-4.0 ft bgs	8.0-9.0 ft bgs	16.0-17.5 ft bgs	18.5-19.5 ft bgs	22.0-23.5 ft bgs	6.5-8.0 ft bgs	23.5-24.5 ft bgs	1.5-3.0 ft bgs	10.5-12.0 ft bgs	6.5-7.5 ft bgs	17.5-19.0 ft bgs
		5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015	5/14/2015
Total Metals (mg/kg)[b]												
Arsenic	20	**12.9**	**20.1**	**10.5**	**18.3**	**75.4**	**24.2**	**3.6**	**19.8**	**20.8**	**14.5**	**5.5**
Barium	640	**39.2 J**[c]	**70.6 J**	**80.6 J**	**100 J**	**38.3 J**	**104 J**	**66.2 J**	**254 J**	**255 J**	**49.8 J**	**18.6 J**
Cadmium	4.0	**0.2 J**	**4.8 J**	**0.9 J**	**0.3 J**	**0.1 J**	**0.7 J**	**0.8 J**	**3.0 J**	**4.5 J**	**0.06 J**	**0.11 J**
Chromium	2,000	**120 J**	**686 J**	**37.9 J**	**19.5 J**	**15.2 J**	**542 J**	**17.8 J**	**351 J**	**682 J**	**13.7 J**	**9.2 J**
Copper	80	**154 J**	**228 J**	**65.1 J**	**25.9 J**	**16.8 J**	**126 J**	**21.6 J**	**284 J**	**273 J**	**20.3 J**	**8.0 J**
Lead	250	**62.1**	**594**	**108**	**9.6**	**5.8**	**144**	**6.4**	**363**	**2,120**	**3.1**	**1.0**
Mercury	1.5	**0.02 J**	**0.03 J**	**0.16 J**	**0.07 J**	**0.02 J**	**0.0088 J**	**0.03 J**	**0.30 J**	**0.10 J**	**0.04 J**	**0.0072 J**
Selenium	1.0	**0.11 J**	**0.19 J**	**0.24 J**	**0.23 J**	**0.20 J**	**0.36 J**	**0.23 J**	**0.34 J**	**0.26 J**	**0.20 J**	0.6 U
Silver	170	**0.075 J**	**0.6**	**0.189 J**	**0.100 J**	**0.065 J**	**1.0**	**0.061 J**	**0.5**	**1.1**	**0.044 J**	**0.023 J**
Zinc	1,400	**102**	**520**	**266**	**68**	**58**	**187**	**40**	**1,110**	**1,910**	**47**	**20**
PAHs (µg/kg)[d]												
1-Methylnaphthalene	16,000	**3.9 J**	**9.7**	**23 J**	**39**	**8.4**	**6.2**	**2.7 J**	**7.1**	**28**	**4.4 J**	4.8 U
2-Methylnaphthalene	230,000	**8.6**	**16**	**43**	**57**	**12**	**10**	**4.1 J**	**16**	**46**	**5.7**	**2.7 J**
Acenaphthene	230,000	**2.4 J**	**4.5 J**	**41**	**41**	**16**	**3.9 J**	4.9 U	**2.6 J**	**3.8 J**	4.7 U	4.8 U
Acenaphthylene	Not listed	4.6 U[e]	**2.9 J**	**25 J**	**12**	**22**	4.9 U	4.9 U	**3.1 J**	**5.2**	4.7 U	4.8 U
Anthracene	1,600,000	**7.7**	**23**	**120**	**26**	**10**	**25**	**2.9 J**	**10**	**16**	**3.3 J**	4.8 U
Benzo(a)anthracene	cPAH	**24**	**37**	**200**	**19**	**10**	**270**	**10**	**60**	**39**	**11**	4.8 U
Benzo(a)pyrene	cPAH	**26**	**20**	**160**	**14**	**9.4**	**250**	**12**	**62**	**30**	**23**	4.8 U
Benzo(b)fluoranthene	cPAH	**23**	**17**	**170**	**16**	**10**	**260**	**7.9**	**69**	**45**	**20**	4.8 U
Benzo(k)fluoranthene	cPAH	**12**	**8.2**	**72**	**7.4**	**4.3 J**	**120**	**3.1 J**	**34**	**20**	**7.2**	4.8 U
Total Benzofluoranthenes	cPAH	**48**	**34**	**320**	**32**	**20**	**490**	**14**	**140**	**85**	**35**	4.8 U
Benzo(g,h,i)perylene	Not listed	**28**	**10**	**120**	**17**	**13**	**160**	**9.6**	**56**	**31**	**140**	**4.8**
Chrysene	cPAH	**30**	**56**	**380**	**26**	**12**	**360**	**15**	**92**	**86**	**24**	4.8 U
Dibenz(a,h)anthracene	cPAH	**4.8**	**3.5 J**	**36**	**5.1**	4.6 U	**45**	4.9 U	**15**	**7.5**	**6.4**	4.8 U
Dibenzofuran	120,000	**3.8 J**	**5.6**	**41**	**26**	**10**	**4.6 J**	4.9 U	**8**	**26**	**5.7**	4.8 U
Fluoranthene	230,000	**47**	**70**	**610**	**64**	**50**	**470**	**12**	**110**	**120**	**22**	4.8 U
Fluorene	150,000	4.6 U	**4.5 J**	**52**	**29**	**11**	**4.0 J**	4.9 U	4.6 U	**4.9**	4.7 U	4.8 U
Indeno(1,2,3-cd)pyrene	cPAH	**19**	**8.9**	**84**	**11**	**7.7**	**140**	**5.0**	**52**	**24**	**50**	4.8 U
Naphthalene	3,600	**8.6**	**20**	**170**	**100**	**54**	**9.8**	**4.0 J**	**14**	**82**	**9.8**	4.8 U
Phenanthrene	Not listed	**38**	**120**	**300**	**89**	**45**	**140**	**13**	**51**	**100**	**22**	4.8 U
Pyrene	240,000	**46**	**89**	**450**	**59**	**50**	**380**	**20**	**110**	**110**	**20**	4.8 U
cPAH TTEC[f]	15	**36**	**29 J**	**228**	**21**	**14**	**348**	**15**	**90**	**46**	**33**	3.4 U
TPH (mg/kg)[g]												
Diesel Range Organics	2,000	--[h]	--	290 U	**58**	**8.8**	--	--	**40**	**170**	--	--
Lube Oil	2,000	--	--	**2,400**	**130**	**43**	--	--	**120**	**440**	--	--
PCBs (µg/kg)[i]												
Aroclor 1016	Not listed	19 U	18 U	20 U	19 U	19 U	18 U	18 U	18 U	19 U	18 U	18 U
Aroclor 1221	Not listed	19 U	18 U	20 U	19 U	19 U	18 U	18 U	18 U	19 U	18 U	18 U
Aroclor 1232	Not listed	19 U	18 U	20 U	19 U	19 U	18 U	18 U	18 U	19 U	18 U	18 U
Aroclor 1242	0.72	19 U	18 U	20 U	28 U	19 U	18 U	18 U	18 U	19 U	18 U	18 U
Aroclor 1248	220	19 U	130 U	290 U	19 U	19 U	27 U	18 U	18 U	96 U	18 U	18 U
Aroclor 1254	0.29	**200**	**470**	490 U	**34**	19 U	**170**	**14 J**	**90**	**300**	18 U	18 U
Aroclor 1260	5.4	**120**	44 U	20 U	**35**	19 U	**32**	18 U	**68**	**92**	18 U	18 U
Total PCBs[j]	1.8	**367.5**	**593**	440 U	**121**	66.5 U	**251.5**	**68**	**203**	**478**	63 U	63 U

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TABLE 2

SUMMARY OF SOIL ANALYTICAL RESULTS FOR TARGET ANALYTES
Port of Seattle Parcel (Sliver)

Analyte	Remedial Investigation Preliminary Cleanup Levels[a]	SDP-06		SDP-07		SDP-08	SDP-09	SDP-10		
		SDP-06(10.0-11.0)	SDP-06(12.5-13.5)	SDP-07(1.5-3.0)	SDP-07(8.5-9.5)	SDP-08(12.0-13.5)	SDP-09(2.5-4.0)	SDP-10(13.5-15.0)	SDP-10(15.5-16.5)	SDP-10(16.5-17.5)
		10.0-11.0 ft bgs	12.5-13.5 ft bgs	1.5-3.0 ft bgs	8.5-9.5 ft bgs	12.0-13.5 ft bgs	2.5-4.0 ft bgs	13.5-15.0 ft bgs	15.5-16.5 ft bgs	16.5-17.5 ft bgs
		5/13/2015	5/13/2015	5/13/2015	5/13/2015	5/13/2015	5/13/2015	5/13/2015	5/13/2015	5/13/2015
Total Metals (mg/kg)[b]										
Arsenic	20	**3.1**	**3.6**	**7.5**	**9.5**	**23.9**	**24.5**	**7.9**	**7.9**	**10.8**
Barium	640	**78.2**	**83.4**	**546**	**73.1**	**31.2**	**262**	**117**	**38.6**	**23.1**
Cadmium	4.0	**0.07 J**	**0.04 J**	**6.0**	**0.04 J**	**0.1**	**2.0**	**0.6**	**0.07 J**	**0.02 J**
Chromium	2,000	**20.5 J**	**18.9 J**	**782 J**	**19.0 J**	**9.2 J**	**563 J**	**449 J**	**379 J**	**11.1 J**
Copper	80	**22.8 J**	**25.3 J**	**270 J**	**22.2 J**	**12.5 J**	**158 J**	**36.3 J**	**43.1 J**	**10.2 J**
Lead	250	**6.4**	**4.0**	**549**	**3.6**	**1.5**	**248**	**122**	**8.4**	**2.2**
Mercury	1.5	**0.05**	**0.04**	**0.35**	**0.04**	**0.24**	**0.15**	**0.0191 J**	**0.04**	**0.0100 J**
Selenium	1.0	**0.24 J**	**0.31 J**	**0.6**	**0.29 J**	**0.13 J**	**0.47 J**	**0.7**	**0.16 J**	0.6 U
Silver	170	**0.053 J**	**0.068 J**	**0.6**	**0.056 J**	**0.024 J**	**0.3**	**0.3**	**0.123 J**	**0.036 J**
Zinc	1,400	**49**	**38**	**2,650**	**48**	**18**	**680**	**249**	**43**	**27**
PAHs (µg/kg)[d]										
1-Methylnaphthalene	16,000	4.9 U	4.8 U	**16**	4.9 U	4.8 U	**4.7 J**	**5.4**	**9.2**	4.6 U
2-Methylnaphthalene	230,000	4.9 U	4.8 U	**31**	4.9 U	4.8 U	**10**	**8.4**	**12**	4.6 U
Acenaphthene	230,000	4.9 U	4.8 U	**4.9**	4.9 U	4.8 U	4.9 U	4.8 U	**61**	4.6 U
Acenaphthylene	Not listed	4.9 U	4.8 U	**3.7 J**	4.9 U	4.8 U	4.9 U	4.8 U	**6.7**	4.6 U
Anthracene	1,600,000	4.9 U	4.8 U	**45**	4.9 U	4.8 U	**4.7 J**	**2.6 J**	**7.4**	4.6 U
Benzo(a)anthracene	cPAH	4.9 U	4.8 U	**280**	4.9 U	4.8 U	**25**	**4.7 J**	**6.8**	4.6 U
Benzo(a)pyrene	cPAH	4.9 U	4.8 U	**250**	4.9 U	4.8 U	**9.5**	**2.6 J**	**5.1**	4.6 U
Benzo(b)fluoranthene	cPAH	4.9 U	4.8 U	**290**	**2.1 J**	4.8 U	**33**	**3.1 J**	**8.3**	4.6 U
Benzo(k)fluoranthene	cPAH	4.9 U	4.8 U	**160**	4.9 U	4.8 U	**14**	4.8 U	**3.7 J**	4.6 U
Total Benzofluoranthenes	cPAH	4.9 U	4.8 U	**600**	4.9 U	4.8 U	**61**	**6.4**	**16**	4.6 U
Benzo(g,h,i)perylene	Not listed	4.9 U	4.8 U	**200**	4.9 U	4.8 U	**18**	**2.9 J**	**9.1**	4.6 U
Chrysene	cPAH	**2.6 J**	4.8 U	**400**	4.9 U	4.8 U	**72**	**6.0**	**14**	4.6 U
Dibenz(a,h)anthracene	cPAH	4.9 U	4.8 U	**60**	4.9 U	4.8 U	**3.6 J**	4.8 U	4.6 U	4.6 U
Dibenzofuran	120,000	4.9 U	4.8 U	**27**	4.9 U	4.8 U	**27**	**5.1**	**26**	4.6 U
Fluoranthene	230,000	**2.5 J**	4.8 U	**720**	**3.5 J**	4.8 U	**170**	**16**	**57**	4.6 U
Fluorene	150,000	4.9 U	4.8 U	**4.8**	4.9 U	4.8 U	4.9 U	4.8 U	**21**	4.6 U
Indeno(1,2,3-cd)pyrene	cPAH	4.9 U	4.8 U	**180**	4.9 U	4.8 U	**13**	4.8 U	**6.0**	4.6 U
Naphthalene	3,600	4.9 U	4.8 U	**22**	4.9 U	4.8 U	**17**	**12**	**45**	4.6 U
Phenanthrene	Not listed	**4.4 J**	**3.2 J**	**200**	**5.6**	**2.5 J**	**270**	**30**	**85**	**5.5**
Pyrene	240,000	4.9 U	4.8 U	**480**	**3.1 J**	4.8 U	**110**	**14**	**43**	4.6 U
cPAH TTEC[f]	15	3.4 U	3.4 U	**366**	3.5 U	3.4 U	**20 J**	**4.3 J**	**8.4**	3.2 U
TPH (mg/kg)[g]										
Diesel Range Organics	2,000	6.9 U	**16**	**150**	--	6.2 U	--	--	**20**	--
Lube Oil	2,000	**24**	**60**	**290**	--	12 U	--	--	**40**	--
PCBs (µg/kg)[i]										
Aroclor 1016	Not listed	20 U	19 U	19 U	20 U	18 U	20 U	18 U	18 U	19 U
Aroclor 1221	Not listed	20 U	19 U	19 U	20 U	18 U	20 U	18 U	18 U	19 U
Aroclor 1232	Not listed	20 U	19 U	19 U	20 U	18 U	20 U	18 U	18 U	19 U
Aroclor 1242	0.72	20 U	19 U	19 U	20 U	18 U	20 U	18 U	18 U	19 U
Aroclor 1248	220	20 U	19 U	19 U	39 U	18 U	20 U	18 U	18 U	19 U
Aroclor 1254	0.29	20 U	19 U	**130**	**48**	18 U	**42**	**15 J**	18 U	19 U
Aroclor 1260	5.4	20 U	19 U	**110**	**41**	18 U	**37**	18 U	18 U	19 U
Total PCBs[j]	1.8	70 U	66.5 U	**287.5**	**148.5**	63 U	**129**	**69**	63 U	66.5 U

Notes:

(a) Remedial Investigation Preliminary Cleanup Levels presented in this table are based on Upland Preliminary Cleanup Levels from Table 5 of Ecology Review Draft Remedial Investigation Report, Boeing Isaacson-Thompson Site, Tukwila,Washington (Landau Associates 2013).
(b) Metals analyzed by Methods SW6020A/7471A.
(c) "J" qualifier indicates analyte detected between method detection limit and limit of quantitation. Result is reported as an estimated concentration.
(d) PAHs analyzed by Method SW8270DSIM
(e) "U" indicates analyte not detected above method detection limit. Numeric value represents limit of quantitation.
(f) cPAH TTEC calculated in accordance with WAC 173-340-708(8)(e). Results reported as non-detect values incorporated as one-half the limit of quantitation value.
(g) TPH analyzed by Method NWTPH-Dx.
(h) "--" indicates analyte not analyzed for in sample.
(i) PCBs analyzed by Method SW8082A.
(j) Total PCBs are calculated as the sum of all detections, and half of the reporting limit when the analyte is not detected.

Detected results are indicated in bold font. Detected results above the Preliminary Reporting Level Criteria are indicated with shading.

Abbreviations:

cPAH = Carcinogenic polynuclear aromatic hydrocarbon
ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
PAHs = Polynuclear aromatic hydrocarbons
PCBs = Polychlorinated biphenyls
RPD = Relative percent difference.
SIM = Select ion monitoring
TPH = Total petroleum hydrocarbon.
TTEC = Total toxicity equivalent soil concentration
WAC = Washington Adminstrative Code

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TABLE 3

SUMMARY OF SOIL ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS
Port of Seattle Parcel (Sliver)

Analyte	Remedial Investigation Preliminary Cleanup Level[a]	SDP-02		SDP-06	
		SDP-02 (16.0-17.5)		SDP-06 (12.5-13.5)	
		16.0-17.5 ft bgs		12.5-13.5 ft bgs	
		5/14/2015		5/13/2015	
VOCs (µg/kg)[b]					
Acetone	510,000	**25**		**180**	
2-Butanone	430,000	**3.5**	**J**[c]	**19**	**J**
Carbon Disulfide	75,000	**5.5**		1.3	U[d]
Methylene Chloride	2,400	**150**		**97**	

Notes:

(a) Remedial Investigation Preliminary Cleanup Levels presented in this table are based on Upland Preliminary Cleanup Levels from Table 5 of Ecology Review Draft Remedial Investigation Report, Boeing Isaacson-Thompson Site, Tukwila,Washington (Landau Associates 2013).

(b) VOCs analyzed by Method SW8260C. Samples were not collected using standard practices for VOCs. Results are reported as estimated concentrations due to sample collection methods.

(c) "J" qualifier indicates result is reported as an estimated concentration.

(d) "U" indicates analyte not detected above method detection limit. Numeric value represents limit of quantitation.

Detected results are indicated in bold font.

Abbreviations:

ft bgs = feet below ground surface.
µg/kg = micrograms per kilogram.
VOC = volatile organic compound.

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TABLE 4

SUMMARY OF SOIL ANALYTICAL RESULTS FOR TCLP METALS
Port of Seattle Parcel (Sliver)

Analyte	Dangerous Waste Threshold[a]	SDP-01(8.0-9.0) 8.0-9.0 ft bgs 5/14/2015	SDP-04(10.5-12.0) 10.5-12.0 ft bgs 5/14/2015	SDP-07(1.5-3.0) 1.5-3.0 ft bgs 5/13/2015	SDP-10(15.5-16.5) 15.5-16.5 ft bgs 5/13/2015
TCLP Metals (mg/L)[b]					
Arsenic	5.0	0.2 U[c]	0.2 U	0.2 U	0.2 U
Barium	100	**0.19**	**0.85**	**0.52**	**0.10**
Cadmium	1.0	0.01 U	0.01 U	0.01 U	0.01 U
Chromium	5.0	0.02 U	0.02 U	**0.03**	0.02 U
Lead	5.0	0.1 U	0.1 U	0.1 U	0.1 U
Mercury	0.2	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Selenium	1.0	0.2 U	0.2 U	0.2 U	0.2 U
Silver	5.0	0.02 U	0.02 U	0.02 U	0.02 U

Notes:

(a) Dangerous Waste Threshold listed in Washington Administrative Code (WAC) 173-303-090(8)(c) Toxicity Characteristics List.

(b) Toxicity Characteristic Leaching Procedure (TCLP) metals digested and analyzed using Methods SW1311/6010C (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and SW1311/7470C (mercury).

(c) "U" indicates analyte not detected above method detection limit. Numeric value represents limit of quantitation.

Detected results are indicated in bold font.

Abbreviations:

ft bgs = feet below ground surface

mg/L = milligrams per liter.

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Figures

Document Path: Q:\Projects\2014\1496007.00 Ecology Boeing Isaacson\GIS\MXDs\VicinityMapR1.mxd

Background Imagery from Esri, DigitalGlobe, GeoEye, Earthstar Infographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Site Location
- Approximate Property Boundary

0 200 400

Scale: Feet

Notes:
1. All features shown are approximate

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Port of Seattle Sliver Property
Washington State Department of Ecology

Vicinity Map

K/J 1496007*00
October 2015

Figure 1

Document Path: Q:\Projects\2014\1496007.00 Ecology Boeing Isaacson\GIS\MXDs\DPLocations_May2015.mxd

Background Imagery from Esri, DigitalGlobe, GeoEye, Earthstar Infographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Direct Push Boring Location
- Cross Section Location
- Approximate Location of Chain Link Fence

Notes:
1. All features shown are approximate
2. Soil samples collected 13 and 14 May 2015

N

0 25 50

Scale: Feet

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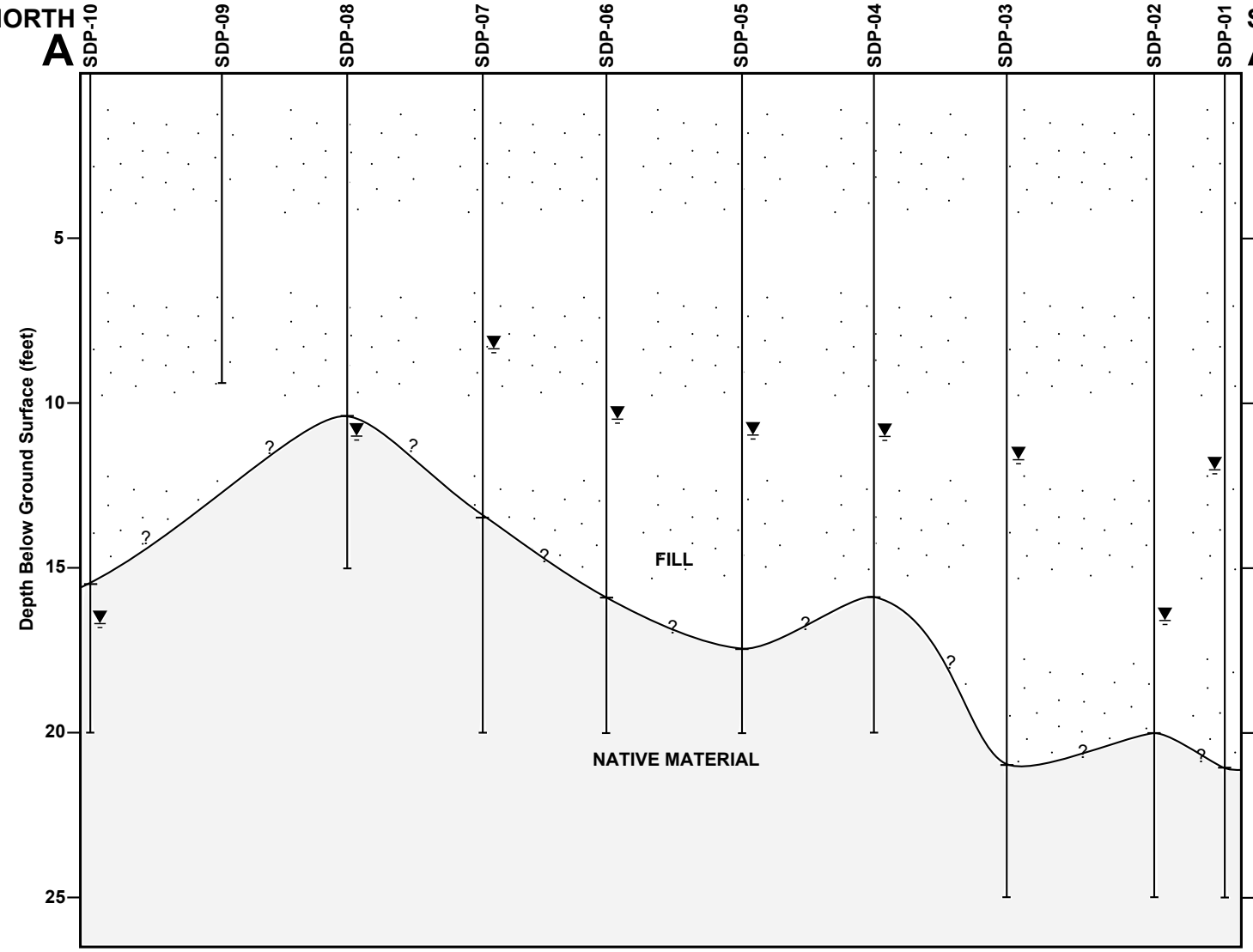
Port of Seattle Sliver Property
Washington State Department of Ecology

Direct Push Boring Locations

K/J 1496007*00
October 2015

Figure 2



Notes:

1. All features shown are approximate.
2. Fill materials are generally gravel or gravel with sand with varying amounts of silt and assorted debris.
3. Native material is generally very dark greyish brown to black silty sand, sandy silt, or poorly graded sand.
4. Boring SDP-09 met refusal at maximum depth of 9.5 feet in 3 attempts.
5. '?' = Approximate contact between fill and native materials.

0 25 50

Horizontal Scale: Feet

0 2.5 5

Vertical Scale: Feet

Vertical Exaggeration = 10 X

Legend

- Fill material: gravel or gravel with sand and assorted debris (e.g. brick, glass, metal, wood, crushed rock)
- Native material (silty sand, sandy silt, poorly graded sand)
- ▼ Approximate water table observed in soil cores (May 13-14, 2015)

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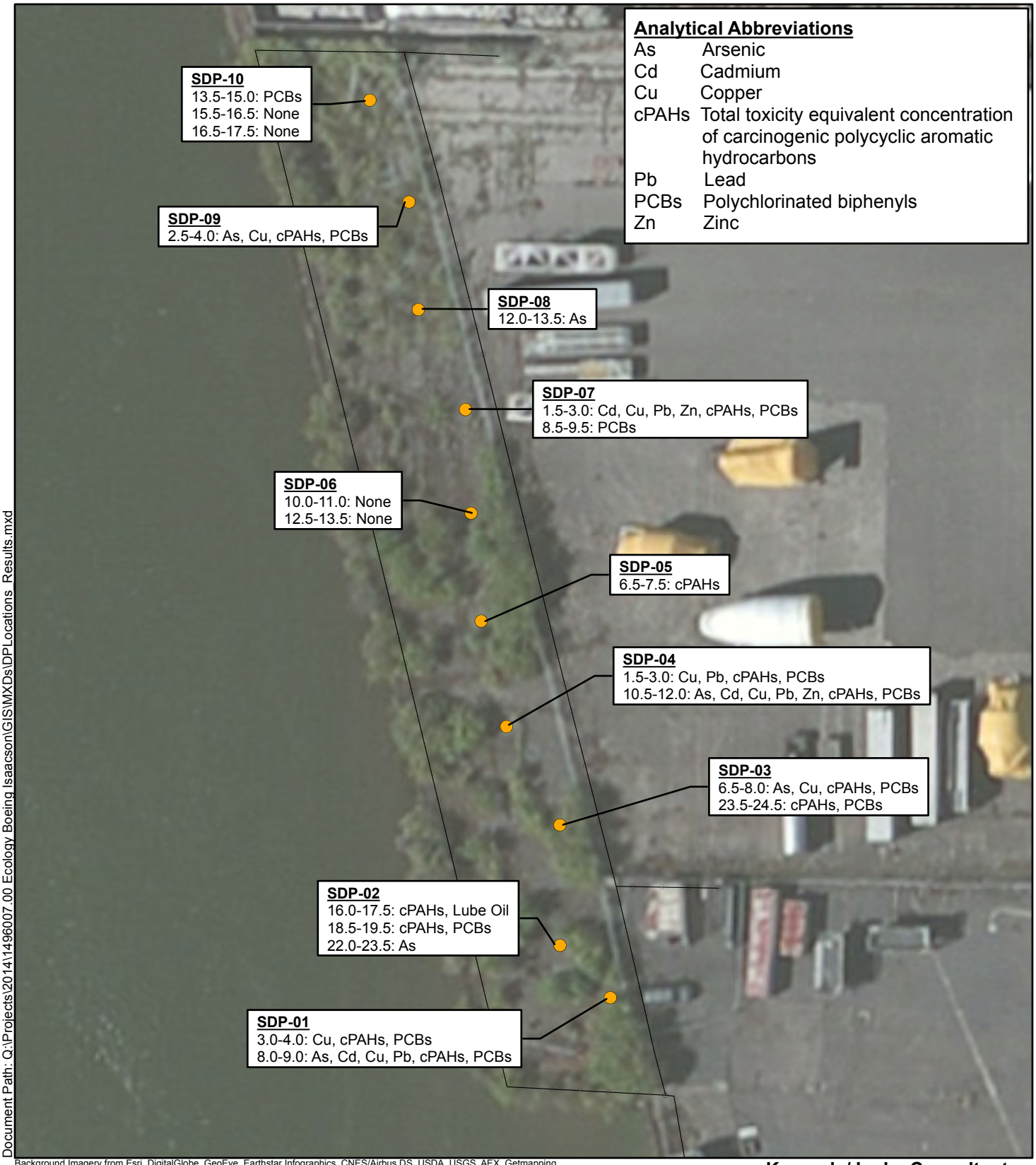
Port of Seattle Sliver Property
Washington State Department of Ecology

Interpretive Geologic Cross Section A-A'

Figure 3

November 2015
1496007*00



Document Path: Q:\Projects\2014\1496007.00 Ecology Boeing Isaacson\GIS\MXDs\DPLocations_Results.mxd

Background Imagery from Esri, DigitalGlobe, GeoEye, Earthstar Infographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

- Direct Push Boring Location
- Approximate Location of Chain Link Fence

Location Name
SDP-08
12.0-13.0: As

Sample depth in feet below ground surface

Analyte detected above RIPCL

N

0 25 50

Scale: Feet

Notes:
1. All features shown are approximate
2. Soil samples collected 13 and 14 May 2015
3. RIPCL = Remedial Investigation Preliminary Cleanup Level

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Port of Seattle Sliver Property
Washington State Department of Ecology

Soil Sample Results Above Remedial Investigation Preliminary Cleanup Levels

K/J 1496007*00
November 2015

Figure 4

Attachment A

Lithologic Boring Logs

Boring Log

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BORING LOCATION: South end of Port of Seattle Sliver		**Boring Name**	SDP-01
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 25.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/14/15	DATE COMPLETED: 5/14/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 11.7	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Schwarz	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 25.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0		1–4	SDP-01 (3.0-4.0)		0, 0, 0, 0		GW/GM, SW	**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 60% medium to coarse gravel, 35% fine to coarse sand, 5% silt, trace roots, moist, no odor, no sheen **Well-graded SAND with gravel** Dark grayish brown (10YR 4/2), 80% fine to coarse sand, 15% coarse gravel, 5% silt, trace roots, moist, no odor, no sheen
	4.0		5–8	SDP-01 (8.0-9.0)		0, 0, 0, 0		SW, GW/GM	1 inch yellow (10YR 7/6) brick layer **Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 60% medium to coarse gravel, 35% fine to coarse sand, 5% silt, moist, no odor, no sheen Very dark grayish brown (10YR 3/2) mottled with white
	4.5		9–12	SDP-01 (11.0-12.5)	▽	0, 0, 0, 0		GW/GM	70% gravel, 30% fine to coarse sand, 5% silt End white mottling, cobbles present
			13–17			0, 0, 0, 0			4 inches of brick, yellow (10YR 7/6) at 13 feet Black (10YR 2/1) Wood debris from 14.0 to 14.5 feet Yellow (10 YR 7/6) brick from 13.0 to 13.4 feet Dark grayish brown (10YR 4/2), wet

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-01

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	2.0		18					GW/ GM	**Well-graded GRAVEL with silt and sand (Continued)** Dark grayish brown (10YR 4/2), 70% gravel, 30% fine to coarse sand, 5% silt, wet, no odor, no sheen
			19						
			20			0			
			21			0			**SILT with sand** Black (10YR 2/1), 85% silt, 15% fine sand, soft, medium plasticity, wet, no sheen, slight marine odor
	4.5		22			0		ML	
			23	SDP-01 (22.5-24.0)		0			
			24			0		SP	**Poorly graded SAND** Black (10YR 2/1), 100% medium sand, trace silt, wet, no sheen, slight marine odor
			25						

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: South end of Port of Seattle Sliver		**Boring Name**	SDP-02
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 25.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/14/15	DATE COMPLETED: 5/14/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 16.0	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Schwarz	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 25.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	3.5		1–5			0, 0, 0			**Well-graded GRAVEL with silt and sand** Black (10YR 2/1), 65% medium to coarse gravel, 30% fine to coarse sand, 5% silt, moist, no odor, no sheen Brown (10YR 5/3) Red (2.5YR 4/6) brick from 2.4 to 2.6 feet Trace roots from 3.0 to 3.5 feet
	4.0		6–9	SDP-02 (7.0-8.5)		0, 0, 0, 0		GW/ GM	Red (2.5YR 4/6) and yellow (10YR 7/6) brick from 6.0 to 6.5 feet Burnt material, trace glass, brown mottled with black (10YR 2/1) and red (2.5YR 4/6) from 7.0 to 8.5 feet, no odor, no sheen
	3.5		10–14	SDP-02 (12.5-13.5)		0, 0, 0			Dark brown (10YR 3/3) below 11.0 feet Red (2.5YR 4/6) brick from 11.5 to 12.0 feet Brick fragments, black (10YR 2/1) from 12.5 to 13.0 feet
			15–17	SDP-02 (16.0-17.5)	▽	0, 122, 351		SP	Black (10YR 2/1), strong odor below 15.0 feet 60% gravel, 35% medium sand, 5% silt, odor, sheen below 16.0 feet ***(See next page for lithology description)***

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-02

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		18			55.1		SP	**Poorly graded SAND** Black (10YR 2/1), 95% fine sand with 5% silt, trace organic material, wet, odor, sheen ***(Continued)***
			19	SDP-02 (18.5-19.5)		17.6			
			20						
			21	SDP-02 (20.0-21.5)		0		ML	**SILT with sand** Black (10YR 2/1), 60% silt, 35% sand, 5% gravel, wet, no odor, no sheen
	4.0		22			0			
			23	SDP-02 (22.0-23.5)		0		SP	**Poorly graded SAND** Black (10YR 2/1), 100% medium sand, wet, no odor, no sheen
			24			0			
			25						

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 13.5 feet on first boring; step out boring located 3 feet to the west.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-03
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 25.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/14/15	DATE COMPLETED: 5/14/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 11.5	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Schwarz	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 25.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
									Concrete from 0 to 0.5 feet
			1			0			**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 65% gravel, 30% sand, 5% silt, moist, no odor, no sheen
			2			0			Dark brown (10YR 3/3) below 1.5 feet
	4.0		3	SDP-03 (2.0-3.5)		0			
			4			0			Dark red (2.5YR 3/6) brick from 3.5 to 4.0 feet
			5						
			6			0			Burnt material, metal fragments from 5.7 to 6.0 feet
			7	SDP-03 (6.5-8.0)		0			Pinkish gray (7.5R 7/1) from 6.5 to 7.0 feet bgs
	3.5		8			0			White (10YR 8/1) with 1/8 inch grains from 7.5 to 7.7 feet
			9					GW/ GM	Yellow (2.5Y 8/6) brick and white (10YR 8/1) material from 8.0 to 8.5 feet
			10						Brown (10YR 4/3) below 10 feet
			11			0			Black (10YR 2/1) with white (10YR 8/1) and dark red (2.5YR 3/6) gravel-sized unknown burnt debris from 11.0 to 11.5 feet bgs
	1.5		12			0			
			13						
			14						
			15						Dark grayish brown (10YR 4/2), 75% gravel, 20% sand, 5% silt, wet below 15.0 feet
			16			0			
			17			0			

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-03

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	2.0		18					GW/ GM	**Well-graded GRAVEL with silt and sand (Continued)** Dark grayish brown (10YR 4/2), 75% gravel, 20% sand, 5% silt, wet, no odor, no sheen
			19						
			20						Odor, no sheen from 20 to 23.5 feet
			21	SDP-03 (21.0-22.0)		0			
	5.0		22			0			**Poorly graded SAND with silt** Very dark gray (10YR 3/1), 90% fine sand, 10% silt, wet, no odor, no sheen
			23			0		SP/ SM	
			24	SDP-03 (23.5-24.5)		0			90% medium sand, 10% silt below 23.5 feet
			25			0			

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 12 feet on first boring; step out boring located 3 feet to the east.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-04
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/14/15	DATE COMPLETED: 5/14/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 11.1	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Schwarz	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 20.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0		1–5	SDP-04 (1.5-3.0)		0			**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 60% medium to coarse gravel, 35% fine to medium sand, 5% silt, moist, no odor, no sheen Poorly graded fine sand, yellowish brown (10YR 5/4) from 3.1 to 3.3 feet Yellow brick from 3.5 to 3.6 feet
	4.0		5–10	SDP-04 (8.0-9.0)		0		GW/ GM	Burnt material and metallic debris present, trace black cobbles White (10YR 8/1) from 8.0 to 8.1 feet Pinkish gray (5YR 7/2) from 8.8 to 9.0 feet
	5.0		10–15	SDP-04 (10.5-12.0)	▽	0			White crystalline material from 11.1 to 11.3 feet Brown (10YR 5/3) mottled with black (10YR 2/1), metal debris from 11.5 to 12.0 feet Yellow (10YR 8/6) brick from 12.0 to 12.4 feet Black (10YR 2/1) metal debris from 13.5 to 14.0 feet Yellow (10YR 8/6) brick from 14.0 to 14.1 feet Brownish gray (10YR 6/2) from 15.0 to 15.3 feet
			15–17	SDP-04 (16.0-17.0)		0		SP	**Poorly graded SAND** Very dark gray (10YR 3/1), 95% fine to medium sand, 5% silt, wet, no odor, no sheen

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F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-04

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		18	SDP-04 (18.0-19.5)		0		SP	**Poorly graded SAND** Very dark gray (10YR 3/1), 95% fine to medium sand, 5% silt, wet, no odor, no sheen ***(Continued)***
			19			0			95% medium sand, 5% silt below 18.3 feet
			20			0			

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 3 feet on original boring; step out boring located 2 feet to the east.
3. MS/MSD sample SDP-04 (1.5-3.0)-MS collected at boring location adjacent to SDP-04.

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-05
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/14/15	DATE COMPLETED: 5/14/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 11.0	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: J. Schwarz	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 20.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0		1–5	SDP-05 (1.0-2.5)		0, 0, 0, 0		GW	**Well-graded GRAVEL with sand** Dark gray brown (10YR 4/2), 60% medium to coarse gravel, some cobbles, 30% fine to medium sand, 5% silt, moist, no odor, no sheen White (10YR 8/1) material, black (10YR 2/1) burnt debris, and wood debris from 1.5 to 2.0 feet Black (10YR 2/1) cobbles, gravel, and coarse sand from 3.5 to 4.0 feet
	3.5		6–9	SDP-05 (6.5-7.5)		0, 0, 0			**Silty SAND** Brown (10YR 4/3) mottled with gray (10YR 6/1) and dark yellowish brown (10YR 4/6), 85% fine to medium sand, 15% silt, roots, moist, no odor, no sheen
	5.0		10–14	SDP-05 (13.0-14.0)		0, 0, 0, 0		SM	Brown (10YR 5/3) mottled with gray (10YR 6/1), 85% very fine to fine sand, 15% silt, wet, no odor, no sheen Dark gray (10YR 4/1) 80% very fine to fine sand, 20% silt below 15 feet Grey mottled with brown
			15–17			0, 0, 0			

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-05

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		18	SDP-05 (17.5-19.0)		0		SP	**Poorly graded SAND** Very dark gray (10YR 3/1), 95% fine to medium sand, 5% silt, wet, no odor, no sheen
			19			0			
			20			0			

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-06
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/13/15	DATE COMPLETED: 5/13/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 10.5	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: C. Joseph	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 20.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	3.0		1–5	SDP-06 (1.5-3.0)		0 0 0		GW/ GM	**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 60% angular medium to coarse gravel, 30% fine to coarse sand, 10% silt, cobbles throughout, moist, no odor, no sheen Burnt, scorched debris from 2.5 to 3 feet bgs
	0 (No Recovery)		5–10						
	5.0		10–15	SDP-06 (10.0-11.0) SDP-06 (12.5-13.5)		0 0 8.8 35.7 4.9		SM	**Silty SAND** Brown (10YR 5/3) mottled with gray (10YR 5/1), 85% very fine to fine sand, 15% silt, wet, no odor, no sheen 70% very fine to fine sand, 30% silt, gradational transition to gray (10YR 5/1), no sheen, faint odor below 12.0 feet
			15			0		SP	**Poorly graded SAND** Very dark grayish brown (10YR 3/2), 95% very fine to fine sand, 5% silt, wet, no odor, no sheen
			16			0		SM	**Silty SAND** Brown (10YR 5/3), 75% fine sand, 25% silt, wet, no odor, no sheen
			17	SDP-06 (17.0-18.0)		0		SP	***(See next page for lithology description)***

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-06

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		18			0			**Poorly graded SAND** Very dark grayish brown (10YR 3/2), 95% very fine to fine sand, 5% silt, wet, no odor, no sheen ***(Continued)***
			19			0		SP	70% medium sand, 30% fine sand
			20			0			

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-07
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/13/15	DATE COMPLETED: 5/13/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 8.5	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: C. Joseph	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 20.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	RECOV. (FEET)	PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	3.5		1–5	SDP-07 (1.5-3.0)		0		GW/ GM	**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3), 60% angular medium to coarse gravel, 30% fine to coarse sand, 10% silt, trace rootlets, moist, no odor, no sheen
						0			
						0		SW/ SM	**Well-graded SAND with silt and gravel** Brown (10YR 4/3) with gray (10YR 5/1), 60% fine to coarse sand, 30% angular medium to coarse sand, 10% silt, trace brick, moist, no odor, no sheen Cobbles from 3.0 to 3.3 feet bgs
						0			
	4.5		5–10	SDP-07 (8.5-9.5)		0		SP	**Poorly graded SAND** Dark brown (10YR 3/3), 95% fine sand, 5% silt, moist, no odor, no sheen
						0			
						0		ML	**Sandy SILT** Brown (10YR 5/3) mottled with dark yellowish brown (10YR 3/6), 70% silt, 30% very fine sand, soft, medium plasticity, wet, no odor, no sheen
						0			
	4.0		10–15	SDP-07 (12.5-13.5)		0		CL	**Lean CLAY** Brown (10YR 5/3) mottled with dark yellowish brown (10YR 3/6), 90% clay, 10% very fine sand, high plasticity, wet, sticky to touch, no dilatency, no odor, no sheen
						0			
						0			Grayish brown (10YR 5/2) below 13.0 feet
						0			
						0		SP	**Poorly graded SAND** Very dark grayish brown (10YR 3/2), 95% fine sand, 5% silt, wet, no odor, no sheen
			15–17			0			70% medium sand, 30% fine sand below 16.0 feet
						0			
						0			

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-07

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		18			0			**Poorly graded SAND (Continued)** Very dark grayish brown (10YR 3/2), 70% medium sand, 30% fine sand, wet, no odor, no sheen
			19	SDP-07 (19.0-20.0)		0		SP	
			20			0			

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. MS/MSD sample SDP-07 (1.5-3.0)-MS collected at boring location adjacent to SDP-07.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Port of Seattle Sliver		**Boring Name**	SDP-08
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 15.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/13/15	DATE COMPLETED: 5/13/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 11.0	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: C. Joseph	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 15.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	5.0		1–5	SDP-08 (3.5-5.0)		0		GW/GM	**Well-graded GRAVEL with silt and sand** Brown (10YR 4/3) alternating with dark gray (10YR 4/1), 60% angular medium to coarse gravel, 30% very fine to coarse sand, 10% silt, moist, no odor, no sheen
									Yellow (10YR 7/6) brick layer from 2.3 to 2.5 feet
									Black (10YR 2/1) burnt material from 4.0 to 4.3 feet
									Woody debris, rootlets from 5.0 to 6.0 feet
	5.0		6–10	SDP-08 (6.0-7.0)		0		ML	**Sandy SILT** Brown (10YR 3/3) mottled with gray (10YR 6/1), 60% silt, 40% very fine sand, soft, low plasticity, moist, no odor, no sheen
								SM	**Silty SAND** Very dark brown (10YR 6/1) mottled with gray (10YR 6/1), 85% very fine sand, 25% silt, moist, no odor, no sheen
									70% very fine sand, 30% silt below 8.5 feet
	3.5		10–15	SDP-08 (12.0-13.5)		0		ML	**SILT with sand** Brown (10YR 5/3) mottled with gray (10YR 5/1), 85% silt, 15% very fine sand, medium plasticity, moist, no odor, no sheen
								SP	**Poorly graded SAND** Very dark grayish brown (10YR 5/2), 95% very fine sand, 5% silt, wet, no odor, no sheen

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 4.5 feet on original boring; step out boring located 3 feet to the east.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: North end of Port of Seattle Sliver		**Boring Name**	SDP-09
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 9.5 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/13/15	DATE COMPLETED: 5/13/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): N/A	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: C. Joseph	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 9.5 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0		1–4	SDP-09 (2.5-4.0)	Cetco Gold Medium Bentonite Chips	0, 0, 0, 0		GW	**Well-graded GRAVEL with sand** Brown (10YR 5/3) transitioning to dark brown (10YR 3/3), 80% angular medium to very coarse gravel, 20% fine to coarse sand, moist, no odor, no sheen
	2.5		5–7	SDP-09 (5.0-6.5)		0, 0, 0			Reddish yellow (10YR 6/8) brick layer from 5.2 to 5.5 feet Gray (10YR 5/1) from 6.0 to 6.5 feet Increased moisture below 7.0 feet

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 9.5 feet on original boring; step out boring located 3 feet to the west.
3. Refusal at 7.5 feet on second boring; step out boring located 3 feet south, 1.5 feet east of original boring.
4. Refusal at 5 feet on third boring.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: North end of Port of Seattle Sliver		**Boring Name**	SDP-10
DRILLING COMPANY: Cascade Drilling, L.P.	DRILLER: Frank Scott	**Project Name**	Boeing Isaacson
DRILLING METHOD(S): Geoprobe Direct Push 7730DT	DRILL BIT(S) SIZE: 2.25 in.	**Project Number**	1496007.00
ISOLATION CASING: N/A	FROM N/A TO N/A FT.	ELEVATION AND DATUM: bgs	TOTAL DEPTH: 20.0 ft.
BLANK CASING: N/A	FROM N/A TO N/A FT.	DATE STARTED: 5/13/15	DATE COMPLETED: 5/13/15
SLOTTED CASING: N/A	FROM N/A TO N/A FT.	INITIAL WATER DEPTH (FT): 16.5	
SIZE AND TYPE OF FILTER PACK: N/A	FROM N/A TO N/A FT.	LOGGED BY: C. Joseph	
SEAL: Cetco Gold Medium Bentonite Chips	FROM 0 TO 20.0 FT.	SAMPLING METHODS: Macro Core	WELL COMPLETION: ☐ SURFACE HOUSING ☐ STAND PIPE _____ FT.
GROUT: N/A	FROM N/A TO N/A FT.		

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
			1			0		GW	**Well-graded GRAVEL with sand** Light gray (10YR 7/1) transitioning to brown (10YR 5/3), 85% medium to coarse angular gravel, 15% very fine to coarse sand, moist, no odor, no sheen
	4.0		2			0			**Well-graded SAND with silt and gravel** Very dark grayish brown (10YR 4/2), 60% fine to coarse sand, 30% medium to coarse angual gavel, 10% silt, moist, no odor, no sheen
			3	SDP-10 (2.0-3.5)		0			
			4			0			
			5			0			Glass and metallic debris at 5 to 6 feet bgs
			6			0			Reddish yellow (7.5YR 7/8) brick layer from 6.0 to 6.3 feet
	3.5		7			0			80% well graded gravel, 20% sand from 7.0 to 7.7 feet
			8	SDP-10 (7.0-8.0)		0			Brown (10YR 5/3), very coarse angular gravel from 8.0 to 9.0 feet
			9					SW/ SM	
			10			0			Reddish gray (10YR 6/1) from 10.0 to 10.2 feet
			11			0			
			12			0			Yellow (10YR 8/6) brick from 11.7 to 12.0 feet
	5.0		13			0			Yellow (10YR 8/6) brick from 13.0 to 13.1 feet
			14	SDP-10 (13.5-15.0)		0			
			15			0			80% fines, 20% coarse sand, white (7.5YR 8/1) from 14.5 to 15.0 feet, wet
			16	SDP-10 (15.5-16.5)		0		SM	**Silty SAND** Very dark brown (10YR 2/2), 80% fine to medium sand, 20% silt, woody debris, moist, no sheen, tide-flat odor
			17	SDP-10 (16.5-17.5)		0		SW	*(See next page for lithology description)*

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

F-40.1
(6-87) (3-88) (8-90)

Project Name Boeing Isaacson **Project Number** 1496007.00 **Boring Name** SDP-10

SAMPLES TYPE	SAMPLES RECOV. (FEET)	SAMPLES PENETR. RESIST. BLOWS/6"	DEPTH (FEET)	SAMPLE NUMBER	BACKFILL DETAILS	PID	LITHOLOGY	USCS LOG	SAMPLE DESCRIPTION AND DRILLING REMARKS
	4.0		18			0		SW	**Well-graded SAND** Very dark grayish brown (10YR 5/2), 95% very fine to coarse sand, 5% silt, wet, no odor, no sheen ***(Continued)***
			19			0			
			20						

NOTES

1. PID = MiniRae 2000 calibrated with 100 parts per million isobutylene standard.
2. Refusal at 11 feet on original boring; step out boring located 3 feet to the east.

KJ PNW 1496007.GPJ KJ PNW.GDT 10/28/15

Attachment B

Laboratory Analytical Reports (on CD)

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Client: Kennedy Jenks Consultants

Project: 1496007.00 POS Sliver

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BC

Signature

June-08-2015

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 8, 2015

Ryan Hultgren
Kennedy/Jenks Consultants Inc.
32001 32nd Avenue South, Suite 100
Federal Way, WA 98001

RE: Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGA8

Dear Mr. Hultgren:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile AGA8

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: AGA8

AGA8 - 90862

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 2 of 2	
ARI Client Company: Kennedy/Jenks	Phone: (253) 541-4235	Date: 05/13/15	Ice Present?
Client Contact: Ryan Huntington		No of Coolers:	Cooler Temps:
Client Project Name: POS Silver			
Client Project #: 1496007.00	Samplers: C. Joseph/J Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Metals (a)	PAHs 8270C SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-07 (1.5-3.0)	05/13/15	1315	Soil	1	X	X	X	X					@ RCRA, Cu, Zn by 6020 Hg by 7471
SDP-07 (8.5-9.5)		1335			X	X	X						
SDP-07 (12.5-13.5)		1345											HOLD
SDP-07 (19.0-20.0)		1350											HOLD
SDP-07 (1.5-3.0)-MS		1330			X	X	X	X					
SDP-06 (1.5-3.0)		1410											HOLD
SDP-06 (12.5-13.5)		1430			X	X	X	X					
SDP-06 (10.0-11.0)		1435			X	X	X	X					
SDP-06 (17.0-18.0)		1445											HOLD
RB-051315		1530	Water	7	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Kirk Hutton	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/13/15 1638	Date & Time: 5/13/15 1640	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGAE	Turn-around Requested: std.	Page: 1 of 2	
ARI Client Company: Kennedy/Jenks	Phone: (253)549-9725	Date: 05/13/15	Ice Present?
Client Contact: Ryan Hultgren		No of Coolers	Cooler Temps
Client Project Name: POS Silver			
Client Project #: 1496007.00	Samplers: C Joseph/J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Metals ①	PAHs EPA 8270C SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-10 (2.0-3.5)	5/13/15	0930	Soil	1									① RCRA and Cu, Zn by 6020 Hg: 7471 HOLD
SDP-10 (7.0-8.0)	5/13/15	0957	Soil	1									HOLD
SDP-10 (13.5-15.0)	5/13/15	1020	Soil	1	X	X	X						
SDP-10 (15.5-16.5)	5/13/15	1045	Soil	1	X	X	X	X					
SDP-10 (16.5-17.5)	5/13/15	1040	Soil	1	X	X	X						
SDP-09 (5.0-6.5)	5/13/15	1120	Soil	1									HOLD
SDP-09 (2.5-4.0)	5/13/15	1130	Soil	1	X	X	X						
SDP-08 (6.0-7.0)	5/13/15	1209	Soil	1									HOLD
SDP-08 (3.5-5.0)	5/13/15	1200	Soil	1									HOLD
SDP-08 (12.0-13.5)	5/13/15	1230	Soil	1	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Rich Hulse	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/13/15 1640	Date & Time: 5/13/15 1640	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Kennedy Jenks Project Name PCS Silver

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other _____

Assigned ARI Job No: AGAE Tracking No _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 8.8 7.4

Time 1640 Temp Gun ID# 90277952

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by _____ Date 5/13/15 Time 1640

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA (YES) NO

Were all VOC vials free of air bubbles? (NA) YES NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI (NA) _____

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment _____ Split by _____

Samples Logged by AV Date: 5/14/15 Time 0744

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By Date

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#: 1+2	Temperature(°C): 8&7.4	
Sample ID	**Bottle Count**	**Bottle Type**
All Samples received above 6°C.		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by _____ Date 5/14/15 Time 8:44

PRESERVATION VERIFICATION 05/14/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AGA8**

Inquiry Number: NONE
Analysis Requested: 05/14/15
Contact: Hultgren, Ryan
Client: Kennedy Jenks Consultants
Logged by: AV
Sample Set Used: Yes-490
Validatable Package: Lv4
Deliverables:

PC: Cheronne
VTSR: 05/13/15

Project #: 1496007.00
Project: POS Sliver
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-9298 **AGA8J**	RB-051315						TOT															

Checked By AJ Date 5/14/15

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: AGA8

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Kennedy/Jenks Consultants Inc.
Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGA8

Sample Receipt

Eighteen soil samples and one water sample were received on May 13, 2015 under ARI job AGA8. The cooler temperatures measured by IR thermometer following ARI SOP were 7.4 and 8.8°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

PAHs by SW8270-SIM

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limit. The LCS and LCSD percent recoveries were within control limits.

Several matrix spike and matrix spike duplicate percent recoveries were outside control limits for sample **SDP-07(1.5-3.0)**. No corrective action is required for matrix QC.

PCB Aroclors by SW8082

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. The internal standard areas were within control limits

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limit. The LCS and LCSD percent recoveries were within control limits.

AGA8 080315

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

NWTPH-Dx

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limit. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

Metals/Mercury by SW6020/7471

The samples and associated laboratory QC were digested and analyzed within the method recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The soil matrix spike percent recoveries of mercury and selenium were outside the control limits for sample **SDP-07(1.5-3.0)**. A post digestion spike was performed for selenium and the recovery was within control limits. All relevant data have been flagged with an "N" qualifier on the appropriate Form V. No further corrective action was taken.

The soil duplicate RPDs of chromium and copper were outside the control limits for sample **SDP-07(1.5-3.0)**. All relevant data have been flagged with a "*" qualifier on the appropriate Form VI. No further corrective action was taken.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AGA8
Client: Kennedy Jenks Consultants
Project Event: 1496007.00
Project Name: POS Sliver

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SDP-10(13.5-15.0)	AGA8A	15-9289	Soil	05/13/15 10:20	05/13/15 16:40
2.	SDP-10(15.5-16.5)	AGA8B	15-9290	Soil	05/13/15 10:45	05/13/15 16:40
3.	SDP-10(16.5-17.5)	AGA8C	15-9291	Soil	05/13/15 10:40	05/13/15 16:40
4.	SDP-09(2.5-4.0)	AGA8D	15-9292	Soil	05/13/15 11:30	05/13/15 16:40
5.	SDP-08(12.0-13.5)	AGA8E	15-9293	Soil	05/13/15 12:30	05/13/15 16:40
6.	SDP-07(1.5-3.0)	AGA8F	15-9294	Soil	05/13/15 13:15	05/13/15 16:40
7.	SDP-07(8.5-9.5)	AGA8G	15-9295	Soil	05/13/15 13:35	05/13/15 16:40
8.	SDP-06(12.5-13.5)	AGA8H	15-9296	Soil	05/13/15 14:30	05/13/15 16:40
9.	SDP-06(10.0-11.0)	AGA8I	15-9297	Soil	05/13/15 14:35	05/13/15 16:40
10.	RB-051315	AGA8J	15-9298	Water	05/13/15 15:00	05/13/15 16:40
11.	SDP-10(2.0-3.5)	AGA8K	15-9299	Soil	05/13/15 09:30	05/13/15 16:40
12.	SDP-10(7.0-8.0)	AGA8L	15-9300	Soil	05/13/15 09:50	05/13/15 16:40
13.	SDP-09(5.0-6.5)	AGA8M	15-9301	Soil	05/13/15 11:20	05/13/15 16:40
14.	SDP-08(6.0-7.0)	AGA8N	15-9302	Soil	05/13/15 12:09	05/13/15 16:40
15.	SDP-08(3.5-5.0)	AGA8O	15-9303	Soil	05/13/15 12:00	05/13/15 16:40
16.	SDP-07(12.5-13.5)	AGA8P	15-9304	Soil	05/13/15 13:45	05/13/15 16:40
17.	SDP-07(19.0-20.0)	AGA8Q	15-9305	Soil	05/13/15 13:50	05/13/15 16:40
18.	SDP-06(1.5-3.0)	AGA8R	15-9306	Soil	05/13/15 14:10	05/13/15 16:40
19.	SDP-06(17.0-18.0)	AGA8S	15-9307	Soil	05/13/15 14:45	05/13/15 16:40

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

ADAS 8001 2

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

ARAS - 00013

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

AGAS - 00814

Analytical Method Information

Printed: 06/08/2015 11:02 am

8270D-SIM PAH (5 ug/kg) in Solid (EPA 8270D-SIM)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz **Amount Required:** 150 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Naphthalene	2.26	5.00 ug/kg		30	36-120	30	36-120	30
2-Methylnaphthalene	1.69	5.00 ug/kg		30	35-120	30	35-120	30
1-Methylnaphthalene	1.61	5.00 ug/kg		30	39-120	30	39-120	30
Biphenyl	1.44	5.00 ug/kg		30	30-160	30	30-160	30
2,6-Dimethylnaphthalene	0.750	5.00 ug/kg		30	30-160	30	30-160	30
Acenaphthylene	1.61	5.00 ug/kg		30	35-120	30	35-120	30
Acenaphthene	1.49	5.00 ug/kg		30	39-120	30	39-120	30
Dibenzofuran	1.41	5.00 ug/kg		30	38-120	30	38-120	30
2,3,5-Trimethylnaphthalene	0.419	5.00 ug/kg		30		30		30
Fluorene	1.47	5.00 ug/kg		30	41-120	30	41-120	30
Dibenzothiophene	0.425	5.00 ug/kg		30		30		30
Phenanthrene	1.58	5.00 ug/kg		30	46-120	30	46-120	30
Anthracene	1.78	5.00 ug/kg		30	36-120	30	36-120	30
Carbazole	0.189	5.00 ug/kg		30	30-160	30	30-160	30
1-Methylphenanthrene	0.700	5.00 ug/kg		30	30-160	30	30-160	30
Fluoranthene	1.87	5.00 ug/kg		30	46-120	30	46-120	30
Pyrene	2.26	5.00 ug/kg		30	49-120	30	49-120	30
Benzo(a)anthracene	2.22	5.00 ug/kg		30	42-120	30	42-120	30
Chrysene	1.92	5.00 ug/kg		30	48-120	30	48-120	30
Benzo(b)fluoranthene	2.11	5.00 ug/kg		30	35-127	30	35-127	30
Benzo(k)fluoranthene	2.28	5.00 ug/kg		30	37-129	30	37-129	30
Benzo(j)fluoranthene	1.75	5.00 ug/kg		30	40-120	30	40-120	30
Benzo(e)pyrene	0.647	5.00 ug/kg		30	30-160	30	30-160	30
Benzo(a)pyrene	2.38	5.00 ug/kg		30	36-120	30	36-120	30
Perylene	3.56	5.00 ug/kg		30	44-120	30	44-120	30
Indeno(1,2,3-cd)pyrene	3.01	5.00 ug/kg		30	40-120	30	40-120	30
Dibenzo(a,h)anthracene	2.56	5.00 ug/kg		30	38-120	30	38-120	30
Benzo(g,h,i)perylene	2.79	5.00 ug/kg		30	38-120	30	38-120	30
Benzofluoranthenes, Total	3.86	10.0 ug/kg		30	46-120	30	46-120	30
Surr: 2-Methylnaphthalene-d10			32-120					
Surr: Dibenzo[a,h]anthracene-d14			21-133					
Surr: Fluoranthene-d10			36-134					
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Perylene-d12								

AGAR . 99815

Analytical Method Information

Printed: 06/08/2015 11:03 am

8270D-SIM PAH (0.1 ug/L) in Water (EPA 8270D-SIM)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Naphthalene	0.0296	0.100 ug/L		30	33-120	30	33-120	30
2-Methylnaphthalene	0.0302	0.100 ug/L		30	29-120	30	29-120	30
1-Methylnaphthalene	0.0289	0.100 ug/L		30	37-120	30	37-120	30
Biphenyl				30	30-160	30	30-160	40
2,6-Dimethylnaphthalene				30	30-160	30	30-160	40
Acenaphthylene	0.0380	0.100 ug/L		30	32-120	30	32-120	30
Acenaphthene	0.0304	0.100 ug/L		30	38-120	30	38-120	30
Dibenzofuran	0.0280	0.100 ug/L		30	38-120	30	38-120	30
2,3,5-Trimethylnaphthalene				30				
Fluorene	0.0278	0.100 ug/L		30	41-120	30	41-120	30
Dibenzothiophene				30				
Phenanthrene	0.0279	0.100 ug/L		30	49-120	30	49-120	30
Anthracene	0.0352	0.100 ug/L		30	39-120	30	39-120	30
Carbazole				30	30-160	30	30-160	40
1-Methylphenanthrene				30	30-160	30	30-160	40
Fluoranthene	0.0347	0.100 ug/L		30	48-120	30	48-120	30
Pyrene	0.0434	0.100 ug/L		30	48-120	30	48-120	30
Benzo(a)anthracene	0.0399	0.100 ug/L		30	37-120	30	37-120	30
Chrysene	0.0321	0.100 ug/L		30	48-120	30	48-120	30
Benzo(b)fluoranthene	0.0417	0.100 ug/L		30	38-128	30	38-128	30
Benzo(k)fluoranthene	0.0433	0.100 ug/L		30	36-130	30	36-130	30
Benzo(j)fluoranthene	0.0376	0.100 ug/L		30	49-120	30	49-120	30
Benzo(e)pyrene				30	30-160	30	30-160	30
Benzo(a)pyrene	0.0429	0.100 ug/L		30	25-120	30	25-120	30
Perylene	0.0420	0.100 ug/L		30	30-160	30	30-160	30
Indeno(1,2,3-cd)pyrene	0.0422	0.100 ug/L		30	32-120	30	32-120	30
Dibenzo(a,h)anthracene	0.0535	0.100 ug/L		30	21-120	30	21-120	30
Benzo(g,h,i)perylene	0.0388	0.100 ug/L		30	28-120	30	28-120	30
Benzofluoranthenes, Total	0.0850	0.200 ug/L		30	46-120	30	46-120	30
Surr: 2-Methylnaphthalene-d10			31-120					
Surr: Dibenzo[a,h]anthracene-d14			10-125					
Surr: Fluoranthene-d10			46-121					
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Perylene-d12								

Analytical Method Information

Printed: 06/08/2015 11:03 am

8082A PCB Solid 20 in Solid (EPA 8082A)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz **Amount Required:** 150 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	8.00	20.0 ug/kg		30	52-120	30	52-120	30
Aroclor-1016 (1)	8.00	20.0 ug/kg		30				
Aroclor-1016 (2)	8.00	20.0 ug/kg		30				
Aroclor-1016 (3)	8.00	20.0 ug/kg		30				
Aroclor-1016 (4)	8.00	20.0 ug/kg		30				
Aroclor 1016 [2C]	8.00	20.0 ug/kg		30	52-120	30	52-120	30
Aroclor-1016 (1) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (2) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (3) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (4) [2C]	8.00	20.0 ug/kg		30				
Aroclor 1221	8.00	20.0 ug/kg		30				
Aroclor-1221 (1)		20.0 ug/kg		30				
Aroclor-1221 (2)		20.0 ug/kg		30				
Aroclor-1221 (3)		20.0 ug/kg		30				
Aroclor 1221 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1221 (1) [2C]		20.0 ug/kg		30				
Aroclor-1221 (2) [2C]		20.0 ug/kg		30				
Aroclor-1221 (3) [2C]		20.0 ug/kg		30				
Aroclor-1221 (4) [2C]		20.0 ug/kg		30				
Aroclor 1232	8.00	20.0 ug/kg		30				
Aroclor-1232 (1)		20.0 ug/kg		30				
Aroclor-1232 (2)		20.0 ug/kg		30				
Aroclor-1232 (3)		20.0 ug/kg		30				
Aroclor-1232 (4)		20.0 ug/kg		30				
Aroclor 1232 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1232 (1) [2C]		20.0 ug/kg		30				
Aroclor-1232 (2) [2C]		20.0 ug/kg		30				
Aroclor-1232 (3) [2C]		20.0 ug/kg		30				
Aroclor-1232 (4) [2C]		20.0 ug/kg		30				
Aroclor 1242	8.00	20.0 ug/kg		30				
Aroclor-1242 (1)		20.0 ug/kg		30				
Aroclor-1242 (2)		20.0 ug/kg		30				
Aroclor-1242 (3)		20.0 ug/kg		30				
Aroclor-1242 (4)		20.0 ug/kg		30				
Aroclor 1242 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1242 (1) [2C]		20.0 ug/kg		30				
Aroclor-1242 (2) [2C]		20.0 ug/kg		30				
Aroclor-1242 (3) [2C]		20.0 ug/kg		30				
Aroclor-1242 (4) [2C]		20.0 ug/kg		30				
Aroclor 1248	8.00	20.0 ug/kg		30				
Aroclor-1248 (1)		20.0 ug/kg		30				
Aroclor-1248 (2)		20.0 ug/kg		30				
Aroclor-1248 (3)		20.0 ug/kg		30				
Aroclor-1248 (4)		20.0 ug/kg		30				
Aroclor 1248 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1248 (1) [2C]		20.0 ug/kg		30				
Aroclor-1248 (2) [2C]		20.0 ug/kg		30				
Aroclor-1248 (3) [2C]		20.0 ug/kg		30				
Aroclor-1248 (4) [2C]		20.0 ug/kg		30				
Aroclor 1254	8.00	20.0 ug/kg		30				
Aroclor-1254 (1)		20.0 ug/kg		30				
Aroclor-1254 (2)		20.0 ug/kg		30				
Aroclor-1254 (3)		20.0 ug/kg		30				
Aroclor-1254 (4)		20.0 ug/kg		30				

Analytical Method Information

(Continued)

Printed: 06/08/2015 11:03 am

8082A PCB Solid 20 in Solid (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)		20.0 ug/kg		30				
Aroclor 1254 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1254 (1) [2C]		20.0 ug/kg		30				
Aroclor-1254 (2) [2C]		20.0 ug/kg		30				
Aroclor-1254 (3) [2C]		20.0 ug/kg		30				
Aroclor-1254 (4) [2C]		20.0 ug/kg		30				
Aroclor-1254 (5) [2C]		20.0 ug/kg		30				
Aroclor 1260	9.28	20.0 ug/kg		30	57-120	30	57-120	30
Aroclor-1260 (1)	9.28	20.0 ug/kg		30				
Aroclor-1260 (2)	9.28	20.0 ug/kg		30				
Aroclor-1260 (3)	9.28	20.0 ug/kg		30				
Aroclor-1260 (4)	9.28	20.0 ug/kg		30				
Aroclor-1260 (5)	9.28	20.0 ug/kg		30				
Aroclor 1260 [2C]	9.28	20.0 ug/kg		30	57-120	30	57-120	30
Aroclor-1260 (1) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (2) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (3) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (4) [2C]	9.28	20.0 ug/kg		30				
Aroclor 1262	9.28	20.0 ug/kg		30				
Aroclor-1262 (1)		20.0 ug/kg		30				
Aroclor-1262 (2)		20.0 ug/kg		30				
Aroclor-1262 (3)		20.0 ug/kg		30				
Aroclor-1262 (4)		20.0 ug/kg		30				
Aroclor-1262 (5)		20.0 ug/kg		30				
Aroclor 1262 [2C]	9.28	20.0 ug/kg		30				
Aroclor-1262 (1) [2C]		20.0 ug/kg		30				
Aroclor-1262 (2) [2C]		20.0 ug/kg		30				
Aroclor-1262 (3) [2C]		20.0 ug/kg		30				
Aroclor-1262 (4) [2C]		20.0 ug/kg		30				
Aroclor-1262 (5) [2C]		20.0 ug/kg		30				
Aroclor 1268	9.28	20.0 ug/kg		30				
Aroclor-1268 (1)		20.0 ug/kg		30				
Aroclor-1268 (2)		20.0 ug/kg		30				
Aroclor-1268 (3)		20.0 ug/kg		30				
Aroclor-1268 (4)		20.0 ug/kg		30				
Aroclor 1268 [2C]	9.28	20.0 ug/kg		30				
Aroclor-1268 (1) [2C]		20.0 ug/kg		30				
Aroclor-1268 (2) [2C]		20.0 ug/kg		30				
Aroclor-1268 (3) [2C]		20.0 ug/kg		30				
Aroclor-1268 (4) [2C]		20.0 ug/kg		30				
Surr: Decachlorobiphenyl			40-133					
Surr: Tetrachlorometaxylene			53-120					
Surr: Decachlorobiphenyl [2C]			40-133					
Surr: Tetrachlorometaxylene [2C]			53-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 06/08/2015 11:04 am

8082A PCB in Water (EPA 8082A)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 ml **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.130	1.00 ug/L		30	62-120	30	62-120	30
Aroclor-1016 (1)				30				
Aroclor-1016 (2)				30				
Aroclor-1016 (3)				30				
Aroclor-1016 (4)				30				
Aroclor 1016 [2C]	0.130	1.00 ug/L		30	62-120	30	62-120	30
Aroclor-1016 (1) [2C]				30				
Aroclor-1016 (2) [2C]				30				
Aroclor-1016 (3) [2C]				30				
Aroclor-1016 (4) [2C]				30				
Aroclor 1221	0.147	1.00 ug/L		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	0.147	1.00 ug/L		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	0.147	1.00 ug/L		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	0.147	1.00 ug/L		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	0.147	1.00 ug/L		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	0.147	1.00 ug/L		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	0.130	1.00 ug/L		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	0.130	1.00 ug/L		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	0.130	1.00 ug/L		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

AGAS - QAP19

Analytical Method Information
(Continued)

Printed: 06/08/2015 11:04 am

8082A PCB in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	0.130	1.00 ug/L		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.147	1.00 ug/L		30	61-120	30	61-120	30
Aroclor-1260 (1)				30				
Aroclor-1260 (2)				30				
Aroclor-1260 (3)				30				
Aroclor-1260 (4)				30				
Aroclor-1260 (5)				30				
Aroclor 1260 [2C]	0.147	1.00 ug/L		30	61-120	30	61-120	30
Aroclor-1260 (1) [2C]				30				
Aroclor-1260 (2) [2C]				30				
Aroclor-1260 (3) [2C]				30				
Aroclor-1260 (4) [2C]				30				
Aroclor 1262	0.147	1.00 ug/L		30				
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.147	1.00 ug/L		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.147	1.00 ug/L		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.147	1.00 ug/L		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			29-120					
Surr: Tetrachlorometaxylene			35-120					
Surr: Decachlorobiphenyl [2C]			29-120					
Surr: Tetrachlorometaxylene [2C]			35-120					
Surr: DCB			29-120					
Surr: TCX			35-120					
Surr: DCB [2C]			29-120					
Surr: TCX [2C]			35-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

ABAA - 000228

Analytical Method Information

Printed: 06/08/2015 11:04 am

TPH (Extractables) in Solid (NWTPH-Dx)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz **Amount Required:** 15 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Diesel Range Organics (NW C12-C24)	1.96	5.00 mg/kg		30		30	62-120	30
Diesel Range Organics (Diesel#1 Tol-C18)				30		30		30
Diesel Range Organics (C10-24)				30		30	30-160	30
Diesel Range Organics (AK C10-C25)	1.98	5.00 mg/kg		30		30	75-125	30
Diesel Range Organics (8015 C10-C28)				30		30	30-160	30
Motor Oil Range Organics (NW C24-C38)	2.70	10.0 mg/kg		30		30		30
Motor Oil Range Organics (CAL C24-C40)				30		30		30
Motor Oil Range Organics (AK C25-C36)	3.42	10.0 mg/kg		30		30	60-120	30
Mineral Oil Range Organics (C24-C38)				30		30		30
Mineral Spirits Range Organics (Tol-C12)				30		30		30
JP8 Range Organics (C8-C18)				30		30		30
JP5 Range Organics (C10-C16)				30		30		30
JP4 Range Organics (Tol-C14)				30		30		30
Jet-A Range Organics (C10-C18)	2.22	5.00 mg/kg		30		30		30
Kerosene Range Organics (Tol-C18)				30		30		30
Stoddard Range Organics (C8-C12)				30		30		30
Creosote Range Organics (C8-C22)				30		30		30
Bunker C Range Organics (C10-C38)				30		30		30
Transformer Oil Range Organics (C12-C28)				30		30		30
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

AGAS : 00021

Analytical Method Information

Printed: 06/08/2015 11:04 am

TPH (Extractables) in Water (NWTPH-Dx)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Diesel Range Organics (NW C12-C24)	0.0410	0.100 mg/L		30	64-120	30	64-120	30
Diesel Range Organics (AK C10-C25)	0.0390	0.100 mg/L		30	75-125	30	75-125	30
Diesel Range Organics (Diesel#1 Tol-C18)				30		30		30
Diesel Range Organics (C10-24)				30	30-160	30	30-160	30
Diesel Range Organics (8015 C10-C28)				30	30-160	30	30-160	30
Motor Oil Range Organics (NW C24-C38)	0.0500	0.200 mg/L		30		30		30
Motor Oil Range Organics (AK C25-C36)	0.0650	0.200 mg/L		30	60-120	30	60-120	30
Motor Oil Range Organics (CAL C24-C40)				30		30		30
Mineral Spirits Range Organics (Tol-C12)				30		30		30
Mineral Oil Range Organics (C24-C38)				30		30		30
Kerosene Range Organics (Tol-C18)				30		30		30
JP8 Range Organics (C8-C18)				30		30		30
JP5 Range Organics (C10-C16)				30		30		30
JP4 Range Organics (Tol-C14)				30		30		30
Jet-A Range Organics (C10-C18)				30		30		30
Creosote Range Organics (C8-C22)				30		30		30
Bunker C Range Organics (C10-C38)				30		30		30
Stoddard Range Organics (C8-C12)				30		30		30
Transformer Oil Range Organics (C12-C28)				30		30		30
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 200.8/6020A Master List in Solid (EPA 200.8)

Preservation: Cool <6°C

Container: Glass WM, Clear, 4 oz **Amount Required:** 100 g **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum-27	0.550	20.0 mg/kg		20	75-125	20	80-120	20
Antimony-121	0.0199	0.200 mg/kg		20	75-125	20	80-120	20
Antimony-123	0.0183	0.200 mg/kg		20	75-125	20	80-120	20
Arsenic-75a	0.0298	0.200 mg/kg		20	75-125	20	80-120	20
Arsenic-75b	0.120	0.500 mg/kg		20	75-125	20	80-120	20
Barium-135	0.0314	0.500 mg/kg		20	75-125	20	80-120	20
Barium-137	0.0336	0.500 mg/kg		20	75-125	20	80-120	20
Beryllium-9	0.00954	0.200 mg/kg		20	75-125	20	80-120	20
Cadmium-111	0.00716	0.100 mg/kg		20	75-125	20	80-120	20
Cadmium-114	0.00500	0.100 mg/kg		20	75-125	20	80-120	20
Calcium-43	3.81	50.0 mg/kg		20	75-125	20	80-120	20
Chromium-52	0.0685	0.500 mg/kg		20	75-125	20	80-120	20
Chromium-53	0.0373	0.500 mg/kg		20	75-125	20	80-120	20
Cobalt-59	0.00572	0.200 mg/kg		20	75-125	20	80-120	20
Copper-63	0.0372	0.500 mg/kg		20	75-125	20	80-120	20
Copper-65	0.0259	0.500 mg/kg		20	75-125	20	80-120	20
Iron-54	4.01	20.0 mg/kg		20	75-125	20	80-120	20
Iron-57	1.31	20.0 mg/kg		20	75-125	20	80-120	20
Lead-208	0.00800	0.100 mg/kg		20	75-125	20	80-120	20
Magnesium-24	0.614	20.0 mg/kg		20	75-125	20	80-120	20
Manganese-55	0.0133	0.500 mg/kg		20	75-125	20	80-120	20
Molybdenum-98	0.0100	0.200 mg/kg		20	75-125	20	80-120	20
Nickel-60	0.0168	0.500 mg/kg		20	75-125	20	80-120	20
Nickel-62	0.268	0.500 mg/kg		20	75-125	20	80-120	20
Potassium-39	2.81	20.0 mg/kg		20	75-125	20	80-120	20
Selenium-82	0.0322	0.500 mg/kg		20	75-125	20	80-120	20
Selenium-78	0.391	2.00 mg/kg		20	75-125	20	80-120	20
Silver-107	0.00310	0.200 mg/kg		20	75-125	20	80-120	20
Sodium-23	14.4	100 mg/kg		20	75-125	20	80-120	20
Thallium-205	0.00619	0.200 mg/kg		20	75-125	20	80-120	20
Vanadium-51a	0.0214	0.200 mg/kg		20	75-125	20	80-120	20
Vanadium-51b	0.0214	0.200 mg/kg		20	75-125	20	80-120	20
Zinc-66	0.285	4.00 mg/kg		20	75-125	20	80-120	20
Zinc-67	0.226	4.00 mg/kg		20	75-125	20	80-120	20
Zinc-68	0.326	4.00 mg/kg		20	75-125	20	80-120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

ACAA - 20023

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 200.8/6020A Master List in Water (EPA 200.8)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum-27	0.000550	0.0200 mg/L		20	75-125	20	80-120	20
Antimony-121	0.0000199	0.000200 mg/L		20	75-125	20	80-120	20
Antimony-123	0.0000183	0.000200 mg/L		20	75-125	20	80-120	20
Arsenic-75a	0.0000298	0.000200 mg/L		20	75-125	20	80-120	20
Arsenic-75b	0.000120	0.000500 mg/L		20	75-125	20	80-120	20
Barium-135	0.0000314	0.000500 mg/L		20	75-125	20	80-120	20
Barium-137	0.0000336	0.000500 mg/L		20	75-125	20	80-120	20
Beryllium-9	0.00000954	0.000200 mg/L		20	75-125	20	80-120	20
Cadmium-111	0.00000716	0.000100 mg/L		20	75-125	20	80-120	20
Cadmium-114	0.00000500	0.000100 mg/L		20	75-125	20	80-120	20
Calcium-43	0.00381	0.0500 mg/L		20	75-125	20	80-120	20
Chromium-52	0.0000685	0.000500 mg/L		20	75-125	20	80-120	20
Chromium-53	0.0000373	0.000500 mg/L		20	75-125	20	80-120	20
Cobalt-59	0.00000572	0.000200 mg/L		20	75-125	20	80-120	20
Copper-63	0.0000372	0.000500 mg/L		20	75-125	20	80-120	20
Copper-65	0.0000259	0.000500 mg/L		20	75-125	20	80-120	20
Iron-54	0.00401	0.0200 mg/L		20	75-125	20	80-120	20
Iron-57	0.00131	0.0200 mg/L		20	75-125	20	80-120	20
Lead-208	0.00000800	0.000100 mg/L		20	75-125	20	80-120	20
Magnesium-24	0.000614	0.0200 mg/L		20	75-125	20	80-120	20
Manganese-55	0.0000133	0.000500 mg/L		20	75-125	20	80-120	20
Molybdenum-98	0.0000100	0.000200 mg/L		20	75-125	20	80-120	20
Nickel-60	0.0000168	0.000500 mg/L		20	75-125	20	80-120	20
Nickel-62	0.000268	0.000500 mg/L		20	75-125	20	80-120	20
Potassium-39	0.00281	0.0200 mg/L		20	75-125	20	80-120	20
Selenium-82	0.0000322	0.000500 mg/L		20	75-125	20	80-120	20
Selenium-78	0.000391	0.00200 mg/L		20	75-125	20	80-120	20
Silver-107	0.00000310	0.000200 mg/L		20	75-125	20	80-120	20
Sodium-23	0.0144	0.100 mg/L		20	75-125	20	80-120	20
Thallium-205	0.00000619	0.000200 mg/L		20	75-125	20	80-120	20
Vanadium-51a	0.0000203	0.000200 mg/L		20	75-125	20	80-120	20
Vanadium-51b	0.0000203	0.000200 mg/L		20	75-125	20	80-120	20
Zinc-66	0.000285	0.00400 mg/L		20	75-125	20	80-120	20
Zinc-67	0.000226	0.00400 mg/L		20	75-125	20	80-120	20
Zinc-68	0.000326	0.00400 mg/L		20	75-125	20	80-120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 7471B Hg in Solid (EPA 7471B)

Preservation: Cool <6°C

Container: Glass WM, Clear, 2 oz

Amount Required: 100 g

Hold Time: 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00210	0.0250 mg/kg		20	75-125	20	80-120	20

Analytical Method Information

Printed: 06/08/2015 11:06 am

Met 7470A Hg in Water (EPA 7470A)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00000700	0.000100 mg/L		20	75-125	20	80-120	20

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: AGA8

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(13.5-15.0)
SAMPLE

Lab Sample ID: AGA8A
LIMS ID: 15-9289
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 17:16
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 31.0 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**2.2**	**4.8**	**12**
91-57-6	**2-Methylnaphthalene**	**1.6**	**4.8**	**8.4**
90-12-0	**1-Methylnaphthalene**	**1.6**	**4.8**	**5.4**
208-96-8	Acenaphthylene	1.6	4.8	< 4.8 U
83-32-9	Acenaphthene	1.4	4.8	< 4.8 U
86-73-7	Fluorene	1.4	4.8	< 4.8 U
85-01-8	**Phenanthrene**	**1.5**	**4.8**	**30**
120-12-7	**Anthracene**	**1.7**	**4.8**	**2.6 J**
206-44-0	**Fluoranthene**	**1.8**	**4.8**	**16**
129-00-0	**Pyrene**	**2.2**	**4.8**	**14**
56-55-3	**Benzo(a)anthracene**	**2.1**	**4.8**	**4.7 J**
218-01-9	**Chrysene**	**1.9**	**4.8**	**6.0**
205-99-2	**Benzo(b)fluoranthene**	**2.0**	**4.8**	**3.1 J**
207-08-9	Benzo(k)fluoranthene	2.2	4.8	< 4.8 U
50-32-8	**Benzo(a)pyrene**	**2.3**	**4.8**	**2.6 J**
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	< 4.8 U
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	< 4.8 U
191-24-2	**Benzo(g,h,i)perylene**	**2.7**	**4.8**	**2.9 J**
132-64-9	**Dibenzofuran**	**1.4**	**4.8**	**5.1**
TOTBFA	**Total Benzofluoranthenes**	**2.2**	**4.8**	**6.4**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	72.7%
d10-2-Methylnaphthalene	49.0%
d14-Dibenzo(a,h)anthracen	68.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(15.5-16.5)
SAMPLE

Lab Sample ID: AGA8B
LIMS ID: 15-9290
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 17:42
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.8 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 23.6 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result	
91-20-3	Naphthalene	2.1	4.6	45	
91-57-6	2-Methylnaphthalene	1.6	4.6	12	
90-12-0	1-Methylnaphthalene	1.5	4.6	9.2	
208-96-8	Acenaphthylene	1.5	4.6	6.7	
83-32-9	Acenaphthene	1.4	4.6	61	
86-73-7	Fluorene	1.4	4.6	21	
85-01-8	Phenanthrene	1.5	4.6	85	
120-12-7	Anthracene	1.7	4.6	7.4	
206-44-0	Fluoranthene	1.7	4.6	57	
129-00-0	Pyrene	2.1	4.6	43	
56-55-3	Benzo(a)anthracene	2.1	4.6	6.8	
218-01-9	Chrysene	1.8	4.6	14	
205-99-2	Benzo(b)fluoranthene	2.0	4.6	8.3	
207-08-9	Benzo(k)fluoranthene	2.1	4.6	3.7	J
50-32-8	Benzo(a)pyrene	2.2	4.6	5.1	
193-39-5	Indeno(1,2,3-cd)pyrene	2.8	4.6	6.0	
53-70-3	Dibenz(a,h)anthracene	2.4	4.6	< 4.6	U
191-24-2	Benzo(g,h,i)perylene	2.6	4.6	9.1	
132-64-9	Dibenzofuran	1.3	4.6	26	
TOTBFA	Total Benzofluoranthenes	2.1	4.6	16	

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	65.0%
d10-2-Methylnaphthalene	42.3%
d14-Dibenzo(a,h)anthracen	62.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(16.5-17.5)
SAMPLE

Lab Sample ID: AGA8C
LIMS ID: 15-9291
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 18:07
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.8 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 23.3 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.1	4.6	< 4.6 U
91-57-6	2-Methylnaphthalene	1.6	4.6	< 4.6 U
90-12-0	1-Methylnaphthalene	1.5	4.6	< 4.6 U
208-96-8	Acenaphthylene	1.5	4.6	< 4.6 U
83-32-9	Acenaphthene	1.4	4.6	< 4.6 U
86-73-7	Fluorene	1.4	4.6	< 4.6 U
85-01-8	**Phenanthrene**	**1.5**	**4.6**	**5.5**
120-12-7	Anthracene	1.7	4.6	< 4.6 U
206-44-0	Fluoranthene	1.7	4.6	< 4.6 U
129-00-0	Pyrene	2.1	4.6	< 4.6 U
56-55-3	Benzo(a)anthracene	2.1	4.6	< 4.6 U
218-01-9	Chrysene	1.8	4.6	< 4.6 U
205-99-2	Benzo(b)fluoranthene	2.0	4.6	< 4.6 U
207-08-9	Benzo(k)fluoranthene	2.1	4.6	< 4.6 U
50-32-8	Benzo(a)pyrene	2.2	4.6	< 4.6 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.8	4.6	< 4.6 U
53-70-3	Dibenz(a,h)anthracene	2.4	4.6	< 4.6 U
191-24-2	Benzo(g,h,i)perylene	2.6	4.6	< 4.6 U
132-64-9	Dibenzofuran	1.3	4.6	< 4.6 U
TOTBFA	Total Benzofluoranthenes	2.1	4.6	< 4.6 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	68.0%
d10-2-Methylnaphthalene	47.0%
d14-Dibenzo(a,h)anthracen	68.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-09(2.5-4.0)
SAMPLE

Lab Sample ID: AGA8D
LIMS ID: 15-9292
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 18:33
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 16.0 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**2.2**	**4.9**	**17**
91-57-6	**2-Methylnaphthalene**	**1.7**	**4.9**	**10**
90-12-0	**1-Methylnaphthalene**	**1.6**	**4.9**	**4.7 J**
208-96-8	Acenaphthylene	1.6	4.9	< 4.9 U
83-32-9	Acenaphthene	1.5	4.9	< 4.9 U
86-73-7	Fluorene	1.5	4.9	< 4.9 U
85-01-8	**Phenanthrene**	**1.6**	**4.9**	**270**
120-12-7	**Anthracene**	**1.8**	**4.9**	**4.7 J**
206-44-0	**Fluoranthene**	**1.8**	**4.9**	**170**
129-00-0	**Pyrene**	**2.2**	**4.9**	**110**
56-55-3	**Benzo(a)anthracene**	**2.2**	**4.9**	**25**
218-01-9	**Chrysene**	**1.9**	**4.9**	**72**
205-99-2	**Benzo(b)fluoranthene**	**2.1**	**4.9**	**33**
207-08-9	**Benzo(k)fluoranthene**	**2.3**	**4.9**	**14**
50-32-8	**Benzo(a)pyrene**	**2.3**	**4.9**	**9.5**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**3.0**	**4.9**	**13**
53-70-3	**Dibenz(a,h)anthracene**	**2.5**	**4.9**	**3.6 J**
191-24-2	**Benzo(g,h,i)perylene**	**2.8**	**4.9**	**18**
132-64-9	**Dibenzofuran**	**1.4**	**4.9**	**27**
TOTBFA	**Total Benzofluoranthenes**	**2.3**	**4.9**	**61**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	71.0%
d10-2-Methylnaphthalene	49.0%
d14-Dibenzo(a,h)anthracen	61.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-08(12.0-13.5)
SAMPLE

Lab Sample ID: AGA8E
LIMS ID: 15-9293
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 18:59
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.5 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 19.6 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	< 4.8 U
91-57-6	2-Methylnaphthalene	1.6	4.8	< 4.8 U
90-12-0	1-Methylnaphthalene	1.5	4.8	< 4.8 U
208-96-8	Acenaphthylene	1.5	4.8	< 4.8 U
83-32-9	Acenaphthene	1.4	4.8	< 4.8 U
86-73-7	Fluorene	1.4	4.8	< 4.8 U
85-01-8	**Phenanthrene**	**1.5**	**4.8**	**2.5 J**
120-12-7	Anthracene	1.7	4.8	< 4.8 U
206-44-0	Fluoranthene	1.8	4.8	< 4.8 U
129-00-0	Pyrene	2.2	4.8	< 4.8 U
56-55-3	Benzo(a)anthracene	2.1	4.8	< 4.8 U
218-01-9	Chrysene	1.8	4.8	< 4.8 U
205-99-2	Benzo(b)fluoranthene	2.0	4.8	< 4.8 U
207-08-9	Benzo(k)fluoranthene	2.2	4.8	< 4.8 U
50-32-8	Benzo(a)pyrene	2.3	4.8	< 4.8 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	< 4.8 U
53-70-3	Dibenz(a,h)anthracene	2.4	4.8	< 4.8 U
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	< 4.8 U
132-64-9	Dibenzofuran	1.3	4.8	< 4.8 U
TOTBFA	Total Benzofluoranthenes	2.2	4.8	< 4.8 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	69.3%
d10-2-Methylnaphthalene	48.7%
d14-Dibenzo(a,h)anthracen	72.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-07(1.5-3.0)
SAMPLE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 19:24
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 13.5 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	22
91-57-6	2-Methylnaphthalene	1.6	4.8	31
90-12-0	1-Methylnaphthalene	1.6	4.8	16
208-96-8	Acenaphthylene	1.6	4.8	3.7 J
83-32-9	Acenaphthene	1.4	4.8	4.9
86-73-7	Fluorene	1.4	4.8	4.8
85-01-8	Phenanthrene	1.5	4.8	200
120-12-7	Anthracene	1.7	4.8	45
206-44-0	Fluoranthene	1.8	4.8	610 E
129-00-0	Pyrene	2.2	4.8	480
56-55-3	Benzo(a)anthracene	2.1	4.8	280
218-01-9	Chrysene	1.8	4.8	400
205-99-2	Benzo(b)fluoranthene	2.0	4.8	290
207-08-9	Benzo(k)fluoranthene	2.2	4.8	160
50-32-8	Benzo(a)pyrene	2.3	4.8	250
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	180
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	60
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	200
132-64-9	Dibenzofuran	1.4	4.8	27
TOTBFA	Total Benzofluoranthenes	2.2	4.8	600

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	81.7%
d10-2-Methylnaphthalene	56.7%
d14-Dibenzo(a,h)anthracen	80.0%

AGA8 00033

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
DILUTION

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/29/15 12:49
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 3.00
Percent Moisture: 13.5 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**6.5**	**14**	**24**
91-57-6	**2-Methylnaphthalene**	**4.9**	**14**	**32**
90-12-0	**1-Methylnaphthalene**	**4.7**	**14**	**14**
208-96-8	Acenaphthylene	4.7	14	< 14 U
83-32-9	Acenaphthene	4.3	14	< 14 U
86-73-7	Fluorene	4.2	14	< 14 U
85-01-8	**Phenanthrene**	**4.6**	**14**	**230**
120-12-7	**Anthracene**	**5.1**	**14**	**48**
206-44-0	**Fluoranthene**	**5.4**	**14**	**720**
129-00-0	**Pyrene**	**6.5**	**14**	**570**
56-55-3	**Benzo(a)anthracene**	**6.4**	**14**	**310**
218-01-9	**Chrysene**	**5.5**	**14**	**450**
205-99-2	**Benzo(b)fluoranthene**	**6.1**	**14**	**310**
207-08-9	**Benzo(k)fluoranthene**	**6.6**	**14**	**170**
50-32-8	**Benzo(a)pyrene**	**6.9**	**14**	**280**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**8.7**	**14**	**200**
53-70-3	**Dibenz(a,h)anthracene**	**7.4**	**14**	**66**
191-24-2	**Benzo(g,h,i)perylene**	**8.1**	**14**	**220**
132-64-9	**Dibenzofuran**	**4.1**	**14**	**29**
TOTBFA	**Total Benzofluoranthenes**	**6.6**	**14**	**640**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	89.0%
d10-2-Methylnaphthalene	65.0%
d14-Dibenzo(a,h)anthracen	85.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(8.5-9.5)
SAMPLE

Lab Sample ID: AGA8G
LIMS ID: 15-9295
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 20:41
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 27.6 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.9	< 4.9 U
91-57-6	2-Methylnaphthalene	1.7	4.9	< 4.9 U
90-12-0	1-Methylnaphthalene	1.6	4.9	< 4.9 U
208-96-8	Acenaphthylene	1.6	4.9	< 4.9 U
83-32-9	Acenaphthene	1.5	4.9	< 4.9 U
86-73-7	Fluorene	1.4	4.9	< 4.9 U
85-01-8	**Phenanthrene**	**1.6**	**4.9**	**5.6**
120-12-7	Anthracene	1.8	4.9	< 4.9 U
206-44-0	**Fluoranthene**	**1.8**	**4.9**	**3.5 J**
129-00-0	**Pyrene**	**2.2**	**4.9**	**3.1 J**
56-55-3	Benzo(a)anthracene	2.2	4.9	< 4.9 U
218-01-9	Chrysene	1.9	4.9	< 4.9 U
205-99-2	**Benzo(b)fluoranthene**	**2.1**	**4.9**	**2.1 J**
207-08-9	Benzo(k)fluoranthene	2.2	4.9	< 4.9 U
50-32-8	Benzo(a)pyrene	2.3	4.9	< 4.9 U
193-39-5	Indeno(1,2,3-cd)pyrene	3.0	4.9	< 4.9 U
53-70-3	Dibenz(a,h)anthracene	2.5	4.9	< 4.9 U
191-24-2	Benzo(g,h,i)perylene	2.8	4.9	< 4.9 U
132-64-9	Dibenzofuran	1.4	4.9	< 4.9 U
TOTBFA	Total Benzofluoranthenes	2.2	4.9	< 4.9 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	67.7%
d10-2-Methylnaphthalene	43.7%
d14-Dibenzo(a,h)anthracen	70.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-06(12.5-13.5)
SAMPLE

Lab Sample ID: AGA8H
LIMS ID: 15-9296
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 21:07
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.3 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 26.4 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	< 4.8 U
91-57-6	2-Methylnaphthalene	1.6	4.8	< 4.8 U
90-12-0	1-Methylnaphthalene	1.6	4.8	< 4.8 U
208-96-8	Acenaphthylene	1.6	4.8	< 4.8 U
83-32-9	Acenaphthene	1.4	4.8	< 4.8 U
86-73-7	Fluorene	1.4	4.8	< 4.8 U
85-01-8	**Phenanthrene**	**1.5**	**4.8**	**3.2 J**
120-12-7	Anthracene	1.7	4.8	< 4.8 U
206-44-0	Fluoranthene	1.8	4.8	< 4.8 U
129-00-0	Pyrene	2.2	4.8	< 4.8 U
56-55-3	Benzo(a)anthracene	2.1	4.8	< 4.8 U
218-01-9	Chrysene	1.9	4.8	< 4.8 U
205-99-2	Benzo(b)fluoranthene	2.0	4.8	< 4.8 U
207-08-9	Benzo(k)fluoranthene	2.2	4.8	< 4.8 U
50-32-8	Benzo(a)pyrene	2.3	4.8	< 4.8 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	< 4.8 U
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	< 4.8 U
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	< 4.8 U
132-64-9	Dibenzofuran	1.4	4.8	< 4.8 U
TOTBFA	Total Benzofluoranthenes	2.2	4.8	< 4.8 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	70.0%
d10-2-Methylnaphthalene	49.0%
d14-Dibenzo(a,h)anthracen	71.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-06(10.0-11.0)
SAMPLE

Lab Sample ID: AGA8I
LIMS ID: 15-9297
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 21:33
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.1 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 27.9 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.9	< 4.9 U
91-57-6	2-Methylnaphthalene	1.7	4.9	< 4.9 U
90-12-0	1-Methylnaphthalene	1.6	4.9	< 4.9 U
208-96-8	Acenaphthylene	1.6	4.9	< 4.9 U
83-32-9	Acenaphthene	1.5	4.9	< 4.9 U
86-73-7	Fluorene	1.4	4.9	< 4.9 U
85-01-8	**Phenanthrene**	**1.6**	**4.9**	**4.4 J**
120-12-7	Anthracene	1.8	4.9	< 4.9 U
206-44-0	**Fluoranthene**	**1.8**	**4.9**	**2.5 J**
129-00-0	Pyrene	2.2	4.9	< 4.9 U
56-55-3	Benzo(a)anthracene	2.2	4.9	< 4.9 U
218-01-9	**Chrysene**	**1.9**	**4.9**	**2.6 J**
205-99-2	Benzo(b)fluoranthene	2.1	4.9	< 4.9 U
207-08-9	Benzo(k)fluoranthene	2.2	4.9	< 4.9 U
50-32-8	Benzo(a)pyrene	2.3	4.9	< 4.9 U
193-39-5	Indeno(1,2,3-cd)pyrene	3.0	4.9	< 4.9 U
53-70-3	Dibenz(a,h)anthracene	2.5	4.9	< 4.9 U
191-24-2	Benzo(g,h,i)perylene	2.8	4.9	< 4.9 U
132-64-9	Dibenzofuran	1.4	4.9	< 4.9 U
TOTBFA	Total Benzofluoranthenes	2.2	4.9	< 4.9 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	64.0%
d10-2-Methylnaphthalene	42.3%
d14-Dibenzo(a,h)anthracen	72.0%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	FLN	MNP	DBA	TOT OUT
SDP-10(13.5-15.0)	72.7%	49.0%	68.3%	0
SDP-10(15.5-16.5)	65.0%	42.3%	62.0%	0
SDP-10(16.5-17.5)	68.0%	47.0%	68.7%	0
SDP-09(2.5-4.0)	71.0%	49.0%	61.0%	0
SDP-08(12.0-13.5)	69.3%	48.7%	72.3%	0
MB-052115	75.0%	58.3%	77.7%	0
LCS-052115	67.0%	47.3%	71.0%	0
SDP-07(1.5-3.0)	81.7%	56.7%	80.0%	0
SDP-07(1.5-3.0) DL	89.0%	65.0%	85.0%	0
SDP-07(1.5-3.0) MS	77.7%	57.7%	72.3%	0
SDP-07(1.5-3.0) MSD	75.0%	55.7%	69.3%	0
SDP-07(8.5-9.5)	67.7%	43.7%	70.0%	0
SDP-06(12.5-13.5)	70.0%	49.0%	71.0%	0
SDP-06(10.0-11.0)	64.0%	42.3%	72.0%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(36-134)	(36-134)
(MNP) = d10-2-Methylnaphthalene	(32-120)	(32-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(21-133)	(21-133)

Prep Method: SW3546
Log Number Range: 15-9289 to 15-9297

FORM-II SIM SW8270

AGA8 : 00037

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted MS/MSD: 05/21/15

Date Analyzed MS: 05/27/15 19:50
MSD: 05/27/15 20:16
Instrument/Analyst MS: NT8/JZ
MSD: NT8/JZ

Sample Amount MS: 10.38 g-dry-wt
MSD: 10.41 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	22	102	145	55.2%	93.7	144	49.8%	8.5%
2-Methylnaphthalene	31	116	145	58.6%	111	144	55.6%	4.4%
1-Methylnaphthalene	16	98.8	145	57.1%	99.6	144	58.1%	0.8%
Acenaphthylene	3.7 J	101	145	67.1%	100	144	66.9%	1.0%
Acenaphthene	4.9	100	145	65.6%	97.9	144	64.6%	2.1%
Fluorene	4.8	110	145	72.6%	108	144	71.7%	1.8%
Phenanthrene	200	291	145	62.8%	273	144	50.7%	6.4%
Anthracene	45	156	145	76.6%	152	144	74.3%	2.6%
Fluoranthene	610 E	635 E	145	NA	589 E	144	NA	7.5%
Pyrene	480	487 E	145	4.8%	446	144	NA	8.8%
Benzo(a)anthracene	280	319	145	26.9%	306	144	18.1%	4.2%
Chrysene	400	444	145	30.3%	412	144	8.3%	7.5%
Benzo(b)fluoranthene	290	380	145	62.1%	348	144	40.3%	8.8%
Benzo(k)fluoranthene	160	245	145	58.6%	231	144	49.3%	5.9%
Benzo(a)pyrene	250	322	145	49.7%	303	144	36.8%	6.1%
Indeno(1,2,3-cd)pyrene	180	273	145	64.1%	256	144	52.8%	6.4%
Dibenz(a,h)anthracene	60	160	145	69.0%	152	144	63.9%	5.1%
Benzo(g,h,i)perylene	200	289	145	61.4%	271	144	49.3%	6.4%
Dibenzofuran	27	124	145	66.9%	117	144	62.5%	5.8%
Total Benzofluoranthenes	600	844	434	56.2%	777	432	41.0%	8.3%

Reported in µg/kg (ppb)

NA-No recovery due to high concentration (> 4X) of analyte in original sample, calculated negative recovery, or undetected spike.
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 19:50
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 13.5 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	---
91-57-6	2-Methylnaphthalene	1.6	4.8	---
90-12-0	1-Methylnaphthalene	1.6	4.8	---
208-96-8	Acenaphthylene	1.6	4.8	---
83-32-9	Acenaphthene	1.4	4.8	---
86-73-7	Fluorene	1.4	4.8	---
85-01-8	Phenanthrene	1.5	4.8	---
120-12-7	Anthracene	1.7	4.8	---
206-44-0	Fluoranthene	1.8	4.8	---
129-00-0	Pyrene	2.2	4.8	---
56-55-3	Benzo(a)anthracene	2.1	4.8	---
218-01-9	Chrysene	1.8	4.8	---
205-99-2	Benzo(b)fluoranthene	2.0	4.8	---
207-08-9	Benzo(k)fluoranthene	2.2	4.8	---
50-32-8	Benzo(a)pyrene	2.3	4.8	---
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	---
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	---
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	---
132-64-9	Dibenzofuran	1.4	4.8	---
TOTBFA	Total Benzofluoranthenes	2.2	4.8	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	77.7%
d10-2-Methylnaphthalene	57.7%
d14-Dibenzo(a,h)anthracen	72.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
MATRIX SPIKE DUP

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 20:16
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 13.5 %
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	---
91-57-6	2-Methylnaphthalene	1.6	4.8	---
90-12-0	1-Methylnaphthalene	1.5	4.8	---
208-96-8	Acenaphthylene	1.5	4.8	---
83-32-9	Acenaphthene	1.4	4.8	---
86-73-7	Fluorene	1.4	4.8	---
85-01-8	Phenanthrene	1.5	4.8	---
120-12-7	Anthracene	1.7	4.8	---
206-44-0	Fluoranthene	1.8	4.8	---
129-00-0	Pyrene	2.2	4.8	---
56-55-3	Benzo(a)anthracene	2.1	4.8	---
218-01-9	Chrysene	1.8	4.8	---
205-99-2	Benzo(b)fluoranthene	2.0	4.8	---
207-08-9	Benzo(k)fluoranthene	2.2	4.8	---
50-32-8	Benzo(a)pyrene	2.3	4.8	---
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	---
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	---
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	---
132-64-9	Dibenzofuran	1.4	4.8	---
TOTBFA	Total Benzofluoranthenes	2.2	4.8	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	75.0%
d10-2-Methylnaphthalene	55.7%
d14-Dibenzo(a,h)anthracen	69.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: LCS-052115
LAB CONTROL SAMPLE

Lab Sample ID: LCS-052115
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/15
Date Analyzed LCS: 05/27/15 16:50
Instrument/Analyst LCS: NT8/JZ

Sample Amount LCS: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	75.6	150	50.4%
2-Methylnaphthalene	75.8	150	50.5%
1-Methylnaphthalene	74.4	150	49.6%
Acenaphthylene	79.8	150	53.2%
Acenaphthene	81.0	150	54.0%
Fluorene	84.2	150	56.1%
Phenanthrene	88.8	150	59.2%
Anthracene	96.4	150	64.3%
Fluoranthene	100	150	66.7%
Pyrene	91.8	150	61.2%
Benzo(a)anthracene	101	150	67.3%
Chrysene	95.6	150	63.7%
Benzo(b)fluoranthene	96.7	150	64.5%
Benzo(k)fluoranthene	99.8	150	66.5%
Benzo(a)pyrene	101	150	67.3%
Indeno(1,2,3-cd)pyrene	101	150	67.3%
Dibenz(a,h)anthracene	101	150	67.3%
Benzo(g,h,i)perylene	98.3	150	65.5%
Dibenzofuran	82.8	150	55.2%
Total Benzofluoranthenes	275	450	61.1%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	67.0%
d10-2-Methylnaphthalene	47.3%
d14-Dibenzo(a,h)anthracene	71.0%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

AGA8MBS1

Lab Name: ANALYTICAL RESOURCES INC Client: KJC

ARI Job No: AGA8 Project: POS SLIVER

Lab File ID: 15052703 Date Extracted: 05/21/15

Instrument ID: NT8 Date Analyzed: 05/27/15

Matrix: SOLID Time Analyzed: 1625

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	AGA8LCSS1	BDE0047-BS1	15052704	05/27/15
02	SDP-10(13.5-15.0	15E0011-01	15052705	05/27/15
03	SDP-10(15.5-16.5	15E0011-02	15052706	05/27/15
04	SDP-10(16.5-17.5	15E0011-03	15052707	05/27/15
05	SDP-09(2.5-4.0)	15E0011-04	15052708	05/27/15
06	SDP-08(12.0-13.5	15E0011-05	15052709	05/27/15
07	SDP-07(1.5-3.0)	15E0011-06	15052710	05/27/15
08	SDP-07(1.5-3.0)	BDE0047-MS1	15052711	05/27/15
09	SDP-07(1.5-3.0)	BDE0047-MSD1	15052712	05/27/15
10	SDP-07(8.5-9.5)	15E0011-07	15052713	05/27/15
11	SDP-06(12.5-13.5	15E0011-08	15052714	05/27/15
12	SDP-06(10.0-11.0	15E0011-09	15052715	05/27/15
13	SDP-07(1.5-3.0)	15E0011-06RE	15052903	05/29/15
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FORM IV SV

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-052115
METHOD BLANK

Lab Sample ID: MB-052115
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/29/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/15
Date Analyzed: 05/27/15 16:25
Instrument/Analyst: NT8/JZ
GPC Cleanup: No
Silica Gel Cleanup: Yes

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: NA
Sulfur Cleanup: No

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.3	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	1.7	5.0	< 5.0 U
90-12-0	1-Methylnaphthalene	1.6	5.0	< 5.0 U
208-96-8	Acenaphthylene	1.6	5.0	< 5.0 U
83-32-9	Acenaphthene	1.5	5.0	< 5.0 U
86-73-7	Fluorene	1.5	5.0	< 5.0 U
85-01-8	Phenanthrene	1.6	5.0	< 5.0 U
120-12-7	Anthracene	1.8	5.0	< 5.0 U
206-44-0	Fluoranthene	1.9	5.0	< 5.0 U
129-00-0	Pyrene	2.3	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	2.2	5.0	< 5.0 U
218-01-9	Chrysene	1.9	5.0	< 5.0 U
205-99-2	Benzo(b)fluoranthene	2.1	5.0	< 5.0 U
207-08-9	Benzo(k)fluoranthene	2.3	5.0	< 5.0 U
50-32-8	Benzo(a)pyrene	2.4	5.0	< 5.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	3.0	5.0	< 5.0 U
53-70-3	Dibenz(a,h)anthracene	2.6	5.0	< 5.0 U
191-24-2	Benzo(g,h,i)perylene	2.8	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.4	5.0	< 5.0 U
TOTBFA	Total Benzofluoranthenes	2.3	5.0	< 5.0 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	75.0%
d10-2-Methylnaphthalene	58.3%
d14-Dibenzo(a,h)anthracen	77.7%

AGA8 : 000013

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 04/13/15 DFTPP Injection Time: 1211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	28.2
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	54.1
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.9
275	10.0 - 60.0% of mass 198	37.6
365	Greater than 1.0% of mass 198	5.06
441	0.0 - 24.0% of mass 442	12.2 (16.2)2
442	50.0 - 200.0% of mass 198	75.1
443	15.0 - 24.0% of mass 442	15.8 (21.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC25150413	SDD0030-CAL4	15041302	04/13/15	1222
02	IC01150413	SDD0030-CAL1	15041303	04/13/15	1250
03	IC1150413	SDD0030-CAL3	15041305	04/13/15	1341
04	IC5150413	SDD0030-CAL5	15041306	04/13/15	1407
05	IC10150413	SDD0030-CAL6	15041307	04/13/15	1432
06	IC05150413	SDD0030-CAL2	15041308	04/13/15	1458
07					
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20					

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 05/27/15 DFTPP Injection Time: 1545

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	29.0
68	Less than 2.0% of mass 69	0.8 (1.5)1
69	Mass 69 relative abundance	54.3
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	10.0 - 80.0% of mass 198	55.6
197	Less than 2.0% of mass 198	0.7
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	8.4
275	10.0 - 60.0% of mass 198	37.9
365	Greater than 1.0% of mass 198	5.51
441	0.0 - 24.0% of mass 442	13.5 (16.2)2
442	50.0 - 200.0% of mass 198	83.6
443	15.0 - 24.0% of mass 442	18.1 (21.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV150527	SDE0069-ICV1	15052702	05/27/15	1556
02	AGA8MBS1	BDE0047-BLK1	15052703	05/27/15	1625
03	AGA8LCSS1	BDE0047-BS1	15052704	05/27/15	1650
04	SDP-10(13.5-15.0	15E0011-01	15052705	05/27/15	1716
05	SDP-10(15.5-16.5	15E0011-02	15052706	05/27/15	1742
06	SDP-10(16.5-17.5	15E0011-03	15052707	05/27/15	1807
07	SDP-09(2.5-4.0)	15E0011-04	15052708	05/27/15	1833
08	SDP-08(12.0-13.5	15E0011-05	15052709	05/27/15	1859
09	SDP-07(1.5-3.0)	15E0011-06	15052710	05/27/15	1924
10	SDP-07(1.5-3.0)	BDE0047-MS1	15052711	05/27/15	1950
11	SDP-07(1.5-3.0)	BDE0047-MSD1	15052712	05/27/15	2016
12	SDP-07(8.5-9.5)	15E0011-07	15052713	05/27/15	2041
13	SDP-06(12.5-13.5	15E0011-08	15052714	05/27/15	2107
14	SDP-06(10.0-11.0	15E0011-09	15052715	05/27/15	2133
15					
16					
17					
18					
19					
20					

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 05/29/15 DFTPP Injection Time: 1211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	29.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	57.0
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	56.7
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	8.4
275	10.0 - 60.0% of mass 198	36.8
365	Greater than 1.0% of mass 198	4.94
441	0.0 - 24.0% of mass 442	12.1 (16.8)2
442	50.0 - 200.0% of mass 198	72.0
443	15.0 - 24.0% of mass 442	16.3 (22.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV150529	SDE0070-ICV1	15052902	05/29/15	1223
02	SDP-07(1.5-3.0)	15E0011-06RE	15052903	05/29/15	1249
03					
04					
05					
06					
07					
08					
09					
10					
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6B

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Instrument ID: NT8 Calibration Date: 04/13/15

LAB FILE ID: RRF0.1=15041303 RRF0.5=15041308 RRF1 =15041305
RRF2.5=15041302 RRF5 =15041306 RRF10 =15041307

COMPOUND	RRF 0.1	RRF 0.5	RRF 1	RRF 2.5	RRF 5	RRF 10	___ RRF	%RSD /R^2
Naphthalene	0.986	0.893	1.045	0.924	0.994	0.937	0.963	5.7
2-Methylnaphthalene	0.550	0.548	0.613	0.564	0.602	0.569	0.574	4.7
1-methylnaphthalene	0.589	0.507	0.578	0.546	0.579	0.549	0.558	5.4
Biphenyl	1.365	1.093	1.303	1.177	1.276	1.198	1.235	7.9
2,6-Dimethylnaphthalene	0.902	0.837	0.974	0.887	0.962	0.926	0.915	5.6
Acenaphthylene	1.422	1.288	1.535	1.435	1.595	1.488	1.460	7.3
Acenaphthene	0.976	0.877	1.034	0.927	1.041	0.976	0.972	6.5
Dibenzofuran	1.376	1.247	1.455	1.293	1.409	1.285	1.344	6.1
1,6,7-Trimethylnaphthalene	0.873	0.807	0.948	0.898	0.980	0.956	0.910	7.0
Fluorene	1.007	0.964	1.179	1.069	1.182	1.111	1.085	8.2
Dibenzothiophene	0.987	0.866	0.968	0.895	0.936	0.845	0.916	6.2
Phenanthrene	1.060	0.881	1.007	0.927	0.960	0.886	0.954	7.4
Anthracene	0.842	0.759	0.912	0.868	0.920	0.850	0.858	6.8
Carbazole	0.760	0.711	0.759	0.748	0.803	0.750	0.755	3.9
1-Methylphenanthrene	0.690	0.660	0.805	0.741	0.788	0.744	0.738	7.5
Fluoranthene	1.253	1.004	1.180	1.081	1.139	1.034	1.115	8.4
Pyrene	1.259	0.989	1.118	1.101	1.139	1.084	1.115	7.8
Benzo(a)anthracene	1.030	0.874	1.035	1.001	1.053	1.027	1.003	6.6
Chrysene	1.230	0.850	1.015	0.959	1.001	0.980	1.006	12.4
Benzo(b)fluoranthene	1.086	0.953	1.086	1.018	1.104	1.055	1.050	5.4
Benzo(k)fluoranthene	1.086	0.907	1.101	1.012	1.141	1.049	1.049	7.9
Benzo(j)fluoranthene	1.112	0.844	1.045	1.010	1.096	1.038	1.024	9.4
Benzo(e)pyrene	1.262	0.909	1.094	0.995	1.089	1.021	1.062	11.2
Benzo(a)pyrene	1.059	0.802	0.944	0.872	0.992	0.950	0.936	9.6
Perylene	0.979	0.849	1.022	0.949	1.045	0.990	0.972	7.1
Indeno(1,2,3-cd)pyrene	1.062	0.971	1.182	1.107	1.237	1.189	1.125	8.7
Dibenzo(a,h)anthracene	0.892	0.749	0.946	0.900	1.011	0.998	0.916	10.4
Benzo(g,h,i)perylene	0.946	0.879	1.033	0.975	1.079	1.025	0.990	7.2
2-Methylnaphthalene-d10	0.676	0.534	0.633	0.588	0.636	0.597	0.611	8.0
Fluoranthene-d10	1.004	0.901	1.037	0.967	1.028	0.966	0.984	5.1
Dibenzo(a,h)anthracene-d14	0.746	0.649	0.782	0.756	0.816	0.821	0.762	8.3

<- Outside QC limits: %RSD <20% or R^2 > 0.990

AGA8 - 8001T

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Instrument ID: NT8 Cont. Calib. Date: 05/27/15

Init. Calib. Date: 04/13/15 Cont. Calib. Time: 1556

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.963	0.967	0.700	AVRG	0.4
2-Methylnaphthalene	0.574	0.590	0.400	AVRG	2.8
Acenaphthylene	1.460	1.522	0.900	AVRG	4.2
Acenaphthene	0.972	0.993	0.900	AVRG	2.2
Dibenzofuran	1.344	1.418	0.800	AVRG	5.5
Fluorene	1.085	1.138	0.900	AVRG	4.9
Phenanthrene	0.954	0.939	0.700	AVRG	-1.6
Anthracene	0.858	0.868	0.700	AVRG	1.2
Fluoranthene	1.115	1.108	0.600	AVRG	-0.6
Pyrene	1.115	1.012	0.600	AVRG	-9.2
Benzo(a)anthracene	1.003	0.962	0.800	AVRG	-4.1
Chrysene	1.006	0.948	0.700	AVRG	-5.8
Benzo(b)fluoranthene	1.050	0.992	0.700	AVRG	-5.5
Benzo(k)fluoranthene	1.049	1.027	0.700	AVRG	-2.1
Benzo(j)fluoranthene	1.024	1.010	0.010	AVRG	-1.4
Benzo(a)pyrene	0.936	0.851	0.700	AVRG	-9.1
Indeno(1,2,3-cd)pyrene	1.125	1.108	0.500	AVRG	-1.5
Dibenzo(a,h)anthracene	0.916	0.913	0.400	AVRG	-0.3
Benzo(g,h,i)perylene	0.990	0.956	0.500	AVRG	-3.4
1-methylnaphthalene	0.558	0.562	0.010	AVRG	0.7
Perylene	0.972	0.937	0.010	AVRG	-3.6
2-Methylnaphthalene-d10	0.611	0.600	0.010	AVRG	-1.8
Dibenzo(a,h)anthracene-d14	0.762	0.777	0.010	AVRG	2.0
Fluoranthene-d10	0.984	1.012	0.010	AVRG	2.8

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Instrument ID: NT8 Cont. Calib. Date: 05/29/15

Init. Calib. Date: 04/13/15 Cont. Calib. Time: 1223

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.963	0.972	0.700	AVRG	0.9
2-Methylnaphthalene	0.574	0.649	0.400	AVRG	13.1
Acenaphthylene	1.460	1.523	0.900	AVRG	4.3
Acenaphthene	0.972	1.038	0.900	AVRG	6.8
Dibenzofuran	1.344	1.411	0.800	AVRG	5.0
Fluorene	1.085	1.114	0.900	AVRG	2.7
Phenanthrene	0.954	0.945	0.700	AVRG	-0.9
Anthracene	0.858	0.873	0.700	AVRG	1.7
Fluoranthene	1.115	1.097	0.600	AVRG	-1.6
Pyrene	1.115	1.023	0.600	AVRG	-8.2
Benzo(a)anthracene	1.003	0.983	0.800	AVRG	-2.0
Chrysene	1.006	0.952	0.700	AVRG	-5.4
Benzo(b)fluoranthene	1.050	0.996	0.700	AVRG	-5.1
Benzo(k)fluoranthene	1.049	1.010	0.700	AVRG	-3.7
Benzo(j)fluoranthene	1.024	0.962	0.010	AVRG	-6.0
Benzo(a)pyrene	0.936	0.890	0.700	AVRG	-4.9
Indeno(1,2,3-cd)pyrene	1.125	1.143	0.500	AVRG	1.6
Dibenzo(a,h)anthracene	0.916	0.931	0.400	AVRG	1.6
Benzo(g,h,i)perylene	0.990	0.953	0.500	AVRG	-3.7
1-methylnaphthalene	0.558	0.574	0.010	AVRG	2.9
Perylene	0.972	0.942	0.010	AVRG	-3.1
2-Methylnaphthalene-d10	0.611	0.666	0.010	AVRG	9.0
Dibenzo(a,h)anthracene-d14	0.762	0.785	0.010	AVRG	3.0
Fluoranthene-d10	0.984	1.002	0.010	AVRG	1.8

<- Exceeds QC limit of 20% D

* RF less than minimum RF

AGA8 0805

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/27/15

		IS1(NPT) AREA	#	RT	#	IS2(ANT) AREA	#	RT	#	IS3(PHN) AREA	#	RT	#
	ICAL MIDPT	343090		4.80		230598		7.07		373928		9.09	
	UPPER LIMIT	686180				461196				747856			
	LOWER LIMIT	171545				115299				186964			
	CCAL	281075		4.75		181534		7.01		326991		9.03	
	UPPER LIMIT			5.25				7.51				9.53	
	LOWER LIMIT			4.25				6.51				8.53	
01	AGA8MBS1	335940		4.74		218338		7.01		386006		9.03	
02	AGA8LCSS1	366753		4.74		233918		7.01		412030		9.03	
03	SDP-10(13.5-	349874		4.74		216747		7.01		376479		9.03	
04	SDP-10(15.5-	384878		4.74		244430		7.01		422078		9.03	
05	SDP-10(16.5-	380954		4.74		249211		7.01		429848		9.03	
06	SDP-09(2.5-4	369183		4.74		240902		7.01		421209		9.03	
07	SDP-08(12.0-	403717		4.74		253414		7.01		434695		9.03	
08	SDP-07(1.5-3	382842		4.74		244729		7.01		437670		9.03	
09	SDP-07(1.5-3	401289		4.74		264907		7.01		470490		9.03	
10	SDP-07(1.5-3	410175		4.74		276164		7.01		484508		9.03	
11	SDP-07(8.5-9	395405		4.74		254094		7.01		438676		9.03	
12	SDP-06(12.5-	412336		4.74		262925		7.01		448619		9.03	
13	SDP-06(10.0-	414841		4.75		273091		7.01		467739		9.03	
14													
15													
16													
17													
18													
19													
20													

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8 00058

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/27/15

		IS4(CRY) AREA #	RT #	IS5(PRY) AREA #	RT #	AREA #	RT #
	ICAL MIDPT	381262	13.92	380825	17.76		
	UPPER LIMIT	762524		761650			
	LOWER LIMIT	190631		190412			
	CCAL	366685	13.81	361241	17.64		
	UPPER LIMIT		14.31		18.14		
	LOWER LIMIT		13.31		17.14		
01	AGA8MBS1	422989	13.81	431228	17.63		
02	AGA8LCSS1	458153	13.81	458334	17.64		
03	SDP-10(13.5-	424700	13.81	446685	17.64		
04	SDP-10(15.5-	471771	13.81	481386	17.64		
05	SDP-10(16.5-	479365	13.81	486152	17.64		
06	SDP-09(2.5-4	477730	13.82	500585	17.64		
07	SDP-08(12.0-	487049	13.81	493365	17.64		
08	SDP-07(1.5-3	534120	13.83	547717	17.66		
09	SDP-07(1.5-3	600641	13.84	585844	17.67		
10	SDP-07(1.5-3	613159	13.84	618327	17.67		
11	SDP-07(8.5-9	477545	13.82	517480	17.64		
12	SDP-06(12.5-	510938	13.82	543333	17.65		
13	SDP-06(10.0-	521253	13.82	756546	17.64		
14							
15							
16							
17							
18							
19							
20							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8 - 00051

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/29/15

		IS1(NPT) AREA	#	RT	#	IS2(ANT) AREA	#	RT	#	IS3(PHN) AREA	#	RT	#
	ICAL MIDPT	343090		4.80		230598		7.07		373928		9.09	
	UPPER LIMIT	686180				461196				747856			
	LOWER LIMIT	171545				115299				186964			
	CCAL	311165		4.74		197643		7.00		355748		9.02	
	UPPER LIMIT			5.24				7.50				9.52	
	LOWER LIMIT			4.24				6.50				8.52	
01	SDP-07(1.5-3	423465		4.74		277001		7.00		474018		9.02	
02													
03													
04													
05													
06													
07													
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12													
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14													
15													
16													
17													
18													
19													
20													

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8 00052

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: JKC

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/29/15

		IS4(CRY) AREA #	RT #	IS5(PRY) AREA #	RT #	AREA #	RT #
	ICAL MIDPT	381262	13.92	380825	17.76		
	UPPER LIMIT	762524		761650			
	LOWER LIMIT	190631		190412			
	CCAL	389224	13.80	396831	17.63		
	UPPER LIMIT		14.30		18.13		
	LOWER LIMIT		13.30		17.13		
01	SDP-07(1.5-3	550685	13.81	574380	17.64		
02							
03							
04							
05							
06							
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17							
18							
19							
20							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8-80853

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Selected Ion Monitoring GC/MS **Sample ID: RB-051315**
Extraction Method: SW3520C **SAMPLE**

Lab Sample ID: AGA8J
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/20/15
Date Analyzed: 05/22/15 20:01
Instrument/Analyst: NT8/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	0.030	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.030	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.029	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.038	0.10	< 0.10 U
83-32-9	Acenaphthene	0.030	0.10	< 0.10 U
86-73-7	Fluorene	0.028	0.10	< 0.10 U
85-01-8	Phenanthrene	0.028	0.10	< 0.10 U
120-12-7	Anthracene	0.035	0.10	< 0.10 U
206-44-0	Fluoranthene	0.035	0.10	< 0.10 U
129-00-0	Pyrene	0.043	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.040	0.10	< 0.10 U
218-01-9	Chrysene	0.032	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.042	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.043	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.043	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.042	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.054	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.039	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.028	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.041	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	84.3%
d10-2-Methylnaphthalene	65.7%
d14-Dibenzo(a,h)anthracene	79.0%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	FLN	MNP	DBA	TOT OUT
MB-052015	88.0%	71.3%	93.3%	0
LCS-052015	89.0%	65.3%	91.3%	0
LCSD-052015	84.7%	62.0%	68.7%	0
RB-051315	84.3%	65.7%	79.0%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(46-121)	(46-121)
(MNP) = d10-2-Methylnaphthalene	(31-120)	(31-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(10-125)	(10-125)

Prep Method: SW3520C
Log Number Range: 15-9298 to 15-9298

AGA8 - 02065

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: LCS-052015
LAB CONTROL SAMPLE

Lab Sample ID: LCS-052015
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/22/15 19:09
LCSD: 05/22/15 19:35
Instrument/Analyst LCS: NT8/JZ
LCSD: NT8/JZ

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	1.96	3.00	65.3%	1.89	3.00	63.0%	3.6%
2-Methylnaphthalene	2.13	3.00	71.0%	2.04	3.00	68.0%	4.3%
1-Methylnaphthalene	2.10	3.00	70.0%	1.99	3.00	66.3%	5.4%
Acenaphthylene	2.23	3.00	74.3%	2.09	3.00	69.7%	6.5%
Acenaphthene	2.30	3.00	76.7%	2.14	3.00	71.3%	7.2%
Fluorene	2.49	3.00	83.0%	2.30	3.00	76.7%	7.9%
Phenanthrene	2.39	3.00	79.7%	2.29	3.00	76.3%	4.3%
Anthracene	2.54	3.00	84.7%	2.41	3.00	80.3%	5.3%
Fluoranthene	2.58	3.00	86.0%	2.55	3.00	85.0%	1.2%
Pyrene	2.38	3.00	79.3%	2.29	3.00	76.3%	3.9%
Benzo(a)anthracene	2.55	3.00	85.0%	2.45	3.00	81.7%	4.0%
Chrysene	2.43	3.00	81.0%	2.42	3.00	80.7%	0.4%
Benzo(b)fluoranthene	2.70	3.00	90.0%	2.61	3.00	87.0%	3.4%
Benzo(k)fluoranthene	2.66	3.00	88.7%	2.53	3.00	84.3%	5.0%
Benzo(a)pyrene	2.52	3.00	84.0%	2.29	3.00	76.3%	9.6%
Indeno(1,2,3-cd)pyrene	2.66	3.00	88.7%	2.33	3.00	77.7%	13.2%
Dibenz(a,h)anthracene	2.76	3.00	92.0%	2.13	3.00	71.0%	25.8%
Benzo(g,h,i)perylene	2.58	3.00	86.0%	2.25	3.00	75.0%	13.7%
Dibenzofuran	2.33	3.00	77.7%	2.13	3.00	71.0%	9.0%
Total Benzofluoranthenes	7.43	9.00	82.6%	7.16	9.00	79.6%	3.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	89.0%	84.7%
d10-2-Methylnaphthalene	65.3%	62.0%
d14-Dibenzo(a,h)anthracene	91.3%	68.7%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

AGA8MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No: AGA8

Project: POS SLIVER

Lab File ID: 15052211

Date Extracted: 05/20/15

Instrument ID: NT8

Date Analyzed: 05/22/15

Matrix: LIQUID

Time Analyzed: 1844

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	15052212	05/22/15
02	AGA8LCSDW1	AGA8LCSDW1	15052213	05/22/15
03	RB-051315	AGA8J	15052214	05/22/15
04				
05				
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FORM IV SV

AGA8 : 88857

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Selected Ion Monitoring GC/MS **Sample ID: MB-052015**
Extraction Method: SW3520C **METHOD BLANK**

Lab Sample ID: MB-052015
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/22/15 18:44
Instrument/Analyst: NT8/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	0.030	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.030	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.029	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.038	0.10	< 0.10 U
83-32-9	Acenaphthene	0.030	0.10	< 0.10 U
86-73-7	Fluorene	0.028	0.10	< 0.10 U
85-01-8	Phenanthrene	0.028	0.10	< 0.10 U
120-12-7	Anthracene	0.035	0.10	< 0.10 U
206-44-0	Fluoranthene	0.035	0.10	< 0.10 U
129-00-0	Pyrene	0.043	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.040	0.10	< 0.10 U
218-01-9	Chrysene	0.032	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.042	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.043	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.043	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.042	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.054	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.039	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.028	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.041	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.0%
d10-2-Methylnaphthalene	71.3%
d14-Dibenzo(a,h)anthracene	93.3%

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 04/13/15 DFTPP Injection Time: 1211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	28.2
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	54.1
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.9
275	10.0 - 60.0% of mass 198	37.6
365	Greater than 1.0% of mass 198	5.06
441	0.0 - 24.0% of mass 442	12.2 (16.2)2
442	50.0 - 200.0% of mass 198	75.1
443	15.0 - 24.0% of mass 442	15.8 (21.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC25150413	SDD0030-CAL4	15041302	04/13/15	1222
02	IC01150413	SDD0030-CAL1	15041303	04/13/15	1250
03	IC1150413	SDD0030-CAL3	15041305	04/13/15	1341
04	IC5150413	SDD0030-CAL5	15041306	04/13/15	1407
05	IC10150413	SDD0030-CAL6	15041307	04/13/15	1432
06	IC05150413	SDD0030-CAL2	15041308	04/13/15	1458
07					
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20					

ARAS 88059

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 05/22/15 DFTPP Injection Time: 1441

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	29.1
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	55.3
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	10.0 - 80.0% of mass 198	54.5
197	Less than 2.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.8
275	10.0 - 60.0% of mass 198	36.5
365	Greater than 1.0% of mass 198	4.87
441	0.0 - 24.0% of mass 442	12.5 (16.1)2
442	50.0 - 200.0% of mass 198	77.8
443	15.0 - 24.0% of mass 442	16.8 (21.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV150522	ICV150522	15052202	05/22/15	1453
02	AGA8MBW1	AGA8MBW1	15052211	05/22/15	1844
03	AGA8LCSW1	AGA8LCSW1	15052212	05/22/15	1909
04	AGA8LCSDW1	AGA8LCSDW1	15052213	05/22/15	1935
05	RB-051315	AGA8J	15052214	05/22/15	2001
06					
07					
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20					

AGA8 00060

6B

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGA8 Project: POS SLIVER

Instrument ID: NT8 Calibration Date: 04/13/15

LAB FILE ID: RRF0.1=15041303 RRF0.5=15041308 RRF1 =15041305
RRF2.5=15041302 RRF5 =15041306 RRF10 =15041307

COMPOUND	RRF 0.1	RRF 0.5	RRF 1	RRF 2.5	RRF 5	RRF 10	___ RRF	%RSD /R^2
Naphthalene	0.986	0.893	1.045	0.924	0.994	0.937	0.963	5.7
2-Methylnaphthalene	0.550	0.548	0.613	0.564	0.602	0.569	0.574	4.7
1-methylnaphthalene	0.589	0.507	0.578	0.546	0.579	0.549	0.558	5.4
Biphenyl	1.365	1.093	1.303	1.177	1.276	1.198	1.235	7.9
2,6-Dimethylnaphthalene	0.902	0.837	0.974	0.887	0.962	0.926	0.915	5.6
Acenaphthylene	1.422	1.288	1.535	1.435	1.595	1.488	1.460	7.3
Acenaphthene	0.976	0.877	1.034	0.927	1.041	0.976	0.972	6.5
Dibenzofuran	1.376	1.247	1.455	1.293	1.409	1.285	1.344	6.1
1,6,7-Trimethylnaphthalene	0.873	0.807	0.948	0.898	0.980	0.956	0.910	7.0
Fluorene	1.007	0.964	1.179	1.069	1.182	1.111	1.085	8.2
Dibenzothiophene	0.987	0.866	0.968	0.895	0.936	0.845	0.916	6.2
Phenanthrene	1.060	0.881	1.007	0.927	0.960	0.886	0.954	7.4
Anthracene	0.842	0.759	0.912	0.868	0.920	0.850	0.858	6.8
Carbazole	0.760	0.711	0.759	0.748	0.803	0.750	0.755	3.9
1-Methylphenanthrene	0.690	0.660	0.805	0.741	0.788	0.744	0.738	7.5
Fluoranthene	1.253	1.004	1.180	1.081	1.139	1.034	1.115	8.4
Pyrene	1.259	0.989	1.118	1.101	1.139	1.084	1.115	7.8
Benzo(a)anthracene	1.030	0.874	1.035	1.001	1.053	1.027	1.003	6.6
Chrysene	1.230	0.850	1.015	0.959	1.001	0.980	1.006	12.4
Benzo(b)fluoranthene	1.086	0.953	1.086	1.018	1.104	1.055	1.050	5.4
Benzo(k)fluoranthene	1.086	0.907	1.101	1.012	1.141	1.049	1.049	7.9
Benzo(j)fluoranthene	1.112	0.844	1.045	1.010	1.096	1.038	1.024	9.4
Benzo(e)pyrene	1.262	0.909	1.094	0.995	1.089	1.021	1.062	11.2
Benzo(a)pyrene	1.059	0.802	0.944	0.872	0.992	0.950	0.936	9.6
Perylene	0.979	0.849	1.022	0.949	1.045	0.990	0.972	7.1
Indeno(1,2,3-cd)pyrene	1.062	0.971	1.182	1.107	1.237	1.189	1.125	8.7
Dibenzo(a,h)anthracene	0.892	0.749	0.946	0.900	1.011	0.998	0.916	10.4
Benzo(g,h,i)perylene	0.946	0.879	1.033	0.975	1.079	1.025	0.990	7.2
2-Methylnaphthalene-d10	0.676	0.534	0.633	0.588	0.636	0.597	0.611	8.0
Fluoranthene-d10	1.004	0.901	1.037	0.967	1.028	0.966	0.984	5.1
Dibenzo(a,h)anthracene-d14	0.746	0.649	0.782	0.756	0.816	0.821	0.762	8.3

<- Outside QC limits: %RSD <20% or R^2 > 0.990

AGA8 : 04061

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGA8 Project: POS SLIVER

Instrument ID: NT8 Cont. Calib. Date: 05/22/15

Init. Calib. Date: 04/13/15 Cont. Calib. Time: 1453

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.963	0.940	0.700	AVRG	-2.4
2-Methylnaphthalene	0.574	0.584	0.400	AVRG	1.7
Acenaphthylene	1.460	1.540	0.900	AVRG	5.5
Acenaphthene	0.972	1.027	0.900	AVRG	5.6
Dibenzofuran	1.344	1.401	0.800	AVRG	4.2
Fluorene	1.085	1.204	0.900	AVRG	11.0
Phenanthrene	0.954	0.947	0.700	AVRG	-0.7
Anthracene	0.858	0.873	0.700	AVRG	1.7
Fluoranthene	1.115	1.117	0.600	AVRG	0.2
Pyrene	1.115	1.065	0.600	AVRG	-4.5
Benzo(a)anthracene	1.003	1.011	0.800	AVRG	0.8
Chrysene	1.006	0.978	0.700	AVRG	-2.8
Benzo(b)fluoranthene	1.050	1.042	0.700	AVRG	-0.8
Benzo(k)fluoranthene	1.049	1.043	0.700	AVRG	-0.6
Benzo(j)fluoranthene	1.024	1.017	0.010	AVRG	-0.7
Benzo(a)pyrene	0.936	0.903	0.700	AVRG	-3.5
Indeno(1,2,3-cd)pyrene	1.125	1.134	0.500	AVRG	0.8
Dibenzo(a,h)anthracene	0.916	0.948	0.400	AVRG	3.5
Benzo(g,h,i)perylene	0.990	0.976	0.500	AVRG	-1.4
1-methylnaphthalene	0.558	0.548	0.010	AVRG	-1.8
Perylene	0.972	0.948	0.010	AVRG	-2.5
2-Methylnaphthalene-d10	0.611	0.585	0.010	AVRG	-4.2
Dibenzo(a,h)anthracene-d14	0.762	0.816	0.010	AVRG	7.1
Fluoranthene-d10	0.984	1.002	0.010	AVRG	1.8

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/22/15

		IS1(NPT) AREA #	RT #	IS2(ANT) AREA #	RT #	IS3(PHN) AREA #	RT #
	ICAL MIDPT	343090	4.80	230598	7.07	373928	9.09
	UPPER LIMIT	686180		461196		747856	
	LOWER LIMIT	171545		115299		186964	
	CCAL	297291	4.75	191154	7.01	347015	9.03
	UPPER LIMIT		5.25		7.51		9.53
	LOWER LIMIT		4.25		6.51		8.53
01	AGA8MBW1	344358	4.74	232596	7.01	401626	9.03
02	AGA8LCSW1	375304	4.74	236209	7.01	423109	9.03
03	AGA8LCSDW1	365878	4.74	239375	7.01	424130	9.03
04	RB-051315	368650	4.74	237975	7.01	421417	9.03
05							
06							
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18							
19							
20							

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8 . 00063

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGA8 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/22/15

		IS4(CRY) AREA #	RT #	IS5(PRY) AREA #	RT #	AREA #	RT #
	ICAL MIDPT	381262	13.92	380825	17.76		
	UPPER LIMIT	762524		761650			
	LOWER LIMIT	190631		190412			
	CCAL	373266	13.82	374830	17.64		
	UPPER LIMIT		14.32		18.14		
	LOWER LIMIT		13.32		17.14		
01	AGA8MBW1	432555	13.81	413095	17.65		
02	AGA8LCSW1	473638	13.81	444966	17.64		
03	AGA8LCSDW1	478376	13.81	455442	17.64		
04	RB-051315	468779	13.81	427974	17.64		
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20							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGA8 : 8086

PCB Analysis
Report and Summary QC Forms

ARI Job ID: AGA8

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(13.5-15.0)
SAMPLE

Lab Sample ID: AGA8A
LIMS ID: 15-9289
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 06:40
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.54 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 31.0%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.0	18	< 18 U
53469-21-9	Aroclor 1242	7.0	18	< 18 U
12672-29-6	Aroclor 1248	7.0	18	< 18 U
11097-69-1	**Aroclor 1254**	**7.0**	**18**	**15 J**
11096-82-5	Aroclor 1260	2.7	18	< 18 U
11104-28-2	Aroclor 1221	7.0	18	< 18 U
11141-16-5	Aroclor 1232	7.0	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	84.8%
Tetrachlorometaxylene	78.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(15.5-16.5)
SAMPLE

Lab Sample ID: AGA8B
LIMS ID: 15-9290
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 07:02
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.39 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 23.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.2	18	< 18 U
53469-21-9	Aroclor 1242	7.2	18	< 18 U
12672-29-6	Aroclor 1248	7.2	18	< 18 U
11097-69-1	Aroclor 1254	7.2	18	< 18 U
11096-82-5	Aroclor 1260	2.7	18	< 18 U
11104-28-2	Aroclor 1221	7.2	18	< 18 U
11141-16-5	Aroclor 1232	7.2	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	97.0%
Tetrachlorometaxylene	80.2%

AGA 2857

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-10(16.5-17.5)
SAMPLE

Lab Sample ID: AGA8C
LIMS ID: 15-9291
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 07:23
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.37 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 23.3%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.3	19	< 19 U
53469-21-9	Aroclor 1242	7.3	19	< 19 U
12672-29-6	Aroclor 1248	7.3	19	< 19 U
11097-69-1	Aroclor 1254	7.3	19	< 19 U
11096-82-5	Aroclor 1260	2.7	19	< 19 U
11104-28-2	Aroclor 1221	7.3	19	< 19 U
11141-16-5	Aroclor 1232	7.3	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.2%
Tetrachlorometaxylene	75.5%

AGA8 : 20026

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-09(2.5-4.0)
SAMPLE

Lab Sample ID: AGA8D
LIMS ID: 15-9292
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 07:45
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.08 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 16.0%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.7	20	< 20 U
53469-21-9	Aroclor 1242	7.7	20	< 20 U
12672-29-6	Aroclor 1248	7.7	20	< 20 U
11097-69-1	**Aroclor 1254**	**7.7**	**20**	**42**
11096-82-5	**Aroclor 1260**	**2.9**	**20**	**37**
11104-28-2	Aroclor 1221	7.7	20	< 20 U
11141-16-5	Aroclor 1232	7.7	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	84.2%
Tetrachlorometaxylene	77.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-08(12.0-13.5)
SAMPLE

Lab Sample ID: AGA8E
LIMS ID: 15-9293
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 08:06
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.67 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 19.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	6.9	18	< 18 U
53469-21-9	Aroclor 1242	6.9	18	< 18 U
12672-29-6	Aroclor 1248	6.9	18	< 18 U
11097-69-1	Aroclor 1254	6.9	18	< 18 U
11096-82-5	Aroclor 1260	2.6	18	< 18 U
11104-28-2	Aroclor 1221	6.9	18	< 18 U
11141-16-5	Aroclor 1232	6.9	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.5%
Tetrachlorometaxylene	82.8%

FORM I

AGA8.D8078

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
SAMPLE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 08:27
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.22 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.5	19	< 19 U
53469-21-9	Aroclor 1242	7.5	19	< 19 U
12672-29-6	Aroclor 1248	7.5	19	< 19 U
11097-69-1	**Aroclor 1254**	**7.5**	**19**	**130**
11096-82-5	**Aroclor 1260**	**2.8**	**19**	**110**
11104-28-2	Aroclor 1221	7.5	19	< 19 U
11141-16-5	Aroclor 1232	7.5	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.0%
Tetrachlorometaxylene	79.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(8.5-9.5)
SAMPLE

Lab Sample ID: AGA8G
LIMS ID: 15-9295
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 10:14
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.11 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 27.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.6	20	< 20 U
53469-21-9	Aroclor 1242	7.6	20	< 20 U
12672-29-6	Aroclor 1248	7.6	39	< 39 Y
11097-69-1	**Aroclor 1254**	**7.6**	**20**	**48**
11096-82-5	**Aroclor 1260**	**2.9**	**20**	**41**
11104-28-2	Aroclor 1221	7.6	20	< 20 U
11141-16-5	Aroclor 1232	7.6	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.2%
Tetrachlorometaxylene	80.5%

FORM I

AGA8 : 00072

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-06(12.5-13.5)
SAMPLE

Lab Sample ID: AGA8H
LIMS ID: 15-9296
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 10:36
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.20 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 26.4%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.5	19	< 19 U
53469-21-9	Aroclor 1242	7.5	19	< 19 U
12672-29-6	Aroclor 1248	7.5	19	< 19 U
11097-69-1	Aroclor 1254	7.5	19	< 19 U
11096-82-5	Aroclor 1260	2.8	19	< 19 U
11104-28-2	Aroclor 1221	7.5	19	< 19 U
11141-16-5	Aroclor 1232	7.5	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.8%
Tetrachlorometaxylene	80.8%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-06(10.0-11.0)
SAMPLE

Lab Sample ID: AGA8I
LIMS ID: 15-9297
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 10:57
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.08 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 27.9%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.7	20	< 20 U
53469-21-9	Aroclor 1242	7.7	20	< 20 U
12672-29-6	Aroclor 1248	7.7	20	< 20 U
11097-69-1	Aroclor 1254	7.7	20	< 20 U
11096-82-5	Aroclor 1260	2.9	20	< 20 U
11104-28-2	Aroclor 1221	7.7	20	< 20 U
11141-16-5	Aroclor 1232	7.7	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	85.8%
Tetrachlorometaxylene	81.0%

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
SDP-10(13.5-15.0)	84.8%	40-133	78.8%	53-120	0
SDP-10(15.5-16.5)	97.0%	40-133	80.2%	53-120	0
SDP-10(16.5-17.5)	87.2%	40-133	75.5%	53-120	0
SDP-09(2.5-4.0)	84.2%	40-133	77.5%	53-120	0
SDP-08(12.0-13.5)	89.5%	40-133	82.8%	53-120	0
MB-052115	95.2%	40-133	88.2%	53-120	0
LCS-052115	94.8%	40-133	87.8%	53-120	0
SDP-07(1.5-3.0)	87.0%	40-133	79.0%	53-120	0
SDP-07(1.5-3.0) MS	89.5%	40-133	84.0%	53-120	0
SDP-07(1.5-3.0) MSD	87.2%	40-133	83.5%	53-120	0
SDP-07(8.5-9.5)	85.2%	40-133	80.5%	53-120	0
SDP-06(12.5-13.5)	85.8%	40-133	80.8%	53-120	0
SDP-06(10.0-11.0)	85.8%	40-133	81.0%	53-120	0

Microwave (MARS) Control Limits PCBSMP
Prep Method: SW3546
Log Number Range: 15-9289 to 15-9297

AGA8 00075

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
MS/MSD

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted MS/MSD: 05/21/15

Date Analyzed MS: 05/28/15 08:49
MSD: 05/28/15 09:10
Instrument/Analyst MS: ECD7/JGR
MSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 5.20 g-dry-wt
MSD: 5.22 g-dry-wt
Final Extract Volume MS: 5.0 mL
MSD: 5.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 13.5%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 19 U	466	481	96.9%	459	479	95.8%	1.5%
Aroclor 1260	110	580	481	97.7%	543	479	90.4%	6.6%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD **Sample ID: SDP-07(1.5-3.0)**
Extraction Method: SW3546 **MATRIX SPIKE**

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 08:49
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.20 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.5	19	---
53469-21-9	Aroclor 1242	7.5	19	< 19 U
12672-29-6	Aroclor 1248	7.5	19	< 19 U
11097-69-1	**Aroclor 1254**	**7.5**	**19**	**290**
11096-82-5	Aroclor 1260	2.8	19	---
11104-28-2	Aroclor 1221	7.5	19	< 19 U
11141-16-5	Aroclor 1232	7.5	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	89.5%
Tetrachlorometaxylene	84.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
MATRIX SPIKE DUP

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 09:10
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.22 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 13.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.5	19	---
53469-21-9	Aroclor 1242	7.5	19	< 19 U
12672-29-6	Aroclor 1248	7.5	19	< 19 U
11097-69-1	**Aroclor 1254**	**7.5**	**19**	**240**
11096-82-5	Aroclor 1260	2.8	19	---
11104-28-2	Aroclor 1221	7.5	19	< 19 U
11141-16-5	Aroclor 1232	7.5	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	87.2%
Tetrachlorometaxylene	83.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: LCS-052115
LAB CONTROL

Lab Sample ID: LCS-052115
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 06:19
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.00 g-dry-wt
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	481	500	96.2%
Aroclor 1260	534	500	107%

PCB Surrogate Recovery

Decachlorobiphenyl	94.8%
Tetrachlorometaxylene	87.8%

Results reported in µg/kg (ppb)

AGA8 - 00079

PCB METHOD BLANK SUMMARY

BLANK NO.

AGA8MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No.: AGA8

Project: POS SLIVER

Lab Sample ID: AGA8MBS1

Lab File ID: 05271544

Date Extracted: 05/21/15

Matrix: SOLID

Date Analyzed: 05/28/15

Instrument ID: ECD7

Time Analyzed: 0557

GC Columns: ZB5/ZB35

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSS1	AGA8LCSS1	05/28/15
02	SDP-10(13.5-15.0)	AGA8A	05/28/15
03	SDP-10(15.5-16.5)	AGA8B	05/28/15
04	SDP-10(16.5-17.5)	AGA8C	05/28/15
05	SDP-09(2.5-4.0)	AGA8D	05/28/15
06	SDP-08(12.0-13.5)	AGA8E	05/28/15
07	SDP-07(1.5-3.0)	AGA8F	05/28/15
08	SDP-07(1.5-3.0) MS	AGA8FMS	05/28/15
09	SDP-07(1.5-3.0) MSD	AGA8FMSD	05/28/15
10	SDP-07(8.5-9.5)	AGA8G	05/28/15
11	SDP-06(12.5-13.5)	AGA8H	05/28/15
12	SDP-06(10.0-11.0)	AGA8I	05/28/15

ALL RUNS ARE DUAL COLUMN

FORM IV PCB

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD **Sample ID: MB-052115**
Extraction Method: SW3546 **METHOD BLANK**

Lab Sample ID: MB-052115
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/21/15
Date Analyzed: 05/28/15 05:57
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.00 g
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.8	20	< 20 U
53469-21-9	Aroclor 1242	7.8	20	< 20 U
12672-29-6	Aroclor 1248	7.8	20	< 20 U
11097-69-1	Aroclor 1254	7.8	20	< 20 U
11096-82-5	Aroclor 1260	2.9	20	< 20 U
11104-28-2	Aroclor 1221	7.8	20	< 20 U
11141-16-5	Aroclor 1232	7.8	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	95.2%
Tetrachlorometaxylene	88.2%

AGA8 00001

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 6.24- 6.44	0.5243	0.5274	0.5462	0.5187	0.5432	0.5951	0.5425	5.1
DCB 14.79-14.99	1.0363	0.9972	1.0191	0.9389	0.9796	1.0652	1.0060	4.4

Aroclor-1016 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 8.25- 8.45	0.0136	0.0136	0.0136	0.0122	0.0120	0.0122	0.0129	6.0
2 8.73- 8.93	0.0408	0.0409	0.0412	0.0371	0.0372	0.0393	0.0394	4.8
3 9.03- 9.23	0.0126	0.0142	0.0142	0.0130	0.0131	0.0138	0.0135	4.9
4 9.81-10.01	0.0145	0.0147	0.0148	0.0139	0.0137	0.0144	0.0143	3.1

AROCLOR AVERAGE %RSD = 4.7

Aroclor-1260 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 12.37-12.57	0.0300	0.0276	0.0271	0.0240	0.0235	0.0245	0.0261	9.7
2 13.04-13.24	0.0802	0.0834	0.0852	0.0811	0.0841	0.0929	0.0845	5.3
3 13.41-13.61	0.0387	0.0389	0.0398	0.0376	0.0385	0.0419	0.0392	3.7
4 13.51-13.71	0.0238	0.0237	0.0245	0.0227	0.0229	0.0244	0.0237	3.1
5 13.91-14.11	0.0123	0.0128	0.0134	0.0126	0.0129	0.0139	0.0130	4.5

AROCLOR AVERAGE %RSD = 5.3

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 5.81- 6.01	1.1169	1.0790	1.1065	1.0231	1.0452	1.1024	1.0789	3.5
DCB 14.76-14.96	1.0675	1.0011	0.9976	0.8905	0.9087	0.9214	0.9645	7.1

Aroclor-1016 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 7.93- 8.13	0.0497	0.0478	0.0465	0.0408	0.0391	0.0392	0.0438	10.8
2 8.71- 8.91	0.1042	0.0989	0.0975	0.0864	0.0847	0.0871	0.0931	8.7
3 9.15- 9.35	0.0264	0.0256	0.0252	0.0224	0.0220	0.0225	0.0240	8.0
4 9.91-10.11	0.0185	0.0181	0.0180	0.0158	0.0154	0.0159	0.0170	8.1

AROCLOR AVERAGE %RSD = 8.9

Aroclor-1260 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 12.30-12.50	0.0845	0.0774	0.0750	0.0664	0.0636	0.0635	0.0717	12.0
2 13.00-13.20	0.1781	0.1765	0.1731	0.1592	0.1565	0.1591	0.1671	5.9
3 13.47-13.67	0.0573	0.0543	0.0531	0.0468	0.0466	0.0462	0.0507	9.4
4 13.52-13.72	0.1225	0.1165	0.1155	0.1022	0.1021	0.1018	0.1101	8.3

AROCLOR AVERAGE %RSD = 8.9

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.023	4.92- 5.12	0.00326
2	6.999	6.90- 7.10	0.00510
3	7.123	7.02- 7.22	0.01438

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.026	4.93- 5.13	0.00185
2	6.999	6.90- 7.10	0.00352
3	7.126	7.03- 7.23	0.00960
4	8.830	8.73- 8.93	0.01605

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.834	8.73- 8.93	0.02886
2	9.129	9.03- 9.23	0.01033
3	10.305	10.20-10.40	0.00963
4	10.608	10.51-10.71	0.01442

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.393	9.29- 9.49	0.00919
2	9.909	9.81-10.01	0.01954
3	10.359	10.26-10.46	0.02270
4	10.605	10.50-10.70	0.02296

AGA8 00024

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.371	10.27-10.47	0.01461
2	10.691	10.59-10.79	0.02088
3	11.072	10.97-11.17	0.01694
4	11.210	11.11-11.31	0.03196
5	11.925	11.82-12.02	0.02291

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.467	12.37-12.57	0.04717
2	13.143	13.04-13.24	0.13122
3	13.513	13.41-13.61	0.04136
4	13.675	13.57-13.77	0.07177
5	14.216	14.12-14.32	0.06421

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.612	13.51-13.71	0.12401
2	13.674	13.57-13.77	0.14535
3	13.996	13.90-14.10	0.12995
4	14.597	14.50-14.70	0.45431

AGA8 00085

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.018	4.92- 5.12	0.00831
2	6.720	6.62- 6.82	0.01390
3	7.015	6.92- 7.12	0.00785
4	7.150	7.05- 7.25	0.02401

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.021	4.92- 5.12	0.00505
2	7.153	7.05- 7.25	0.01695
3	8.029	7.93- 8.13	0.01987
4	9.247	9.15- 9.35	0.01020

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.033	7.93- 8.13	0.03218
2	8.810	8.71- 8.91	0.06793
3	10.375	10.28-10.48	0.02366
4	10.734	10.63-10.83	0.02878

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	8.802	8.70- 8.90	0.04409
2	9.813	9.71- 9.91	0.03523
3	10.372	10.27-10.47	0.03734
4	10.729	10.63-10.83	0.04820

AGA8 0006

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.617	10.52-10.72	0.04214
2	10.713	10.61-10.81	0.01997
3	11.148	11.05-11.25	0.03293
4	11.299	11.20-11.40	0.07025
5	12.079	11.98-12.18	0.04197

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.394	12.29-12.49	0.12680
2	12.836	12.74-12.94	0.11918
3	13.100	13.00-13.20	0.24458
4	13.570	13.47-13.67	0.10546
5	14.212	14.11-14.31	0.08290

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.569	13.47-13.67	0.18747
2	13.628	13.53-13.73	0.17713
3	13.953	13.85-14.05	0.14275
4	14.573	14.47-14.67	0.40246

AGA8 00087

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1248 Time Analyzed :0515

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	9.39	9.29	9.49	249.3	250.0	-0.3
Aroclor-1248-2	9.91	9.81	10.01	247.4	250.0	-1.0
Aroclor-1248-3	10.36	10.26	10.46	242.9	250.0	-2.8
Aroclor-1248-4	10.60	10.50	10.70	242.4	250.0	-3.0

AROCLOR AVG: 245.5 CAL %D = -1.8

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1248 Time Analyzed :0515

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	8.80	8.70	8.90	244.8	250.0	-2.1
Aroclor-1248-2	9.81	9.71	9.91	233.9	250.0	-6.4
Aroclor-1248-3	10.37	10.27	10.47	225.0	250.0	-10.0
Aroclor-1248-4	10.73	10.63	10.83	221.5	250.0	-11.4

AROCLOR AVG: 231.3 CAL %D = -7.5

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0536

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.34	8.25	8.45	243.8	250.0	-2.5
Aroclor-1016-2	8.83	8.73	8.93	241.2	250.0	-3.5
Aroclor-1016-3	9.12	9.03	9.23	250.2	250.0	0.1
Aroclor-1016-4	9.91	9.81	10.01	246.4	250.0	-1.4

AROCLOR AVG: 245.4 CAL %D = -1.8

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0536

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	263.4	250.0	5.4
Aroclor-1260-2	13.14	13.04	13.24	265.0	250.0	6.0
Aroclor-1260-3	13.51	13.41	13.61	262.0	250.0	4.8
Aroclor-1260-4	13.61	13.51	13.71	264.1	250.0	5.6
Aroclor-1260-5	14.01	13.91	14.11	264.2	250.0	5.7

AROCLOR AVG: 263.7 CAL %D = 5.5

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0536

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	237.6	250.0	-5.0
Aroclor-1016-2	8.80	8.71	8.91	233.5	250.0	-6.6
Aroclor-1016-3	9.24	9.15	9.35	236.3	250.0	-5.5
Aroclor-1016-4	10.01	9.91	10.11	229.1	250.0	-8.4

AROCLOR AVG: 234.1 CAL %D = -6.4

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0536

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.39	12.30	12.50	214.4	250.0	-14.2
Aroclor-1260-2	13.10	13.00	13.20	213.1	250.0	-14.8
Aroclor-1260-3	13.57	13.47	13.67	204.0	250.0	-18.4
Aroclor-1260-4	13.62	13.52	13.72	206.7	250.0	-17.3

AROCLOR AVG: 209.5 CAL %D = -16.2

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242 Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.83	8.73	8.93	253.8	250.0	1.5
Aroclor-1242-2	9.13	9.03	9.23	253.1	250.0	1.2
Aroclor-1242-3	10.30	10.20	10.40	252.2	250.0	0.9
Aroclor-1242-4	10.61	10.51	10.71	254.3	250.0	1.7

AROCLOR AVG: 253.3 CAL %D = 1.3

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242 Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.03	7.93	8.13	250.3	250.0	0.1
Aroclor-1242-2	8.81	8.71	8.91	247.6	250.0	-0.9
Aroclor-1242-3	10.38	10.28	10.48	242.6	250.0	-3.0
Aroclor-1242-4	10.73	10.63	10.83	243.5	250.0	-2.6

AROCLOR AVG: 246.0 CAL %D = -1.6

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.0	250.0	-2.4
Aroclor-1016-2	8.83	8.73	8.93	242.4	250.0	-3.0
Aroclor-1016-3	9.13	9.03	9.23	252.3	250.0	0.9
Aroclor-1016-4	9.91	9.81	10.01	249.4	250.0	-0.2

AROCLOR AVG: 247.0 CAL %D = -1.2

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	247.9	250.0	-0.8
Aroclor-1260-2	13.14	13.04	13.24	254.6	250.0	1.8
Aroclor-1260-3	13.51	13.41	13.61	252.7	250.0	1.1
Aroclor-1260-4	13.61	13.51	13.71	253.0	250.0	1.2
Aroclor-1260-5	14.01	13.91	14.11	252.8	250.0	1.1

AROCLOR AVG: 252.2 CAL %D = 0.9

AGA8 0809W

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	238.5	250.0	-4.6
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	241.8	250.0	-3.3
Aroclor-1016-4	10.01	9.91	10.11	235.2	250.0	-5.9

AROCLOR AVG: 237.9 CAL %D = -4.8

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	224.0	250.0	-10.4
Aroclor-1260-2	13.10	13.00	13.20	224.2	250.0	-10.3
Aroclor-1260-3	13.57	13.47	13.67	216.8	250.0	-13.3
Aroclor-1260-4	13.62	13.52	13.72	221.0	250.0	-11.6

AROCLOR AVG: 221.5 CAL %D = -11.4

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254 Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.37	10.27	10.47	254.5	250.0	1.8
Aroclor-1254-2	10.69	10.59	10.79	255.1	250.0	2.0
Aroclor-1254-3	11.07	10.97	11.17	255.9	250.0	2.4
Aroclor-1254-4	11.21	11.11	11.31	255.6	250.0	2.2
Aroclor-1254-5	11.92	11.82	12.02	258.5	250.0	3.4

AROCLOR AVG: 255.9 CAL %D = 2.4

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254 Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.62	10.52	10.72	251.4	250.0	0.6
Aroclor-1254-2	10.71	10.61	10.81	253.5	250.0	1.4
Aroclor-1254-3	11.15	11.05	11.25	252.0	250.0	0.8
Aroclor-1254-4	11.30	11.20	11.40	250.6	250.0	0.2
Aroclor-1254-5	12.08	11.98	12.18	252.6	250.0	1.0

AROCLOR AVG: 252.0 CAL %D = 0.8

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.6	250.0	-2.2
Aroclor-1016-2	8.83	8.73	8.93	242.3	250.0	-3.1
Aroclor-1016-3	9.13	9.03	9.23	251.1	250.0	0.4
Aroclor-1016-4	9.91	9.81	10.01	249.2	250.0	-0.3

AROCLOR AVG: 246.8 CAL %D = -1.3

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	239.3	250.0	-4.3
Aroclor-1260-2	13.14	13.04	13.24	245.7	250.0	-1.7
Aroclor-1260-3	13.51	13.41	13.61	244.8	250.0	-2.1
Aroclor-1260-4	13.61	13.51	13.71	246.1	250.0	-1.6
Aroclor-1260-5	14.01	13.91	14.11	249.4	250.0	-0.2

AROCLOR AVG: 245.1 CAL %D = -2.0

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	239.1	250.0	-4.4
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	240.3	250.0	-3.9
Aroclor-1016-4	10.01	9.91	10.11	235.8	250.0	-5.7

AROCLOR AVG: 237.8 CAL %D = -4.9

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	215.9	250.0	-13.6
Aroclor-1260-2	13.10	13.00	13.20	222.4	250.0	-11.0
Aroclor-1260-3	13.57	13.47	13.67	220.0	250.0	-12.0
Aroclor-1260-4	13.62	13.52	13.72	223.9	250.0	-10.4

AROCLOR AVG: 220.6 CAL %D = -11.8

FORM VII PCB

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	5449431	3.349	5633814	15.142
	UPPER LIMIT	10898862	3.449	11267628	15.242
	LOWER LIMIT	2724716	3.249	2816907	15.042

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	5364462	3.346	5547552	15.142
02		0.25PPMAR166	05/27/15	1811	5449431	3.349	5633814	15.142
03		0.02PPMAR166	05/27/15	1833	5444099	3.348	5676446	15.142
04		0.05PPMAR166	05/27/15	1854	5268631	3.345	5493956	15.142
05		1PPMAR1660	05/27/15	1915	4843983	3.347	5005102	15.142
06		0.1PPMAR1660	05/27/15	1937	5165460	3.348	5387445	15.143
07		0.5PPMAR1660	05/27/15	1958	5176005	3.347	5390218	15.143
08		AR1242	05/27/15	2020	5337516	3.344	5573924	15.142
09		AR1248	05/27/15	2041	5300438	3.347	5560964	15.142
10		AR1254	05/27/15	2102	5232643	3.344	5441303	15.142
11		AR2162	05/27/15	2124	5278972	3.343	5544225	15.141
12		AR3268	05/27/15	2145	5332927	3.345	5498000	15.142
13	ZZZZZ	ZZZZZ	05/27/15	2207	5348403	3.348	5628466	15.143
14	ZZZZZ	ZZZZZ	05/27/15	2228	5313543	3.347	5448595	15.142
15	ZZZZZ	ZZZZZ	05/27/15	2249	5283025	3.346	5563146	15.142
16	ZZZZZ	ZZZZZ	05/27/15	2311	5217434	3.346	5473683	15.141
17	ZZZZZ	ZZZZZ	05/27/15	2332	5327597	3.347	5510995	15.141
18	ZZZZZ	ZZZZZ	05/27/15	2354	5291377	3.346	5478047	15.141
19		AR1248	05/28/15	0515	5408388	3.345	4749014	15.142
20		AR1660	05/28/15	0536	5379847	3.346	4959414	15.142
21	AGA8MBS1	AGA8MBS1	05/28/15	0557	5245793	3.348	4915871	15.142
22	AGA8LCSS1	AGA8LCSS1	05/28/15	0619	5440652	3.347	5164750	15.141
23	SDP-10(13.5-	AGA8A	05/28/15	0640	5659033	3.346	5430329	15.142
24	SDP-10(15.5-	AGA8B	05/28/15	0702	5828017	3.347	5585136	15.141
25	SDP-10(16.5-	AGA8C	05/28/15	0723	5825555	3.349	5559273	15.141
26	SDP-09(2.5-4	AGA8D	05/28/15	0745	5879508	3.349	5648104	15.141
27	SDP-08(12.0-	AGA8E	05/28/15	0806	5547667	3.348	5451945	15.142
28	SDP-07(1.5-3	AGA8F	05/28/15	0827	5703856	3.349	5265703	15.141
29	SDP-07(1.5-3	AGA8FMS	05/28/15	0849	5671697	3.349	5139433	15.142
30	SDP-07(1.5-3	AGA8FMSD	05/28/15	0910	5649856	3.350	5174755	15.142
31		AR1242	05/28/15	0932	5420555	3.349	5318139	15.142
32		AR1660	05/28/15	0953	5393241	3.351	5446526	15.143

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

ADAS : 80:01

FORM 8

PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

					IS1 AREA	RT	IS2 AREA	RT
				ICAL MIDPT	5449431	3.349	5633814	15.142
				UPPER LIMIT	10898862	3.449	11267628	15.242
				LOWER LIMIT	2724716	3.249	2816907	15.042
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
33	SDP-07(8.5-9	AGA8G	05/28/15	1014	5725121	3.348	5647565	15.143
34	SDP-06(12.5-	AGA8H	05/28/15	1036	5754188	3.349	5753539	15.143
35	SDP-06(10.0-	AGA8I	05/28/15	1057	5650586	3.349	5721874	15.143
36	ZZZZZ	ZZZZZ	05/28/15	1119	5703109	3.350	5845942	15.143
37		AR1254	05/28/15	1306	5362657	3.350	5699387	15.142
38		AR1660	05/28/15	1328	5407167	3.350	5748876	15.143

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	13059494	3.699	8980422	15.445
	UPPER LIMIT	26118988	3.799	17960844	15.545
	LOWER LIMIT	6529747	3.599	4490211	15.345

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	12796516	3.695	8835826	15.445
02		0.25PPMAR166	05/27/15	1811	13059494	3.699	8980422	15.445
03		0.02PPMAR166	05/27/15	1833	13077546	3.697	9069474	15.444
04		0.05PPMAR166	05/27/15	1854	12739883	3.695	8861124	15.444
05		1PPMAR1660	05/27/15	1915	11620227	3.696	8524199	15.445
06		0.1PPMAR1660	05/27/15	1937	12572695	3.698	8906734	15.445
07		0.5PPMAR1660	05/27/15	1958	12702598	3.696	8989742	15.445
08		AR1242	05/27/15	2020	12964295	3.694	9247281	15.445
09		AR1248	05/27/15	2041	12820555	3.698	9271038	15.445
10		AR1254	05/27/15	2102	12686823	3.693	9119341	15.444
11		AR2162	05/27/15	2124	12591250	3.694	9419455	15.445
12		AR3268	05/27/15	2145	12844090	3.694	9415095	15.445
13	ZZZZZ	ZZZZZ	05/27/15	2207	12940835	3.697	9714071	15.445
14	ZZZZZ	ZZZZZ	05/27/15	2228	12729044	3.697	9658995	15.445
15	ZZZZZ	ZZZZZ	05/27/15	2249	12806439	3.695	9699512	15.444
16	ZZZZZ	ZZZZZ	05/27/15	2311	12694649	3.696	9548705	15.445
17	ZZZZZ	ZZZZZ	05/27/15	2332	12767315	3.697	9637779	15.444
18	ZZZZZ	ZZZZZ	05/27/15	2354	12775400	3.696	9670669	15.445
19		AR1248	05/28/15	0515	12867109	3.695	8319905	15.445
20		AR1660	05/28/15	0536	12881265	3.695	8621556	15.444
21	AGA8MBS1	AGA8MBS1	05/28/15	0557	12849611	3.696	8614143	15.444
22	AGA8LCSS1	AGA8LCSS1	05/28/15	0619	13206489	3.696	8786517	15.445
23	SDP-10(13.5-	AGA8A	05/28/15	0640	13386742	3.695	9351051	15.443
24	SDP-10(15.5-	AGA8B	05/28/15	0702	13412705	3.696	9441477	15.444
25	SDP-10(16.5-	AGA8C	05/28/15	0723	13823528	3.698	9594418	15.444
26	SDP-09(2.5-4	AGA8D	05/28/15	0745	13999018	3.698	9888336	15.443
27	SDP-08(12.0-	AGA8E	05/28/15	0806	13628830	3.697	9438310	15.444
28	SDP-07(1.5-3	AGA8F	05/28/15	0827	13664486	3.698	9503473	15.443
29	SDP-07(1.5-3	AGA8FMS	05/28/15	0849	13641263	3.698	9488412	15.443
30	SDP-07(1.5-3	AGA8FMSD	05/28/15	0910	13356421	3.699	9475879	15.445
31		AR1242	05/28/15	0932	13103463	3.699	9200397	15.446
32		AR1660	05/28/15	0953	13124437	3.700	9338057	15.446

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AG48 : 8014

FORM 8

PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGA8 Project: POS SILVER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

					IS1 AREA	RT	IS2 AREA	RT
				ICAL MIDPT	13059494	3.699	8980422	15.445
				UPPER LIMIT	26118988	3.799	17960844	15.545
				LOWER LIMIT	6529747	3.599	4490211	15.345
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
33	SDP-07(8.5-9	AGA8G	05/28/15	1014	13693431	3.698	9882394	15.445
34	SDP-06(12.5-	AGA8H	05/28/15	1036	13450396	3.699	10093680	15.446
35	SDP-06(10.0-	AGA8I	05/28/15	1057	13805081	3.698	10082150	15.446
36		AR1254	05/28/15	1306	13048646	3.698	9966703	15.445
37		AR1660	05/28/15	1328	13180150	3.700	10153131	15.445

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGAA : 00135

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: RB-051315
SAMPLE

Lab Sample ID: AGA8J
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted: 05/20/15
Date Analyzed: 05/28/15 12:23
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.13	1.0	< 1.0 U
53469-21-9	Aroclor 1242	0.15	1.0	< 1.0 U
12672-29-6	Aroclor 1248	0.15	1.0	< 1.0 U
11097-69-1	Aroclor 1254	0.15	1.0	< 1.0 U
11096-82-5	Aroclor 1260	0.15	1.0	< 1.0 U
11104-28-2	Aroclor 1221	0.15	1.0	< 1.0 U
11141-16-5	Aroclor 1232	0.15	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	67.5%
Tetrachlorometaxylene	78.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-052015	78.5%	38-120	70.2%	29-120	0
LCS-052015	81.2%	38-120	78.2%	29-120	0
LCSD-052015	75.5%	38-120	78.8%	29-120	0
RB-051315	67.5%	38-120	78.2%	29-120	0

Prep Method: SW3510C
Log Number Range: 15-9298 to 15-9298

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Page 1 of 1

Sample ID: LCS-052015
LCS/LCSD

Lab Sample ID: LCS-052015
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/28/15 11:40
LCSD: 05/28/15 12:02
Instrument/Analyst LCS: ECD7/JGR
LCSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 5.0 mL
LCSD: 5.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No
Acid Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	4.54	5.00	90.8%	4.44	5.00	88.8%	2.2%
Aroclor 1260	4.35	5.00	87.0%	4.28	5.00	85.6%	1.6%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	81.2%	75.5%
Tetrachlorometaxylene	78.2%	78.8%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

PCB METHOD BLANK SUMMARY

BLANK NO.

AGA8MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No.: AGA8

Project: POS SLIVER

Lab Sample ID: AGA8MBW1

Lab File ID: 05271559

Date Extracted: 05/20/15

Matrix: LIQUID

Date Analyzed: 05/28/15

Instrument ID: ECD7

Time Analyzed: 1119

GC Columns: ZB5/ZB35

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	05/28/15
02	AGA8LCSDW1	AGA8LCSDW1	05/28/15
03	RB-051315	AGA8J	05/28/15
04	RB-051415	AGC9L	05/28/15

ALL RUNS ARE DUAL COLUMN

FORM IV PCB

AGA8_08185

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: MB-052015
METHOD BLANK

Lab Sample ID: MB-052015
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/28/15 11:19
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.13	1.0	< 1.0 U
53469-21-9	Aroclor 1242	0.15	1.0	< 1.0 U
12672-29-6	Aroclor 1248	0.15	1.0	< 1.0 U
11097-69-1	Aroclor 1254	0.15	1.0	< 1.0 U
11096-82-5	Aroclor 1260	0.15	1.0	< 1.0 U
11104-28-2	Aroclor 1221	0.15	1.0	< 1.0 U
11141-16-5	Aroclor 1232	0.15	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.5%
Tetrachlorometaxylene	70.2%

FORM I

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	6.25- 6.45	0.5243	0.5274	0.5462	0.5187	0.5432	0.5951	0.5425	5.1
DCB	14.79-14.99	1.0363	0.9972	1.0191	0.9389	0.9796	1.0652	1.0060	4.4

Aroclor-1016 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	8.25- 8.45	0.0136	0.0136	0.0136	0.0122	0.0120	0.0122	0.0129	6.0
2	8.73- 8.93	0.0408	0.0409	0.0412	0.0371	0.0372	0.0393	0.0394	4.8
3	9.03- 9.23	0.0126	0.0142	0.0142	0.0130	0.0131	0.0138	0.0135	4.9
4	9.81-10.01	0.0145	0.0147	0.0148	0.0139	0.0137	0.0144	0.0143	3.1

AROCLOR AVERAGE %RSD = 4.7

Aroclor-1260 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	12.37-12.57	0.0300	0.0276	0.0271	0.0240	0.0235	0.0245	0.0261	9.7
2	13.04-13.24	0.0802	0.0834	0.0852	0.0811	0.0841	0.0929	0.0845	5.3
3	13.41-13.61	0.0387	0.0389	0.0398	0.0376	0.0385	0.0419	0.0392	3.7
4	13.51-13.71	0.0238	0.0237	0.0245	0.0227	0.0229	0.0244	0.0237	3.1
5	13.91-14.11	0.0123	0.0128	0.0134	0.0126	0.0129	0.0139	0.0130	4.5

AROCLOR AVERAGE %RSD = 5.3

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 5.81- 6.01	1.1169	1.0790	1.1065	1.0231	1.0452	1.1024	1.0789	3.5
DCB 14.76-14.96	1.0675	1.0011	0.9976	0.8905	0.9087	0.9214	0.9645	7.1

Aroclor-1016 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	7.93- 8.13	0.0497	0.0478	0.0465	0.0408	0.0391	0.0392	0.0438	10.8
2	8.71- 8.91	0.1042	0.0989	0.0975	0.0864	0.0847	0.0871	0.0931	8.7
3	9.15- 9.35	0.0264	0.0256	0.0252	0.0224	0.0220	0.0225	0.0240	8.0
4	9.91-10.11	0.0185	0.0181	0.0180	0.0158	0.0154	0.0159	0.0170	8.1

AROCLOR AVERAGE %RSD = 8.9

Aroclor-1260 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	12.30-12.50	0.0845	0.0774	0.0750	0.0664	0.0636	0.0635	0.0717	12.0
2	13.00-13.20	0.1781	0.1765	0.1731	0.1592	0.1565	0.1591	0.1671	5.9
3	13.47-13.67	0.0573	0.0543	0.0531	0.0468	0.0466	0.0462	0.0507	9.4
4	13.53-13.73	0.1225	0.1165	0.1155	0.1022	0.1021	0.1018	0.1101	8.3

AROCLOR AVERAGE %RSD = 8.9

6G
8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.023	4.92- 5.12	0.00326
2	6.999	6.90- 7.10	0.00510
3	7.123	7.02- 7.22	0.01438

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.026	4.93- 5.13	0.00185
2	6.999	6.90- 7.10	0.00352
3	7.126	7.03- 7.23	0.00960
4	8.830	8.73- 8.93	0.01605

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.834	8.73- 8.93	0.02886
2	9.130	9.03- 9.23	0.01033
3	10.305	10.20-10.40	0.00963
4	10.608	10.51-10.71	0.01442

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.396	9.30- 9.50	0.00919
2	9.912	9.81-10.01	0.01954
3	10.362	10.26-10.46	0.02270
4	10.608	10.51-10.71	0.02296

AGA8 : 8015

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.361	10.26-10.46	0.01461
2	10.682	10.58-10.78	0.02088
3	11.065	10.96-11.16	0.01694
4	11.203	11.10-11.30	0.03196
5	11.919	11.82-12.02	0.02291

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.467	12.37-12.57	0.04717
2	13.143	13.04-13.24	0.13122
3	13.513	13.41-13.61	0.04136
4	13.675	13.57-13.77	0.07177
5	14.216	14.12-14.32	0.06421

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.612	13.51-13.71	0.12401
2	13.674	13.57-13.77	0.14535
3	13.996	13.90-14.10	0.12995
4	14.597	14.50-14.70	0.45431

AGA8 : 08114

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC

Client: URS

ARI Job No.: AGA8

Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35

Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.018	4.92- 5.12	0.00831
2	6.720	6.62- 6.82	0.01390
3	7.015	6.92- 7.12	0.00785
4	7.150	7.05- 7.25	0.02401

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.021	4.92- 5.12	0.00505
2	7.153	7.05- 7.25	0.01695
3	8.029	7.93- 8.13	0.01987
4	9.247	9.15- 9.35	0.01020

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.033	7.93- 8.13	0.03218
2	8.811	8.71- 8.91	0.06793
3	10.376	10.28-10.48	0.02366
4	10.734	10.63-10.83	0.02878

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	8.804	8.70- 8.90	0.04409
2	9.816	9.72- 9.92	0.03523
3	10.376	10.28-10.48	0.03734
4	10.732	10.63-10.83	0.04820

AGA8 0015

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.608	10.51-10.71	0.04214
2	10.702	10.60-10.80	0.01997
3	11.139	11.04-11.24	0.03293
4	11.291	11.19-11.39	0.07025
5	12.072	11.97-12.17	0.04197

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.394	12.29-12.49	0.12680
2	12.836	12.74-12.94	0.11918
3	13.100	13.00-13.20	0.24458
4	13.570	13.47-13.67	0.10546
5	14.212	14.11-14.31	0.08290

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.569	13.47-13.67	0.18747
2	13.628	13.53-13.73	0.17713
3	13.953	13.85-14.05	0.14275
4	14.573	14.47-14.67	0.40246

AGA8 08115

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: URS

ARI Job No.: AGA8

Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242

Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.83	8.73	8.93	253.8	250.0	1.5
Aroclor-1242-2	9.13	9.03	9.23	253.1	250.0	1.2
Aroclor-1242-3	10.30	10.20	10.40	252.2	250.0	0.9
Aroclor-1242-4	10.61	10.51	10.71	254.3	250.0	1.7

AROCLOR AVG: 253.3 CAL %D = 1.3

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: URS

ARI Job No.: AGA8

Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242

Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.03	7.93	8.13	250.3	250.0	0.1
Aroclor-1242-2	8.81	8.71	8.91	247.6	250.0	-0.9
Aroclor-1242-3	10.38	10.28	10.48	242.6	250.0	-3.0
Aroclor-1242-4	10.73	10.63	10.83	243.5	250.0	-2.6

AROCLOR AVG: 246.0 CAL %D = -1.6

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.0	250.0	-2.4
Aroclor-1016-2	8.83	8.73	8.93	242.4	250.0	-3.0
Aroclor-1016-3	9.13	9.03	9.23	252.3	250.0	0.9
Aroclor-1016-4	9.91	9.81	10.01	249.4	250.0	-0.2

AROCLOR AVG: 247.0 CAL %D = -1.2

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	247.9	250.0	-0.8
Aroclor-1260-2	13.14	13.04	13.24	254.6	250.0	1.8
Aroclor-1260-3	13.51	13.41	13.61	252.7	250.0	1.1
Aroclor-1260-4	13.61	13.51	13.71	253.0	250.0	1.2
Aroclor-1260-5	14.01	13.91	14.11	252.8	250.0	1.1

AROCLOR AVG: 252.2 CAL %D = 0.9

AGA8 : 2813

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	238.5	250.0	-4.6
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	241.8	250.0	-3.3
Aroclor-1016-4	10.01	9.91	10.11	235.2	250.0	-5.9

AROCLOR AVG: 237.9 CAL %D = -4.8

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	224.0	250.0	-10.4
Aroclor-1260-2	13.10	13.00	13.20	224.2	250.0	-10.3
Aroclor-1260-3	13.57	13.47	13.67	216.8	250.0	-13.3
Aroclor-1260-4	13.62	13.53	13.73	221.0	250.0	-11.6

AROCLOR AVG: 221.5 CAL %D = -11.4

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: URS

ARI Job No.: AGA8

Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5

Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254

Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.37	10.26	10.46	254.5	250.0	1.8
Aroclor-1254-2	10.69	10.58	10.78	255.1	250.0	2.0
Aroclor-1254-3	11.07	10.96	11.16	255.9	250.0	2.4
Aroclor-1254-4	11.21	11.10	11.30	255.6	250.0	2.2
Aroclor-1254-5	11.92	11.82	12.02	258.5	250.0	3.4

AROCLOR AVG: 255.9 CAL %D = 2.4

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254 Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.62	10.51	10.71	251.4	250.0	0.6
Aroclor-1254-2	10.71	10.60	10.80	253.5	250.0	1.4
Aroclor-1254-3	11.15	11.04	11.24	252.0	250.0	0.8
Aroclor-1254-4	11.30	11.19	11.39	250.6	250.0	0.2
Aroclor-1254-5	12.08	11.97	12.17	252.6	250.0	1.0

AROCLOR AVG: 252.0 CAL %D = 0.8

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.6	250.0	-2.2
Aroclor-1016-2	8.83	8.73	8.93	242.3	250.0	-3.1
Aroclor-1016-3	9.13	9.03	9.23	251.1	250.0	0.4
Aroclor-1016-4	9.91	9.81	10.01	249.2	250.0	-0.3

AROCLOR AVG: 246.8 CAL %D = -1.3

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	239.3	250.0	-4.3
Aroclor-1260-2	13.14	13.04	13.24	245.7	250.0	-1.7
Aroclor-1260-3	13.51	13.41	13.61	244.8	250.0	-2.1
Aroclor-1260-4	13.61	13.51	13.71	246.1	250.0	-1.6
Aroclor-1260-5	14.01	13.91	14.11	249.4	250.0	-0.2

AROCLOR AVG: 245.1 CAL %D = -2.0

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	239.1	250.0	-4.4
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	240.3	250.0	-3.9
Aroclor-1016-4	10.01	9.91	10.11	235.8	250.0	-5.7

AROCLOR AVG: 237.8 CAL %D = -4.9

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	215.9	250.0	-13.6
Aroclor-1260-2	13.10	13.00	13.20	222.4	250.0	-11.0
Aroclor-1260-3	13.57	13.47	13.67	220.0	250.0	-12.0
Aroclor-1260-4	13.62	13.53	13.73	223.9	250.0	-10.4

AROCLOR AVG: 220.6 CAL %D = -11.8

FORM VII PCB

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

			IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT		5449431	3.349	5633814	15.142
	UPPER LIMIT		10898862	3.449	11267628	15.242
	LOWER LIMIT		2724716	3.249	2816907	15.042

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	5364462	3.346	5547552	15.142
02		0.25PPMAR166	05/27/15	1811	5449431	3.349	5633814	15.142
03		0.02PPMAR166	05/27/15	1833	5444099	3.348	5676446	15.142
04		0.05PPMAR166	05/27/15	1854	5268631	3.345	5493956	15.142
05		1PPMAR1660	05/27/15	1915	4843983	3.347	5005102	15.142
06		0.1PPMAR1660	05/27/15	1937	5165460	3.348	5387445	15.143
07		0.5PPMAR1660	05/27/15	1958	5176005	3.347	5390218	15.143
08		AR1242	05/27/15	2020	5337516	3.344	5573924	15.142
09		AR1248	05/27/15	2041	5300438	3.347	5560964	15.142
10		AR1254	05/27/15	2102	5232643	3.344	5441303	15.142
11		AR2162	05/27/15	2124	5278972	3.343	5544225	15.141
12		AR3268	05/27/15	2145	5332927	3.345	5498000	15.142
13	ZZZZZ	ZZZZZ	05/27/15	2207	5348403	3.348	5628466	15.143
14	ZZZZZ	ZZZZZ	05/27/15	2228	5313543	3.347	5448595	15.142
15	ZZZZZ	ZZZZZ	05/27/15	2249	5283025	3.346	5563146	15.142
16	ZZZZZ	ZZZZZ	05/27/15	2311	5217434	3.346	5473683	15.141
17	ZZZZZ	ZZZZZ	05/27/15	2332	5327597	3.347	5510995	15.141
18	ZZZZZ	ZZZZZ	05/27/15	2354	5291377	3.346	5478047	15.141
19		AR1242	05/28/15	0932	5420555	3.349	5318139	15.142
20		AR1660	05/28/15	0953	5393241	3.351	5446526	15.143
21	AGA8MBW1	AGA8MBW1	05/28/15	1119	5703109	3.350	5845942	15.143
22	AGA8LCSW1	AGA8LCSW1	05/28/15	1140	5691416	3.353	5903690	15.143
23	AGA8LCSDW1	AGA8LCSDW1	05/28/15	1202	5653869	3.350	5856732	15.143
24	RB-051315	AGA8J	05/28/15	1223	5582012	3.355	5950071	15.143
25	RB-051415	AGC9L	05/28/15	1245	5793312	3.355	6186299	15.142
26		AR1254	05/28/15	1306	5362657	3.350	5699387	15.142
27		AR1660	05/28/15	1328	5407167	3.350	5748876	15.143

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGA8 . 00125

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	13059494	3.699	8980422	15.445
	UPPER LIMIT	26118988	3.799	17960844	15.545
	LOWER LIMIT	6529747	3.599	4490211	15.345

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	12796516	3.695	8835826	15.445
02		0.25PPMAR166	05/27/15	1811	13059494	3.699	8980422	15.445
03		0.02PPMAR166	05/27/15	1833	13077546	3.697	9069474	15.444
04		0.05PPMAR166	05/27/15	1854	12739883	3.695	8861124	15.444
05		1PPMAR1660	05/27/15	1915	11620227	3.696	8524199	15.445
06		0.1PPMAR1660	05/27/15	1937	12572695	3.698	8906734	15.445
07		0.5PPMAR1660	05/27/15	1958	12702598	3.696	8989742	15.445
08		AR1242	05/27/15	2020	12964295	3.694	9247281	15.445
09		AR1248	05/27/15	2041	12820555	3.698	9271038	15.445
10		AR1254	05/27/15	2102	12686823	3.693	9119341	15.444
11		AR2162	05/27/15	2124	12591250	3.694	9419455	15.445
12		AR3268	05/27/15	2145	12844090	3.694	9415095	15.445
13	ZZZZZ	ZZZZZ	05/27/15	2207	12940835	3.697	9714071	15.445
14	ZZZZZ	ZZZZZ	05/27/15	2228	12729044	3.697	9658995	15.445
15	ZZZZZ	ZZZZZ	05/27/15	2249	12806439	3.695	9699512	15.444
16	ZZZZZ	ZZZZZ	05/27/15	2311	12694649	3.696	9548705	15.445
17	ZZZZZ	ZZZZZ	05/27/15	2332	12767315	3.697	9637779	15.444
18	ZZZZZ	ZZZZZ	05/27/15	2354	12775400	3.696	9670669	15.445
19		AR1242	05/28/15	0932	13103463	3.699	9200397	15.446
20		AR1660	05/28/15	0953	13124437	3.700	9338057	15.446
21	AGA8MBW1	AGA8MBW1	05/28/15	1119	13961066	3.700	10072454	15.446
22	AGA8LCSW1	AGA8LCSW1	05/28/15	1140	13914766	3.702	10200852	15.445
23	AGA8LCSDW1	AGA8LCSDW1	05/28/15	1202	14041479	3.699	10142562	15.446
24	RB-051315	AGA8J	05/28/15	1223	13779002	3.704	10173905	15.446
25	RB-051415	AGC9L	05/28/15	1245	14056128	3.703	10537392	15.445
26		AR1254	05/28/15	1306	13048646	3.698	9966703	15.445
27		AR1660	05/28/15	1328	13180150	3.700	10153131	15.445

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGA8 : 60125

TPHD Analysis
Report and Summary QC Forms

ARI Job ID: AGA8

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Matrix: Soil

Date Received: 05/13/15

Data Release Authorized:
Reported: 05/28/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	RL	MDL
AGA8B	SDP-10(15.5-16.5)	05/26/15	1.0	**Diesel**	**20**	6.5	1.8
15-9290		FID4A		**Motor Oil**	**40**	13	3.2
				HC ID	DRO/RRO		
				o-Terphenyl	68.0%		
AGA8E	SDP-08(12.0-13.5)	05/26/15	1.0	Diesel	< 6.2 U	6.2	1.7
15-9293		FID4A		Motor Oil	< 12 U	12	3.1
				HC ID	---		
				o-Terphenyl	87.2%		
MB-052015	Method Blank	05/26/15	1.0	Diesel	< 5.0 U	5.0	1.4
15-9294		FID4A		Motor Oil	< 10 U	10	2.5
				HC ID	---		
				o-Terphenyl	92.0%		
AGA8F	SDP-07(1.5-3.0)	05/26/15	5.0	**Diesel**	**150**	29	7.8
15-9294		FID4A		**Motor Oil**	**290**	58	14
				HC ID	DIESEL/MOTOR OIL		
				o-Terphenyl	74.9%		
AGA8H	SDP-06(12.5-13.5)	05/26/15	1.0	**Diesel**	**16**	6.8	1.8
15-9296		FID4A		**Motor Oil**	**60**	14	3.4
				HC ID	DRO/MOTOR OIL		
				o-Terphenyl	69.2%		
AGA8I	SDP-06(10.0-11.0)	05/27/15	1.0	Diesel	< 6.9 U	6.9	1.9
15-9297		FID4A		**Motor Oil**	**24**	14	3.4
				HC ID	RRO		
				o-Terphenyl	88.2%		

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	OTER	TOT OUT
SDP-10(15.5-16.5)	68.0%	0
SDP-08(12.0-13.5)	87.2%	0
052015MB	92.0%	0
052015LCS	92.1%	0
SDP-07(1.5-3.0)	74.9%	0
SDP-07(1.5-3.0) MS	86.0%	0
SDP-07(1.5-3.0) MSD	71.1%	0
SDP-06(12.5-13.5)	69.2%	0
SDP-06(10.0-11.0)	88.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-9290 to 15-9297

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: SDP-07(1.5-3.0)
MS/MSD

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Date Extracted MS/MSD: 05/20/15

Date Analyzed MS: 05/26/15 22:23
MSD: 05/26/15 22:47
Instrument/Analyst MS: FID4A/ML
MSD: FID4A/ML

Sample Amount MS: 8.67 g-dry-wt
MSD: 8.68 g-dry-wt
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 5.00
MSD: 5.00
Percent Moisture: 13.5%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	150	313	173	94.2%	276	173	72.8%	12.6%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	86.0%	71.1%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-052015
LAB CONTROL

Lab Sample ID: LCS-052015
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/26/15 20:50
Instrument/Analyst: FID4A/ML

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	135	150	90.0%

TPHD Surrogate Recovery

o-Terphenyl	92.1%

Results reported in mg/kg

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: AGA8
Matrix: Soil Project: POS Sliver
Date Received: 05/13/15 1496007.00

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-9290-AGA8B	SDP-10(15.5-16.5)	7.64 g	1.00 mL	D	05/20/15
15-9293-AGA8E	SDP-08(12.0-13.5)	8.04 g	1.00 mL	D	05/20/15
15-9294-052015MB1	Method Blank	10.0 g	1.00 mL	-	05/20/15
15-9294-052015LCS1	Lab Control	10.0 g	1.00 mL	-	05/20/15
15-9294-AGA8F	SDP-07(1.5-3.0)	8.67 g	1.00 mL	D	05/20/15
15-9294-AGA8FMS	SDP-07(1.5-3.0)	8.67 g	1.00 mL	D	05/20/15
15-9294-AGA8FMSD	SDP-07(1.5-3.0)	8.68 g	1.00 mL	D	05/20/15
15-9296-AGA8H	SDP-06(12.5-13.5)	7.39 g	1.00 mL	D	05/20/15
15-9297-AGA8I	SDP-06(10.0-11.0)	7.26 g	1.00 mL	D	05/20/15

Basis: D=Dry Weight W=As Received

TPH METHOD BLANK SUMMARY

BLANK NO.

AGA8MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: KENNEDY JENKS

SDG No.: AGA8/AGC9

Project No.: POS SILVER

Date Extracted: 05/20/15

Matrix: SOLID

Date Analyzed : 05/26/15

Instrument ID : FID4A

Time Analyzed : 2026

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSS1	AGA8LCSS1	05/26/15
02	SDP-10(15.5-	AGA8B	05/26/15
03	SDP-08(12.0-	AGA8E	05/26/15
04	SDP-07(1.5-3	AGA8F	05/26/15
05	SDP-07(1.5-3	AGA8FMS	05/26/15
06	SDP-07(1.5-3	AGA8FMSD	05/26/15
07	SDP-06(12.5-	AGA8H	05/26/15
08	SDP-06(10.0-	AGA8I	05/27/15
09	SDP-02(16.0-	AGC9C	05/27/15
10	SDP-02(18.5-	AGC9D	05/27/15
11	SDP-02(22.0-	AGC9E	05/27/15
12	SDP-04(1.5-3	AGC9H	05/27/15
13	SDP-04(1.5-3	AGC9HMS	05/27/15
14	SDP-04(1.5-3	AGC9HMSD	05/27/15
15	SDP-04(10.5-	AGC9I	05/27/15
16			
17			
18			
19			
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21			
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23			
24			
25			
26			
27			
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29			
30			

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID4A.I Project: POS Silver

Calibration Date: 16-MAR-2015 SDG No.: AGA8/AGC9

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	16883	16837	16662	16474	16073	16315	16541	1.9
AK Diesel	20602	20180	19759	19321	19009	19111	19664	3.2
OR Diesel	20711	20284	19885	19446	19141	19237	19784	3.2
Cal Diesel	20550	20136	19710	19279	18948	19058	19614	3.2
o-Terph	24171	23714	23513	23246	22946	20666	23043	5.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.522-7.247)
AK Diesel C10-C25 (2.648-7.546)
OR Diesel C10-C28 (2.648-8.396)
Cal Diesel C10-C24 (2.648-7.247)

Calibration Files	Analysis Time
0316a004.d	16-MAR-2015 11:25
0316a005.d	16-MAR-2015 11:49
0316a006.d	16-MAR-2015 12:13
0316a007.d	16-MAR-2015 12:37
0316a008.d	16-MAR-2015 13:01
0316a009.d	16-MAR-2015 13:25

AGA8:0214

6a
NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID4A.I Project: POS Silver

Calibration Date: 16-MAR-2015 SDG No.: AGA8/AGC9

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	16578	15811	15675	15221	14468	13582	15222	7.0
Triac Surr	20574	20462	20163	20117	19665	19261	20040	2.5

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0316a011.d	16-MAR-2015 14:12
0316a012.d	16-MAR-2015 14:36
0316a013.d	16-MAR-2015 15:00
0316a014.d	16-MAR-2015 15:24
0316a015.d	16-MAR-2015 15:48
0316a016.d	16-MAR-2015 16:12

AGA8 00135

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 11:49

Lab ID: DIESEL#1

Instrument: FID4A.I

Lab File Name: 15052603.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4006487	242.2	250	-3.1	
AK102 (C10-C25)	4720175	240.0	250	-4.0	
NASDies(C10-C24)	4710705	240.2	250	-3.9	
Terphenyl	1020814	44.3	45	-1.6	
Creos (C12-C22)	3882671	1013.2	250	305.3	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 12:12

Lab ID: MOIL#1

Instrument: FID4A.I

Lab File Name: 15052604.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7084867	465.4	500	-6.9	
AK103 (C25-C36)	5995754	651.6	500	30.3	<-
OR MOIL(C28-C40)	5790804	766.7	500	53.3	
CRUDE(Tol-C40)	8613033	1140.4	500	128.1	
n-Triacontane	810530	40.4	45	-10.1	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 16:53

Lab ID: DIESEL#2

Instrument: FID4A.I

Lab File Name: 15052615.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4168075	252.0	250	0.8	
AK102 (C10-C25)	4896793	249.0	250	-0.4	
NASDies(C10-C24)	4886584	249.1	250	-0.3	
Terphenyl	1025118	44.5	45	-1.1	
Creos (C12-C22)	4035002	1052.9	250	321.2	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Kennedy Jenks

ICal Date: 16-MAR-2015
Project: POS Silver

CCal Date: 26-MAY-2015
SDG No.: AGA8/AGC9

Analysis Time: 17:17
Lab ID: MOIL#2

Instrument: FID4A.I
Lab File Name: 15052616.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	6594975	433.3	500	-13.3
AK103 (C25-C36)	5460684	593.4	500	18.7
OR MOIL(C28-C40)	5408987	716.2	500	43.2
CRUDE(Tol-C40)	8262000	1093.9	500	118.8
n-Triacontane	800381	39.9	45	-11.2

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 23:33

Lab ID: DIESEL#3

Instrument: FID4A.I

Lab File Name: 15052632.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4008260	242.3	250	-3.1	
AK102 (C10-C25)	4687715	238.4	250	-4.6	
NASDies(C10-C24)	4676975	238.5	250	-4.6	
Terphenyl	1016971	44.1	45	-1.9	
Creos (C12-C22)	3908704	1019.9	250	308.0	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 23:56

Lab ID: MOIL#3

Instrument: FID4A.I

Lab File Name: 15052633.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7450659	489.5	500	-2.1	
AK103 (C25-C36)	6322318	687.1	500	37.4	<-
OR MOIL(C28-C40)	6322313	837.1	500	67.4	
CRUDE(Tol-C40)	9232745	1222.4	500	144.5	
n-Triacontane	867580	43.3	45	-3.8	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Kennedy Jenks

ICal Date: 16-MAR-2015
Project: POS Silver

CCal Date: 27-MAY-2015
SDG No.: AGA8/AGC9

Analysis Time: 03:27
Lab ID: DIESEL#4

Instrument: FID4A.I
Lab File Name: 15052642.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4034577	243.9	250	-2.4	
AK102 (C10-C25)	4707321	239.4	250	-4.2	
NASDies(C10-C24)	4690929	239.2	250	-4.3	
Terphenyl	1002308	43.5	45	-3.3	
Creos (C12-C22)	3920847	1023.1	250	309.2	<-

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Kennedy Jenks

ICal Date: 16-MAR-2015
Project: POS Silver

CCal Date: 27-MAY-2015
SDG No.: AGA8/AGC9

Analysis Time: 03:51
Lab ID: MOIL#4

Instrument: FID4A.I
Lab File Name: 15052643.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7937306	521.4	500	4.3	
AK103 (C25-C36)	6528208	709.4	500	41.9	<-
OR MOIL(C28-C40)	7044146	932.7	500	86.5	
CRUDE(Tol-C40)	9956781	1318.3	500	163.7	
n-Triacontane	861670	43.0	45	-4.5	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project: POS SILVER

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.43 TRIAC: 8.90

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT0526	05/26/15	1102	5.43	8.90
02		IB0526	05/26/15	1125	5.43	8.89
03	POS SILVER	DIESEL#1	05/26/15	1149	5.43	8.88
04	POS SILVER	MOIL#1	05/26/15	1212	5.44	8.89
05	POS SILVER	DIESEL#2	05/26/15	1653	5.43	8.88
06	POS SILVER	MOIL#2	05/26/15	1717	5.44	8.89
07	AGA8MBS1	AGA8MBS1	05/26/15	2026	5.43	8.88
08	AGA8LCSS1	AGA8LCSS1	05/26/15	2050	5.44	8.88
09	SDP-10(15.5-	AGA8B	05/26/15	2113	5.44	8.88
10	SDP-08(12.0-	AGA8E	05/26/15	2137	5.43	8.88
11	SDP-07(1.5-3	AGA8F	05/26/15	2200	5.42	8.86
12	SDP-07(1.5-3	AGA8FMS	05/26/15	2223	5.43	8.87
13	SDP-07(1.5-3	AGA8FMSD	05/26/15	2247	5.43	8.87
14	SDP-06(12.5-	AGA8H	05/26/15	2310	5.43	8.88
15	POS SILVER	DIESEL#3	05/26/15	2333	5.43	8.89
16	POS SILVER	MOIL#3	05/26/15	2356	5.44	8.89
17	SDP-06(10.0-	AGA8I	05/27/15	0020	5.43	8.88
18	SDP-02(16.0-	AGC9C	05/27/15	0043		
19	SDP-02(18.5-	AGC9D	05/27/15	0107	5.44	8.89
20	SDP-02(22.0-	AGC9E	05/27/15	0130	5.44	8.88
21	SDP-04(1.5-3	AGC9H	05/27/15	0154	5.43	8.90
22	SDP-04(1.5-3	AGC9HMS	05/27/15	0217	5.44	8.89
23	SDP-04(1.5-3	AGC9HMSD	05/27/15	0240	5.44	8.89
24	SDP-04(10.5-	AGC9I	05/27/15	0304	5.44	8.91
25	POS SILVER	DIESEL#4	05/27/15	0327	5.44	8.86
26	POS SILVER	MOIL#4	05/27/15	0351	5.43	8.89

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: Kennedy Jenks

SDG No.: AGA8/AGC9 Project: POS Silver

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.52 TRIAC: 9.00

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	03/16/15	1014	5.53	9.01
02		SDC0026-IBL1	03/16/15	1037	5.52	9.00
03		SDC0026-IBL2	03/16/15	1101	5.52	8.99
04		SDC0026-CAL1	03/16/15	1125	5.52	8.99
05		SDC0026-CAL2	03/16/15	1149	5.52	8.99
06		SDC0026-CAL3	03/16/15	1213	5.53	8.99
07		SDC0026-CAL4	03/16/15	1237	5.54	8.99
08		SDC0026-CAL5	03/16/15	1301	5.55	8.98
09		SDC0026-CAL6	03/16/15	1325	5.57	8.98
10		SDC0026-SCV1	03/16/15	1349	5.53	8.99
11		SDC0026-CAL7	03/16/15	1412	5.52	8.98
12		SDC0026-CAL8	03/16/15	1436	5.52	8.99
13		SDC0026-CAL9	03/16/15	1500	5.52	9.00
14		SDC0026-CALA	03/16/15	1524	5.52	9.02
15		SDC0026-CALB	03/16/15	1548	5.52	9.06*
16		SDC0026-CALC	03/16/15	1612	5.52	9.10*
17		SDC0026-SCV2	03/16/15	1636	5.52	9.00

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

AGA8 : 20145

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Matrix: Water

Date Received: 05/13/15

Data Release Authorized: MW
Reported: 05/22/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
MB-052015	Method Blank	05/21/15	1.0	Diesel Range	< 0.10 U	0.10	0.02
15-9298		FID9		Motor Oil Range	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	87.1%		
AGA8J	RB-051315	05/21/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-9298		FID9		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	85.2%		

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

AGA8 801WS

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID

Sample ID: LCS-052015
LCS/LCSD

Lab Sample ID: LCS-052015
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 05/22/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/21/15 19:40
LCSD: 05/21/15 20:01
Instrument/Analyst LCS: FID9/ML
LCSD: FID9/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.76	3.00	92.0%	2.71	3.00	90.3%	1.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	85.0%	83.9%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	OTER	TOT OUT
MB-052015	87.1%	0
LCS-052015	85.0%	0
LCSD-052015	83.9%	0
RB-051315	85.2%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-9298 to 15-9298

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 05/13/15

ARI Job: AGA8
Project: POS Sliver
1496007.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-9298-052015MB1	Method Blank	500 mL	1.00 mL	05/20/15
15-9298-052015LCS1	Lab Control	500 mL	1.00 mL	05/20/15
15-9298-052015LCSD1	Lab Control Dup	500 mL	1.00 mL	05/20/15
15-9298-AGA8J	RB-051315	500 mL	1.00 mL	05/20/15

TPH METHOD BLANK SUMMARY

BLANK NO.

AGA8MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: KENNEDY JENKS

SDG No.: AGA8/AGC9

Project No.: POS SILVER

Date Extracted: 05/20/15

Matrix: LIQUID

Date Analyzed : 05/21/15

Instrument ID : FID9

Time Analyzed : 1919

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	05/21/15
02	AGA8LCSDW1	AGA8LCSDW1	05/21/15
03	RB-051315	AGA8J	05/21/15
04	RB-051415	AGC9L	05/21/15
05			
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6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID9.I Project: POS Silver

Calibration Date: 20-MAY-2015 SDG No.: AGA8/AGC9

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	18660	17772	16466	16978	17515	17079	17412	4.4
AK Diesel	20995	20425	18918	19828	20369	19865	20067	3.5
OR Diesel	21403	20596	19068	19965	20505	19985	20254	3.9
Cal Diesel	20881	20329	18840	19760	20309	19809	19988	3.5
o-Terph	19203	22044	22123	22324	22968	23064	21954	6.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.970-7.460)
AK Diesel C10-C25 (2.984-7.712)
OR Diesel C10-C28 (2.984-8.406)
Cal Diesel C10-C24 (2.984-7.460)

Calibration Files	Analysis Time
15052009.d	20-MAY-2015 17:25
15052010.d	20-MAY-2015 17:46
15052011.d	20-MAY-2015 18:08
15052012.d	20-MAY-2015 18:29
15052013.d	20-MAY-2015 18:50
15052014.d	20-MAY-2015 19:12

AGA8 : 80151

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID9.I Project: POS Silver

Calibration Date: 20-MAY-2015 SDG No.: AGA8/AGC9

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	15206	14015	14211	14189	14255	13758	14273	3.5
Triac Surr	13043	14500	15844	17434	18319	18364	16251	13.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
15052016.d	20-MAY-2015 19:54
15052017.d	20-MAY-2015 20:15
15052018.d	20-MAY-2015 20:36
15052019.d	20-MAY-2015 20:58
15052020.d	20-MAY-2015 21:19
15052021.d	20-MAY-2015 21:40

AGA8 . 00152

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Kennedy Jenks

ICal Date: 20-MAY-2015
Project: POS Silver

CCal Date: 21-MAY-2015
SDG No.: AGA8/AGC9

Analysis Time: 14:42
Lab ID: DIESEL#1

Instrument: FID9.I
Lab File Name: 15052103.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	4190600	240.7	250	-3.7
AK102 (C10-C25)	4840525	241.2	250	-3.5
ITDies(C10-C24)	4820061	241.1	250	-3.5
Terphenyl	956256	43.6	45	-3.2

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 15:04 Lab ID: MOIL#1

Instrument: FID9.I Lab File Name: 15052104.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	7186887	503.6	500	0.7
AK103 (C25-C36)	6081700	389.9	500	-22.0
n-Triacontane	764127	47.0	45	4.5

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38

AK M.Oil C25-C36

AGA8 : 0515

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 20-MAY-2015

Project: POS Silver

CCal Date: 21-MAY-2015

SDG No.: AGA8/ACG9

Analysis Time: 21:04

Lab ID: DIESEL#2

Instrument: FID9.I

Lab File Name: 15052121.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	4275054	245.5	250	-1.8
AK102 (C10-C25)	4919195	245.1	250	-1.9
ITDies(C10-C24)	4899587	245.1	250	-1.9
Terphenyl	954270	43.5	45	-3.4

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 21:26 Lab ID: MOIL#2

Instrument: FID9.I Lab File Name: 15052122.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6764973	474.1	500	-5.2	
AK103 (C25-C36)	5727137	367.1	500	-26.6	<-
n-Triacontane	717035	44.1	45	-1.9	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38

AK M.Oil C25-C36

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project: POS SILVER

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.96 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT	05/21/15	1359	5.96	8.82
02	IB	IB	05/21/15	1421	5.96	8.82
03	POS SILVER	DIESEL#1	05/21/15	1442	5.96	8.80
04	POS SILVER	MOIL#1	05/21/15	1504	5.97	8.82
05	AGA8MBW1	AGA8MBW1	05/21/15	1919	5.96	8.81
06	AGA8LCSW1	AGA8LCSW1	05/21/15	1940	5.97	8.82
07	AGA8LCSDW1	AGA8LCSDW1	05/21/15	2001	5.97	8.81
08	RB-051315	AGA8J	05/21/15	2022	5.96	8.81
09	RB-051415	AGC9L	05/21/15	2043	5.96	8.81
10	POS SILVER	DIESEL#2	05/21/15	2104	5.96	8.82
11	POS SILVER	MOIL#2	05/21/15	2126	5.96	8.82

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: Kennedy Jenks

SDG No.: AGA8/AGC9 Project: POS Silver

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.97 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		SDE0049-IBL1	05/20/15	1642	5.97	8.82
02		SDE0049-IBL2	05/20/15	1703	5.96	8.81
03		SDE0049-CAL1	05/20/15	1725	5.95	8.81
04		SDE0049-CAL2	05/20/15	1746	5.96	8.82
05		SDE0049-CAL3	05/20/15	1808	5.97	8.82
06		SDE0049-CAL4	05/20/15	1829	5.97	8.81
07		SDE0049-CAL5	05/20/15	1850	5.99	8.82
08		SDE0049-CAL6	05/20/15	1912	6.02	8.82
09		SDE0049-SCV1	05/20/15	1933	5.96	8.81
10		SDE0049-CAL7	05/20/15	1954	5.95	8.81
11		SDE0049-CAL8	05/20/15	2015	5.96	8.81
12		SDE0049-CAL9	05/20/15	2036	5.96	8.82
13		SDE0049-CALA	05/20/15	2058	5.96	8.83
14		SDE0049-CALB	05/20/15	2119	5.96	8.85
15		SDE0049-CALC	05/20/15	2140	5.96	8.89*
16		SDE0049-SCV2	05/20/15	2201	5.96	8.82

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

AGA8 - 00158

Metals Analysis
Report and Summary QC Forms

ARI Job ID: AGA8

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
SDP-10(13.5-15.0)	AGA8A	15-9289	
SDP-10(15.5-16.5)	AGA8B	15-9290	
SDP-10(16.5-17.5)	AGA8C	15-9291	
SDP-09(2.5-4.0)	AGA8D	15-9292	
SDP-08(12.0-13.5)	AGA8E	15-9293	
SDP-07(1.5-3.0)	AGA8F	15-9294	
SDP-07(1.5-3.0)D	AGA8FDUP	15-9294	
SDP-07(1.5-3.0)S	AGA8FSPK	15-9294	
SDP-07(8.5-9.5)	AGA8G	15-9295	
SDP-06(12.5-13.5)	AGA8H	15-9296	
SDP-06(10.0-11.0)	AGA8I	15-9297	
PBS	AGA8MB1	15-9297	
LCSS	AGA8MB1SPK	15-9297	
RB-051315	AGA8J	15-9298	
RB-051315D	AGA8JDUP	15-9298	
RB-051315S	AGA8JSPK	15-9298	
PBW	AGA8MB2	15-9298	
LCSW	AGA8MB2SPK	15-9298	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 6/1/15 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-10(13.5-15.0)
SAMPLE

Lab Sample ID: AGA8A
LIMS ID: 15-9289
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 73.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.11	0.3	**7.9**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.7	**117**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.1	**0.6**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.12	2	**449**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.047	0.7	**36.3**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**122**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0014	0.0273	**0.0191**	J
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.13	0.7	**0.7**	
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.010	0.3	**0.3**	
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.44	5	**249**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-10(15.5-16.5)
SAMPLE

Lab Sample ID: AGA8B
LIMS ID: 15-9290
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 76.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.11	0.2	**7.9**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.6	**38.6**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.12	**0.07**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.12	2	**379**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.044	0.6	**43.1**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**8.4**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0014	0.03	**0.04**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.12	0.62	**0.16**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.010	0.247	**0.123**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.42	5	**43**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-10(16.5-17.5)
SAMPLE

Lab Sample ID: AGA8C
LIMS ID: 15-9291
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 81.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**10.8**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.6	**23.1**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.12	**0.02**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.045	0.6	**11.1**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.043	0.6	**10.2**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**2.2**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0013	0.0250	**0.0100**	**J**
3050B	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.12	0.6	0.6	U
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.237	**0.036**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.40	5	**27**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGA 00165

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-09(2.5-4.0)
SAMPLE

Lab Sample ID: AGA8D
LIMS ID: 15-9292
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 82.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**24.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.6	**262**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**2.0**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.11	1	**563**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.040	0.6	**158**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.05	0.1	**248**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0015	0.03	**0.15**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.56	**0.47**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.2	**0.3**	
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	1.0	10	**680**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-08(12.0-13.5)
SAMPLE

Lab Sample ID: AGA8E
LIMS ID: 15-9293
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 81.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**23.9**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.6	**31.2**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**0.1**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.045	0.6	**9.2**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.043	0.6	**12.5**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**1.5**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0012	0.02	**0.24**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.12	0.59	**0.13**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.236	**0.024**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.40	5	**18**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-07(1.5-3.0)
SAMPLE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 86.3%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.09	0.2	**7.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.2	1	**546**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**6.0**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.41	5	**782**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	1.0	10	**270**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.5	1	**549**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0011	0.02	**0.35**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.5	**0.6**	
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.2	**0.6**	
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	9.2	110	**2,650**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-07(8.5-9.5)
SAMPLE

Lab Sample ID: AGA8G
LIMS ID: 15-9295
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 71.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.12	0.3	**9.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.08	0.7	**73.1**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.14	**0.04**	J
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.053	0.7	**19.0**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.050	0.7	**22.2**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.07	0.1	**3.6**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0016	0.03	**0.04**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.14	0.70	**0.29**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.011	0.278	**0.056**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.47	6	**48**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-06(12.5-13.5)
SAMPLE

Lab Sample ID: AGA8H
LIMS ID: 15-9296
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 72.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.12	0.3	**3.6**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.08	0.7	**83.4**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.14	**0.04**	J
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.052	0.7	**18.9**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.049	0.7	**25.3**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**4.0**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0013	0.02	**0.04**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.13	0.68	**0.31**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.011	0.272	**0.068**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.46	5	**38**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-06(10.0-11.0)
SAMPLE

Lab Sample ID: AGA8I
LIMS ID: 15-9297
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Percent Total Solids: 71.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.11	0.3	**3.1**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.7	**78.2**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.13	**0.07**	J
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.050	0.7	**20.5**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.047	0.7	**22.8**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**6.4**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0016	0.03	**0.05**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.13	0.66	**0.24**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.011	0.264	**0.053**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.45	5	**49**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-07(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6020A	7.5	36.7	27.1	108%	
Barium	6020A	546	427	27.1	-439%	H
Cadmium	6020A	6.0	30.9	27.1	91.9%	
Chromium	6020A	782	915	27.1	491%	H
Copper	6020A	270	25,800	27.1	94200%	H
Lead	6020A	549	1,250	27.1	2590%	H
Mercury	7471A	0.35	0.64	0.212	137%	N
Selenium	6020A	0.6	63.8	86.8	72.8%	N
Silver	6020A	0.6	28.4	27.1	103%	
Zinc	6020A	2,650	3,800	86.8	1320%	H

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-07(1.5-3.0)
DUPLICATE

Lab Sample ID: AGA8F
LIMS ID: 15-9294
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6020A	7.5	7.1	5.5%	+/- 20%	
Barium	6020A	546	500	8.8%	+/- 20%	
Cadmium	6020A	6.0	5.9	1.7%	+/- 20%	
Chromium	6020A	782	585	28.8%	+/- 20%	*
Copper	6020A	270	220	20.4%	+/- 20%	*
Lead	6020A	549	545	0.7%	+/- 20%	
Mercury	7471A	0.35	0.29	18.8%	+/- 20%	
Selenium	6020A	0.6	0.6	0.0%	+/- 0.5	L
Silver	6020A	0.6	0.5	18.2%	+/- 0.2	L
Zinc	6020A	2,650	2,650	0.0%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: LAB CONTROL

Lab Sample ID: AGA8LCS
LIMS ID: 15-9297
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6020A	29.5	25.0	118%	
Barium	6020A	24.6	25.0	98.4%	
Cadmium	6020A	24.9	25.0	99.6%	
Chromium	6020A	25.5	25.0	102%	
Copper	6020A	26.3	25.0	105%	
Lead	6020A	25.4	25.0	102%	
Mercury	7471A	0.53	0.50	106%	
Selenium	6020A	80.6	80.0	101%	
Silver	6020A	25.4	25.0	102%	
Zinc	6020A	85	80	106%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AGA8MB
LIMS ID: 15-9297
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	7440-38-2	Arsenic	0.09	0.2	0.2	U
3050B	05/18/15	6020A	05/28/15	7440-39-3	Barium	0.06	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7440-43-9	Cadmium	0.01	0.1	0.1	U
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.038	0.500	**0.080**	**J**
3050B	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.036	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7439-92-1	Lead	0.05	0.1	0.1	U
CLP	05/18/15	7471A	05/22/15	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.10	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.008	0.2	0.2	U
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.34	4.00	**1.99**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: RB-051315
SAMPLE

Lab Sample ID: AGA8J
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.05	0.20	**0.08**	**J**
200.8	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.020	0.500	**0.030**	**J**
200.8	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.10	**0.02**	**J**
200.8	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.045	0.500	**0.090**	**J**
200.8	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.16	0.5	0.5	U
200.8	05/18/15	6020A	05/28/15	7439-92-1	Lead	0.05	0.1	0.1	U
7470A	05/18/15	7470A	05/20/15	7439-97-6	Mercury	0.007	0.1	0.1	U
200.8	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.13	0.50	**0.28**	**J**
200.8	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.008	0.2	0.2	U
200.8	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.5	4.0	**3.7**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGA8 0017U

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB-051315
MATRIX SPIKE

Lab Sample ID: AGA8J
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6020A	0.0002 U	0.0279	0.0250	112%	
Barium	6020A	0.0005 U	0.0245	0.0250	98.0%	
Cadmium	6020A	0.0001 U	0.0235	0.0250	94.0%	
Chromium	6020A	0.0005 U	0.0248	0.0250	99.2%	
Copper	6020A	0.0005 U	0.0257	0.0250	103%	
Lead	6020A	0.0001 U	0.0246	0.0250	98.4%	
Mercury	7470A	0.0001 U	0.0010	0.0010	100%	
Selenium	6020A	0.0005 U	0.0714	0.0800	89.2%	
Silver	6020A	0.0002 U	0.0249	0.0250	99.6%	
Zinc	6020A	0.004 U	0.077	0.080	96.2%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: RB-051315
DUPLICATE

Lab Sample ID: AGA8J
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/13/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6020A	0.0002 U	0.0002 U	0.0%	+/- 0.0002	L
Barium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Cadmium	6020A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Chromium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Copper	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Lead	6020A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Selenium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Silver	6020A	0.0002 U	0.0002 U	0.0%	+/- 0.0002	L
Zinc	6020A	0.004 U	0.004 U	0.0%	+/- 0.004	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

AGA8 : 9015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: AGA8LCS
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6020A	0.0272	0.0250	109%	
Barium	6020A	0.0241	0.0250	96.4%	
Cadmium	6020A	0.0235	0.0250	94.0%	
Chromium	6020A	0.0252	0.0250	101%	
Copper	6020A	0.0247	0.0250	98.8%	
Lead	6020A	0.0239	0.0250	95.6%	
Mercury	7470A	0.0019	0.0020	95.0%	
Selenium	6020A	0.0702	0.0800	87.8%	
Silver	6020A	0.0249	0.0250	99.6%	
Zinc	6020A	0.074	0.080	92.5%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AGA8MB
LIMS ID: 15-9298
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGA8-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	µg/L	Q
200.8	05/18/15	6020A	05/28/15	7440-38-2	Arsenic	0.05	0.2	0.2	U
200.8	05/18/15	6020A	05/28/15	7440-39-3	Barium	0.020	0.5	0.5	U
200.8	05/18/15	6020A	05/28/15	7440-43-9	Cadmium	0.01	0.1	0.1	U
200.8	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.045	0.500	**0.170**	**J**
200.8	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.16	0.5	0.5	U
200.8	05/18/15	6020A	05/28/15	7439-92-1	Lead	0.05	0.1	0.1	U
7470A	05/18/15	7470A	05/20/15	7439-97-6	Mercury	0.007	0.1	0.1	U
200.8	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.13	0.5	0.5	U
200.8	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.008	0.2	0.2	U
200.8	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.5	4.0	**0.8**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGA8 - 00178

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS052811	50.0	53.71	**107.4**	50.0	49.85	**99.7**	51.18	**102.4**	49.70	**99.4**	50.48	**101.0**	49.84	**99.7**
Barium	BA	PMS	MS052811	50.0	49.93	**99.9**	50.0	50.13	**100.3**	49.17	**98.3**	49.69	**99.4**	48.75	**97.5**	49.19	**98.4**
Cadmium	CD	PMS	MS052811	50.0	49.34	**98.7**	50.0	50.54	**101.1**	49.75	**99.5**	49.63	**99.3**	50.58	**101.2**	50.60	**101.2**
Chromium	CR	PMS	MS052811	50.0	50.63	**101.3**	50.0	50.76	**101.5**	52.18	**104.4**	50.21	**100.4**	50.60	**101.2**	49.92	**99.8**
Copper	CU	PMS	MS052811	50.0	50.96	**101.9**	50.0	49.63	**99.3**	51.05	**102.1**	49.29	**98.6**	50.22	**100.4**	49.43	**98.9**
Lead	PB	PMS	MS052811	50.0	49.92	**99.8**	50.0	49.46	**98.9**	49.50	**99.0**	49.57	**99.1**	51.94	**103.9**	51.72	**103.4**
Mercury	HG	CVA	HG052002	8.0	7.74	**96.8**	4.0	3.93	**98.3**	3.82	**95.5**						
Selenium	SE	PMS	MS052811	80.0	77.37	**96.7**	50.0	50.21	**100.4**	52.02	**104.0**	50.58	**101.2**	51.33	**102.7**	51.42	**102.8**
Silver	AG	PMS	MS052811	50.0	48.83	**97.7**	50.0	49.57	**99.1**	50.04	**100.1**	49.02	**98.0**	50.97	**101.9**	51.14	**102.3**
Zinc	ZN	PMS	MS052811	50.0	50.88	**101.8**	50.0	49.40	**98.8**	52.06	**104.1**	49.89	**99.8**	51.19	**102.4**	50.82	**101.6**

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	PMS	MS052811	50.0	50.89	101.8	50.32	100.6	50.76	101.5	50.30	100.6	50.21	100.4	50.25	100.5
Barium	BA	PMS	MS052811	50.0	48.55	97.1	50.43	100.9	50.48	101.0	50.77	101.5	49.82	99.6	51.26	102.5
Cadmium	CD	PMS	MS052811	50.0	49.67	99.3	50.64	101.3	50.19	100.4	50.25	100.5	49.51	99.0	50.20	100.4
Chromium	CR	PMS	MS052811	50.0	50.93	101.9	50.17	100.3	51.45	102.9	50.61	101.2	50.96	101.9	52.81	105.6
Copper	CU	PMS	MS052811	50.0	50.67	101.3	50.22	100.4	50.19	100.4	50.03	100.1	49.41	98.8	49.55	99.1
Lead	PB	PMS	MS052811	50.0	51.07	102.1	50.93	101.9	49.76	99.5	48.98	98.0	49.23	98.5	49.09	98.2
Mercury	HG	CVA	HG052002	4.0												
Selenium	SE	PMS	MS052811	50.0	53.04	106.1	51.39	102.8	51.76	103.5	51.21	102.4	50.16	100.3	49.98	100.0
Silver	AG	PMS	MS052811	50.0	49.71	99.4	49.86	99.7	49.00	98.0	49.34	98.7	48.86	97.7	48.64	97.3
Zinc	ZN	PMS	MS052811	50.0	52.89	105.8	51.66	103.3	51.06	102.1	50.10	100.2	49.75	99.5	51.04	102.1

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Mercury	HG	CVA	HG052202	8.0	8.44	105.5	4.0	4.03	100.8	4.02	100.5	4.04	101.0	4.01	100.3	4.05	101.3

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Mercury	HG	CVA	HG052202	4.0	4.05	101.3	4.05	101.3	4.06	101.5						

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	PMS	MS052811	0.2	0.24	**120.0**										
Barium	BA	PMS	MS052811	0.5	0.49	**98.0**										
Cadmium	CD	PMS	MS052811	0.1	0.10	**100.0**										
Chromium	CR	PMS	MS052811	0.5	0.49	**98.0**										
Copper	CU	PMS	MS052811	0.5	0.53	**106.0**										
Lead	PB	PMS	MS052811	0.1	0.11	**110.0**										
Mercury	HG	CVA	HG052002	0.1	0.07	**70.0**										
Selenium	SE	PMS	MS052811	0.5	0.52	**104.0**										
Silver	AG	PMS	MS052811	0.2	0.21	**105.0**										
Zinc	ZN	PMS	MS052811	4.0	3.94	**98.5**										

Control Limits: no control limits have been established by the EPA at this time.

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	M	RUN	CRA/I	TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Mercury	HG	CVA	HG052202		0.1	0.09	**90.0**										

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Barium	BA	PMS	MS052811	200.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	CD	PMS	MS052811	5.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chromium	CR	PMS	MS052811	10.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Copper	CU	PMS	MS052811	25.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Lead	PB	PMS	MS052811	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Mercury	HG	CVA	HG052002	0.2	0.1	0.1	U	0.1	U	0.1	U						
Selenium	SE	PMS	MS052811	5.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Silver	AG	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Zinc	ZN	PMS	MS052811	20.0	4.0	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

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Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Barium	BA	PMS	MS052811	200.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	CD	PMS	MS052811	5.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chromium	CR	PMS	MS052811	10.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Copper	CU	PMS	MS052811	25.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Lead	PB	PMS	MS052811	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Mercury	HG	CVA	HG052002	0.2	0.1												
Selenium	SE	PMS	MS052811	5.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Silver	AG	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Zinc	ZN	PMS	MS052811	20.0	4.0	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Mercury	HG	CVA	HG052202	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U

3 3 1 5 5 9 5 4 1 7

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGA8

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Mercury	HG	CVA	HG052202	0.2	0.1	0.1	U	0.1	U	0.1	U						

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

ICS SOURCE: I.V.

PROJECT: POS Sliver

RUNID: MS052811

SDG: AGA8

INSTRUMENT ID: NEXION 300D

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Arsenic		20	0.1	17.7	**88.5**						
Cadmium		20	0.0	19.1	**95.5**						
Chromium		20	0.5	19.8	**99.0**						
Copper		20	1.1	20.7	**103.5**						
Manganese		20	0.1	19.6	**98.0**						
Nickel		20	0.3	20.0	**100.0**						
Silver		20	0.0	19.9	**99.5**						
Zinc		20	0.2	19.2	**96.0**						

Post Digest Spike Sample Recovery

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

ANALYSIS METHOD: PMS

SDG: AGA8

UNITS: ug/L

ANALYTE	CLIENT ID	ARI ID	RUNID	SPIKED SAMPLE RESULT	C	SAMPLE RESULT	C	SPIKE ADDED	MATRIX	%R
Selenium	SDP-07(1.5-3.0)A	AGA8FPOST	MS052811	1501.66		11.80	B	1600	Soil	**93.1**

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	PMS	NEXION 300D MS	0.00		10	0.2	4/1/2012		
Barium	BA	PMS	NEXION 300D MS	0.00		200	0.5	4/1/2012		
Cadmium	CD	PMS	NEXION 300D MS	0.00		5	0.1	4/1/2012		
Chromium	CR	PMS	NEXION 300D MS	0.00		10	0.5	4/1/2012		
Copper	CU	PMS	NEXION 300D MS	0.00		25	0.5	4/1/2012		
Lead	PB	PMS	NEXION 300D MS	0.00		3	0.1	4/1/2012		
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2012		
Selenium	SE	PMS	NEXION 300D MS	0.00		5	0.5	4/1/2012		
Silver	AG	PMS	NEXION 300D MS	0.00		10	0.2	4/1/2012		
Zinc	ZN	PMS	NEXION 300D MS	0.00		20	4.0	4/1/2012		

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8

ANALYSIS METHOD: CVA

ARI PREP CODE: SMM

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-10(13.5-15.0)	AGA8A	0.248	0.0	50.0
SDP-10(15.5-16.5)	AGA8B	0.247	0.0	50.0
SDP-10(16.5-17.5)	AGA8C	0.247	0.0	50.0
SDP-09(2.5-4.0)	AGA8D	0.212	0.0	50.0
SDP-08(12.0-13.5)	AGA8E	0.266	0.0	50.0
SDP-07(1.5-3.0)	AGA8F	0.276	0.0	50.0
SDP-07(1.5-3.0)D	AGA8FDUP	0.274	0.0	50.0
SDP-07(1.5-3.0)S	AGA8FSPK	0.273	0.0	50.0
SDP-07(8.5-9.5)	AGA8G	0.230	0.0	50.0
SDP-06(12.5-13.5)	AGA8H	0.284	0.0	50.0
SDP-06(10.0-11.0)	AGA8I	0.226	0.0	50.0
PBS	AGA8MB1	0.200	0.0	50.0
LCSW	AGA8MB1SPK	0.200	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8

ANALYSIS METHOD: CVA

ARI PREP CODE: TWM

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RB-051315	AGA8J	0.000	20.0	20.0
RB-051315D	AGA8JDUP	0.000	20.0	20.0
RB-051315S	AGA8JSPK	0.000	20.0	20.0
PBW	AGA8MB2	0.000	20.0	20.0
LCSW	AGA8MB2SPK	0.000	20.0	20.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-10(13.5-15.0)	AGA8A	1.034	0.0	50.0
SDP-10(15.5-16.5)	AGA8B	1.058	0.0	50.0
SDP-10(16.5-17.5)	AGA8C	1.040	0.0	50.0
SDP-09(2.5-4.0)	AGA8D	1.079	0.0	50.0
SDP-08(12.0-13.5)	AGA8E	1.044	0.0	50.0
SDP-07(1.5-3.0)	AGA8F	1.066	0.0	50.0
SDP-07(1.5-3.0)D	AGA8FDUP	1.069	0.0	50.0
SDP-07(1.5-3.0)S	AGA8FSPK	1.068	0.0	50.0
SDP-07(8.5-9.5)	AGA8G	1.006	0.0	50.0
SDP-06(12.5-13.5)	AGA8H	1.011	0.0	50.0
SDP-06(10.0-11.0)	AGA8I	1.068	0.0	50.0
PBS	AGA8MB1	1.000	0.0	50.0
LCSS	AGA8MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGA8

ANALYSIS METHOD: PMS

ARI PREP CODE: REN

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RB-051315	AGA8J	0.000	50.0	25.0
RB-051315D	AGA8JDUP	0.000	50.0	25.0
RB-051315S	AGA8JSPK	0.000	50.0	25.0
PBW	AGA8MB2	0.000	50.0	25.0
LCSW	AGA8MB2SPK	0.000	50.0	25.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGA8 | RUNID: MS052811 | METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	08310		X		X		X			X		X	X									X		X							X
S1	S1	1.00	08350		X		X		X			X		X	X									X		X							X
S2	S2	1.00	08380		X		X		X			X		X	X									X		X							X
S3	S3	1.00	08420		X		X		X			X		X	X									X		X							X
S4	S4	1.00	08470		X		X		X			X		X	X									X		X							X
S5	S5	1.00	08510																														
ZZZZZZ	Rinse sampl	1.00	08560																														
ICV	MICV	1.00	09030		X		X		X			X		X	X									X		X							X
ICB	ICB	1.00	09090		X		X		X			X		X	X									X		X							X
CCV	MCCV1	1.00	09130		X		X		X			X		X	X									X		X							X
CCB	CCB1	1.00	09190		X		X		X			X		X	X									X		X							X
ZZZZZZ	ZZZZZZ	1.00	09230																														
ZZZZZZ	ZZZZZZ	1.00	09260																														
ZZZZZZ	ZZZZZZ	1.00	09320																														
ZZZZZZ	LR200	1.00	09390																														
ZZZZZZ	LR300	1.00	09450																														
ZZZZZZ	B1	1.00	09520																														
ZZZZZZ	B2	1.00	09570																														
ZZZZZZ	B3	1.00	10060																														
ZZZZZZ	B4	1.00	10120																														
ZZZZZZ	B5	1.00	10190																														
CCV	MCCV2	1.00	10240		X		X		X			X		X	X									X		X							X
CCB	CCB2	1.00	10310		X		X		X			X		X	X									X		X							X
S0	S0	1.00	10430		X		X		X			X		X	X									X		X							X
CCV	MCCV3	1.00	10470		X		X		X			X		X	X									X		X							X
CCB	CCB3	1.00	10530		X		X		X			X		X	X									X		X							X
CRI	MCRI	1.00	10570		X		X		X			X		X	X									X		X							X
ICSA	ICSAI	1.00	11010		X		X		X			X		X	X									X		X							X
ZZZZZZ	ZZZZZZ	1.00	11070																														
ICSAB	ICSABI	1.00	11150		X		X		X			X		X	X									X		X							X
ZZZZZZ	B6	1.00	11210																														
CCV	MCCV4	1.00	11270		X		X		X			X		X	X									X		X							X
CCB	CCB4	1.00	11330		X		X		X			X		X	X									X		X							X
S0	S0	1.00	11420		X		X		X			X		X	X									X		X							X
CCV	MCCV5	1.00	11460		X		X		X			X		X	X									X		X							X

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGA8 | RUNID: MS052811 | METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB5	1.00	11520		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGO7MB	2.00	11570																														
ZZZZZZ	AGP2MB	2.00	12000																														
ZZZZZZ	AGP2A	2.00	12040																														
ZZZZZZ	AGP0A	2.00	12080																														
ZZZZZZ	AGO8A	2.00	12110																														
ZZZZZZ	AGO7A	5.00	12150																														
ZZZZZZ	AGO7A	2.00	12190																														
ZZZZZZ	AGO7MBSPK	2.00	12220																														
ZZZZZZ	AGP2MBSPK	2.00	12260																														
ZZZZZZ	AGE0MBSPK	2.00	12300																														
CCV	MCCV6	1.00	12350		X		X		X			X		X	X									X		X							X
CCB	CCB6	1.00	12410		X		X		X			X		X	X									X		X							X
PBS	AGA8MB1	20.00	12510		X		X		X			X		X	X									X		X							X
SDP-10(13.5-15.0)	AGA8A	20.00	12540		X		X		X			X			X									X		X							X
SDP-10(15.5-16.5)	AGA8B	20.00	12580		X		X		X			X			X									X		X							X
SDP-10(16.5-17.5)	AGA8C	20.00	13020		X		X		X			X		X	X									X		X							X
SDP-07(1.5-3.0)D	AGA8FDUP	20.00	13050		X		X					X														X							
SDP-07(1.5-3.0)	AGA8F	20.00	13090		X		X					X														X							
SDP-07(1.5-3.0)S	AGA8FSPK	20.00	13130		X		X					X														X							
SDP-07(1.5-3.0)A	AGA8FPOST	20.00	13160																							X							
LCSS	AGA8MB1SPK	20.00	13200		X				X			X		X	X									X		X							X
ZZZZZZ	AGE0MBSPK	2.00	13240																														
CCV	MCCV7	1.00	13280		X		X		X			X		X	X									X		X							X
CCB	CCB7	1.00	13350		X		X		X			X		X	X									X		X							X
S0	S0	1.00	13450		X		X		X			X		X	X									X		X							X
CCV	MCCV8	1.00	13480		X		X		X			X		X	X									X		X							X
CCB	CCB8	1.00	13550		X		X		X			X		X	X									X		X							X
PBW	AGA8MB2	2.00	14030		X		X		X			X		X	X									X		X							X
RB-051315D	AGA8JDUP	2.00	14060		X		X		X			X		X	X									X		X							X
RB-051315	AGA8J	2.00	14100																														
RB-051315S	AGA8JSPK	2.00	14140		X		X		X			X		X	X									X		X							X
SDP-09(2.5-4.0)	AGA8D	20.00	14170		X		X		X			X			X									X		X							
SDP-08(12.0-13.5)	AGA8E	20.00	14210		X		X		X			X		X	X									X		X							X
SDP-07(8.5-9.5)	AGA8G	20.00	14250		X		X		X			X		X	X									X		X							X

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGA8 | RUNID: MS052811 | METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
SDP-06(12.5-13.5)	AGA8H	20.00	14290		X		X		X			X		X	X									X		X							X
SDP-06(10.0-11.0)	AGA8I	20.00	14320		X		X		X			X		X	X									X		X							X
LCSW	AGA8MB2SPK	2.00	14360		X		X		X			X		X	X									X		X							X
CCV	MCCV9	1.00	14410		X		X		X			X		X	X									X		X							X
CCB	CCB9	1.00	14470		X		X		X			X		X	X									X		X							X
SDP-10(13.5-15.0)	AGA8A	50.00	14550											X																			
SDP-10(15.5-16.5)	AGA8B	50.00	14590											X																			
SDP-07(1.5-3.0)D	AGA8FDUP	50.00	15030						X																								
SDP-07(1.5-3.0)	AGA8F	50.00	15060						X																								
SDP-07(1.5-3.0)S	AGA8FSPK	50.00	15100						X																								
SDP-07(1.5-3.0)D	AGA8FDUP	200.00	15140											X										X									
SDP-07(1.5-3.0)	AGA8F	200.00	15170											X										X									
SDP-07(1.5-3.0)S	AGA8FSPK	200.00	15210											X										X									
SDP-07(1.5-3.0)S	AGA8FSPK	20.00	15250																														
LCSS	AGA8MB1SPK	20.00	15280				X																										
CCV	MCCV10	1.00	15330		X		X		X			X		X	X									X		X							X
CCB	CCB10	1.00	15400		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGC9MB1	20.00	15540																														
RB-051315	AGA8J	2.00	15590		X		X		X			X		X	X									X		X							X
SDP-09(2.5-4.0)	AGA8D	50.00	16030											X																			X
SDP-07(1.5-3.0)D	AGA8FDUP	500.00	16180												X																		X
SDP-07(1.5-3.0)	AGA8F	500.00	16220												X																		X
SDP-07(1.5-3.0)S	AGA8FSPK	500.00	16250																														X
SDP-07(1.5-3.0)S	AGA8FSPK	2000.00	16290												X																		
ZZZZZZ	AGC9A	20.00	16330																														
ZZZZZZ	AGC9B	20.00	16360																														
ZZZZZZ	AGC9MB1SPK	20.00	16400																														
CCV	MCCV11	1.00	16450		X		X		X			X		X	X									X		X							X
CCB	CCB11	1.00	16510		X		X		X			X		X	X									X		X							X

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/20/2015

SDG: AGA8 | RUNID: HG052002 | METHOD: CVA | END DATE: 5/20/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09502														X																
S0.1	S0.1	1.00	09530														X																
S0.5	S0.5	1.00	09544														X																
S1	S1	1.00	09562														X																
S2	S2	1.00	09575														X																
S5	S5	1.00	09593														X																
S10	S10	1.00	10011														X																
ICV	AICV	1.00	10041														X																
ICB	ICB	1.00	10070														X																
CCV	ACCV1	1.00	10084														X																
CCB	CCB1	1.00	10102														X																
CRA	CRA	1.00	10120														X																
PBW	AGA8MB2	1.00	10133														X																
LCSW	AGA8MB2SPK	1.00	10151														X																
RB-051315	AGA8J	1.00	10164														X																
RB-051315D	AGA8JDUP	1.00	10182														X																
RB-051315S	AGA8JSPK	1.00	10200														X																
ZZZZZZ	AGC9MB2	1.00	10213																														
ZZZZZZ	AGC9MB2SPK	1.00	10231																														
ZZZZZZ	AGC9L	1.00	10245																														
ZZZZZZ	AGC9LDUP	1.00	10263																														
CCV	ACCV2	1.00	10281														X																
CCB	CCB2	1.00	10295														X																

05/20/15 09:59

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGA8 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	10082														X															
S0.1	S0.1	1.00	10100														X															
S0.5	S0.5	1.00	10114														X															
S1	S1	1.00	10131														X															
S2	S2	1.00	10145														X															
S5	S5	1.00	10163														X															
S10	S10	1.00	10181														X															
ICV	AICV	1.00	10202																													
CCV	ACCV1	1.00	10220														X															
ICV	AICV	1.00	10303														X															
ICB	ICB	1.00	10333														X															
CCV	ACCV1	1.00	10351														X															
CCB	CCB1	1.00	10365														X															
CRA	CRA	1.00	10383														X															
ZZZZZZ	AGC9MB1	1.00	10400																													
ZZZZZZ	AGC9MB1SPK	1.00	10414																													
ZZZZZZ	AGC9A	1.00	10431																													
ZZZZZZ	AGC9B	1.00	10445																													
ZZZZZZ	AGC9C	1.00	10463																													
ZZZZZZ	AGC9D	1.00	10480																													
ZZZZZZ	AGC9E	1.00	10494																													
ZZZZZZ	AGC9F	1.00	10512																													
ZZZZZZ	AGC9G	1.00	10530																													
CCV	ACCV2	1.00	10544														X															
CCB	CCB2	1.00	10562														X															
ZZZZZZ	AGC9H	1.00	10575																													
ZZZZZZ	AGC9HDUP	1.00	10593																													
ZZZZZZ	AGC9HSPK	1.00	11010																													
ZZZZZZ	AGC9I	1.00	11024																													
ZZZZZZ	AGC9J	1.00	11042																													
ZZZZZZ	AGC9K	1.00	11055																													
CCV	ACCV3	1.00	11073														X															
CCB	CCB3	1.00	11091														X															
PBW	AGA8MB1	1.00	11112														X															
LCSW	AGA8MB1SPK	1.00	11125														X															

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGA8 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
SDP-10(13.5-15.0)	AGA8A	1.00	11143														X															
SDP-10(15.5-16.5)	AGA8B	1.00	11160														X															
SDP-10(16.5-17.5)	AGA8C	1.00	11174														X															
SDP-09(2.5-4.0)	AGA8D	1.00	11191														X															
SDP-08(12.0-13.5)	AGA8E	1.00	11205														X															
SDP-07(1.5-3.0)	AGA8F	1.00	11222														X															
SDP-07(1.5-3.0)D	AGA8FDUP	1.00	11240														X															
SDP-07(1.5-3.0)S	AGA8FSPK	1.00	11254														X															
CCV	ACCV4	1.00	11272														X															
CCB	CCB4	1.00	11290														X															
SDP-07(8.5-9.5)	AGA8G	1.00	11304														X															
SDP-06(12.5-13.5)	AGA8H	1.00	11322														X															
SDP-06(10.0-11.0)	AGA8I	1.00	11335														X															
ZZZZZZ	AGB8MB1	1.00	11353																													
ZZZZZZ	AGB8MB1SPK	1.00	11370																													
ZZZZZZ	AGB8A	1.00	11384																													
ZZZZZZ	AGB8B	1.00	11401																													
ZZZZZZ	AGG2MB1	1.00	11415																													
ZZZZZZ	AGG2MB1SPK	1.00	11433																													
ZZZZZZ	AGG2A	1.00	11450																													
CCV	ACCV5	1.00	11464														X															
CCB	CCB5	1.00	11482														X															
ZZZZZZ	AGG2ADUP	1.00	11500																													
ZZZZZZ	AGG2ASPK	1.00	11514																													
ZZZZZZ	AGG2B	1.00	11532																													
ZZZZZZ	AGG2C	1.00	11550																													
ZZZZZZ	AGG2D	1.00	11563																													
CCV	ACCV6	1.00	11581														X															
CCB	CCB6	1.00	11595														X															
ZZZZZZ	AGF8MB	1.00	12013																													
ZZZZZZ	AGF8MBSPK	1.00	12031																													
ZZZZZZ	AGF8A	1.00	12044																													
ZZZZZZ	AGF8ADUP	1.00	12062																													
ZZZZZZ	AGF8ASPK	1.00	12080																													
ZZZZZZ	AGF8B	1.00	12093																													

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGA8 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AGF9A	1.00	12111																													
ZZZZZZ	AGF9B	1.00	12125																													
CCV	ACCV7	1.00	12143														X															
CCB	CCB7	1.00	12161														X															
ZZZZZZ	AGC9H	1.00	12175																													
ZZZZZZ	AGC9HDUP	1.00	12193																													
ZZZZZZ	AGC9HSPK	1.00	12211																													
SDP-07(1.5-3.0)	AGA8F	1.00	12224																													
SDP-07(1.5-3.0)D	AGA8FDUP	1.00	12242																													
SDP-07(1.5-3.0)S	AGA8FSPK	1.00	12260																													
CCV	ACCV8	1.00	12273														X															
CCB	CCB8	1.00	12291														X															

Total Solids

ARI Job ID: AGA8

Extractions Total Solids-extts
Data By: Yen Luu
Created: 5/14/15

Worklist: 3002
Analyst: YL
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:___ ___ Analyst:_____

Samples Out: Date:___ ____ Time:_____ Temp:_____ Analyst:_____

	ART ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AGA8A 15-9289 SDP-10(13.5-15.0)	1.18	12.36	8.89	69.0	No	7.25	14.49	18.12
2.	AGA8B 15-9290 SDP-10(15.5-16.5)	1.17	12.50	9.83	76.4	No	6.54	13.09	16.36
3.	AGA8C 15-9291 SDP-10(16.5-17.5)	1.17	12.97	10.22	76.7	No	6.52	13.04	16.30
4.	AGA8D 15-9292 SDP-09(2.5-4.0)	1.16	12.19	10.42	84.0	No	5.95	11.90	14.88
5.	AGA8E 15-9293 SDP-08(12.0-13.5)	1.16	12.99	10.67	80.4	No	6.22	12.44	15.55
6.	AGA8F 15-9294 SDP-07(1.5-3.0)	1.19	12.61	11.07	86.5	No	5.78	11.56	14.45
7.	AGA8G 15-9295 SDP-07(8.5-9.5)	1.16	12.37	9.28	72.4	No	6.91	13.81	17.27
8.	AGA8H 15-9296 SDP-06(12.5-13.5)	1.18	12.56	9.55	73.6	No	6.79	13.59	16.98
9.	AGA8I 15-9297 SDP-06(10.0-11.0)	1.19	12.16	9.10	72.1	No	6.93	13.87	17.34

AGA8 00203

Extractions Total Solids-extts
Data By: Yen Luu
Created: 5/14/15

Worklist: 3002
Analyst: YL
Comments:

Oven ID: Φ15

Balance ID: B13929840Φ2

Samples In: Date: Φ5/14/15 Time: 16:3Φ Temp: 10Φ Analyst: ML

Samples Out: Date: 5/15/15 Time: Φ754 Temp: 101 Analyst: SP

	AR1 ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AGA8A 15-9289 SDP-10(13.5-15.0)	1.18	12.36	8.89		No			
2.	AGA8B 15-9290 SDP-10(15.5-16.5)	1.17	12.5Φ	9.83		No			
3.	AGA8C 15-9291 SDP-10(16.5-17.5)	1.17	12.97	10.22		No			
4.	AGA8D 15-9292 SDP-09(2.5-4.0)	1.16	12.19	10.42		No			
5.	AGA8E 15-9293 SDP-08(12.0-13.5)	1.16	12.99	10.67		No			
6.	AGA8F 15-9294 SDP-07(1.5-3.0)	1.19	12.61	11.07		No			
7.	AGA8G 15-9295 SDP-07(8.5-9.5)	1.16	12.37	9.28		No			
8.	AGA8H 15-9296 SDP-06(12.5-13.5)	1.18	12.56	9.55		No			
9.	AGA8I 15-9297 SDP-06(10.0-11.0)	1.19	12.16	9.14		No			

AGA8.3002W

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section: Metals

Oven Identification: 07 Balance ID: 068755

Samples in Oven: Date: 5/18/15 Time: 0935 Temp: 104°C Analyst: MB

Removed from Oven: Date: 5/19/15 Time: 0745 Temp: 104°C Analyst: MB

ARI Sample ID		Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
AGA8	A	1.003	10.122	7.732	—	✓
"	B	1.015	10.108	7.984	—	✓
"	C	1.002	10.145	8.406	—	✓
"	D	1.013	10.051	8.482	—	✓
"	E	0.987	10.218	8.472	—	✓
"	F	0.989	10.541	9.232	—	✓
"	G	0.997	10.132	7.529	—	✓
"	H	1.011	10.145	7.656	—	✓
"	I	1.003	10.204	7.540	—	✓
AGB8	A	0.977	10.273	7.086	—	✓
"	B	0.982	10.039	7.169	—	✓

MB 5/18/15

1) Place a check mark in this column if samples have dried > 12 but < 24 hours When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S Use a 2nd bench sheet for additional weightings.

SIM PAH Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGA8

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8270D) SIM PNA-~~Soil~~/ Sediment Microwave (3546) (SOP # 3304S)

Element Batch BDE0947

Preparation Test SIM PNA # 5

In-House (5ppb)

ARI Job No(s) AEA8 Page 1 of 1 Batch set up by: SP

Bottle #	Extraction Requirements	Weight Extracted (eq. to 10g dry wt)	(~~REQ~~/ ~~Opt~~) GPC (1:1) 1 2 3	(REQ/ Sulfur Clean (1:1) (Transfer Rinse)	(REQ/Opt) Silica Gel Clean (1:1) (Y) N	Final Effective Volume	Volume to Lab	Comments	Verify Client ID MC 5/21/15 Analyst/Date Microwave 1 2 3 SP 5/21/15 Analyst/Date
	AEA8 MBS	10.00g	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL		Pre GPC KD 80°C (No Exchange) 1 2 3 4 5 6 N/A Analyst/Date
	SBS	10.00g	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL		
	~~SBS Dup~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
1	AEA8 A ~~MBS~~	~~10.00g~~ 13.02	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	15E0911-01A	
1	B	14.08	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-02A	Pre GPC TurboVap 1 2 3 4 N/A Analyst/Date
1	C	14.03	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-03A	
1	D	12.06	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-04A	
1	E	13.06	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-05A	Post GPC KD 80°C RH Hex X (2 X 20mL) 5/22/15 100°C 1 2 3 4 5 6 Analyst/Date
1	F	12.00	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-06A	
1	FMS	12.04	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-06A	
1	FMS2	12.04	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-06A	Pre Cleanups TurboVap 1 2 3 (4) SP 5/26/15 Analyst/Date
1	G	14.01	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-07A	
1	H	14.05	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-08A	Post Cleanups TurboVap 1 2 3 4 (5) SP 5/26/15 Analyst/Date
1	I	14.06	(1:1) Y (N)	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-09A	
Analyst/Date MC 05/21/15				SP 5/26/15	SP 5/26/15	SP 5/26/15	SP 5/26/15		Reviewed by/Date SP 5/26/15

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	B (D0913E4)	15/75µg/mL	100µL	12/12/15	CT	MC
Spike	15 (D091444)	15/75µg/mL	100µL	3/13/16	CT	MC
~~QLS Spike~~	~~4 ( )~~	~~1µg/mL~~	~~50µL~~			
Extraction Time: 13:25				Balance ID: B139229 & 0912		

SPECIAL INSTRUCTIONS: 1. Weigh into beakers-lightly dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add 1:1 DCM/ACE to the vessels (until solvent is 3" above soil layer after homogenization). 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-re-homogenize while hot-then let cool 15 min in cold water and Ice . Re-homogenize while cool. 7. Decant 1:1 DCM/ACE into Erlenmeyer flask with sodium sulfate in the bottom and funnel containing neutral glasswool. 8. Rinse with DCM 9. Microwave a 2nd time using 80:20 DCM/ACE 10. Let cool and decant solvent then empty the soil into the funnel and rinse with DCM. 11. ~~IF GPC is Req~~= ~~KD (Small or Large drying column) to 5mL at 80°C~~. 12. IF GPC is NOT Req= KD to 5mL at 80-85°C. Exchange to Hexane (2 X 20mL) to 5mL at 100°C 13. TurboVap. 14. Sulfur Clean=Transfer rinse. 15. Silica Clean-up=Any Color=REQ (All or none). 16. TurboVap. 17. Vial in DCM.

A. Need Total Solids Y / (N) B. Archive/Freeze Y (N)

AEA8 - 0927

Organic Extractions
Reagent and Solutions Identification

(8270D) SIM PNA (Soil) Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) AGA8

(8270D) SIM PNA Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station:	Microwave
Anhydrous Sodium Sulfate: (DD41874)	CT 5/21/15
Neutral Glasswool: (DD41494)	Analyst/Date
1:1 Methylene Chloride/Acetone: (DD42473)	
80:20 Methylene Chloride/Acetone: (DD42474)	
Methylene Chloride: (DD41946)	
Pre-GPC KD Station:	Pre-GPC KD
Neutral Glasswool: ( )	
Anhydrous Sodium Sulfate: ( )	Analyst/Date
Methylene Chloride: ( )	
GPC Filter Prep:	GPC Filter Prep
Methylene Chloride: ( )	
GPC Station:	Analyst/Date
Acetone: ( )	GPC
Methylene Chloride: ( )	
Post GPC KD Station:	Analyst/Date
Methylene Chloride: (DDD1906)	Post GPC KD
Hexane: (DDD1893)	RM 5/22/15
	Analyst/Date
Vialing Station:	Vialing SP 5/26/15
Methylene Chloride: (DD42226) TBAS DD41536	Analyst/Date
Hexane: (DD41893) Sodium Sulfite CC04322	
Copper: (N/A)	
Silica Gel (SPE) Darts: (DD41907)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/15EØ411 Client ID: Kennedy Jenks Consultants

Parameter: SIM PNA Client Project: Pos silver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= B C, E, G, 5/14/15	MP 05/14/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☒ Clay/Clumps (Difficult to homogenize)= H, I: 20.0% 10.0% 20.4%	MP 05/14/15
☒ Rocks (%+size)? A, B, D T:	MP 05/14/15
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations) Sample 'D' went to approx 1/4 mL before cleanup, Brought up with hexane for cleanup	SC 5/26/15

Reviewed by/Date: B 5/29/15

3F58F

Revision 10
09/12/13

Incorporated
Analytical Chemists and
Consultants

Element Batch BDE0941

Organic Extractions Benchsheet

(8270D) SIM PNA-Water
Liquid/Liquid (3520C) (SOP # 3311S)

Preparation Test SIM PNA # 3 (SPNAWLL)

In-House (0.1ppb)

ARI Job No(s) AGA8, AGC9 Page 1 of 1 Batch set up by: JH

Bottle #	Extraction Requirements	Volume Extracted	Disassemble Liq/Liq (Mantle #)	(Opt) Silica Gel Clean (1:1) Y/N	Final Effective Volume	Volume to Lab	Comments
	AGA8 MBW	500mL	14	(1:1) Y/N	0.5mL	0.5mL	
	SBW	500mL	15	(1:1) Y/N	0.5mL	0.5mL	
	SBW Dup	500mL	16	(1:1) Y/N	0.5mL	0.5mL	
	~~QLS~~	~~500mL~~		(1:1) Y/N	~~0.5mL~~	~~0.5mL~~	
3	AGA8 J	500mL	17	(1:1) Y/N	0.5mL	0.5mL	15EΦΦ11-12C
3	AGC9 L	500mL	25	(1:1) Y/N	0.5mL	0.5mL	15EΦΦ13-12C
		~~500mL~~		(1:1) Y/N	~~0.5mL~~	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		500mL		(1:1) Y/N	0.5mL	0.5mL	
		~~500mL~~		(1:1) Y/N	~~0.5mL~~	~~0.5mL~~	
Analyst/Date		AR 05/20/15 → 05/21/15			GM 5/22/15	GM 5/22/15	GM 5/22/15

Verify Client ID: AR 05/20/15

Analyst/Date

KD 80-85°C

Hexane Exchange (2 X 10mL) 100°C ①2③4 5 6

RH 5/21/15

Analyst/Date

TurboVap 1 2③④ Pre-Silica Gel Clean

GM 5/22/15

Analyst/Date

TurboVap 1 2 3 Post Silica Gel Clean

Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	B (DΦΦ53Φ4)	15/75µg/mL	100µL	12/12/15	AGL	JH
Spike	15 (DΦΦ1ΦΦΦ)	15/75µg/mL	100µL	3/13/16	AR	JH
~~QLS Spike~~	~~4 ( )~~	~~1µg/mL~~	~~50µL~~			

Extraction Time: 14:30 Liq/Liq Start: 14:45 Liq/Liq Stop: 03:50

SPECIAL INSTRUCTIONS: 1. Use 500mL Liq/Liq Body 2. Add 20-25mL Hexane. 3. Add ~200mL DCM to Liq/Liq.
4. Add surr/spik. 5. Extract minimum 8 hrs. 6. KD (no drying column) to 5mL at 80°.
7. Exchange (2 X with 10mL) to Hexane at 100°. 8. TurboVap. 9. Silica Clean-up Opt-Any Color=REQ (All or none).
10. TurboVap (if Silica Clean). 11. Vial in DCM.

A ~~Archive~~ Y/N

AGA8 : BD210

Organic Extractions
Reagent and Solutions Identification

(8270D) SIM PNA-Water
Liquid/Liquid (3520C) (SOP # 3311S)

ARI Job No(s) AGA8, AG<9

(8270D) SIM PNA Aqueous:	Analyst/Date
Liquid/Liquid Station: Methylene Chloride: (I# DØØ) 1906 Hexane: (I# DØØ1893 Anhydrous Sodium Sulfate: (I# + jar date 5/6/15)	Liq/Liq DS 5/21/15 AR Ø5/2Ø/15
KD Station: DØØ1874 Methylene Chloride: (I#) DØØ1906 Hexane: (I#) DØØ1893	KD RH 5/22/15
Vialing Station: Methylene Chloride: (I#) DØØ19Ø6 Hexane: (I# NA). Silica Gel (SPE) Darts. (I# NA)	Vialing GM 5/22/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/AGC9

Client ID: Kennedy Jenks Consultants

Parameter: SIM PNA

Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: 5/28/14

0056F

Revision 10
09/12/13

AGA8 . 00212

SIM PAH Raw Data
Initial Calibration

ARI Job ID: AGA8

AGA8 00013

Checklist for SEQUENCE SDD0030

4/14/2015

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-SVOA

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JZ	04/14/2015
2	DFTPP Tune met criteria	YES	JZ	04/14/2015
3	DDT breakdown <20%	YES	JZ	04/14/2015
4	Peak Tailing factor <= 2%	YES	JZ	04/14/2015
5	ICal meets 20% RSD, LR COD, and QR COD limits	YES	JZ	04/14/2015
6	NO ICAL Q Flag applied	YES	JZ	04/14/2015
7	Manual integrations include before/after pictures	NA	JZ	04/14/2015
8	Spectral Library matches updated	YES	JZ	04/14/2015
9	Internal Standard areas within 50-200% from reference	YES	JZ	04/14/2015
10	Minimum response factors met	YES	JZ	04/14/2015
11	All SCV within +/- 20% (DOD)	YES	JZ	04/14/2015
12	All SCV within +/- 30%	NA	JZ	04/14/2015
13	NO Linear or Quadratic fits used	YES	JZ	04/14/2015
14	NO Calibration points dropped	YES	JZ	04/14/2015
15	Additional notes	NA	JZ	04/14/2015
16	Reviewer approval (Reviewer)	YES	BB	04/14/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SDD0030

Instrument: NT8
Calibnration ID: YD00019

Printed: 4/14/2015 2:41:46PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SDD0030-TUN1	QC		1		D001500			
SDD0030-CAL1	QC		2		D001493	D000019		
SDD0030-CAL2	QC		3		D001494	D000019		
SDD0030-CAL3	QC		4		D001495	D000019		
SDD0030-CAL4	QC		5		D001496	D000019		
SDD0030-CAL5	QC		6		D001497	D000019		
SDD0030-CAL6	QC		7		D001498	D000019		
SDD0030-SCV1	QC		8		D000028	D000019		

Samples Loaded By — 4/13/15 Date

Data Processed By — 4/14/15 Date

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-APR-2015 12:22
End Cal Date : 13-APR-2015 14:58
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Cal Date : 14-Apr-2015 14:09 jianqing
Curve Type : Average

Calibration File Names:
Level 1: /chem3/nt8.i/20150413.b/15041303.d
Level 2: /chem3/nt8.i/20150413.b/15041308.d
Level 3: /chem3/nt8.i/20150413.b/15041305.d
Level 4: /chem3/nt8.i/20150413.b/15041302.d
Level 5: /chem3/nt8.i/20150413.b/15041306.d
Level 6: /chem3/nt8.i/20150413.b/15041307.d

04/14/15

	Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	___ RRF	% RSD
7	Naphthalene	0.98660	0.89342	1.04523	0.92458	0.99407	0.93677	0.96345	5.740
14	2-Methylnaphthalene	0.54967	0.54822	0.61332	0.56429	0.60201	0.56941	0.57449	4.735
15	1-methylnaphthalene	0.58949	0.50735	0.57813	0.54649	0.57911	0.54908	0.55829	5.446
19	Biphenyl	1.36462	1.09284	1 30261	1.17718	1.27602	1.19753	1.23514	7.935
20	2,6-Dimethylnaphthalene	0.90160	0.83727	0.97424	0.88694	0.96258	0.92551	0.91469	5.551
21	Acenaphthylene	1.42170	1.28820	1.53504	1.43485	1.59536	1 48856	1.46062	7.270
23	Acenaphthene	0.97588	0.87692	1.03395	0.92685	1.04101	0.97650	0.97186	6.461
11	Dibenzofuran	1.37609	1.24689	1.45513	1.29266	1.40896	1.28481	1.34410	6.060
24	1,6,7-Trimethylnaphthalene	0.87285	0.80712	0.94836	0.89808	0.97987	0.95585	0.91036	7.044
25	Fluorene	1.00732	0.96445	1.17894	1.06912	1.18259	1.11061	1.08551	8.221
27	Dibenzothiophene	0.98691	0.86590	0.96759	0.89495	0.93579	0.84495	0.91602	6.192
30	Phenanthrene	1.05972	0.88117	1.00683	0.92744	0.96025	0.88580	0.95354	7.367
31	Anthracene	0.84195	0.75899	0.91231	0.86817	0.91958	0.84975	0.85847	6.787
26	Carbazole	0.75958	0.71134	0.75916	0.74752	0.80297	0.75047	0.75518	3.893
33	1-Methylphenanthrene	0.68954	0.65996	0.80530	0.74144	0.78799	0.74384	0.73801	7.547
36	Fluoranthene	1.25325	1.00457	1.18009	1.08084	1.13868	1 03409	1.11525	8.394
39	Pyrene	1.25899	0.98940	1.11797	1.10068	1.13889	1.08352	1.11491	7.849
46	Benzo(a)anthracene	1.02962	0.87353	1.03526	1.00093	1.05305	1.02688	1.00322	6.551
48	Chrysene	1.22975	0.85002	1.01508	0.95934	1.00110	0.97999	1.00588	12.366
51	Benzo(b)fluoranthene	1.08589	0.95268	1.08577	1.01801	1.10425	1.05520	1.05030	5.391
52	Benzo(k)fluoranthene	1.08599	0.90696	1.10136	1.01167	1.14117	1.04941	1.04943	7.878

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-APR-2015 12:22
End Cal Date : 13-APR-2015 14:58
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Cal Date : 14-Apr-2015 14:09 jianqing
Curve Type : Average

Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	RRF	% RSD
251 Benzo(j)fluoranthene	1.11175	0.84378	1.04470	1.01018	1.09600	1.03766	1.02402	9.385
55 Benzo(e)pyrene	1.26158	0.90916	1.09392	0.99543	1.08911	1.02124	1.06174	11.227
54 Benzo(a)pyrene	1.05864	0.80190	0.94457	0.87161	0.99200	0.95012	0.93648	9.620
57 Perylene	0.97900	0.84872	1.02180	0.94909	1.04479	0.98954	0.97216	7.106
63 Indeno(1,2,3-cd)pyrene	1.06229	0.97099	1.18233	1.10705	1.23711	1.18904	1.12480	8.704
62 Dibenzo(a,h)anthracene	0.89226	0.74922	0.94628	0.90017	1.01096	0.99789	0.91613	10.386
61 Benzo(g,h,i)perylene	0.94568	0.87881	1.03290	0.97473	1.07900	1.02531	0.98941	7.227
$ 12 2-Methylnaphthalene-d10	0.67646	0.53383	0.63324	0.58854	0.63562	0.59674	0.61074	8.038
$ 253 Fluoranthene-d10	1.00360	0.90106	1.03729	0.96715	1.02801	0.96555	0.98378	5.116
$ 60 Dibenzo(a,h)anthracene-d14	0.74635	0.64901	0.78183	0.75566	0.81593	0.82135	0.76169	8.277

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Batch File: /chem3/nt8.i/20150413.b
Inst ID: nt8.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	15041302	15041303	15041305	15041306	15041307	15041308
INJ.DATE:	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015
INJ.TIME:	12:22	12:50	13:41	14:07	14:32	14:58

AR 04/14/15

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	6 Naphthalene-d8	4.802	4.799	4.802	4.802	4.802	4.805	4.802	1.802-7.802	4.802	0.002
	7 Naphthalene	4.831	4.831	4.831	4.831	4.831	4.831	4.831	1.831-7.831	4.831	0.000
$	12 2-Methylnaphthalene-d1	5.526	5.526	5 529	5.530	5 529	5 529	5.526	2.526-8.526	5.528	0.002
	14 2-Methylnaphthalene	5.574	5.574	5.577	5.577	5.577	5 577	5.574	2.574-8.574	5.576	0.002
	15 1-methylnaphthalene	5.770	5.764	5.770	5.770	5.773	5.770	5.770	2.770-8.770	5.769	0.003
	19 Biphenyl	6.228	6.228	6.228	6.231	6.231	6.228	6 228	3.228-9.228	6.229	0.002
	20 2,6-Dimethylnaphthalen	6.272	6.273	6.273	6.273	6.276	6.272	6.272	3.272-9.272	6.273	0 001
	21 Acenaphthylene	6.959	6.959	6.959	6 959	6 962	6.959	6.959	3.959-9.959	6.959	0.001
*	22 Acenaphthene-d10	7.069	7.069	7.069	7.069	7 069	7.069	7.069	4.069-10.069	7.069	0.000
	23 Acenaphthene	7.117	7.120	7.120	7.120	7.120	7.120	7.117	4.117-10.117	7.119	0.001
	11 Dibenzofuran	7.269	7.269	7.269	7.269	7.268	7.265	7.269	4.269-10.268	7.268	0.001
	24 1,6,7-Trimethylnaphtha	7.335	7.332	7.335	7.335	7.335	7.335	7.335	4.335-10.335	7.334	0.001
	25 Fluorene	7.740	7.737	7.743	7 740	7.743	7.740	7.740	4.740-10.740	7.740	0.002
	27 Dibenzothiophene	8.963	8.963	8.963	8.963	8.966	8 963	8.963	5.963-11.963	8.964	0.001
*	28 Phenanthrene-d10	9.090	9.090	9.090	9.090	9 090	9.090	9.090	6.090-12.090	9.090	0.000
	30 Phenanthrene	9.125	9.122	9.125	9.125	9.128	9.125	9.125	6.125-12.125	9.125	0.002
	31 Anthracene	9.166	9.159	9.163	9.166	9.166	9.162	9.166	6.166-12.166	9.164	0.003

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: 4/14/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Batch File: /chem3/nt8.i/20150413.b
Inst ID: nt8.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	26 Carbazole	9 672	9.675	9.672	9.672	9.671	9.668	9.672	6.672-12 672	9.672	0.002
	33 1-Methylphenanthrene	9.883	9.884	9.884	9.884	9 886	9.880	9.883	6 883-12.883	9.883	0.002
	36 Fluoranthene	10.851	10.854	10.851	10.854	10.854	10.851	10.851	7 851-13.851	10.853	0.002
$	253 Fluoranthene-d10	10.816	10.813	10.813	10.816	10.819	10.813	10.816	7.816-13 816	10.815	0.003
	39 Pyrene	11.354	11.354	11.351	11.354	11 357	11.351	11.354	8.354-14.354	11.353	0 002
	46 Benzo(a)anthracene	13.792	13.789	13.792	13.792	13.798	13.788	13.792	10.792-16.792	13.792	0.003
*	47 Chrysene-d12	13.918	13.915	13.915	13.915	13.915	13.915	13.918	10.918-16.918	13.916	0.001
	48 Chrysene	13.991	13.985	13.988	13.991	13.994	13.988	13.991	10.991-16.991	13.989	0.003
*	29 Fluorene-d10	13.795	13.776	13.779	13.795	13.795	13.795	13.795	10.795-16.795	13.789	0.009
	51 Benzo(b)fluoranthene	16.492	16.483	16.489	16.495	16.505	16.486	16.492	13.492-19.492	16.491	0.008
	52 Benzo(k)fluoranthene	16.549	16.549	16.546	16.555	16.565	16.552	16.549	13.549-19.549	16.553	0.007
	251 Benzo(j)fluoranthene	16.628	16.631	16.625	16.631	16.644	16.628	16.628	13.628-19.628	16 631	0 007
	55 Benzo(e)pyrene	17.399	17.396	17.396	17.406	17.412	17.396	17.399	14 399-20.399	17.401	0.007
	54 Benzo(a)pyrene	17.529	17.529	17.526	17.532	17.542	17.529	17.529	14.529-20.529	17.531	0.005
*	56 Perylene-d12	17.763	17.757	17.760	17.760	17.760	17.757	17.763	14.763-20.763	17.759	0 002
	57 Perylene	17.833	17.823	17.833	17.839	17.845	17.833	17.833	14.833-20.833	17.834	0.007
$	60 Dibenzo(a,h)anthracene	20.087	20.084	20.081	20.094	20.109	20.078	20.087	17.087-23.087	20.089	0.011
	63 Indeno(1,2,3-cd)pyrene	20.201	20.192	20.195	20.211	20.223	20.195	20.201	17.201-23.201	20.203	0.012
	62 Dibenzo(a,h)anthracene	20.185	20.192	20.179	20.192	20.210	20.188	20.185	17.185-23.185	20.191	0.011
	61 Benzo(g,h,i)perylene	21.194	21.191	21.194	21.200	21.222	21.191	21.194	18.194-24 194	21.199	0.012

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 4/13/15 Analysis: SIMPAH Analyst: AR

GC Program: SIMPAH Column No: 1242228 Column Type: RXi-17Sil MS

Instrument Tune (.U or .CT.): LF0413 EM Voltage: 1800

Calibration File: Curve Date: 4/13/15 Injection Vol.: 1µl

IS/SS	Ical/Ccal	LCS/ICV
C007319	D00216	D00027
		D00456

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150413.b

	Time	Filename	LabID	ClientId	DF									
1	1211	15041301.d	SDD0030-TUN1	DFTPP150413	1	NO ISTDS FOUND								
2	1222	15041302.d	SDD0030-CAL4	IC25150413	1	4.80	343090	7.07	230598	9.09	373928	13.92	381262	17.76	380825
3	1250	15041303.d	SDD0030-CAL1	IC01150413	1	4.80	354612	7.07	237223	9.09	376365	13.92	394650	17.76	388989
4	1315	15041304.d	IC05150414	IC05150413	1	4.81	173922	7.07	110517	9.09	187774	13.92	193661	17.75	186289
5	1341	15041305.d	SDD0030-CAL3	IC15150413	1	4.80	364481	7.07	242831	9.09	404962	13.92	421977	17.76	408072
6	1407	15041306.d	SDD0030-CAL5	IC5150413	1	4.80	372032	7.07	241476	9.09	411722	13.92	425415	17.76	409924
7	1432	15041307.d	SDD0030-CAL6	IC10150413	1	4.80	409499	7.07	262568	9.09	448359	13.91	452115	17.76	457765
8	1458	15041308.d	SDD0030-CAL2	IC05150413	1	4.81	459490	7.07	302339	9.09	478448	13.91	503143	17.76	510079
9	1654	15041309.d	SDD0030-SCV1	SCV150413	1	4.80	396827	7.07	256683	9.09	413213	13.92	440508	17.76	436031
10	1720	15041310.d	AD90MBW1	AD90MBW1	1	4.80	402780	7.07	261655	9.09	428082	13.91	452471	17.75	382226
11	1746	15041311.d	AD90LCSW1	AD90LCSW1	1	4.80	414743	7.07	279704	9.09	469332	13.92	476572	17.76	418683
12	1811	15041312.d	AD90LCSDW1	AD90LCSDW1	1	4.80	428283	7.07	283155	9.09	487586	13.92	489751	17.76	437580
13	1837	15041313.d	AD90C	MW-2D-040215	1	4.80	399479	7.07	277412	9.09	456455	13.91	467075	17.76	386856
14	1902	15041314.d	AD90E	MW-31D-04021	1	4.79	424441	7.07	291662	9.09	498984	13.91	521324	17.76	443961
15	1928	15041315.d	AD90F	MW-31S-04021	1	4.80	448218	7.07	287883	9.09	482094	13.91	504500	17.76	430882
16	1954	15041316.d	AE11C	MW-38D-04031	1	4.79	438556	7.07	294032	9.09	500835	13.91	518196	17.76	441406
17	2019	15041317.d	AE53D	MW-1	1	4.79	406660	7.07	264551	9.09	457323	13.91	482180	17.75	435673
18	2045	15041318.d	AE53E	MW-2	1	4.79	426404	7.07	285165	9.09	475447	13.92	501232	17.76	435056
19	2110	15041319.d	AE53F	MW-3	1	4.80	442978	7.07	277753	9.09	475460	13.91	501220	17.76	412354
20	2136	15041320.d	CCV150413	CCV150413	1	4.80	445024	7.07	290855	9.09	476584	13.92	486017	17.75	480807

W26935 added in NR

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

AR 04/14/15

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150413.b

ARI Job No.: SDD0 Method: FSIMPNA150413.m Instrument: nt8.i Date: 13-APR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1222	15041302.d	SDD0030-CAL4	IC25150413	1	NO MANUAL INTEGRATION
1250	15041303.d	SDD0030-CAL1	IC01150413	1	NO MANUAL INTEGRATION
1341	15041305.d	SDD0030-CAL3	IC1150413	1	NO MANUAL INTEGRATION
1407	15041306.d	SDD0030-CAL5	IC5150413	1	NO MANUAL INTEGRATION
1432	15041307.d	SDD0030-CAL6	IC10150413	1	NO MANUAL INTEGRATION
1458	15041308.d	SDD0030-CAL2	IC05150413	1	NO MANUAL INTEGRATION
1654	15041309.d	SDD0030-SCV1	SCV150413	1	NO MANUAL INTEGRATION

04/14/15

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

Instrument: nt8.i

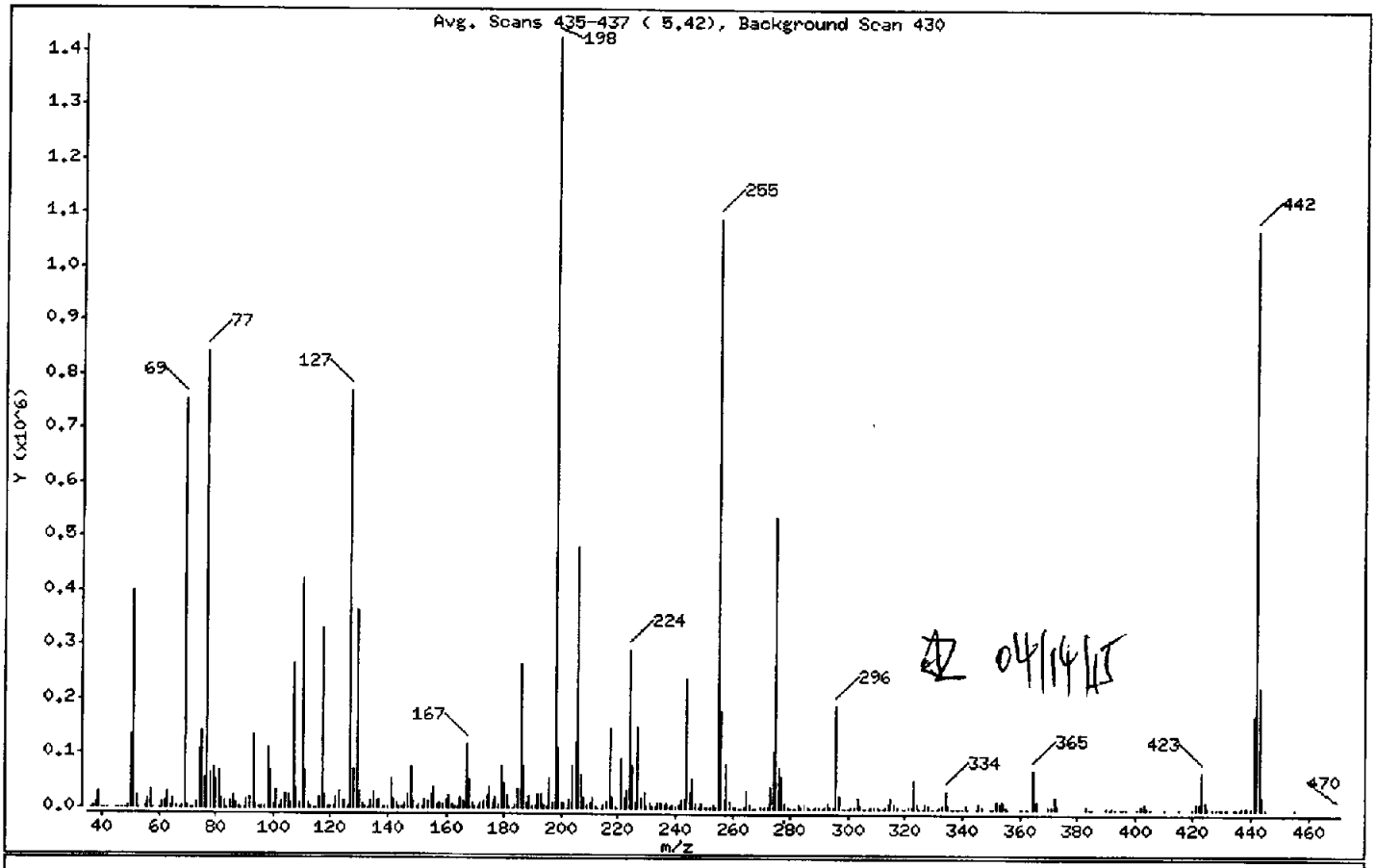
Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

1 dftpp



04/14/15

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	28.16
68	Less than 2.00% of mass 69	0.24 (0.45)
69	Mass 69 relative abundance	52.87
70	Less than 2.00% of mass 69	0.27 (0.51)
127	10.00 - 80.00% of mass 198	54.06
197	Less than 2.00% of mass 198	0.60
199	5.00 - 9.00% of mass 198	7.89
275	10.00 - 60.00% of mass 198	37.61
365	Greater than 1.00% of mass 198	5.06
441	0.01 - 24.00% of mass 442	12.17 (16.21)
442	50.00 - 200.00% of mass 198	75.07
443	15.00 - 24.00% of mass 442	15.79 (21.03)

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413 Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15041301.d
Spectrum: Avg. Scans 435-437 (5.42), Background Scan 430
Location of Maximum: 198.00
Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	35	132.00	3084	227.00	149888	324.00	9567
37.00	2782	133.00	1296	228.00	20104	325.00	1181
38.00	8480	134.00	13132	229.00	29456	326.00	967
39.00	29744	135.00	30696	230.00	3690	327.00	11155
40.00	1486	136.00	13516	231.00	11376	328.00	5669
41.00	521	137.00	16848	232.00	2041	329.00	1310
42.00	44	138.00	3094	233.00	3067	330.00	879
43.00	362	139.00	2378	234.00	9408	331.00	538
45.00	816	140.00	4331	235.00	9386	332.00	3225
46.00	137	141.00	54360	236.00	7811	333.00	5673
47.00	148	142.00	17064	237.00	9627	334.00	33432
48.00	924	143.00	10440	238.00	1776	335.00	8163
49.00	4281	144.00	3493	239.00	6063	336.00	915
50.00	133056	145.00	2547	240.00	4524	337.00	146
51.00	401408	146.00	11343	241.00	7957	338.00	88
52.00	22912	147.00	27784	242.00	17760	339.00	1041
53.00	1305	148.00	75880	243.00	17624	340.00	947
54.00	136	149.00	12846	244.00	238400	341.00	5344
55.00	3906	150.00	3330	245.00	29104	342.00	1141
56.00	17664	151.00	5321	246.00	57136	343.00	237
57.00	32384	152.00	4866	247.00	10736	345.00	523
58.00	1487	153.00	17848	248.00	1923	346.00	10853
59.00	824	154.00	11845	249.00	9283	347.00	2484
60.00	807	155.00	25920	250.00	2029	350.00	449
61.00	9080	156.00	40704	251.00	1975	351.00	1276
62.00	13437	157.00	6484	252.00	2792	352.00	13550
63.00	29864	158.00	10154	253.00	5282	353.00	9800
64.00	4160	159.00	8016	254.00	4222	354.00	14104
65.00	14803	160.00	15352	255.00	1091584	355.00	2938
66.00	1710	161.00	21536	256.00	178880	356.00	402
67.00	413	162.00	6083	257.00	15238	358.00	268
68.00	3364	163.00	2008	258.00	82808	359.00	978
69.00	753600	164.00	2275	259.00	14544	360.00	207
70.00	3816	165.00	20768	260.00	2010	361.00	586
71.00	806	166.00	13767	261.00	2983	362.00	84

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413 Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5ms Column diameter: 0.32

Data File: 15041301.d
Spectrum: Avg. Scans 435-437 (5.42), Background Scan 430
Location of Maximum: 198.00
Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	710	167.00	118912	262.00	549	363.00	147
73.00	9753	168.00	52896	263.00	1179	365.00	72072
74.00	107688	169.00	8330	264.00	3508	366.00	11983
75.00	139904	170.00	3634	265.00	33696	367.00	776
76.00	56712	171.00	4636	266.00	5542	370.00	1771
77.00	842304	172.00	8930	267.00	555	371.00	3350
78.00	64336	173.00	13072	268.00	587	372.00	22728
79.00	75592	174.00	22008	270.00	1650	373.00	5744
80.00	51152	175.00	40760	271.00	2983	374.00	649
81.00	67752	176.00	9035	272.00	3991	377.00	887
82.00	16424	177.00	19704	273.00	38456	378.00	584
83.00	13729	178.00	6678	274.00	103776	379.00	382
84.00	1183	179.00	80000	275.00	536064	383.00	5464
85.00	13108	180.00	44888	276.00	76224	384.00	1228
86.00	22152	181.00	22216	277.00	58968	385.00	471
87.00	9310	182.00	4593	278.00	9267	389.00	432
88.00	2748	183.00	1494	279.00	1717	390.00	3285
89.00	1241	184.00	6726	280.00	274	391.00	1625
90.00	438	185.00	36776	281.00	807	392.00	1770
91.00	15236	186.00	264768	282.00	1510	393.00	234
92.00	19240	187.00	79464	283.00	5483	395.00	411
93.00	134976	188.00	8700	284.00	4682	396.00	282
94.00	8016	189.00	21752	285.00	8161	397.00	387
95.00	1956	190.00	3509	286.00	1742	401.00	1154
96.00	4029	191.00	7718	287.00	207	402.00	7347
97.00	2143	192.00	24856	288.00	705	403.00	11161
98.00	110488	193.00	27376	289.00	2594	404.00	3845
99.00	67632	194.00	5600	290.00	1854	405.00	606
100.00	6767	195.00	2461	291.00	1550	410.00	118
101.00	31968	196.00	57320	292.00	2914	415.00	1229
102.00	1891	197.00	8500	293.00	11461	420.00	621
103.00	11871	198.00	1425408	294.00	2715	421.00	9177
104.00	24600	199.00	112464	295.00	3880	422.00	8410
105.00	23480	200.00	10594	296.00	191488	423.00	67320
106.00	9930	201.00	9546	297.00	24328	424.00	12020

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5ms

Column diameter: 0.32

Data File: 15041301.d

Spectrum: Avg. Scans 435-437 (5,42), Background Scan 430

Location of Maximum: 198.00

Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	265216	202.00	943	298.00	1532	425.00	1698
108.00	37280	203.00	16181	299.00	429	427.00	120
109.00	8643	204.00	77800	300.00	322	428.00	359
110.00	421568	205.00	122584	301.00	2611	429.00	84
111.00	69840	206.00	481472	302.00	3828	430.00	923
112.00	10268	207.00	62496	303.00	19928	431.00	913
113.00	3152	208.00	20192	304.00	5261	432.00	309
114.00	635	209.00	6404	305.00	844	434.00	756
115.00	787	210.00	9460	306.00	252	435.00	1116
116.00	19896	211.00	19408	307.00	89	436.00	694
117.00	332032	212.00	1734	308.00	2307	437.00	2086
118.00	21912	213.00	1529	309.00	1789	438.00	3497
119.00	1972	214.00	554	310.00	1911	439.00	3970
120.00	2869	215.00	6602	311.00	381	440.00	3182
121.00	1825	216.00	14311	312.00	730	441.00	173440
122.00	19600	217.00	145984	313.00	1672	442.00	1070080
123.00	30640	218.00	20336	314.00	8633	443.00	225024
124.00	13699	219.00	1950	315.00	20504	444.00	21560
125.00	12740	220.00	633	316.00	10139	445.00	927
126.00	1766	221.00	91016	317.00	1748	455.00	572
127.00	770560	222.00	18648	319.00	231	470.00	226
128.00	71680	223.00	32528	320.00	1183		
129.00	362240	224.00	293184	321.00	4755		
130.00	30384	225.00	79648	322.00	2758		
131.00	5835	226.00	9627	323.00	51016		

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

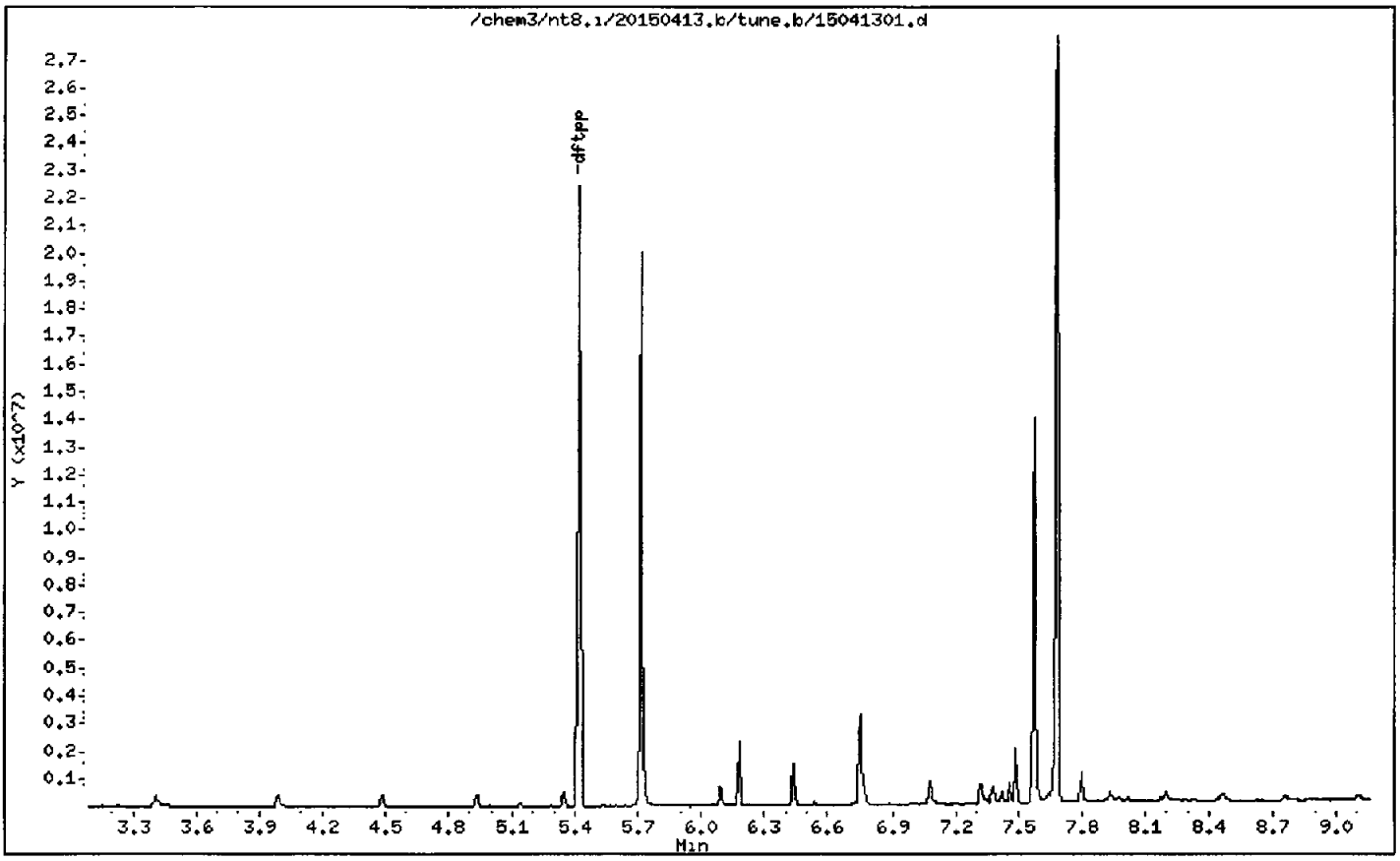
Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150413.b/ddt.b/15041301.d ARI ID: DDT150413
Method: /chem3/nt8.i/20150413.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 13-APR-2015 12:11 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.713	1520726
Benzidine	7.580	3322136
4,4'-DDE	7.082	14272
4,4'-DDD	7.489	254514
4,4'-DDT	7.687	3109084

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

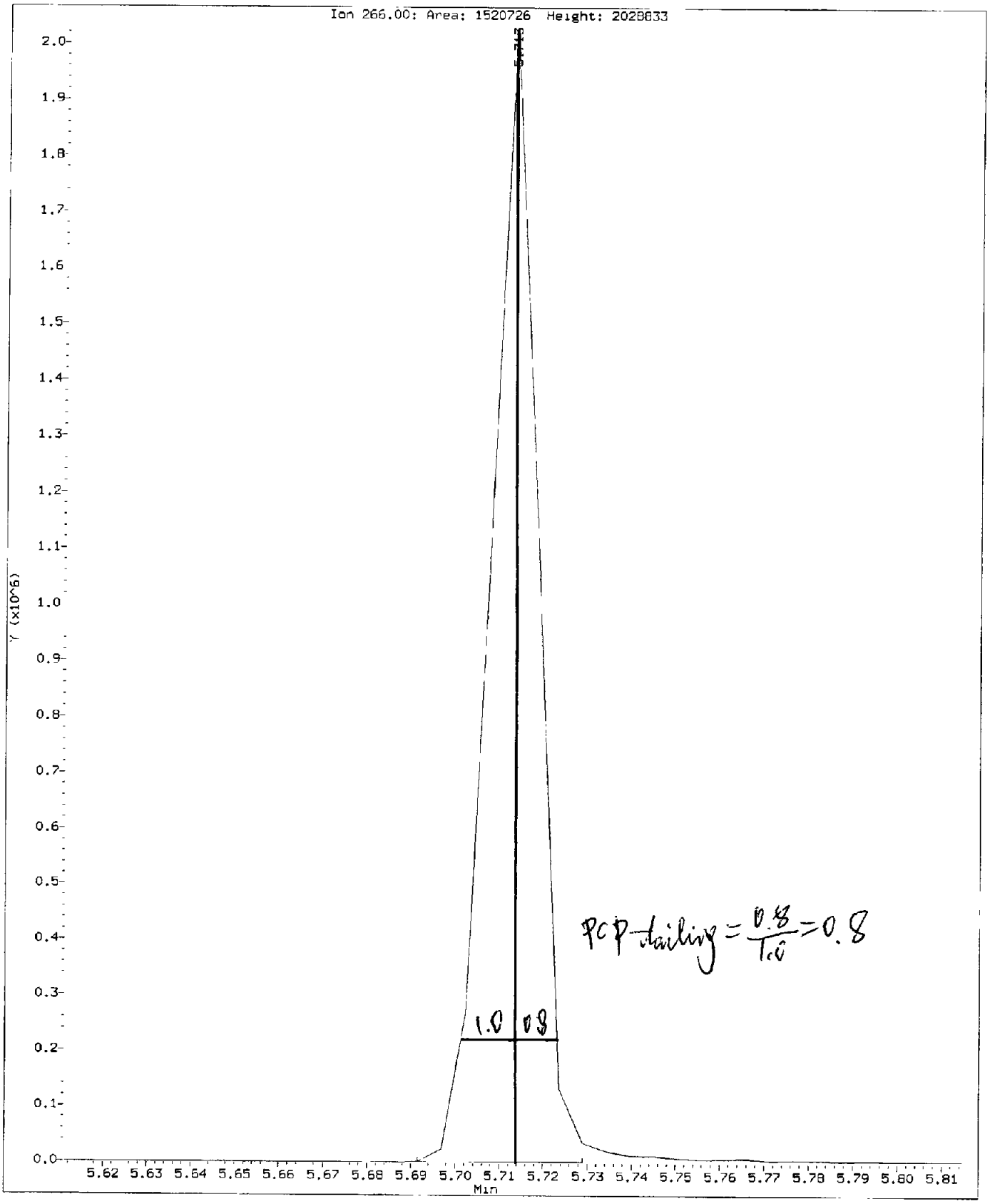
$$\text{DDT Percent Breakdown} = \frac{(14272 + 254514) * 100}{(14272 + 254514 + 3109084)}$$

DDT Percent Breakdown = 8.0 %

ok R 4/14/15

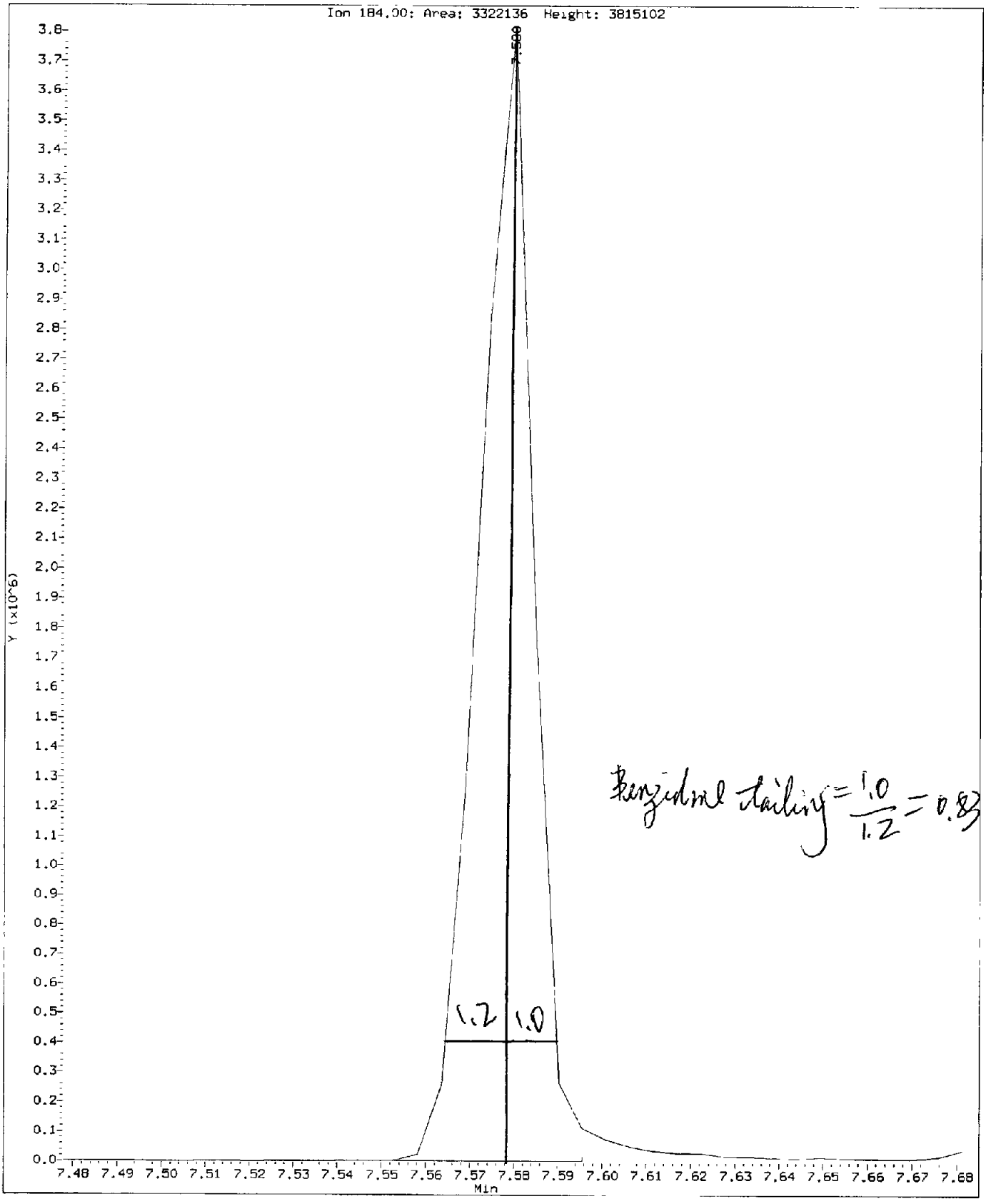
Data File: /chem3/nt8.i/20150413.b/ddt.b/15041301.d
Injection Date: 13-APR-2015 12:11
Instrument: nt8.i
Client Sample ID: DDT150413

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.i/20150413.b/ddt.b/15041301.d
Injection Date: 13-APR-2015 12:11
Instrument: nt8.i
Client Sample ID: DDT150413

Compound: Benzidine
CAS Number:



Benzidine tailing = $\frac{1.0}{1.2} = 0.83$

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041303.d
Lab Smp Id: SDD30-CAL1 Client Smp ID: IC01150413
Inj Date : 13-APR-2015 12:50
Operator : JZ Inst ID: nt8.i
Smp Info : IC01150413
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:09 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

4/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.799	4.799	(1.000)	354612	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.007)	17493	0.10000	0.1024
$	12 2-Methylnaphthalene-d10	152	5.526	5.526	(1.152)	11994	0.10000	0.1108
	14 2-Methylnaphthalene	141	5.574	5.574	(1.161)	9746	0.10000	0.09568
	15 1-methylnaphthalene	141	5.764	5.764	(1.201)	10452	0.10000	0.1056
	19 Biphenyl	154	6.228	6.228	(0.881)	16186	0.10000	0.1105
	20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	10694	0.10000	0.09857
	21 Acenaphthylene	152	6.959	6.959	(0.984)	16863	0.10000	0.09734
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	237223	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	11575	0.10000	0.1004
	11 Dibenzofuran	168	7.269	7.269	(1.028)	16322	0.10000	0.1024
	24 1,6,7-Trimethylnaphthalene	170	7.332	7.332	(1.037)	10353	0.10000	0.09588
	25 Fluorene	166	7.737	7.737	(1.094)	11948	0.10000	0.09280
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	18572	0.10000	0.1077
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	376365	2.00000	
	30 Phenanthrene	178	9.122	9.122	(1.003)	19942	0.10000	0.1111
	31 Anthracene	178	9.159	9.159	(1.008)	15844	0.10000	0.09808
	26 Carbazole	167	9.675	9.675	(1.064)	14294	0.10000	0.1006
	33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	12976	0.10000	0.09344
	36 Fluoranthene	202	10.854	10.854	(1.194)	23584	0.10000	0.1124
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	18886	0.10000	0.1020
	39 Pyrene	202	11.354	11.354	(0.816)	24843	0.10000	0.1129
	46 Benzo(a)anthracene	228	13.789	13.789	(0.991)	20317	0.10000	0.1026
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	394650	2.00000	
	48 Chrysene	228	13.985	13.985	(1.005)	24266	0.10000	0.1223
	51 Benzo(b)fluoranthene	252	16.483	16.483	(0.928)	21120	0.10000	0.1034
	52 Benzo(k)fluoranthene	252	16.549	16.549	(0.932)	21122	0.10000	0.1035

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.631	16.631	(0.937)	21623	0.10000	0.1086
55	Benzo(e)pyrene	252	17.396	17.396	(0.980)	24537	0.10000	0.1188
54	Benzo(a)pyrene	252	17 529	17.529	(0.987)	20590	0.10000	0.1130
* 56	Perylene-d12	264	17 757	17.757	(1.000)	388989	2.00000	
57	Perylene	252	17.823	17.823	(1.004)	19041	0.10000	0.1007
$ 60	Dibenzo(a,h)anthracene-d14	292	20.084	20.084	(1.131)	14516	0.10000	0.09799
63	Indeno(1,2,3-cd)pyrene	276	20.192	20.192	(1.137)	20661	0.10000	0.09444
62	Dibenzo(a,h)anthracene	278	20.192	20.192	(1.137)	17354	0.10000	0.09740
61	Benzo(g,h,i)perylene	276	21.191	21 191	(1.193)	18393	0.10000	0.09558

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041303.d
Lab Smp Id: SDD30-CAL1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC01150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	354612	3.36
22 Acenaphthene-d10	230598	115299	461196	237223	2.87
28 Phenanthrene-d10	373928	186964	747856	376365	0.65
47 Chrysene-d12	381262	190631	762524	394650	3.51
56 Perylene-d12	380825	190412	761650	388989	2.14

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	-0.06
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.03

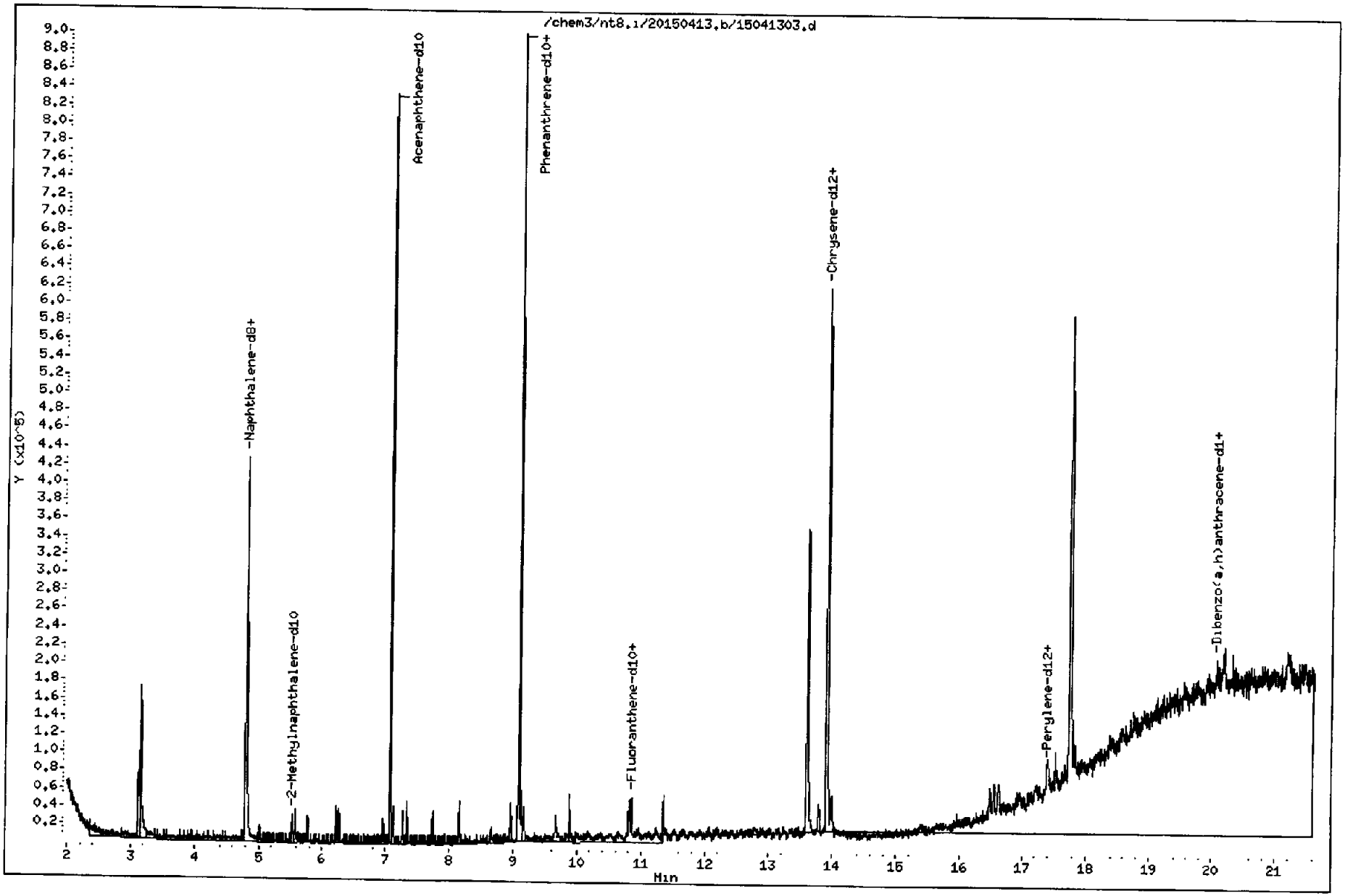
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041303.d
Date : 13-APR-2015 12:50
Client ID: IC01150413
Sample Info: IC01150413

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041303.d

Lab ID: SDD30-CAL1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS
20.192	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.192	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

Quant Method: ICAL

04/14/15

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041308.d
Lab Smp Id: SDD30-CAL2 Client Smp ID: IC05150413
Inj Date : 13-APR-2015 14:58
Operator : JZ Inst ID: nt8.i
Smp Info : IC05150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:58 Cal File: 15041308.d
Als bottle: 8 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.805	4.802	(1.000)	459490	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.005)	102629	0.50000	0.4636
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	61322	0.50000	0.4370
	14 2-Methylnapnthalene	141	5.577	5.577	(1.161)	62975	0.50000	0.4771
	15 1-methylnaphthalene	141	5.770	5.770	(1.201)	58281	0 50000	0.4544
	19 Biphenyl	154	6.228	6.228	(0.881)	82602	0.50000	0.4424
	20 2,6-Dimethylnaphthalene	156	6.272	6.273	(0 887)	63285	0.50000	0 4577
	21 Acenaphthylene	152	6.959	6.959	(0.984)	97368	0.50000	0.4410
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	302339	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	66282	0.50000	0.4512
	11 Dibenzofuran	168	7.265	7.269	(1 028)	94246	0.50000	0.4638
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1 038)	61006	0.50000	0.4433
	25 Fluorene	166	7.740	7.743	(1.095)	72898	0.50000	0.4442
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	103572	0.50000	0.4726
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	478448	2.00000	
	30 Phenanthrene	178	9.125	9.125	(1.004)	105399	0.50000	0.4624
	31 Anthracene	178	9.162	9.163	(1 008)	90784	0.50000	0.4422
	26 Carbazole	167	9.668	9.672	(1.064)	85085	0.50000	0.4637
	33 1-Methylphenanthrene	192	9.880	9.884	(1.087)	78939	0.50000	0.4471
	36 Fluoranthene	202	10.851	10.851	(1.194)	120159	0.50000	0.4506
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	107777	0.50000	0.4580
	39 Pyrene	202	11.351	11.351	(0.816)	124453	0.50000	0.4438
	46 Benzo(a)anthracene	228	13.788	13.792	(0 991)	109877	0.50000	0.4354
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	503143	2.00000	
	48 Chrysene	228	13.988	13.988	(1.005)	106920	0.50000	0.4224
	51 Benzo(b)fluoranthene	252	16.486	16.489	(0.928)	121486	0.50000	0.4511
	52 Benzo(k)fluoranthene	252	16.552	16.546	(0.932)	115655	0.50000	0.4306

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.628	16.625	(0.936)	107598	0.50000	0.4127
55	Benzo(e)pyrene	252	17.396	17.396	(0.980)	115936	0.50000	0.4257
54	Benzo(a)pyrene	252	17 529	17.526	(0.987)	102258	0.50000	0.4237
* 56	Perylene-d12	264	17.757	17.760	(1.000)	510079	2.00000	
57	Perylene	252	17.833	17.833	(1.004)	108228	0.50000	0.4350
$ 60	Dibenzo(a,h)anthracene-d14	292	20.078	20.081	(1.131)	82762	0.50000	0.4260
63	Indeno(1,2,3-cd)pyrene	276	20.195	20.195	(1 137)	123820	0.50000	0.4302
62	Dibenzo(a,h)anthracene	278	20.188	20.179	(1.137)	95540	0.50000	0.4277
61	Benzo(g,h,i)perylene	276	21.191	21.194	(1.193)	112066	0.50000	0.4426

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041308.d
Lab Smp Id: SDD30-CAL2
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC05150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	459490	33.93
22 Acenaphthene-d10	230598	115299	461196	302339	31.11
28 Phenanthrene-d10	373928	186964	747856	478448	27.95
47 Chrysene-d12	381262	190631	762524	503143	31.97
56 Perylene-d12	380825	190412	761650	510079	33.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.81	0.06
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.91	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.04

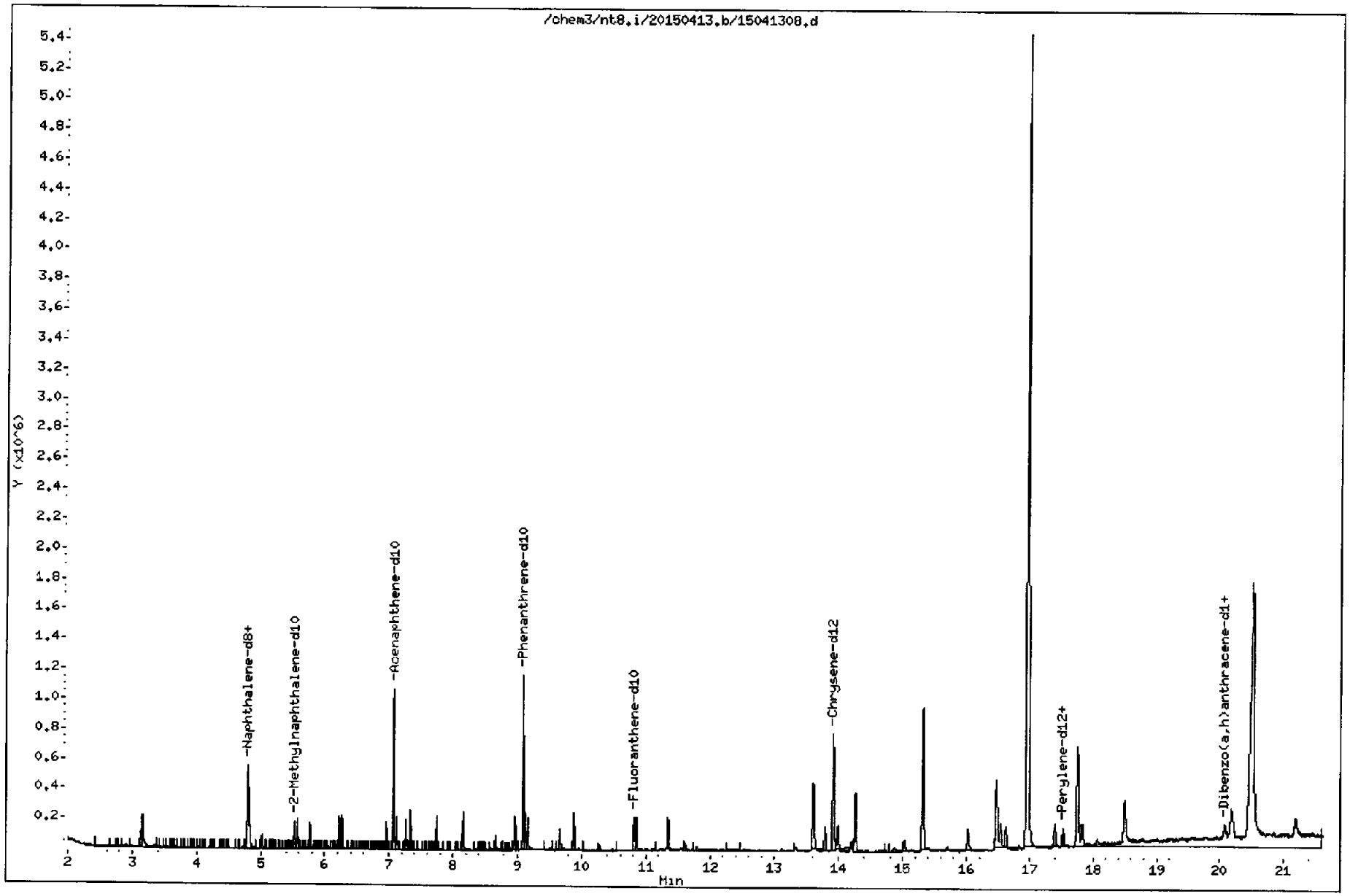
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041308.d
Date : 13-APR-2015 14:58
Client ID: IC05150413
Sample Info: IC05150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041308.d

Lab ID: SDD30-CAL2, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041305.d
Lab Smp Id: SDD30-CAL3 Client Smp ID: IC1150413
Inj Date : 13-APR-2015 13:41
Operator : JZ Inst ID: nt8.i
Smp Info : IC1150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 13:41 Cal File: 15041305.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.802	4.802	(1.000)	367481	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.006)	192052	1.00000	1.085
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	116351	1.00000	1.037
	14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	112691	1.00000	1.068
	15 1-methylnaphthalene	141	5.770	5.770	(1.201)	106226	1.00000	1.036
	19 Biphenyl	154	6.228	6.228	(0.881)	158157	1.00000	1.055
	20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	118288	1.00000	1.065
	21 Acenaphthylene	152	6.959	6.959	(0.984)	186378	1.00000	1.051
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	242831	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	125538	1.00000	1.064
	11 Dibenzofuran	168	7.269	7.269	(1.028)	176675	1.00000	1.083
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	115146	1.00000	1.042
	25 Fluorene	166	7.743	7.743	(1.095)	143142	1.00000	1.086
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	195918	1.00000	1.056
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	404962	2.00000	
	30 Phenanthrene	178	9.125	9.125	(1.004)	203863	1.00000	1.056
	31 Anthracene	178	9.163	9.163	(1.008)	184725	1.00000	1.063
	26 Carbazole	167	9.672	9.672	(1.064)	153716	1.00000	1.005
	33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	163058	1.00000	1.091
	36 Fluoranthene	202	10.851	10.851	(1.194)	238946	1.00000	1.058
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	210032	1.00000	1.054
	39 Pyrene	202	11.351	11.351	(0.816)	235878	1.00000	1.003
	46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	218429	1.00000	1.032
*	47 Chrysene-d12	240	13.915	13 915	(1 000)	421977	2.00000	
	48 Chrysene	228	13 988	13.988	(1.005)	214171	1.00000	1.009
	51 Benzo(b)fluoranthene	252	16.489	16.489	(0.928)	221537	1.00000	1.032
	52 Benzo(k)fluoranthene	252	16.546	16.546	(0.932)	224718	1.00000	1.047

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.625	16.625	(0.936)	213156	1.00000	1.018
55	Benzo(e)pyrene	252	17.396	17 396	(0.980)	223200	1.00000	1.028
54	Benzo(a)pyrene	252	17.526	17.526	(0.987)	192727	1.00000	1.006
* 56	Perylene-d12	264	17 760	17.760	(1.000)	408072	2.00000	
57	Perylene	252	17.833	17.833	(1.004)	208483	1.00000	1.049
$ 60	Dibenzo(a,h)anthracene-d14	292	20.081	20.081	(1.131)	159522	1.00000	1.025
63	Indeno(1,2,3-cd)pyrene	276	20.195	20.195	(1.137)	241237	1.00000	1.049
62	Dibenzo(a,h)anthracene	278	20.179	20.179	(1.136)	193075	1.00000	1.082
61	Benzo(g,h,i)perylene	276	21 194	21.194	(1.193)	210748	1.00000	1.042

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041305.d
Lab Smp Id: SDD30-CAL3
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC1150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	367481	7.11
22 Acenaphthene-d10	230598	115299	461196	242831	5.30
28 Phenanthrene-d10	373928	186964	747856	404962	8.30
47 Chrysene-d12	381262	190631	762524	421977	10.68
56 Perylene-d12	380825	190412	761650	408072	7.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

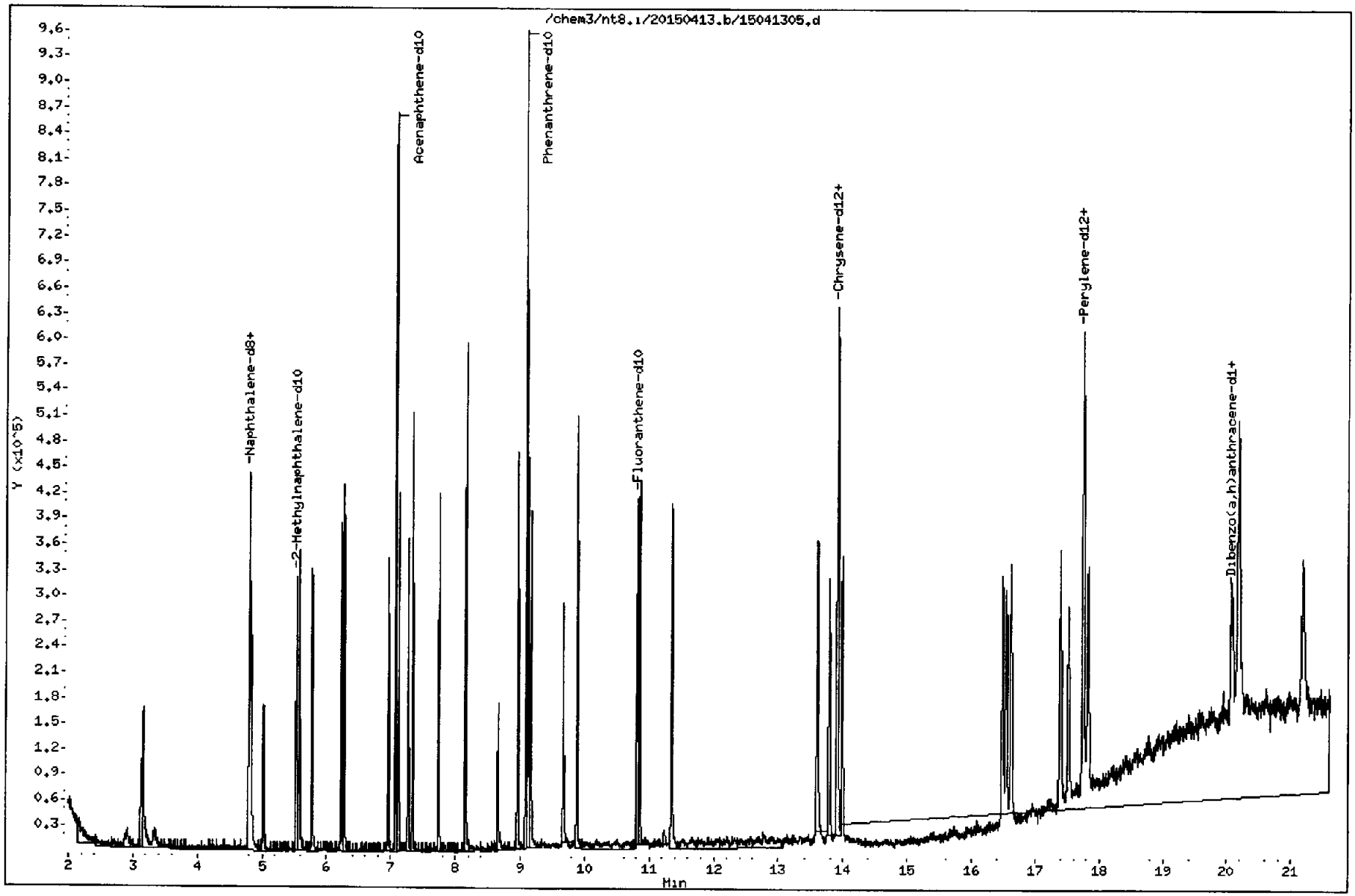
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041305.d
Date : 13-APR-2015 13:41
Client ID: IC1150413
Sample Info: IC1150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041305.d

Lab ID: SDD30-CAL3, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041302.d
Lab Smp Id: SDD30-CAL4 Client Smp ID: IC25150413
Inj Date : 13-APR-2015 12:22
Operator : JZ Inst ID: nt8.i
Smp Info : IC25150413
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:22 Cal File: 15041302.d
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

4/14/15

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.802	4.802	(1.000)	343090	2.00000	
7 Naphthalene	128	4.831	4.831	(1.006)	396517	2.50000	2.399
$ 12 2-Methylnaphthalene-d10	152	5.526	5.529	(1.151)	252402	2.50000	2.409
14 2-Methylnaphthalene	141	5.574	5.577	(1.161)	242001	2.50000	2.456
15 1-methylnaphthalene	141	5.770	5.770	(1.201)	234371	2.50000	2.447
19 Biphenyl	154	6.228	6.228	(0.881)	339320	2 50000	2.383
20 2,6-Dimethylnaphthalene	156	6.272	6.273	(0.887)	255658	2.50000	2.424
21 Acenaphthylene	152	6.959	6.959	(0 984)	413592	2.50000	2.456
* 22 Acenaphthene-d10	164	7.069	7.069	(1.000)	230598	2.00000	
23 Acenaphthene	153	7.117	7.120	(1.007)	267163	2.50000	2.384
11 Dibenzofuran	168	7.269	7.269	(1.028)	372605	2 50000	2.404
24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	258870	2 50000	2.467
25 Fluorene	166	7.740	7.743	(1.095)	308171	2.50000	2.462
27 Dibenzothiophene	184	8.963	8.963	(0.986)	418308	2.50000	2.443
* 28 Phenanthrene-d10	188	9.090	9.090	(1.000)	373928	2.00000	
30 Phenanthrene	178	9.125	9.125	(1 004)	433495	2.50000	2.433
31 Anthracene	178	9.166	9.163	(1.008)	405791	2.50000	2.529
26 Carbazole	167	9.672	9.672	(1.064)	349396	2.50000	2.436
33 1-Methylphenanthrene	192	9 883	9.884	(1.087)	346555	2.50000	2.512
36 Fluoranthene	202	10.851	10.851	(1.194)	505195	2.50000	2.424
$ 253 Fluoranthene-d10	212	10.816	10.813	(1.190)	452054	2.50000	2.458
39 Pyrene	202	11.354	11.351	(0.816)	524558	2.50000	2.470
46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	477023	2 50000	2.496
* 47 Chrysene-d12	240	13.918	13.915	(1 000)	381262	2 00000	
48 Chrysene	228	13.991	13.988	(1.005)	457201	2.50000	2.385
51 Benzo(b)fluoranthene	252	16.492	16.489	(0.928)	484605	2.50000	2.415
52 Benzo(k)fluoranthene	252	16.549	16.546	(0.932)	481588	2.50000	2.402

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.628	16.625	(0.936)	480879	2.50000	2.457
55	Benzo(e)pyrene	252	17.399	17.396	(0.980)	473855	2.50000	2.335
54	Benzo(a)pyrene	252	17.529	17.526	(0.987)	414914	2.50000	2.314
* 56	Perylene-d12	264	17.763	17.760	(1.000)	380825	2.00000	
57	Perylene	252	17.833	17.833	(1.004)	451796	2.50000	2.432
$ 60	Dibenzo(a,h)anthracene-d14	292	20.087	20.081	(1.131)	359716	2.50000	2.495
63	Indeno(1,2,3-cd)pyrene	276	20.201	20.195	(1.137)	526991	2.50000	2.452
62	Dibenzo(a,h)anthracene	278	20.185	20.179	(1.136)	428508	2.50000	2.569
61	Benzo(g,h,i)perylene	276	21.194	21.194	(1.193)	464000	2.50000	2.455

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041302.d
Lab Smp Id: SDD30-CAL4
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC25150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	343090	0.00
22 Acenaphthene-d10	230598	115299	461196	230598	0.00
28 Phenanthrene-d10	373928	186964	747856	373928	0.00
47 Chrysene-d12	381262	190631	762524	381262	0.00
56 Perylene-d12	380825	190412	761650	380825	0.00

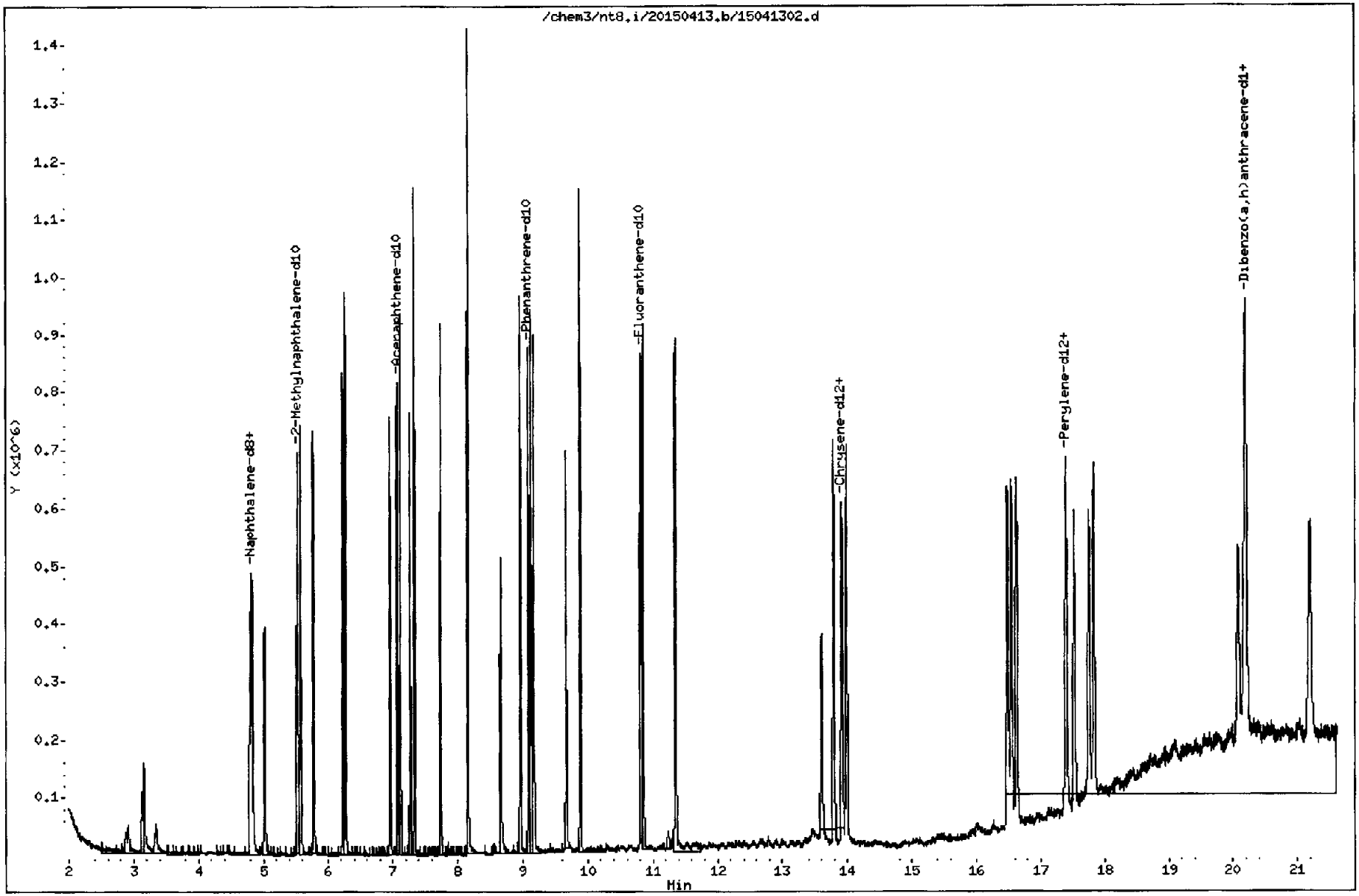
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	0.00
56 Perylene-d12	17.76	17.26	18.26	17.76	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041302.d
Date : 13-APR-2015 12:22
Client ID: IC25150413
Sample Info: IC25150413

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041302.d

Lab ID: SDD30-CAL4, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041306.d
Lab Smp Id: SDD30-CAL5 Client Smp ID: IC5150413
Inj Date : 13-APR-2015 14:07
Operator : JZ Inst ID: nt8.i
Smp Info : IC5150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:07 Cal File: 15041306.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.802	4.802	(1.000)	372032	2.00000	
7 Naphthalene	128	4.831	4.831	(1.006)	924565	5.00000	5.153
$ 12 2-Methylnaphthalene-d10	152	5.530	5.529	(1.151)	591180	5.00000	5.204
14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	559916	5.00000	5.241
15 1-methylnaphthalene	141	5.770	5.770	(1.201)	538618	5.00000	5.184
19 Biphenyl	154	6.231	6.228	(0.881)	770321	5.00000	5.166
20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	581098	5.00000	5.262
21 Acenaphthylene	152	6.959	6.959	(0.984)	963103	5.00000	5.461
* 22 Acenaphthene-d10	164	7.069	7.069	(1.000)	241476	2.00000	
23 Acenaphthene	153	7 120	7.120	(1.007)	628450	5.00000	5.356
11 Dibenzofuran	168	7 269	7.269	(1.028)	850576	5.00000	5.240
24 1,6,7-Trimethylnaphthalene	170	7 335	7.335	(1.038)	591540	5.00000	5.383
25 Fluorene	166	7.740	7.743	(1.095)	713916	5.00000	5.452
27 Dibenzothiophene	184	8.963	8.963	(0.986)	963210	5.00000	5.108
* 28 Phenanthrene-d10	188	9.090	9.090	(1.000)	411722	2.00000	
30 Phenanthrene	178	9.125	9.125	(1.004)	988393	5.00000	5.038
31 Anthracene	178	9 166	9.163	(1.008)	946532	5.00000	5.327
26 Carbazole	167	9.672	9.672	(1 064)	826501	5.00000	5 320
33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	811083	5.00000	5.338
36 Fluoranthene	202	10.854	10.851	(1.194)	1172047	5.00000	5.106
$ 253 Fluoranthene-d10	212	10.816	10.813	(1.190)	1058133	5.00000	5.225
39 Pyrene	202	11.354	11.351	(0.816)	1211251	5.00000	5.110
46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	1119956	5.00000	5.249
* 47 Chrysene-d12	240	13.915	13.915	(1.000)	425415	2.00000	
48 Chrysene	228	13.991	13.988	(1.005)	1064705	5.00000	4.963
51 Benzo(b)fluoranthene	252	16.495	16.489	(0.929)	1131642	5.00000	5.217
52 Benzo(k)fluoranthene	252	16.555	16.546	(0.932)	1169479	5.00000	5.418

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.631	16.625	(0.936)	1123189	5.00000	5.345
55	Benzo(e)pyrene	252	17.406	17.396	(0.980)	1116129	5.00000	5.099
54	Benzo(a)pyrene	252	17.532	17.526	(0.987)	1016610	5.00000	5.241
* 56	Perylene-d12	264	17.760	17.760	(1.000)	409924	2.00000	
57	Perylene	252	17.839	17.833	(1.004)	1070708	5.00000	5.375
$ 60	Dibenzo(a,h)anthracene-d14	292	20.094	20 081	(1.131)	836172	5.00000	5.420
63	Indeno(1,2,3-cd)pyrene	276	20.211	20.195	(1.138)	1267799	5.00000	5.472
62	Dibenzo(a,h)anthracene	278	20 192	20.179	(1.137)	1036040	5.00000	5.771
61	Benzo(g,h,i)perylene	276	21.200	21.194	(1.194)	1105769	5.00000	5.435

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041306.d
Lab Smp Id: SDD30-CAL5
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC5150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	372032	8.44
22 Acenaphthene-d10	230598	115299	461196	241476	4.72
28 Phenanthrene-d10	373928	186964	747856	411722	10.11
47 Chrysene-d12	381262	190631	762524	425415	11.58
56 Perylene-d12	380825	190412	761650	409924	7.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

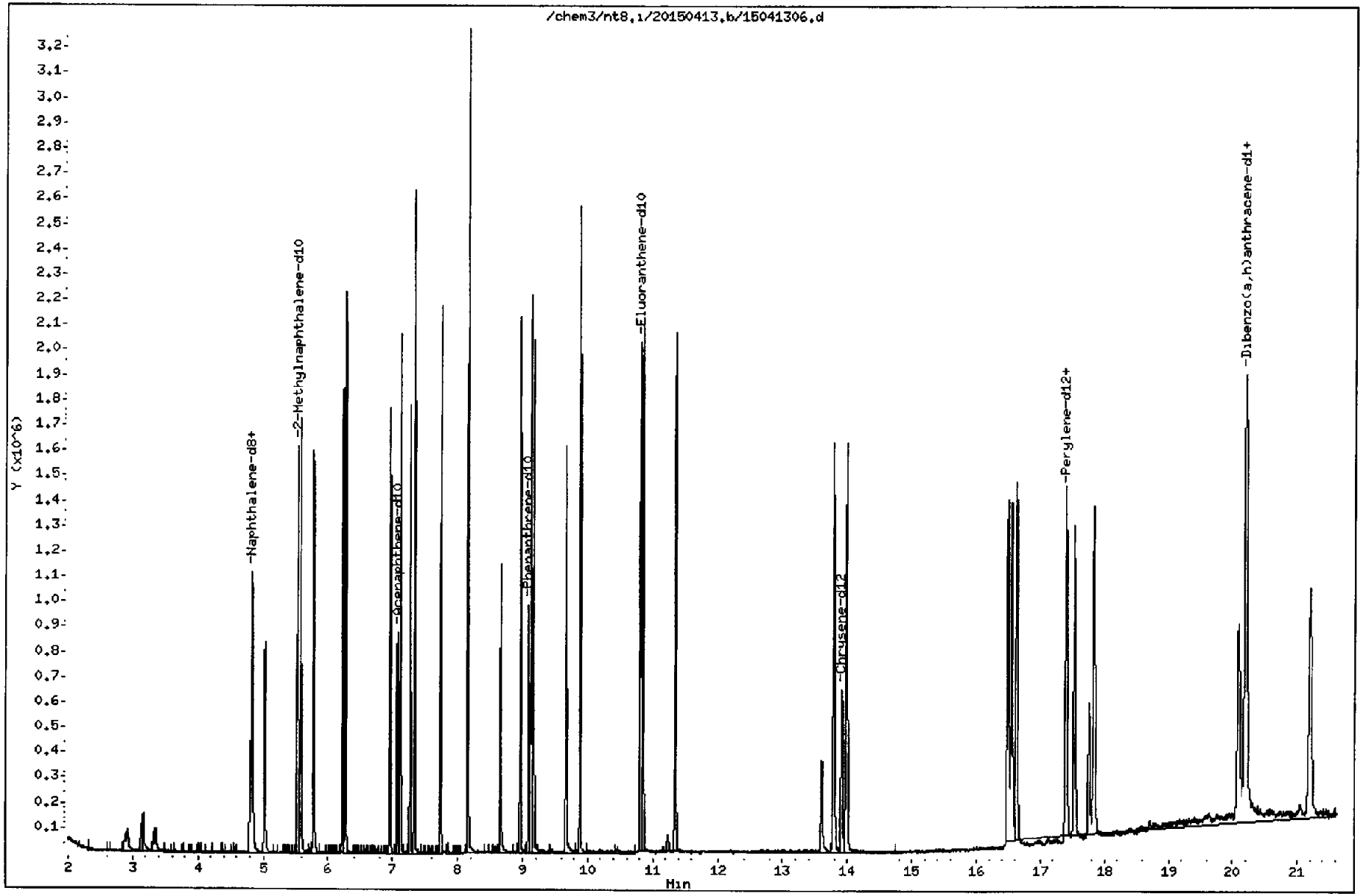
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150413.b/15041306.d
Date : 13-APR-2015 14:07
Client ID: IC5150413
Sample Info: IC5150413,

Instrument: nt8.1

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041306.d

Lab ID: SDD30-CAL5, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041307.d
Lab Smp Id: SDD30-CAL6 Client Smp ID: IC10150413
Inj Date : 13-APR-2015 14:32
Operator : JZ Inst ID: nt8.i
Smp Info : IC10150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:32 Cal File: 15041307.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.802	4.802	(1.000)	409499	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.006)	1918039	10.0000	9.713
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	1221831	10.0000	9.771
	14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	1165871	10.0000	9.914
	15 1-methylnaphthalene	141	5.773	5.770	(1.202)	1124247	10.0000	9.830
	19 Biphenyl	154	6.231	6.228	(0.881)	1572162	10.0000	9.696
	20 2,6-Dimethylnaphthalene	156	6.276	6.273	(0.888)	1215040	10.0000	10.12
	21 Acenaphthylene	152	6.962	6.959	(0.985)	1954243	10.0000	10.19
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	262568	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	1281982	10.0000	10.05
	11 Dibenzofuran	168	7.268	7.269	(1.028)	1686752	10.0000	9.556
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	1254873	10.0000	10.50
	25 Fluorene	166	7.743	7.743	(1.095)	1458055	10.0000	10.24
	27 Dibenzothiophene	184	8.966	8.963	(0.986)	1894203	10.0000	9.224
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	448359	2.00000	
	30 Phenanthrene	178	9.128	9.125	(1.004)	1985784	10.0000	9.295
	31 Anthracene	178	9.166	9 163	(1.008)	1904970	10.0000	9.844
	26 Carbazole	167	9.671	9.672	(1.064)	1682399	10.0000	9.944
	33 1-Methylphenanthrene	192	9.886	9.884	(1.088)	1667530	10 0000	10 08
	36 Fluoranthene	202	10.854	10.851	(1.194)	2318217	10.0000	9.274
$	253 Fluoranthene-d10	212	10.819	10.813	(1.190)	2164563	10.0000	9.815
	39 Pyrene	202	11.357	11.351	(0.816)	2449380	10.0000	9.723
	46 Benzo(a)anthracene	228	13.798	13.792	(0.992)	2321342	10.0000	10.24
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	452115	2.00000	
	48 Chrysene	228	13 994	13.988	(1.006)	2215334	10.0000	9.716
	51 Benzo(b)fluoranthene	252	16.505	16.489	(0.929)	2415171	10.0000	9.970
	52 Benzo(k)fluoranthene	252	16.565	16.546	(0.933)	2401915	10 0000	9.965

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
	251 Benzo(j)fluoranthene	252	16 644	16.625	(0.937)	2375015	10.0000	10.12
	55 Benzo(e)pyrene	252	17.412	17.396	(0.980)	2337431	10.0000	9.563
	54 Benzo(a)pyrene	252	17.542	17.526	(0.988)	2174669	10.0000	10.04
*	56 Perylene-d12	264	17.760	17 760	(1.000)	457765	2.00000	
	57 Perylene	252	17.845	17.833	(1.005)	2264893	10.0000	10.18
$	60 Dibenzo(a,h)anthracene-d14	292	20.109	20.081	(1.132)	1879915	10.0000	10.91
	63 Indeno(1,2,3-cd)pyrene	276	20.223	20.195	(1.139)	2721505	10 0000	10.52
	62 Dibenzo(a,h)anthracene	278	20.210	20.179	(1.138)	2284005	10.0000	11.39
	61 Benzo(g,h,i)perylene	276	21.222	21.194	(1.195)	2346750	10.0000	10.33

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041307.d
Lab Smp Id: SDD30-CAL6
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC10150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	409499	19.36
22 Acenaphthene-d10	230598	115299	461196	262568	13.86
28 Phenanthrene-d10	373928	186964	747856	448359	19.91
47 Chrysene-d12	381262	190631	762524	452115	18.58
56 Perylene-d12	380825	190412	761650	457765	20.20

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.91	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

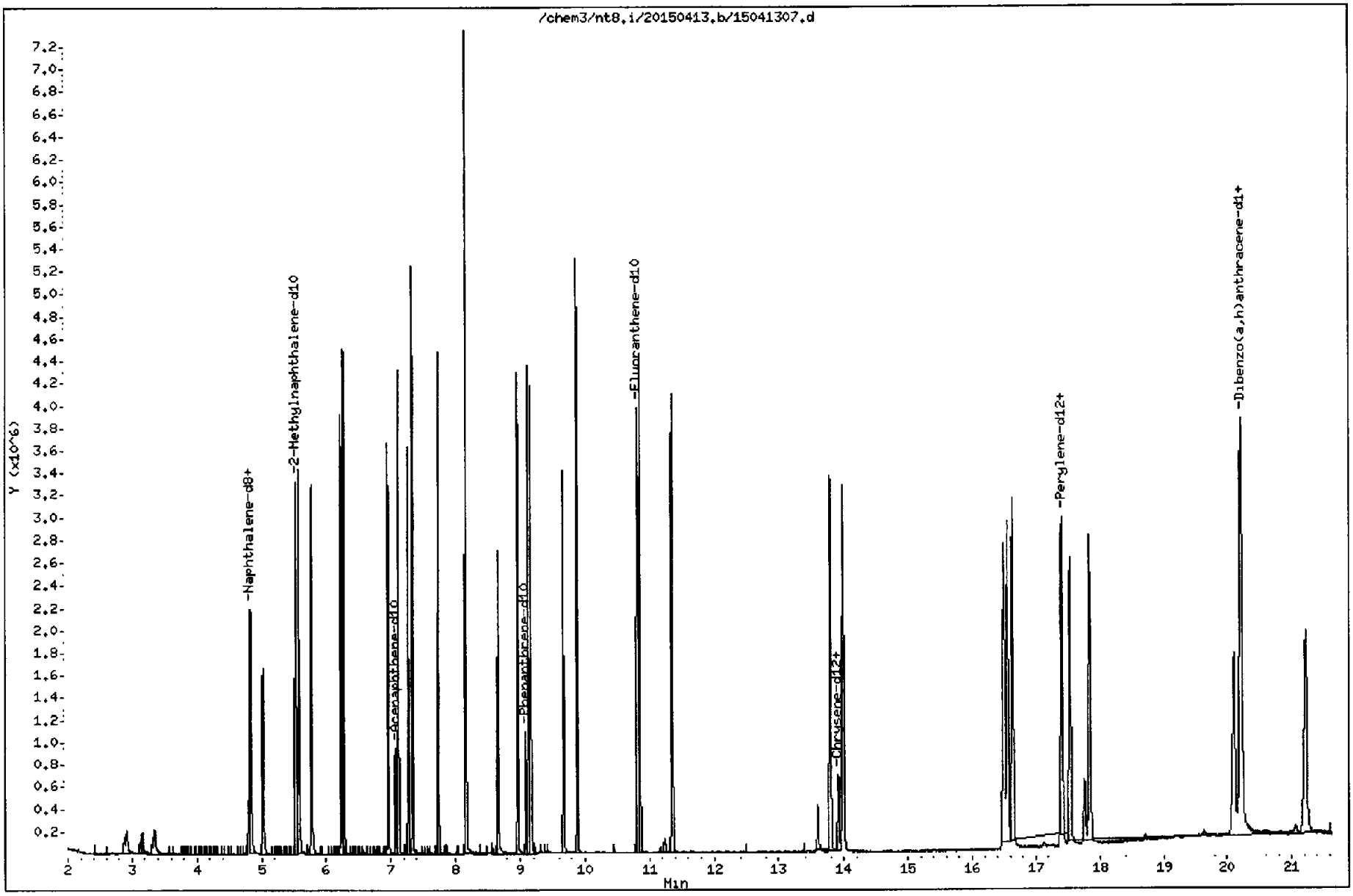
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041307.d
Date : 13-APR-2015 14:32
Client ID: IC10150413
Sample Info: IC10150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041307.d

Lab ID: SDD30-CAL6, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041309.d
Lab Smp Id: SDD0030-SCV1 Client Smp ID: SCV150413
Inj Date : 13-APR-2015 16:54
Operator : JZ Inst ID: nt8.i
Smp Info : SCV150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:13 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SIMPNAICV.sub
Target Version: 3.50

04/14/15

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.799	4.799	(1.000)	396827	2.00000	
7 Naphthalene	128	4.831	4.831	(1.007)	443976	2.32251	2.323
$ 12 2-Methylnaphthalene-d10	152	5 526	5.526	(1.152)	258316	2.13170	2.132
14 2-Methylnaphthalene	141	5.574	5.574	(1.161)	249152	2.18582	2.186
15 1-methylnaphthalene	141	5.767	5.764	(1.202)	249951	2.25647	2.256
21 Acenaphthylene	152	6.959	6.959	(0.984)	442842	2.36234	2.362
* 22 Acenaphthene-d10	164	7.069	7.069	(1.000)	256683	2.00000	
23 Acenaphthene	153	7.117	7.120	(1.007)	287870	2.30793	2.308
25 Fluorene	166	7.740	7.737	(1.095)	320800	2.30267	2.303
* 28 Phenanthrene-d10	188	9.090	9.090	(1.000)	413213	2.00000	
30 Phenanthrene	178	9.125	9.122	(1.004)	459146	2.33060	2.331
31 Anthracene	178	9.162	9.159	(1.008)	424354	2.39255	2.393
36 Fluoranthene	202	10.851	10 854	(1.194)	531021	2.30459	2.305
$ 253 Fluoranthene-d10	212	10.813	10.813	(1.190)	446225	2.19540	2.195
39 Pyrene	202	11.354	11.354	(0.816)	530850	2.16176	2.162
46 Benzo(a)anthracene	228	13.792	13.789	(0.991)	505205	2.28639	2.286

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
*	47 Chrysene-d12	240	13.918	13.915	(1.000)	440508	2.00000	
	48 Chrysene	228	13.988	13.985	(1.005)	497642	2.24620	2 246
	51 Benzo(b)fluoranthene	252	16.489	16.483	(0.929)	489120	2.13605	2.136
	52 Benzo(k)fluoranthene	252	16.549	16.549	(0 932)	520936	2.27689	2.277
	54 Benzo(a)pyrene	252	17 526	17.529	(0.987)	478284	2.34262	2.343
*	56 Perylene-d12	264	17.757	17.757	(1.000)	436031	2.00000	
$	60 Dibenzo(a,h)anthracene-d14	292	20.081	20.084	(1.131)	361419	2.17644	2.176
	63 Indeno(1,2,3-cd)pyrene	276	20.201	20.192	(1.138)	539813	2.20130	2.201
	62 Dibenzo(a,h)anthracene	278	20.188	20.192	(1.137)	462398	2.31510	2.315
	61 Benzo(g,h,i)perylene	276	21.197	21.191	(1.194)	469304	2.17566	2.176

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041309.d
Lab Smp Id: SDD0030-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: SCV150413
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	396827	15.66
22 Acenaphthene-d10	230598	115299	461196	256683	11.31
28 Phenanthrene-d10	373928	186964	747856	413213	10.51
47 Chrysene-d12	381262	190631	762524	440508	15.54
56 Perylene-d12	380825	190412	761650	436031	14.50

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	-0.07
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	0.00
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

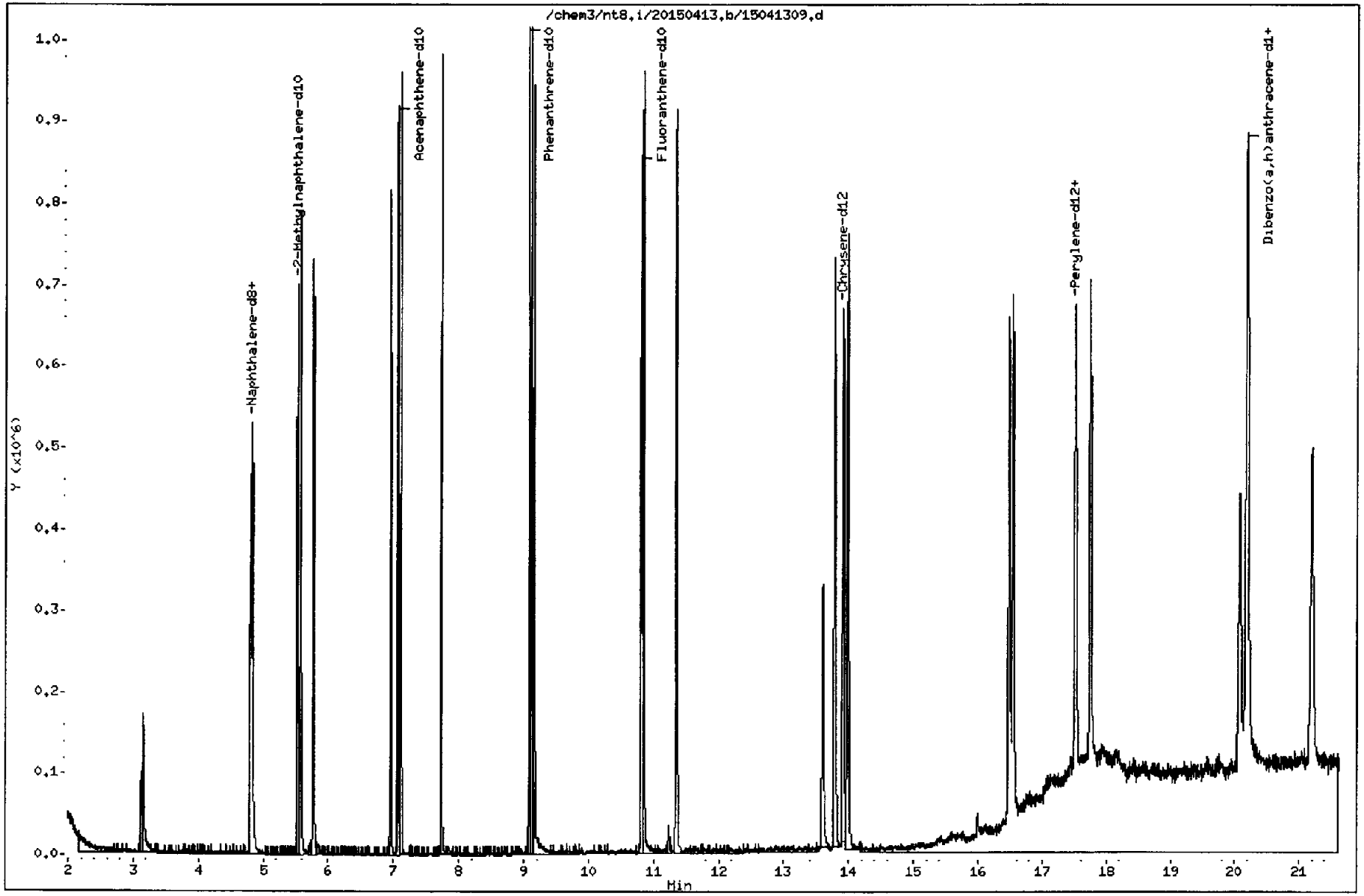
Client Name: Client SDG: 20150413
Sample Matrix: LIQUID Fraction: SV
Lab Smp Id: SDD0030-SCV1 Client Smp ID: SCV150413
Level: LOW Operator: JZ
Data Type: MS DATA SampleType: LCS
SpikeList File: Simpnaicv.spk Quant Type: ISTD
Sublist File: SIMPNAICV.sub
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	2.500	2.323	92.90	80-120
14 2-Methylnaphthalen	2.500	2.186	87.43	80-120
15 1-methylnaphthalen	2.500	2.256	90.26	80-120
21 Acenaphthylene	2.500	2.362	94.49	80-120
23 Acenaphthene	2.500	2.308	92.32	80-120
25 Fluorene	2.500	2.303	92.11	80-120
30 Phenanthrene	2.500	2.331	93.22	80-120
31 Anthracene	2.500	2.393	95.70	80-120
36 Fluoranthene	2.500	2.305	92.18	80-120
39 Pyrene	2.500	2.162	86.47	80-120
46 Benzo(a)anthracene	2.500	2.286	91.46	80-120
48 Chrysene	2.500	2.246	89.85	80-120
51 Benzo(b)fluoranthe	2.500	2.136	85.44	80-120
52 Benzo(k)fluoranthe	2.500	2.277	91.08	80-120
54 Benzo(a)pyrene	2.500	2.343	93.70	80-120
63 Indeno(1,2,3-cd)py	2.500	2.201	88.05	80-120
62 Dibenzo(a,h)anthra	2.500	2.315	92.60	80-120
61 Benzo(g,h,i)peryle	2.500	2.176	87.03	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	2.490	2.132	85.61	80-120
$ 253 Fluoranthene-d10	2.490	2.195	88.17	80-120
$ 60 Dibenzo(a,h)anthra	2.490	2.176	87.41	80-120

Data File: /chem3/nt8.i/20150413.b/15041309.d
Date : 13-APR-2015 16:54
Client ID: SCV150413
Sample Info: SCV150413,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15041309.d

Lab ID: SDD0030-SCV1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-AP

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

SIM PAH Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGA8

AGA8 : 00205

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC/MS SVOA Analyst Notes / Data Review Checklist

ELEMENT/NWA #.: AGAB Client: Kennedy Jenks

METHOD: **8270D** (SIM-SVOA) **KRONE** (Butyl Tins) **8270D** (SVOA) **8270D** (OP-Pest)

Instrument: NT-6 NT-8 NT-10 NT11 NT12 NT14

Calibration Code: YJ00019 Analysis Start Date: 5/27, 29/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
DFTPP Tune met Criteria?	Y / N /	Internal Standard within 50-200%?	Y / N /
DDT Breakdown <20%?	Y / N /	Retention Times within Windows?	Y / N /
Peak Tailing Factor ≤2?	Y / N /	Method Blank in Control?	Y / N /
ICV/CCV Meets %D?	Y / N /	BS/BSD Recovery in Control?	Y / N /
ICAL Q Flag applied?	Y / N /	BS/BSD RPD ≤ 30%?	NA / BS only
ICV/CCV Q flag applied?	Y / N /	MS / MSD Recovery in Control?	Y / N /
Surrogate Recovery met?	Y / N /	MS / MSD RPD ≤ 30%? See Form III	NA /
Manual Integrations?	Y / N	Samples Diluted?	Y / N / BX
Integration Summary?	Y / N /	Special Analysis Request?	Y / N

Detail problems, corrective actions and/or other pertinent information below.

5/27: Samples A-I + MB/LCS + MS/MSD

5/29: Dilution for sample 7.

CCV included

Forms attached.

Element sequence #: SDZ0069, SDZ0070

(Review 1) Analyst: _____ **Date:** 05/29/15

(Review 2) Reviewer: _____ **Date:** 5/27/15

AGAB 84267

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 5/27/15 Analysis: SIMPAH Analyst: AB

GC Program: SIMPAH Column No: 124228 Column Type: RXI-17SILMS

Instrument Tune (.U or .CT.): 150413 EM Voltage: 1761

Calibration File: 150527D2 Curve Date: 4/13/15 Injection Vol.: 1ul

Y0 00019

IS/SS	Ical/Ccal	LCS/ICV
D00207D	D000216	

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150527.b

	Time	Filename	LabID	ClientId	DF									
1	1545	15052701.d	DFTPP150527	DFTPP150527	1	NO ISTDS FOUND								
2	1556	15052702 d	ICV150527	ICV150527	1	4.75	281075	7 01	181534	9 03	326991	13.81	366685	17 64	361241
3	1625	15052703.d	AGA8MBS1	AGA8MBS1	1	4.74	335940	7.01	218338	9 03	386006	13 81	422989	17 63	431228
4	1650	15052704.d	AGA8LCSS1	AGA8LCSS1	1	4.74	366753	7 01	233918	9.03	412030	13 81	458153	17 64	458334
5	1716	15052705.d	AGA8A	SDP-10(13 5-	1	4.74	349874	7 01	216747	9 03	376479	13 81	424700	17.64	446685
6	1742	15052706.d	AGA8B	SDP-10(15 5-	1	4.74	384878	7 01	244430	9 03	422078	13 81	471771	17 64	481386
7	1807	15052707.d	AGA8C	SDP-10(16.5-	1	4.74	380954	7 01	249211	9 03	429848	13.81	479365	17 64	486152
8	1833	15052708.d	AGA8D	SDP-09(2 5-4	1	4.74	369183	7.01	240902	9 03	421209	13.82	477730	17 64	500585
9	1859	15052709.d	AGA8E	SDP-08(12 0-	1	4 74	403717	7.01	253414	9 03	434695	13 81	487049	17 64	493365
10	1924	15052710.d	AGA8F E	SDP-07(1 5-3	1	4 74	382842	7.01	244729	9.03	437670	13 83	534120	17.66	547717
11	1950	15052711.d	AGA8FMS	SDP-07(1 5-3	1	4.74	401289	7.01	264907	9.03	470490	13 84	600641	17 67	585844
12	2016	15052712.d	AGA8FMSD	SDP-07(1 5-3	1	4 74	410175	7 01	276164	9 03	484508	13 84	613159	17 67	618327
13	2041	15052713 d	AGA8G	SDP-07(8.5-9	1	4.74	395405	7 01	254094	9 03	438676	13 82	477545	17 64	517480
14	2107	15052714.d	AGA8H	SDP-06(12.5-	1	4 74	412336	7 01	262925	9 03	448619	13 82	510938	17.65	543333
15	2133	15052715.d	AGA8I	SDP-06(10.0-	1	4 75	414841	7.01	273091	9.03	467739	13 82	521253	17.64	756546
16	2158	15052716.d	CCV150527	CCV150527	1	4 75	355499	7 01	216453	9.03	466212	13.81	534655	17.64	596570

AB 05/28/15

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150527.b

ARI Job No.: ICV1 Method: FSIMPNA150413.m Instrument: nt8.i Date: 27-MAY-2015

AZ 05/28/15

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1556	15052702.d	ICV150527	ICV150527	1	NO MANUAL INTEGRATION
1625	15052703 d	AGA8MBS1	AGA8MBS1	1	NO MANUAL INTEGRATION
1650	15052704 d	AGA8LCSS1	AGA8LCSS1	1	NO MANUAL INTEGRATION
1716	15052705.d	AGA8A	SDP-10(13.	1	Benzo(k)fluoranthene, Benzo(g,h,i)perylene,
1742	15052706.d	AGA8B	SDP-10(15.	1	Benzo(a)pyrene,
1807	15052707 d	AGA8C	SDP-10(16.	1	NO MANUAL INTEGRATION
1833	15052708 d	AGA8D	SDP-09(2.5	1	Anthracene,
1859	15052709 d	AGA8E	SDP-08(12.	1	NO MANUAL INTEGRATION
1924	15052710.d	AGA8F	SDP-07(1.5	1	NO MANUAL INTEGRATION
1950	15052711.d	AGA8FMS	SDP-07(1.5	1	NO MANUAL INTEGRATION
2016	15052712.d	AGA8FMSD	SDP-07(1.5	1	NO MANUAL INTEGRATION
2041	15052713.d	AGA8G	SDP-07(8.5	1	Benzo(b)fluoranthene,
2107	15052714 d	AGA8H	SDP-06(12.	1	NO MANUAL INTEGRATION
2133	15052715 d	AGA8I	SDP-06(10.	1	NO MANUAL INTEGRATION
2158	15052716.d	CCV150527	CCV150527	1	NO MANUAL INTEGRATION

SSSSS - 05/28/15

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt8.i/20150527.b

Instrument: nt8.i Date: 27-MAY-2015 Method: FSIMPNA150413.m

INITIAL CAL: 13-APR-2015

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 27-MAY-2015

Compound	%D
NO Q-FLAGS	

05/27/15

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 27-MAY-2015 15:56
Lab File ID: 15052702.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: ICV150527 Quant Type: ISTD
Method: /chem3/nt8.i/20150527.b/FSIMPNA150413.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.96707	0.100	0.37521	20.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0 59975	0.100	-1.79863	20.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.59012	0.100	2.72038	20.00000	Averaged
15 1-methylnaphthalene	0.55829	0.56249	0.100	0.75337	20.00000	Averaged
21 Acenaphthylene	1.46062	1.52187	0.100	4.19334	20.00000	Averaged
23 Acenaphthene	0.97186	0.99338	0.100	2.21420	20.00000	Averaged
11 Dibenzofuran	1.34410	1.41837	0.100	5.52591	20.00000	Averaged
25 Fluorene	1.08551	1.13803	0.100	4.83832	20.00000	Averaged
30 Phenanthrene	0.95354	0.93921	0.100	-1.50250	20 00000	Averaged
31 Anthracene	0.85847	0.86803	0.100	1.11446	20.00000	Averaged
36 Fluoranthene	1.11525	1.10787	0.100	-0.66197	20.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.01169	0.100	2.83714	20.00000	Averaged
39 Pyrene	1.11491	1.01158	0 100	-9.26834	20.00000	Averaged
46 Benzo(a)anthracene	1.00322	0.96153	0.100	-4.15470	20.00000	Averaged
48 Chrysene	1.00588	0.94789	0.100	-5.76517	20.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	0.99186	0.100	-5.56490	20 00000	Averaged
52 Benzo(k)fluoranthene	1.04943	1.02660	0.100	-2.17554	20.00000	Averaged
251 Benzo(j)fluoranthene	1 02402	1 00997	0.100	-1.37201	20.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.85127	0.100	-9.09899	20 00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.10838	0.100	-1.45995	20.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0 77684	0.010	1.98901	20.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.91302	0.100	-0.34019	20 00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0 95582	0.100	-3.39437	20.00000	Averaged
57 Perylene	0.97216	0.93691	0.100	-3.62608	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052702.d
Lab Smp Id: ICV150527 Client Smp ID: ICV150527
Inj Date : 27-MAY-2015 15:56
Operator : JZ Inst ID: nt8.i
Smp Info : ICV150527
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:05 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/27/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.745	4.745	(1.000)	281075	2.00000	
	7 Naphthalene	128	4.774	4.774	(1.006)	339773	2.50000	2.509
$	12 2-Methylnaphthalene-d10	152	5.469	5.469	(1.153)	210719	2.50000	2.455
	14 2-Methylnaphthalene	141	5.520	5.520	(1.163)	207333	2.50000	2.568
	15 1-methylnaphthalene	141	5.713	5.713	(1.204)	197627	2.50000	2.519
	21 Acenaphthylene	152	6.899	6.899	(0.984)	345341	2.50000	2.605
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	181534	2.00000	
	23 Acenaphthene	153	7.057	7.057	(1.007)	225417	2.50000	2.555
	11 Dibenzofuran	168	7.208	7.208	(1.028)	321854	2.50000	2.638
	25 Fluorene	166	7.680	7.680	(1.096)	258240	2.50000	2.621
*	28 Phenanthrene-d10	188	9.027	9.027	(1.000)	326991	2.00000	
	30 Phenanthrene	178	9.061	9.061	(1.004)	383893	2.50000	2.462
	31 Anthracene	178	9.102	9.102	(1.008)	354798	2 50000	2.528
	36 Fluoranthene	202	10.775	10.775	(1.194)	452830	2.50000	2 483
$	253 Fluoranthene-d10	212	10.737	10.737	(1.190)	413515	2 50000	2.571
	39 Pyrene	202	11.268	11.268	(0.816)	463664	2.50000	2 268
	46 Benzo(a)anthracene	228	13.691	13.691	(0.991)	440726	2.50000	2.396
*	47 Chrysene-d12	240	13.811	13.811	(1.000)	366685	2.00000	
	48 Chrysene	228	13.883	13.883	(1.005)	434471	2.50000	2.356
	51 Benzo(b)fluoranthene	252	16.375	16.375	(0.928)	447874	2.50000	2.361
	52 Benzo(k)fluoranthene	252	16 438	16.438	(0.932)	463563	2 50000	2.446
	251 Benzo(j)fluoranthene	252	16 511	16.511	(0.936)	456051	2.50000	2.466
	54 Benzo(a)pyrene	252	17.412	17.412	(0.987)	384390	2.50000	2.273
*	56 Perylene-d12	264	17.640	17.640	(1.000)	361241	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.052	20.052	(1.137)	500492	2.50000	2.464
$	60 Dibenzo(a,h)anthracene-d14	292	19.939	19.939	(1.130)	350782	2.50000	2.550
	62 Dibenzo(a,h)anthracene	278	20.037	20.037	(1.136)	412273	2.50000	2.491

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.020	21.020	(1.192)	431604	2.50000	2.415
57 Perylene	252	17.713	17.713	(1.004)	423062	2.50000	2.409

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052702.d
Lab Smp Id: ICV150527
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: ICV150527
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	281075	-18.08
22 Acenaphthene-d10	230598	115299	461196	181534	-21.28
28 Phenanthrene-d10	373928	186964	747856	326991	-12.55
47 Chrysene-d12	381262	190631	762524	366685	-3.82
56 Perylene-d12	380825	190412	761650	361241	-5.14

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

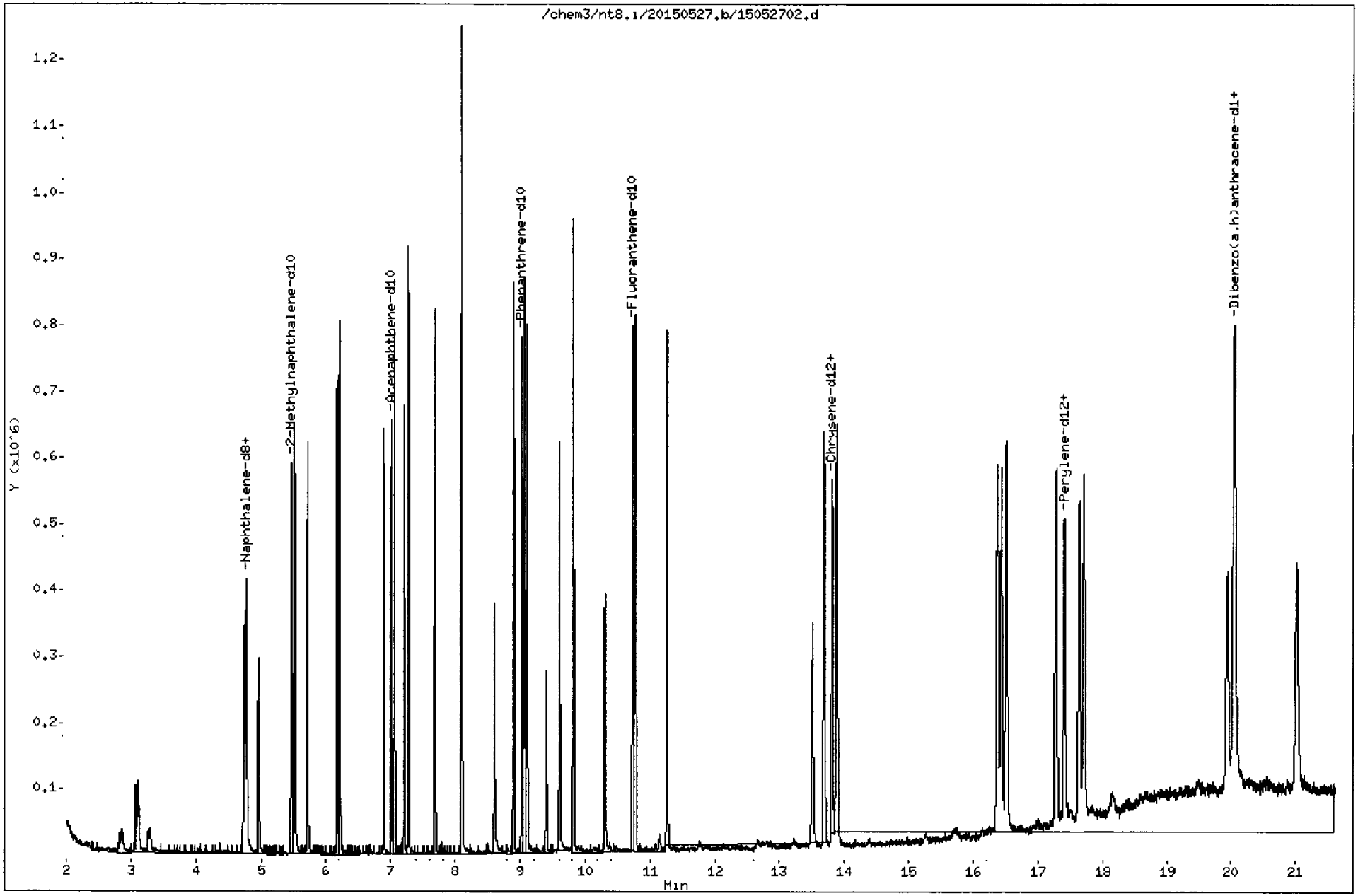
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150527.b/15052702.d
Date : 27-MAY-2015 15:56
Client ID: ICW150527
Sample Info: ICW150527

Instrument: nt8.1

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052702.d

Lab ID: ICV150527, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem3/nt8.1/20150527.b/tune.b/15052701.d

Date : 27-MAY-2015 15:45

Client ID: DFTPP150527

Instrument: nt8.1

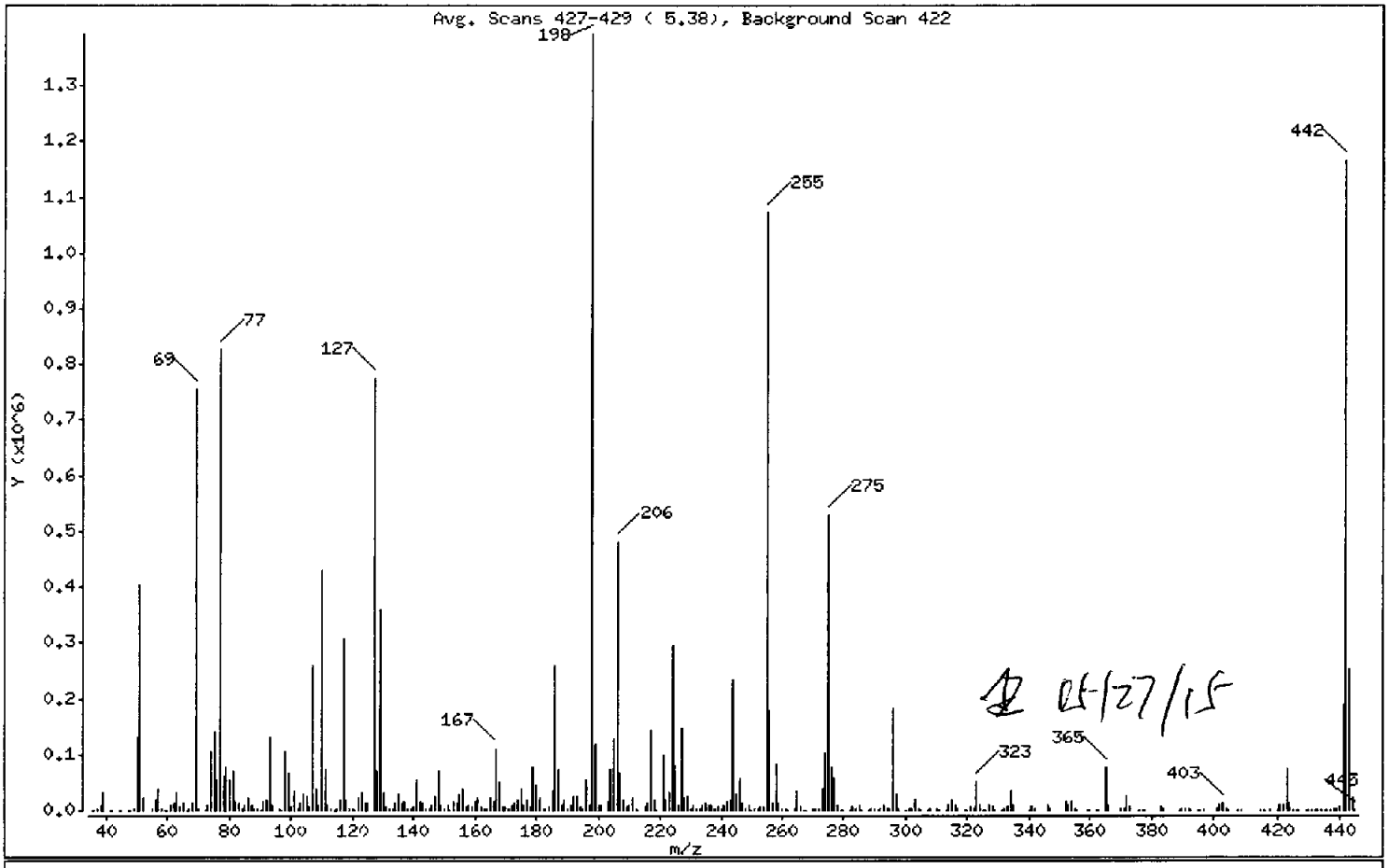
Sample Info: DFTPP150527

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	28.99
68	Less than 2.00% of mass 69	0.82 (1.51)
69	Mass 69 relative abundance	54.30
70	Less than 2.00% of mass 69	0.32 (0.59)
127	10.00 - 80.00% of mass 198	55.62
197	Less than 2.00% of mass 198	0.67
199	5.00 - 9.00% of mass 198	8.40
275	10.00 - 60.00% of mass 198	37.92
365	Greater than 1.00% of mass 198	5.51
441	0.01 - 24.00% of mass 442	13.51 (16.15)
442	50.00 - 200.00% of mass 198	83.65
443	15.00 - 24.00% of mass 442	18.13 (21.68)

AIAA : 20277

Date : 27-MAY-2015 15:45

Client ID: DFTPP150527 Instrument: nt8.1

Sample Info: DFTPP150527

Operator: JZ

Column phase: ZB-5msi Column diameter: 0.32

Data File: 15052701.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 377

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	447	132.00	3362	227.00	145984	325.00	839
36.00	497	133.00	1718	228.00	21544	326.00	1272
37.00	3381	134.00	11625	229.00	27208	327.00	10336
38.00	8522	135.00	30000	230.00	3190	328.00	5203
39.00	33168	136.00	12036	231.00	10974	329.00	956
40.00	1379	137.00	16123	232.00	2201	330.00	396
41.00	1085	138.00	3182	233.00	2912	331.00	256
42.00	267	139.00	2186	234.00	10189	332.00	3456
43.00	777	140.00	5754	235.00	11304	333.00	5435
44.00	115	141.00	54752	236.00	8106	334.00	33856
45.00	653	142.00	15960	237.00	9934	335.00	8797
47.00	469	143.00	11259	238.00	1722	336.00	1204
48.00	587	144.00	2603	239.00	6780	337.00	271
49.00	2416	145.00	1984	240.00	4260	339.00	683
50.00	130600	146.00	10652	241.00	8798	340.00	1339
51.00	403904	147.00	25584	242.00	16520	341.00	5549
52.00	23528	148.00	70920	243.00	17736	342.00	1694
53.00	970	149.00	10340	244.00	233088	346.00	11113
55.00	3782	150.00	4038	245.00	29688	347.00	1982
56.00	17656	151.00	8450	246.00	58136	348.00	208
57.00	37184	152.00	551	247.00	11309	350.00	180
58.00	2658	153.00	16496	248.00	2117	351.00	1366
59.00	563	154.00	11499	249.00	9003	352.00	14657
60.00	252	155.00	28064	250.00	1439	353.00	10255
61.00	9458	156.00	39656	251.00	2301	354.00	17376
62.00	12343	157.00	7867	252.00	2668	355.00	3841
63.00	31208	158.00	9820	253.00	5498	356.00	410
64.00	4865	159.00	6341	254.00	6778	357.00	268
65.00	13939	160.00	15916	255.00	1071616	359.00	1242
66.00	1185	161.00	22816	256.00	180352	360.00	144
67.00	2966	162.00	6899	257.00	12360	362.00	85
68.00	11432	163.00	1980	258.00	83312	363.00	522
69.00	756480	164.00	3188	259.00	12253	364.00	638
70.00	4500	165.00	21384	260.00	2273	365.00	76712
71.00	749	166.00	14763	261.00	2588	366.00	11059

Date : 27-MAY-2015 15:45

Client ID: DFTPP150527 Instrument: nt8.1

Sample Info: DFTPP150527

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052701.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 377

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	310	167.00	109456	262.00	253	367.00	1039
73.00	9274	168.00	50792	263.00	1184	370.00	1614
74.00	104984	169.00	7571	264.00	2425	371.00	4200
75.00	142272	170.00	5035	265.00	34928	372.00	24192
76.00	55160	171.00	4724	266.00	4983	373.00	6457
77.00	827136	172.00	9799	267.00	499	374.00	1043
78.00	60992	173.00	11879	268.00	443	376.00	197
79.00	75832	174.00	20344	269.00	172	377.00	598
80.00	55256	175.00	39088	270.00	1712	378.00	92
81.00	69808	176.00	10820	271.00	2438	383.00	5323
82.00	15918	177.00	20336	272.00	3705	384.00	1944
83.00	13703	178.00	7212	273.00	38976	385.00	301
84.00	1640	179.00	76456	274.00	101320	389.00	159
85.00	11069	180.00	44784	275.00	528320	390.00	2727
86.00	21760	181.00	22744	276.00	76768	391.00	2274
87.00	9742	182.00	3464	277.00	58816	392.00	1741
88.00	2998	183.00	2014	278.00	9133	393.00	572
89.00	1946	184.00	5959	279.00	1417	395.00	419
90.00	196	185.00	36264	280.00	481	396.00	108
91.00	16279	186.00	259968	282.00	1440	397.00	181
92.00	18808	187.00	73544	283.00	6495	401.00	1689
93.00	131584	188.00	8609	284.00	3777	402.00	9270
94.00	8197	189.00	20600	285.00	8512	403.00	11831
95.00	1367	190.00	3037	286.00	1189	404.00	4766
96.00	4362	191.00	8390	287.00	227	405.00	455
97.00	1102	192.00	24264	288.00	555	408.00	159
98.00	105216	193.00	25376	289.00	1940	409.00	275
99.00	68448	194.00	5815	290.00	1842	410.00	296
100.00	5323	195.00	2950	291.00	1336	415.00	322
101.00	33712	196.00	55960	292.00	2480	416.00	107
102.00	1705	197.00	9379	293.00	10899	418.00	143
103.00	12577	198.00	1393152	294.00	3053	420.00	674
104.00	28344	199.00	117000	295.00	4786	421.00	9835
105.00	25272	200.00	10574	296.00	183936	422.00	8814
106.00	5418	201.00	8241	297.00	28760	423.00	74320

Data File: /chem3/nt8.1/20150527.b/tune.b/15052701.d

Date : 27-MAY-2015 15:45

Client ID: DFTPP150527 Instrument: nt8.1

Sample Info: DFTPP150527

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052701.d
Spectrum: Avg. Scans 427-429 (5.38). Background Scan 422
Location of Maximum: 198.00
Number of points: 377

m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	258752	202.00	898	298.00	2261	424.00	14213
108.00	39984	203.00	16896	299.00	428	425.00	1432
109.00	10595	204.00	72992	300.00	339	426.00	218
110.00	427904	205.00	128248	301.00	2340	427.00	237
111.00	73408	206.00	481728	302.00	2704	428.00	208
112.00	9160	207.00	65784	303.00	19608	429.00	268
113.00	3019	208.00	20264	304.00	4778	430.00	205
114.00	584	209.00	6781	305.00	719	431.00	391
115.00	2243	210.00	9152	307.00	386	432.00	554
116.00	18496	211.00	22512	308.00	2293	433.00	913
117.00	308608	212.00	4475	309.00	1489	434.00	1168
118.00	20120	213.00	1159	310.00	2284	435.00	580
119.00	2013	214.00	1157	311.00	514	436.00	778
120.00	3476	215.00	7030	312.00	750	437.00	1486
121.00	1599	216.00	12751	313.00	1536	438.00	1967
122.00	23704	217.00	144448	314.00	8098	439.00	4239
123.00	30824	218.00	19304	315.00	19056	440.00	4849
124.00	12886	219.00	1202	316.00	8713	441.00	188224
125.00	12560	220.00	511	317.00	1869	442.00	1165312
126.00	713	221.00	98136	319.00	218	443.00	252608
127.00	774848	222.00	20512	320.00	764	444.00	23896
128.00	71344	223.00	31720	321.00	5552	445.00	1278
129.00	358848	224.00	295936	322.00	2999		
130.00	31576	225.00	81560	323.00	50192		
131.00	6227	226.00	8981	324.00	8976		

Data File: /chem3/nt8.i/20150527.b/tune.b/15052701.d

Date : 27-MAY-2015 15:45

Client ID: DFTPP150527

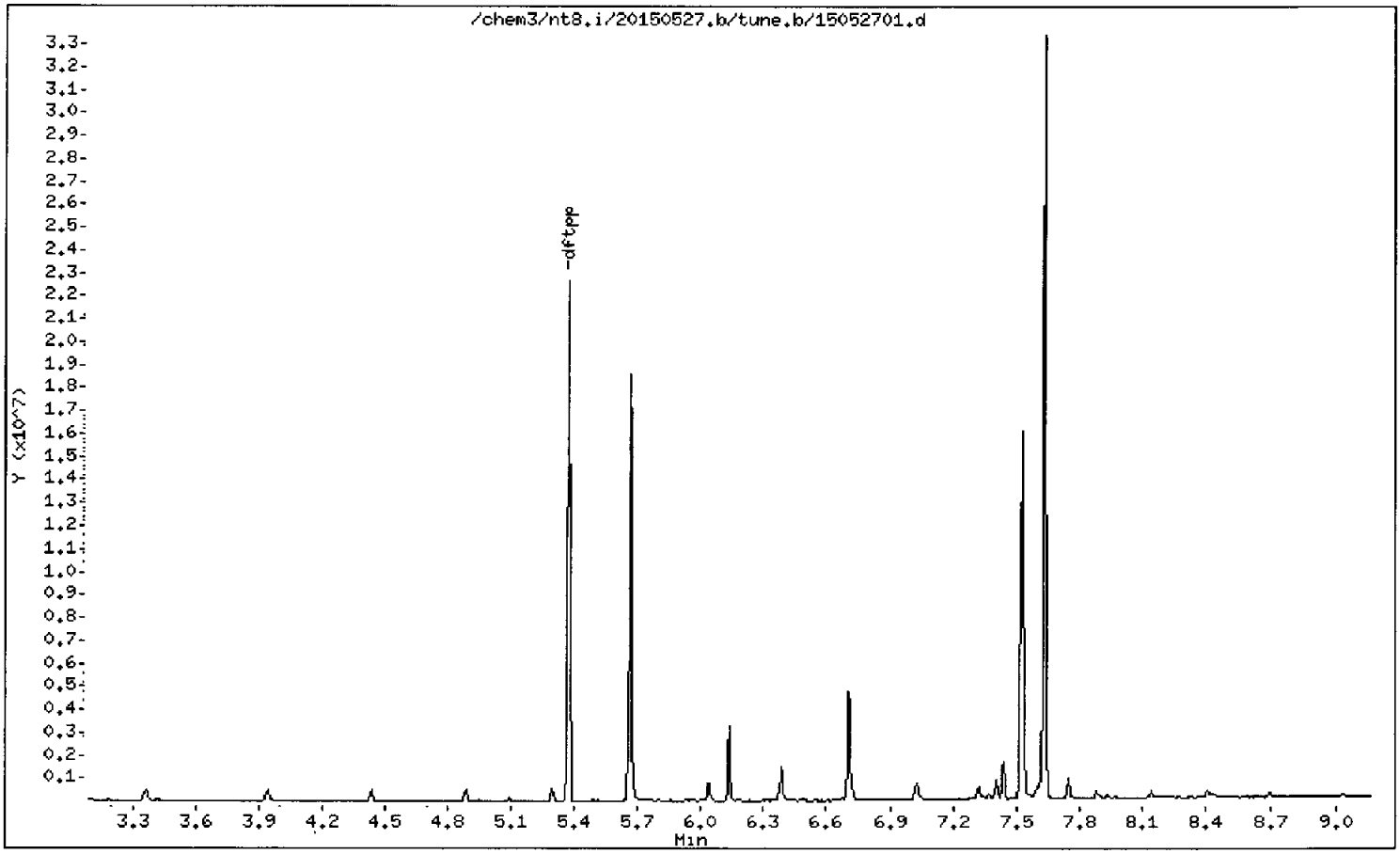
Instrument: nt8.i

Sample Info: DFTPP150527

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150527.b/ddt.b/15052701.d ARI ID: DDT150527
Method: /chem3/nt8.i/20150527.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 27-MAY-2015 15:45 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.670	1578750
Benzidine	7.526	4176258
4,4'-DDE	7.034	18749
4,4'-DDD	7.441	221900
4,4'-DDT	7.633	3402427

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

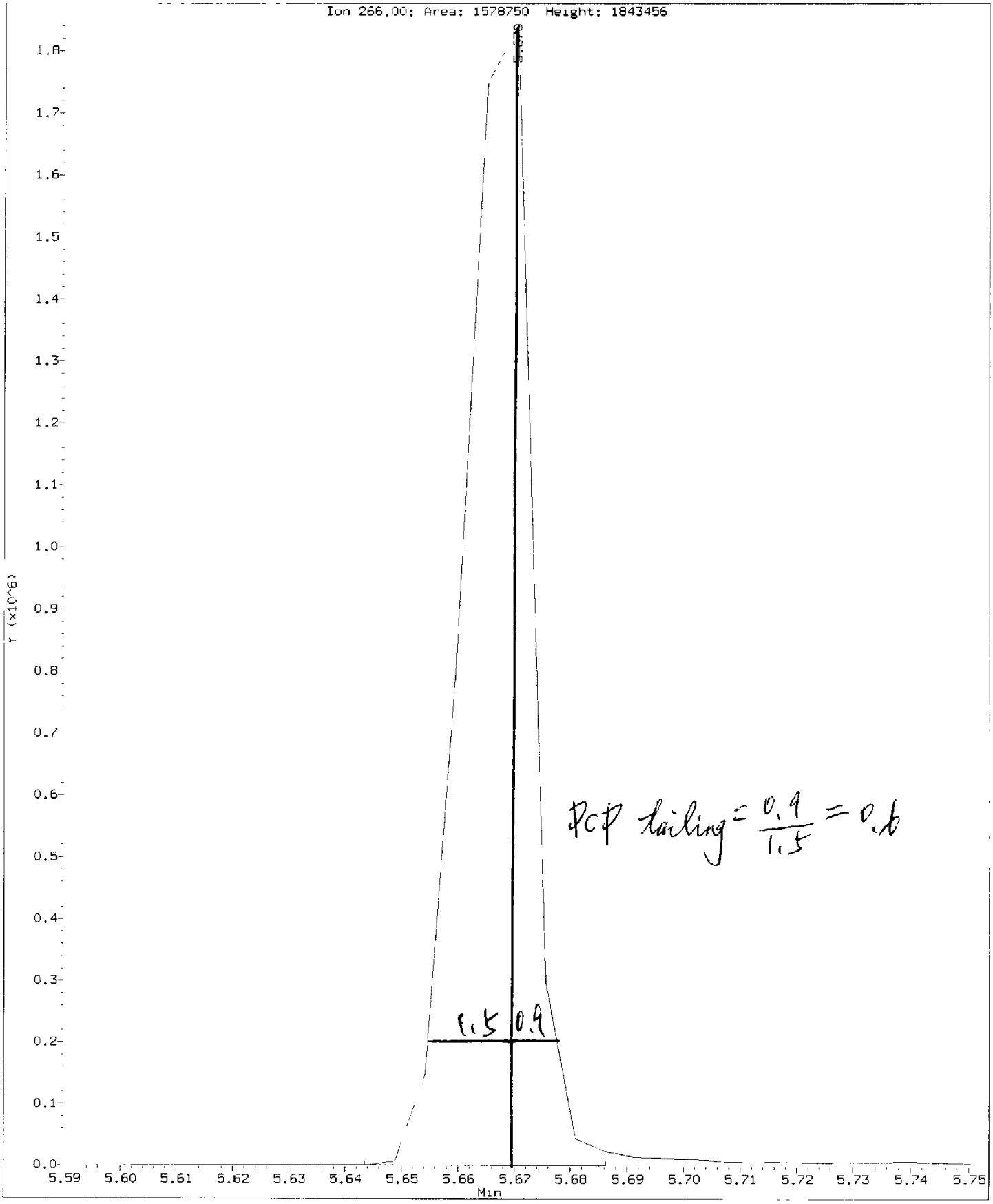
$$\text{DDT Percent Breakdown} = \frac{(18749 + 221900) * 100}{(18749 + 221900 + 3402427)}$$

DDT Percent Breakdown = 6.6 %

05/27/15

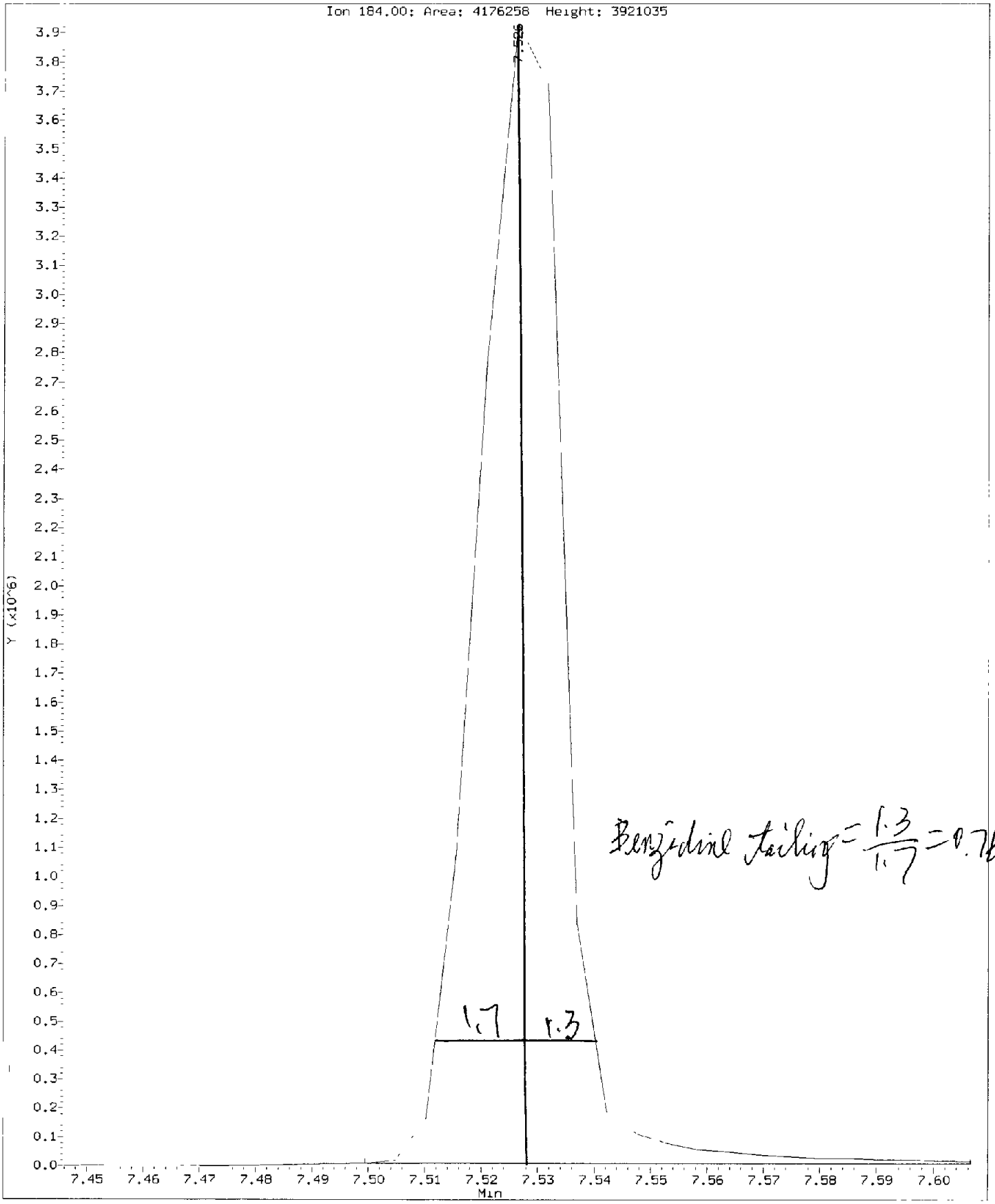
Data File: /chem3/nt8.1/20150527.b/ddt.b/15052701.d
Injection Date: 27-MAY-2015 15:45
Instrument: nt8.1
Client Sample ID: DDT150527

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.1/20150527.b/ddt.b/15052701.d
Injection Date: 27-MAY-2015 15:45
Instrument: nt8.1
Client Sample ID: DDT150527

Compound: Benzidine
CAS Number:



Benzidine tailing = $\frac{1.3}{1.7} = 0.76$

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 27-MAY-2015 21:58
Lab File ID: 15052716.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: CCV150527 Quant Type: ISTD
Method: /chem3/nt8.i/20150527.b/ccv.b/FSIMPNA150413C.m

JZ 06/28/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.95881	0 100	-0.48240	50.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.57426	0 100	-5.97253	50.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.55934	0.100	-2.63653	50.00000	Averaged
15 1-methylnaphthalene	0.55829	0.55547	0.100	-0.50380	50.00000	Averaged
21 Acenaphthylene	1.46062	1.55498	0.100	6.45987	50.00000	Averaged
23 Acenaphthene	0.97186	1.00313	0.100	3.21666	50.00000	Averaged
11 Dibenzofuran	1.34410	1.39655	0.100	3.90202	50.00000	Averaged
25 Fluorene	1.08551	1.18277	0.100	8 95950	50.00000	Averaged
30 Phenanthrene	0.95354	0.93825	0.100	-1 60307	50.00000	Averaged
31 Anthracene	0.85847	0.88962	0.100	3 62959	50.00000	Averaged
36 Fluoranthene	1.11525	1.12008	0.100	0.43247	50.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.01450	0.100	3.12264	50.00000	Averaged
39 Pyrene	1.11491	1.01396	0.100	-9.05500	50.00000	Averaged
46 Benzo(a)anthracene	1.00322	0.98790	0.100	-1.52658	50.00000	Averaged
48 Chrysene	1 00588	0.94841	0.100	-5.71291	50.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	0.94933	0.100	-9.61385	50.00000	Averaged
52 Benzo(k)fluoranthene	1 04943	0.95787	0.100	-8.72530	50.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0.91677	0.100	-10.47279	50.00000	Averaged
54 Benzo(a)pyrene	0 93648	0.86472	0.100	-7.66278	50.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.17660	0.100	4.60463	50.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.83059	0.010	9.04601	50.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.98460	0.100	7.47323	50.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	1.00513	0.100	1.58941	50.00000	Averaged
57 Perylene	0.97216	0.92848	0.100	-4.49272	50.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/ccv.b/15052716.d
Lab Smp Id: CCV150527 Client Smp ID: CCV150527
Inj Date : 27-MAY-2015 21:58
Operator : JZ Inst ID: nt8.i
Smp Info : CCV150527
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/ccv.b/FSIMPNA150413C.m
Meth Date : 28-May-2015 10:44 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 16 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/28/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.745	4.745	(1.000)	355499	2.00000	
	7 Naphthalene	128	4.777	4.777	(1 007)	426068	2.50000	2.488
$	12 2-Methylnaphthalene-d10	152	5.472	5.472	(1.153)	255186	2.50000	2.351
	14 2-Methylnaphthalene	141	5.523	5.523	(1.164)	248556	2.50000	2.434
	15 1-methylnaphthalene	141	5.716	5.716	(1.205)	246837	2.50000	2.487
	21 Acenaphthylene	152	6.898	6.898	(0.984)	420726	2.50000	2.661
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	216453	2.00000	
	23 Acenaphthene	153	7.060	7.060	(1.007)	271413	2.50000	2.580
	11 Dibenzofuran	168	7.208	7.208	(1.028)	377859	2.50000	2 598
	25 Fluorene	166	7.683	7.683	(1.096)	320018	2.50000	2.724
*	28 Phenanthrene-d10	188	9.027	9.027	(1.000)	466212	2.00000	
	30 Phenanthrene	178	9.061	9 061	(1.004)	546783	2.50000	2.460
	31 Anthracene	178	9.102	9.102	(1.008)	518443	2.50000	2.591
	36 Fluoranthene	202	10.775	10.775	(1.194)	652743	2.50000	2.511
$	253 Fluoranthene-d10	212	10.740	10.740	(1.190)	591213	2.50000	2 578
	39 Pyrene	202	11.268	11.268	(0.816)	677648	2.50000	2.274
	46 Benzo(a)anthracene	228	13.690	13.690	(0.991)	660233	2.50000	2.462
*	47 Chrysene-d12	240	13.814	13.814	(1.000)	534655	2.00000	
	48 Chrysene	228	13.886	13.886	(1.005)	633844	2.50000	2.357
	51 Benzo(b)fluoranthene	252	16.378	16.378	(0.928)	707927	2.50000	2.260
	52 Benzo(k)fluoranthene	252	16.438	16.438	(0.932)	714292	2.50000	2.282
	251 Benzo(j)fluoranthene	252	16.514	16.514	(0.936)	683648	2.50000	2.238
	54 Benzo(a)pyrene	252	17.412	17.412	(0.987)	644829	2.50000	2.308
*	56 Perylene-d12	264	17.640	17 640	(1.000)	596570	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.059	20.059	(1.137)	877403	2.50000	2.615
$	60 Dibenzo(a,h)anthracene-d14	292	19.945	19.945	(1.131)	619381	2.50000	2.726
	62 Dibenzo(a,h)anthracene	278	20.040	20.040	(1.136)	734226	2.50000	2.687

AR48 · 002545

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.029	21.029	(1.192)	749541	2.50000	2.540
57 Perylene	252	17.709	17.709	(1.004)	692381	2.50000	2.388

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052716.d
Lab Smp Id: CCV150527
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/ccv.b/FSIMPNA150413C.m
Misc Info: 15-

Calibration Date: 27-MAY-2015
Calibration Time: 21:58
Client Smp ID: CCV150527
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	355499	3.62
22 Acenaphthene-d10	230598	115299	461196	216453	-6.13
28 Phenanthrene-d10	373928	186964	747856	466212	24.68
47 Chrysene-d12	381262	190631	762524	534655	40.23
56 Perylene-d12	380825	190412	761650	596570	56.65

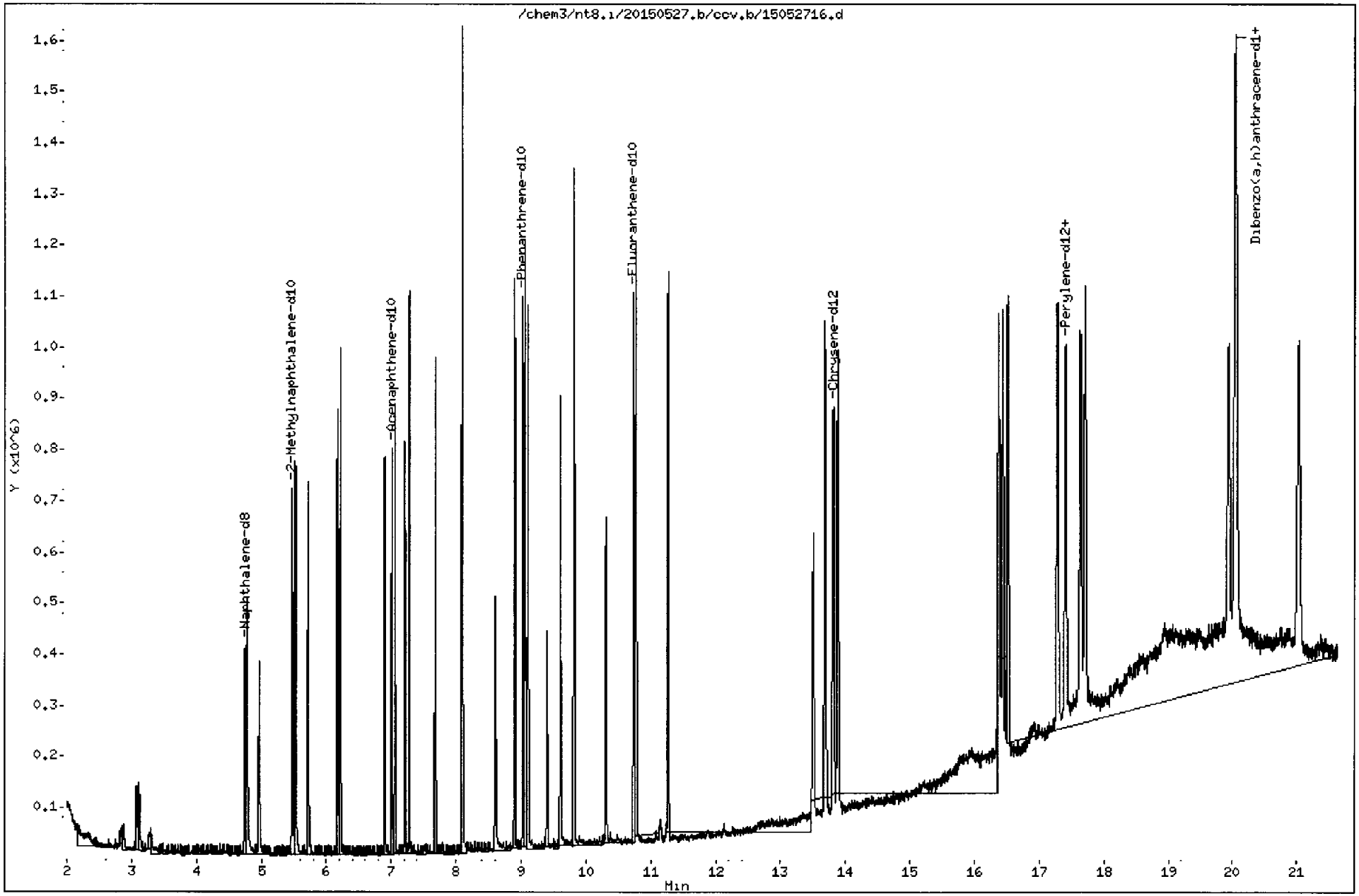
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150527.b/ccv.b/15052716.d
Date : 27-MAY-2015 21:58
Client ID: CCV150527
Sample Info: CCV150527

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052716.d

Lab ID: CCV150527, Method: ccv.b/FSIMPNA150413C.m, Instrument: nt8.i, Date: 2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052703.d
Lab Smp Id: AGA8MBS1 Client Smp ID: AGA8MBS1
Inj Date : 27-MAY-2015 16:25
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8MBS1,
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:21 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 3 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	10.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6	Naphthalene-d8	136	4.736	4.745	(1.000)	335940	2.00000	
7	Naphthalene	128	Compound Not Detected.					
$ 12	2-Methylnaphthalene-d10	152	5.466	5.469	(1 154)	179610	1.75083	87.54
14	2-Methylnaphthalene	141	Compound Not Detected.					
15	1-methylnaphthalene	141	Compound Not Detected.					
21	Acenaphthylene	152	Compound Not Detected.					
* 22	Acenaphthene-d10	164	7 006	7.009	(1.000)	218338	2.00000	
23	Acenaphthene	153	Compound Not Detected.					
11	Dibenzofuran	168	Compound Not Detected.					
25	Fluorene	166	Compound Not Detected.					
* 28	Phenanthrene-d10	188	9.027	9.027	(1.000)	386006	2.00000	
30	Phenanthrene	178	Compound Not Detected.					
31	Anthracene	178	Compound Not Detected.					
36	Fluoranthene	202	Compound Not Detected.					
$ 253	Fluoranthene-d10	212	10.737	10.737	(1.190)	427814	2.25317	112.7
39	Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.811	13 811	(1.000)	422989	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.633	17.640	(1.000)	431228	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.935	19.939	(1.131)	381975	2.32584	116.3
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052703.d
Lab Smp Id: AGA8MBS1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: AGA8MBS1
Level: LOW
Sample Type: Solid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	335940	-2.08
22 Acenaphthene-d10	230598	115299	461196	218338	-5.32
28 Phenanthrene-d10	373928	186964	747856	386006	3.23
47 Chrysene-d12	381262	190631	762524	422989	10.94
56 Perylene-d12	380825	190412	761650	431228	13.24

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.20
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	-0.05
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.63	-0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

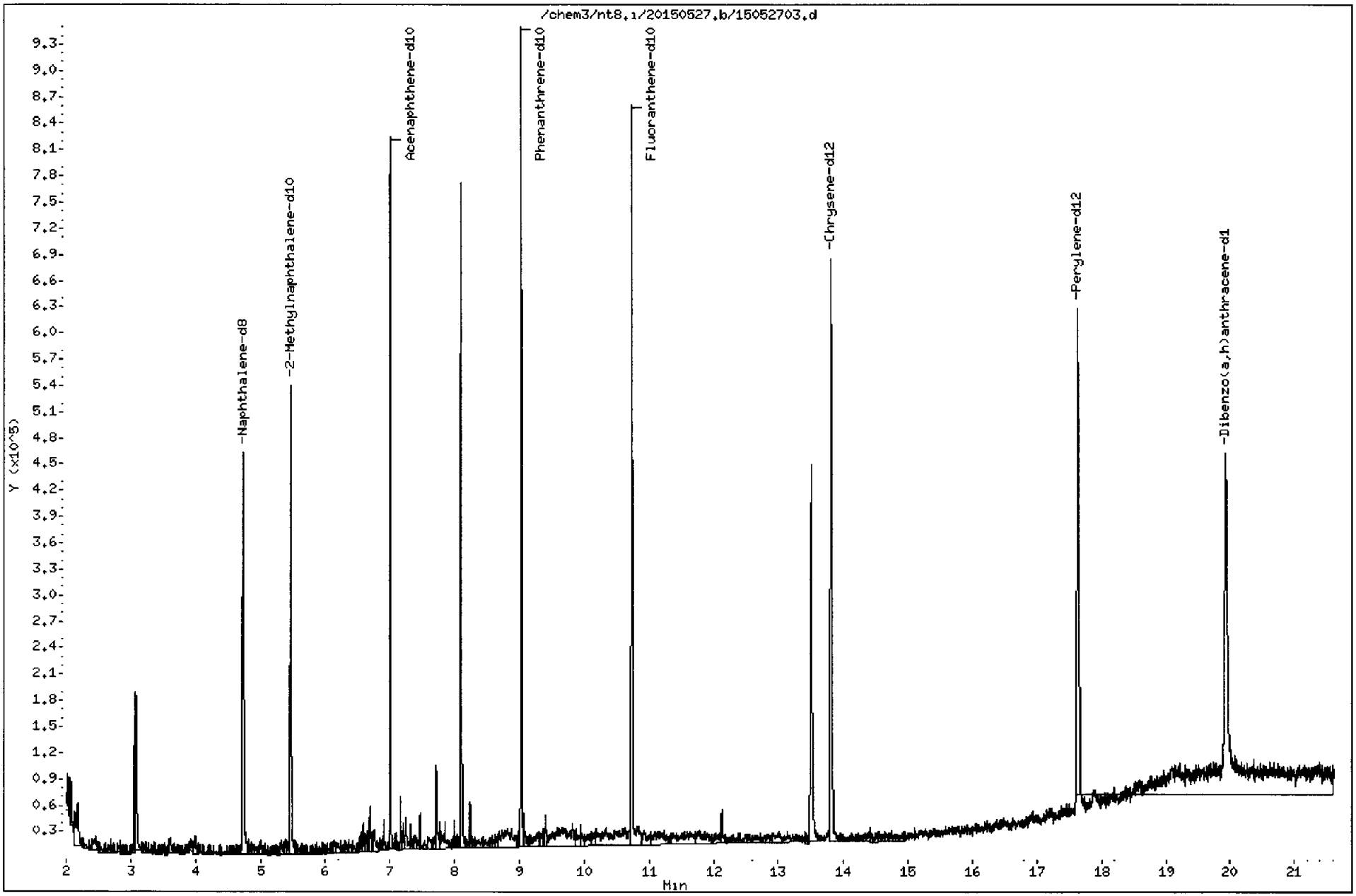
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8MBS1
Client Smp ID: AGA8MBS1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: BLANK
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	150.0	87.54	58.36	32-120
$ 253 Fluoranthene-d10	150.0	112.7	75.11	36-134
$ 60 Dibenzo(a,h)anthra	150.0	116.3	77.53	21-133

Data File: /chem3/nt8.i/20150527.b/15052703.d
Date : 27-MAY-2015 16:25
Client ID: AGA8MBS1
Sample Info: AGA8MBS1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052703.d

Lab ID: AGA8MBS1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052704.d
Lab Smp Id: AGA8LCSS1 Client Smp ID: AGA8LCSS1
Inj Date : 27-MAY-2015 16:50
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8LCSS1,
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:21 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 06/27/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	10.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.739	4.745	(1.000)	366753	2.00000	
	7 Naphthalene	128	4.767	4.774	(1.006)	267107	1.51186	75.59
$	12 2-Methylnaphthalene-d10	152	5.469	5.469	(1.154)	159218	1.42166	71.08
	14 2-Methylnaphthalene	141	5.517	5.520	(1.164)	159579	1.51479	75.74
	15 1-methylnaphthalene	141	5.710	5.713	(1.205)	152363	1.48826	74.41
	21 Acenaphthylene	152	6.899	6.899	(0.985)	272547	1.59540	79.77
*	22 Acenaphthene-d10	164	7.006	7.009	(1.000)	233918	2.00000	
	23 Acenaphthene	153	7.057	7.057	(1.007)	184155	1.62011	81.01
	11 Dibenzofuran	168	7.208	7.208	(1.029)	260383	1.65633	82.82
	25 Fluorene	166	7.680	7 680	(1.096)	213638	1.68271	84 14
*	28 Phenanthrene-d10	188	9.027	9.027	(1.000)	412030	2.00000	
	30 Phenanthrene	178	9.061	9 061	(1.004)	349126	1.77723	88.86
	31 Anthracene	178	9.103	9.102	(1.008)	341000	1.92811	96.41
	36 Fluoranthene	202	10.772	10.775	(1.193)	461681	2.00941	100.5
$	253 Fluoranthene-d10	212	10.737	10.737	(1.190)	407429	2.01028	100.5

AGA8-SW257

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.265	11.268	(0.816)	469092	1 83669	91.83
	46 Benzo(a)anthracene	228	13 687	13.691	(0 991)	463091	2.01508	100.8
*	47 Chrysene-d12	240	13.811	13.811	(1 000)	458153	2.00000	
	48 Chrysene	228	13.880	13.883	(1.005)	440565	1.91198	95.60
	51 Benzo(b)fluoranthene	252	16.375	16.375	(0.928)	465614	1.93446	96.72
	52 Benzo(k)fluoranthene	252	16.432	16.438	(0.932)	480072	1.99618	99.81
	251 Benzo(j)fluoranthene	252	16 508	16.511	(0 936)	369474	1.57444	78.72
	54 Benzo(a)pyrene	252	17 409	17.412	(0 987)	434934	2.02663	101.3
*	56 Perylene-d12	264	17 640	17.640	(1.000)	458334	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.046	20.052	(1.136)	522579	2.02733	101.4
$	60 Dibenzo(a,h)anthracene-d14	292	19.932	19.939	(1.130)	371718	2.12953	106.5
	62 Dibenzo(a,h)anthracene	278	20.037	20.037	(1.136)	423870	2.01894	100.9
	61 Benzo(g,h,i)perylene	276	21.023	21.020	(1.192)	445654	1.96549	98.27
	57 Perylene	252	17.709	17.713	(1.004)	438483	1.96818	98.41

AGA8 - 08298

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052704.d
Lab Smp Id: AGA8LCSS1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: AGA8LCSS1
Level: LOW
Sample Type: Solid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	366753	6.90
22 Acenaphthene-d10	230598	115299	461196	233918	1.44
28 Phenanthrene-d10	373928	186964	747856	412030	10.19
47 Chrysene-d12	381262	190631	762524	458153	20.17
56 Perylene-d12	380825	190412	761650	458334	20.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	-0.05
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: KJC
Sample Matrix: SOLID
Lab Smp Id: AGA8LCSS1
Level: LOW
Data Type: MS DATA
SpikeList File: pnalcss.spk
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

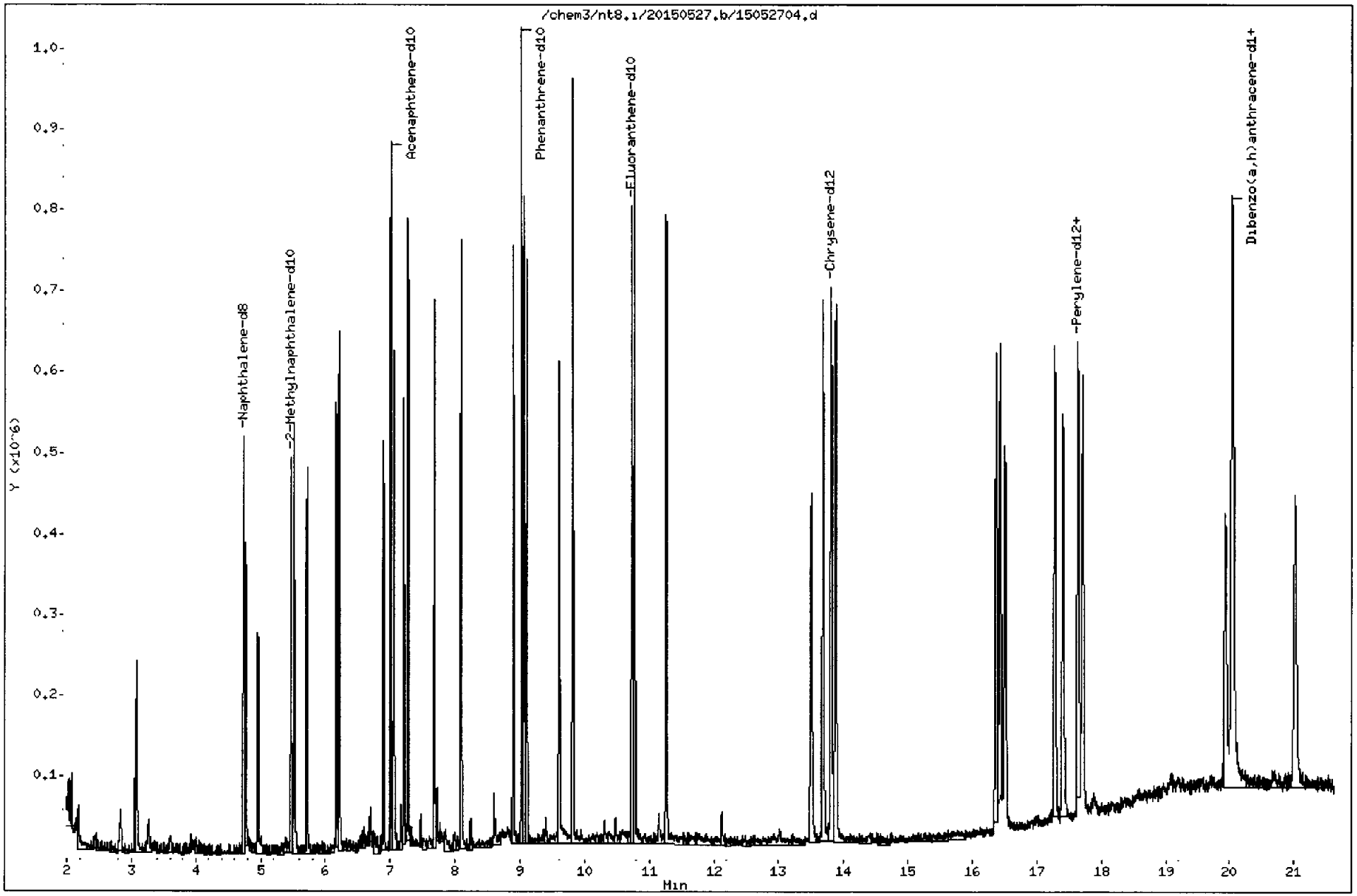
Client SDG: AGA8
Fraction: SV
Client Smp ID: AGA8LCSS1
Operator: JZ
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7 Naphthalene	150.0	75.59	50.40	36-120
14 2-Methylnaphthalen	150.0	75.74	50.49	35-120
15 1-methylnaphthalen	150.0	74.41	49.61	39-120
21 Acenaphthylene	150.0	79.77	53.18	35-120
23 Acenaphthene	150.0	81.01	54.00	39-120
11 Dibenzofuran	150.0	82.82	55.21	38-120
25 Fluorene	150.0	84.14	56.09	41-120
30 Phenanthrene	150.0	88.86	59.24	46-120
31 Anthracene	150.0	96.41	64.27	36-120
36 Fluoranthene	150.0	100.5	66.98	46-120
39 Pyrene	150.0	91.83	61.22	49-120
46 Benzo(a)anthracene	150.0	100.8	67.17	42-120
48 Chrysene	150.0	95.60	63.73	48-120
51 Benzo(b)fluoranthe	150.0	96.72	64.48	35-127
52 Benzo(k)fluoranthe	150.0	99.81	66.54	37-129
251 Benzo(j)fluoranthe	150.0	78.72	52.48	40-120
54 Benzo(a)pyrene	150.0	101.3	67.55	36-120
63 Indeno(1,2,3-cd)py	150.0	101.4	67.58	40-120
62 Dibenzo(a,h)anthra	150.0	100.9	67.30	38-120
61 Benzo(g,h,i)peryle	150.0	98.27	65.52	38-120
57 Perylene	150.0	98.41	65.61	44-120

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	150.0	71.08	47.39	32-120
$ 253 Fluoranthene-d10	150.0	100.5	67.01	36-134
$ 60 Dibenzo(a,h)anthra	150.0	106.5	70.98	21-133

Data File: /chem3/nt8.1/20150527.b/15052704.d
Date : 27-MAY-2015 16:50
Client ID: AGA8LCSS1
Sample Info: AGA8LCSS1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052704.d

Lab ID: AGA8LCSS1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052705.d
Lab Smp Id: AGA8A Client Smp ID: SDP-10(13.5-15.0)
Inj Date : 27-MAY-2015 17:16
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8A
Misc Info : 15-9289
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:28 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/27/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	15.01000	Weight of sample extracted (g)
M	31.00000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6	Naphthalene-d8	136	4.742	4.745	(1.000)	349874	2.00000	
7	Naphthalene	128	4.771	4.774	(1.006)	43571	0.25851	12.48
$ 12	2-Methylnaphthalene-d10	152	5.472	5.469	(1.154)	157145	1.47083	71.01
14	2-Methylnaphthalene	141	5.517	5.520	(1.163)	17397	0.17311	8.357
15	1-methylnaphthalene	141	5.713	5.713	(1.205)	10960	0.11222	5.418
21	Acenaphthylene	152	Compound Not Detected.					
* 22	Acenaphthene-d10	164	7.009	7 009	(1.000)	216747	2.00000	
23	Acenaphthene	153	Compound Not Detected.					
11	Dibenzofuran	168	7.208	7.208	(1.028)	15511	0.10648	5.141
25	Fluorene	166	Compound Not Detected.					
* 28	Phenanthrene-d10	188	9.027	9.027	(1.000)	376479	2.00000	
30	Phenanthrene	178	9.061	9.061	(1.004)	112828	0.62859	30.35
31	Anthracene	178	9.102	9.102	(1.008)	8931	0.05527	2.668
36	Fluoranthene	202	10.772	10.775	(1.193)	70954	0.33798	16.32
$ 253	Fluoranthene-d10	212	10.737	10.737	(1.190)	404145	2.18238	105.4

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11 268	11.268	(0.816)	65979	0.27868	13.45
	46 Benzo(a)anthracene	228	13 687	13.691	(0.991)	20814	0.09770	4.717
*	47 Chrysene-d12	240	13.811	13.811	(1.000)	424700	2.00000	
	48 Chrysene	228	13.886	13.883	(1.005)	26748	0.12523	6.046
	51 Benzo(b)fluoranthene	252	16.378	16.375	(0.928)	15135	0.06452	3.115
	52 Benzo(k)fluoranthene	252	16.419	16.438	(0.931)	8166	0.03484	1.682(M)
	251 Benzo(j)fluoranthene	252	16.505	16 511	(0.936)	7427	0.03247	1.568
	54 Benzo(a)pyrene	252	17.422	17 412	(0.988)	11102	0.05308	2.563
*	56 Perylene-d12	264	17.640	17 640	(1.000)	446685	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.938	19.939	(1.130)	349410	2.05394	99.16
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	21.023	21.020	(1.192)	13366	0.06049	2.920(M)
	57 Perylene	252	17.706	17.713	(1.004)	12165	0.05603	2.705

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052705.d
Lab Smp Id: AGA8A
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9289

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-10(13.5-15.0
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	349874	1.98
22 Acenaphthene-d10	230598	115299	461196	216747	-6.01
28 Phenanthrene-d10	373928	186964	747856	376479	0.68
47 Chrysene-d12	381262	190631	762524	424700	11.39
56 Perylene-d12	380825	190412	761650	446685	17.29

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

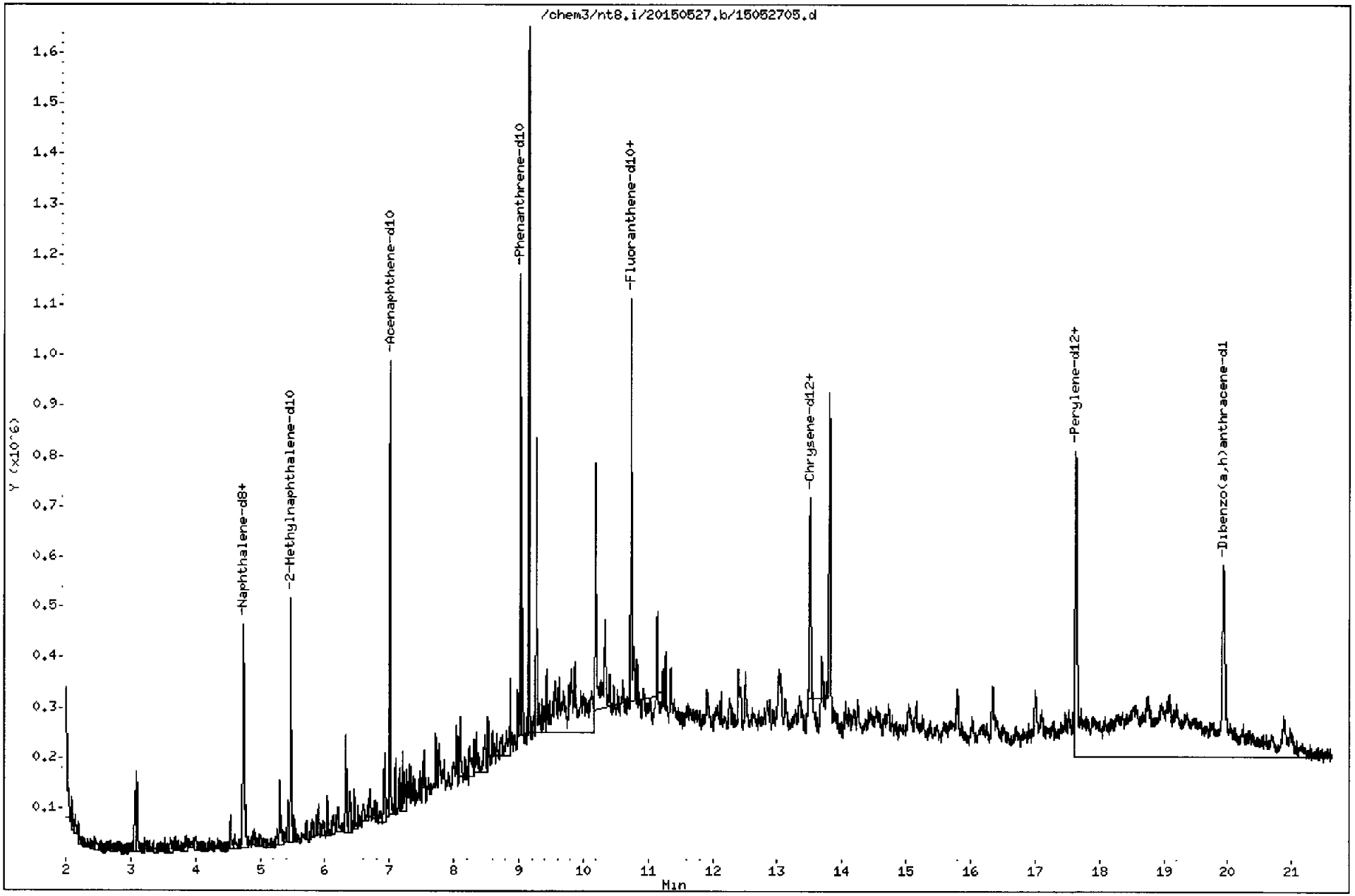
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8A
Client Smp ID: SDP-10(13.5-15.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9289

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.8	71.01	49.03	32-120
$ 253 Fluoranthene-d10	144.8	105.4	72.75	36-134
$ 60 Dibenzo(a,h)anthra	144.8	99.16	68.46	21-133

Data File: /chem3/nt8.i/20150527.b/15052705.d
Date : 27-MAY-2015 17:16
Client ID: SDP-10(13.5-15.0)
Sample Info: AGA8A
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

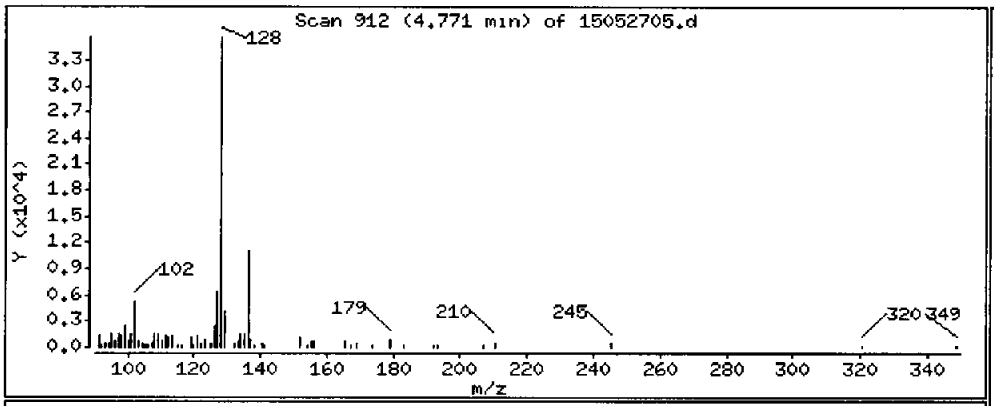
Operator: JZ

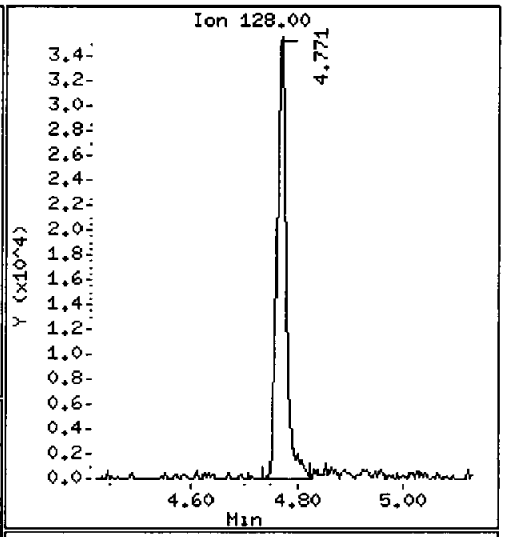
Column phase: ZB-35

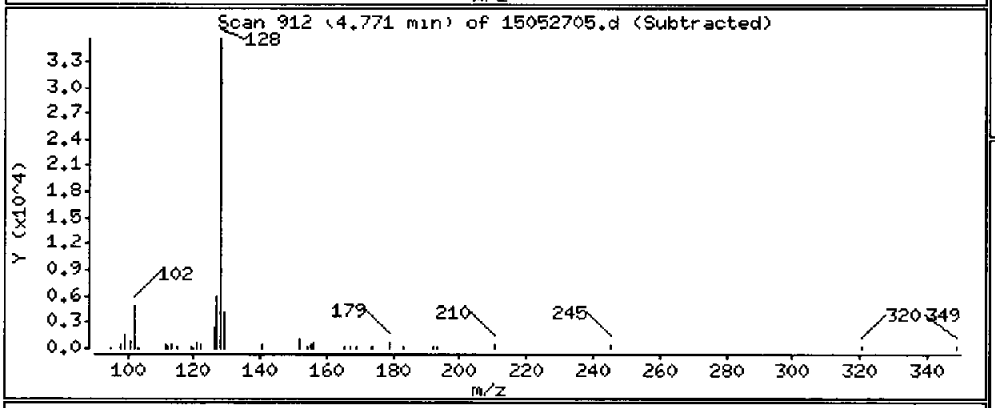
Column diameter: 0.25

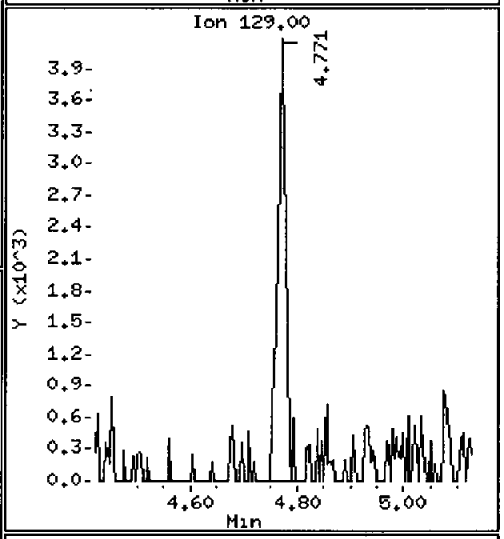
7 Naphthalene

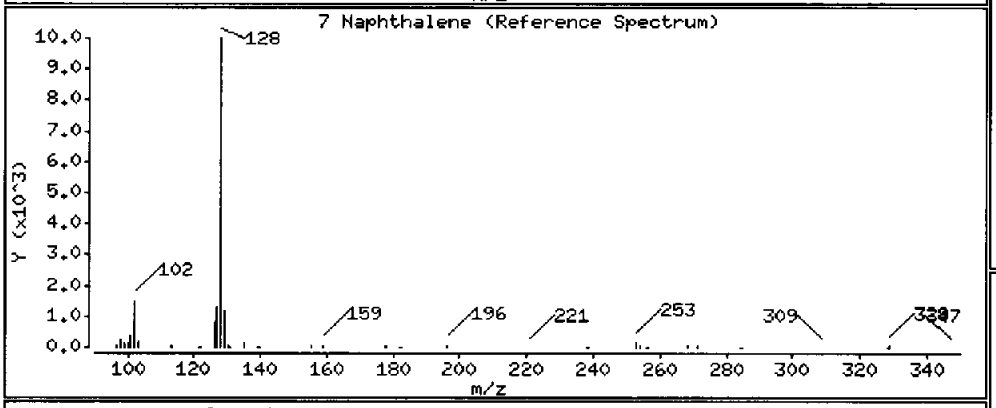
Concentration: 12.48 ug/kg

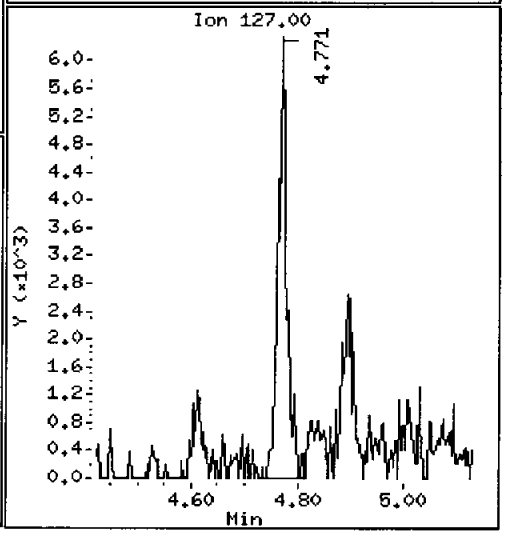


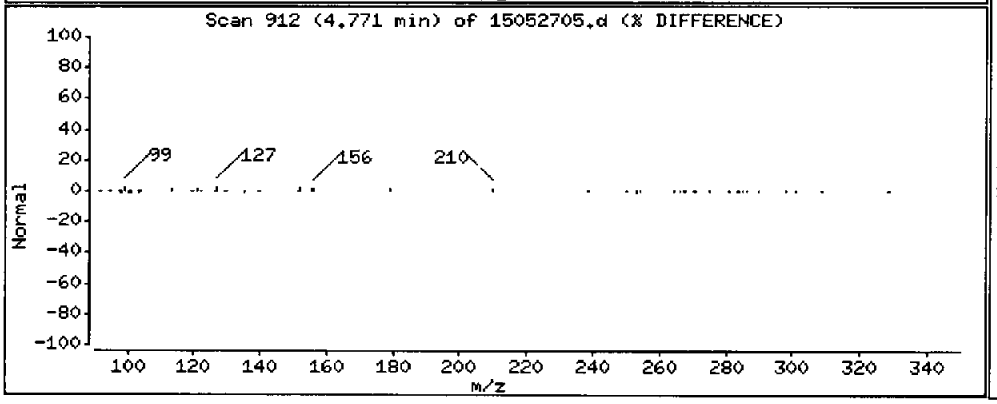












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

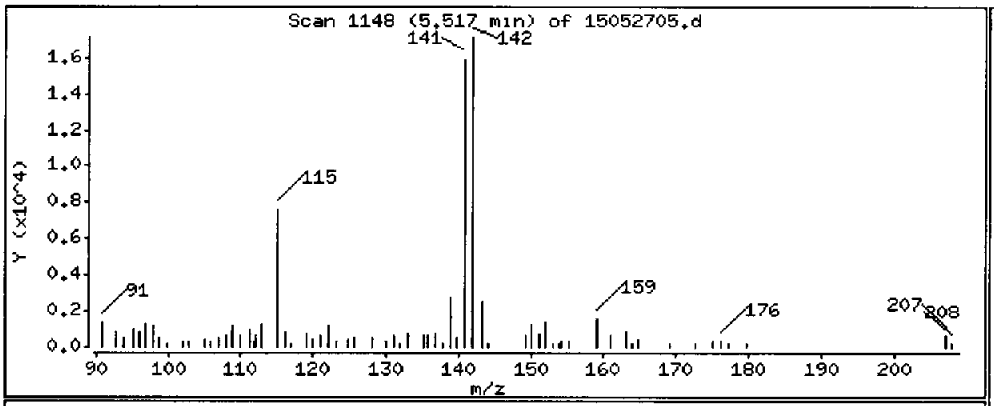
Operator: JZ

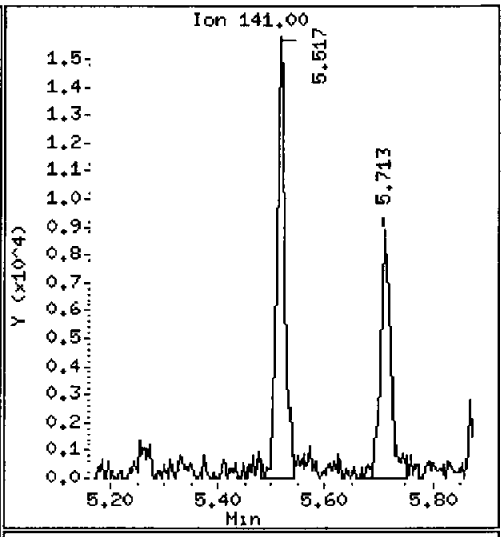
Column phase: ZB-35

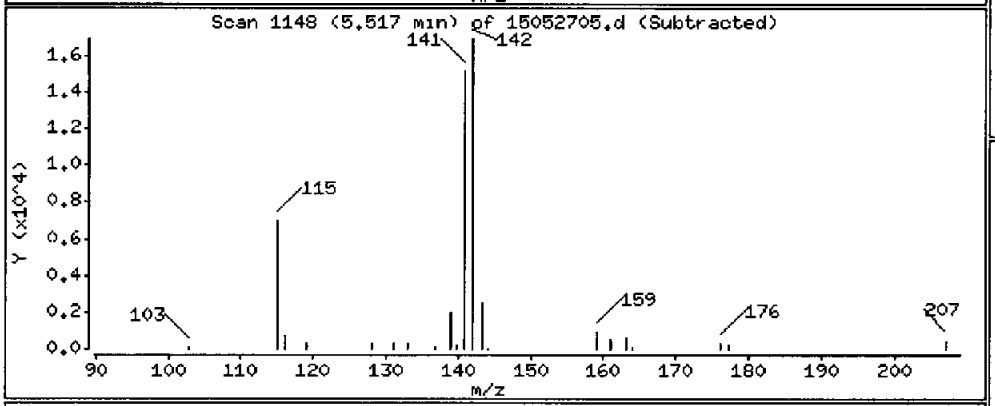
Column diameter: 0.25

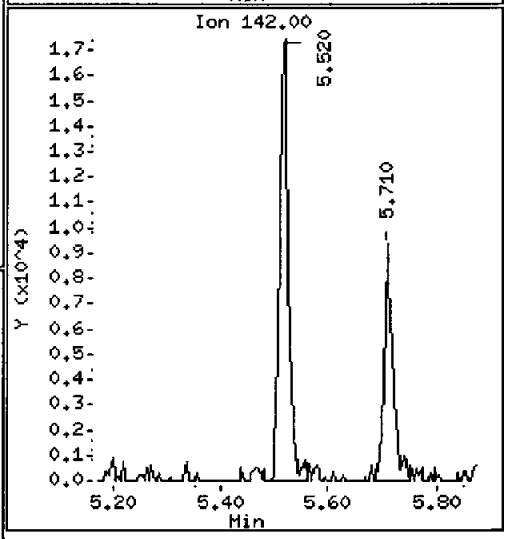
14 2-Methylnaphthalene

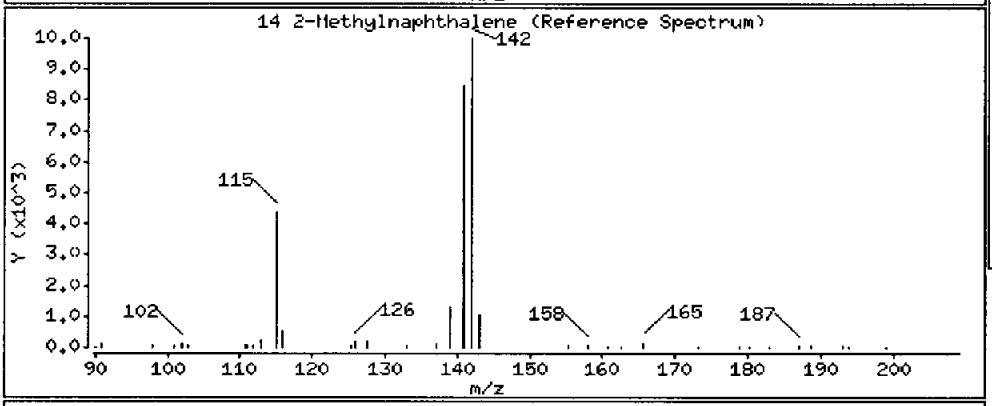
Concentration: 8.357 ug/kg

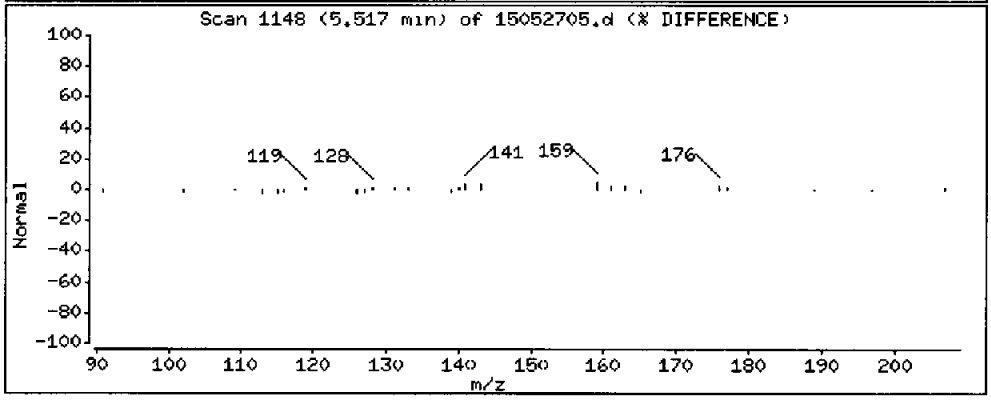












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

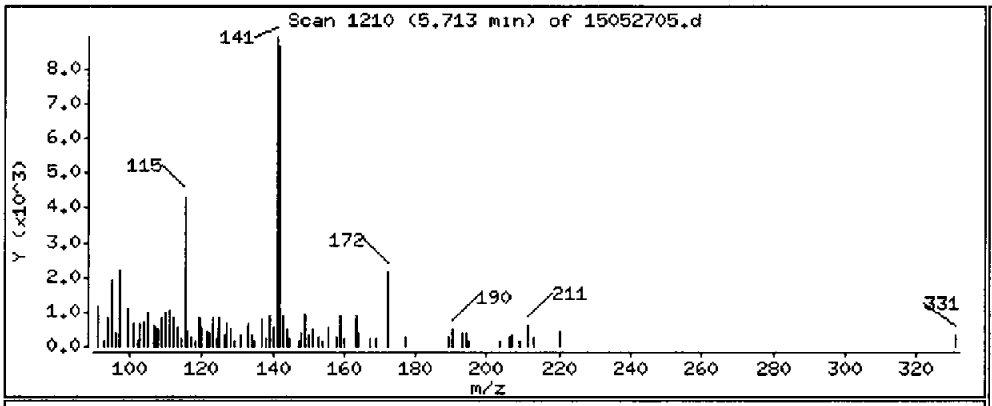
Operator: JZ

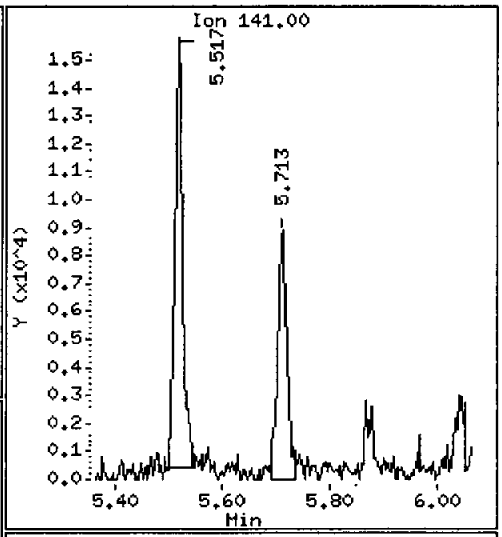
Column phase: ZB-35

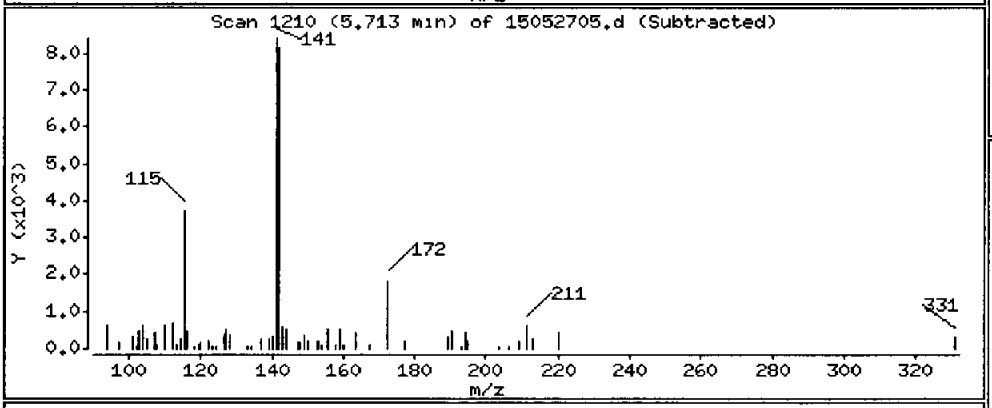
Column diameter: 0.25

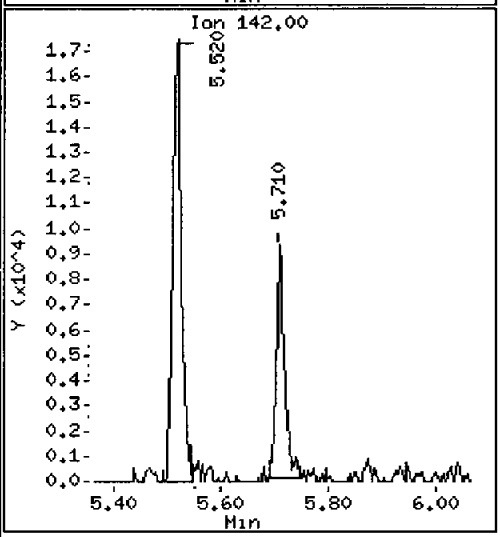
15 1-methylnaphthalene

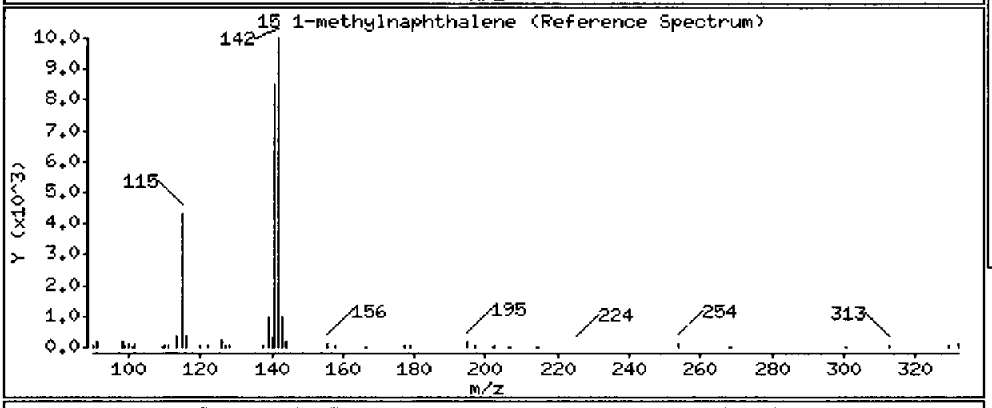
Concentration: 5.418 ug/kg

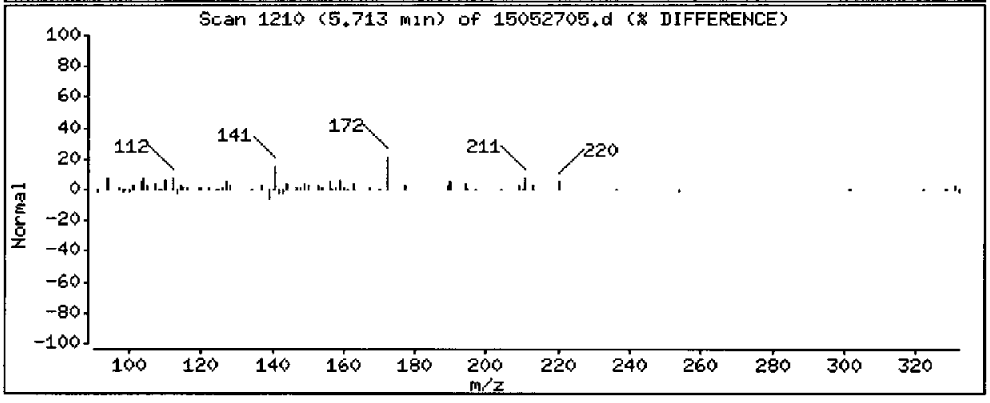












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

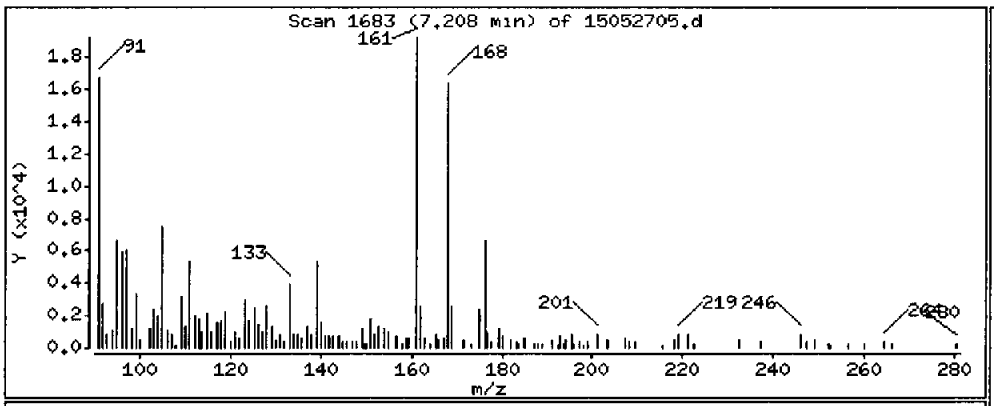
Operator: JZ

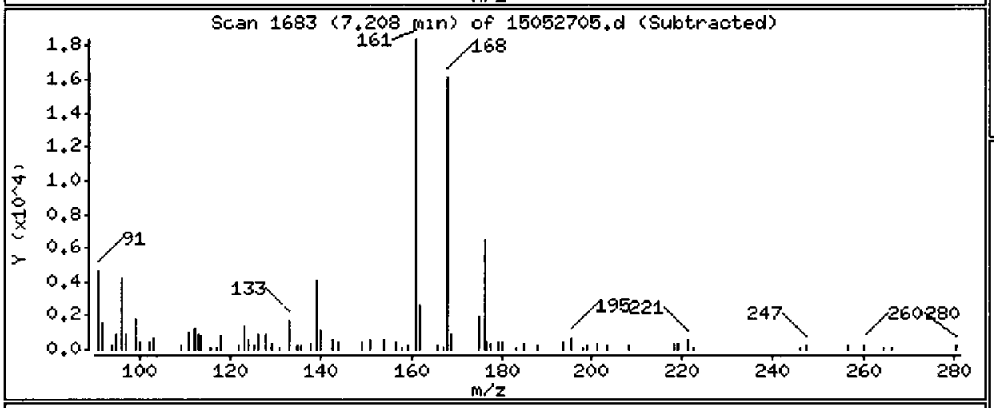
Column phase: ZB-35

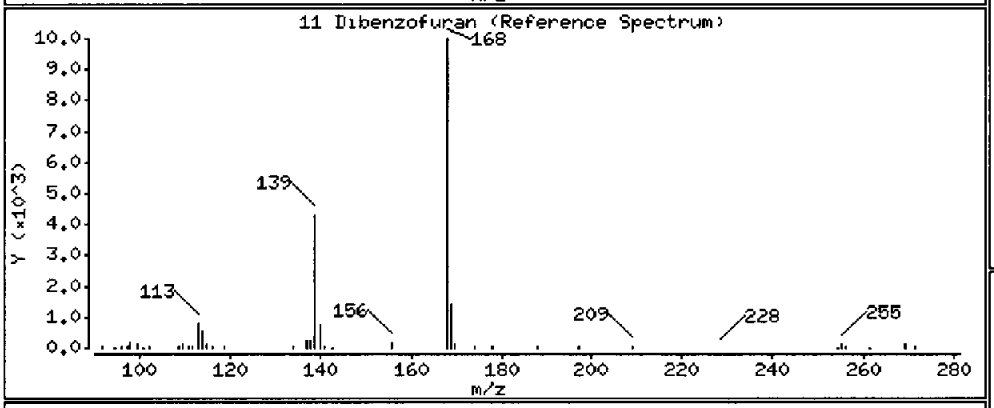
Column diameter: 0.25

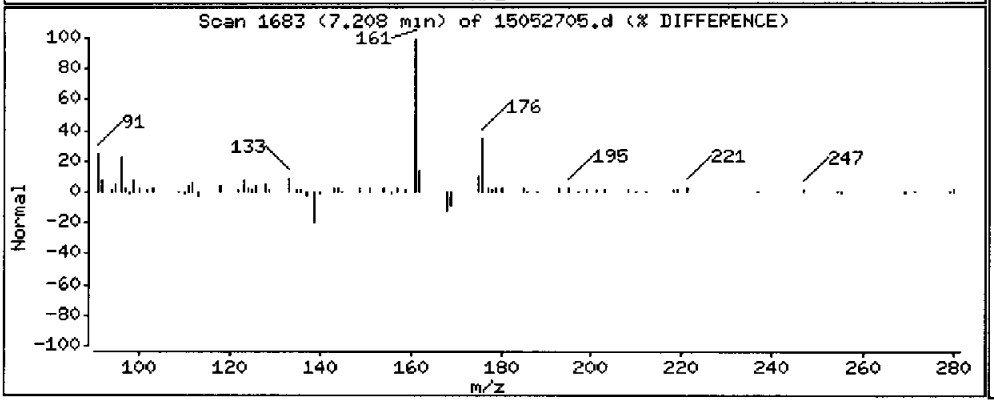
11 Dibenzofuran

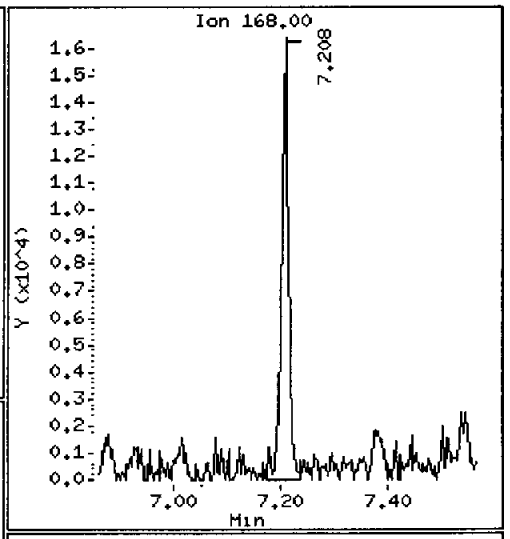
Concentration: 5.141 ug/kg

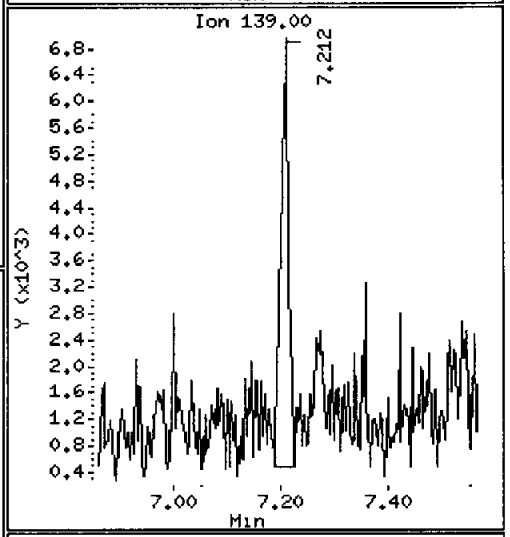


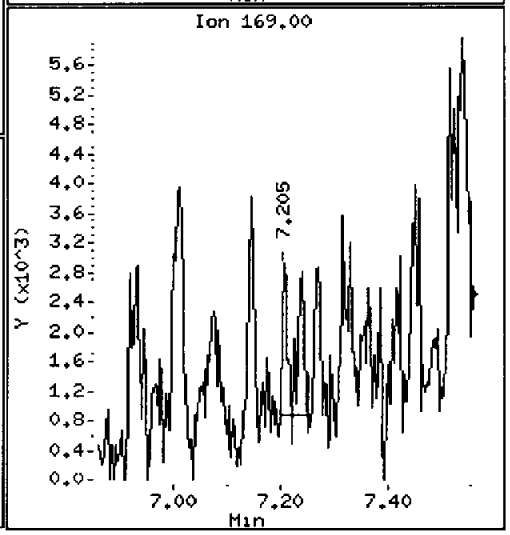












Data File: /chem3/nt8.i/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.i

Sample Info: AGA8A

Volume Injected (uL): 1.0

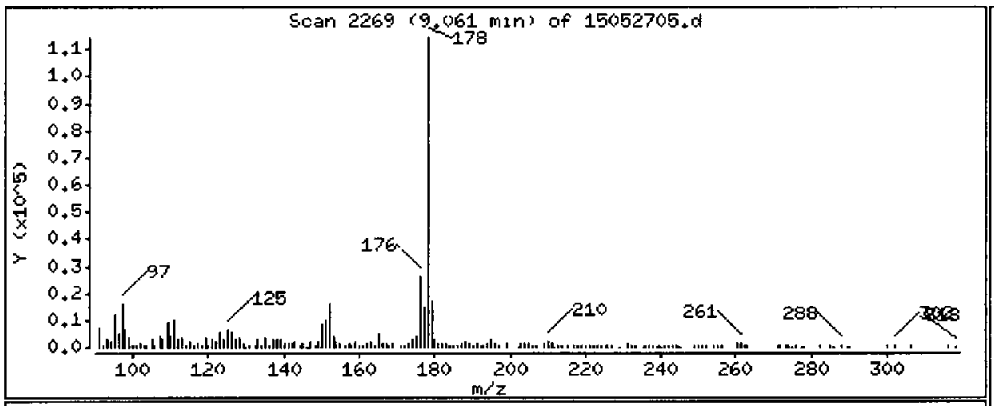
Operator: JZ

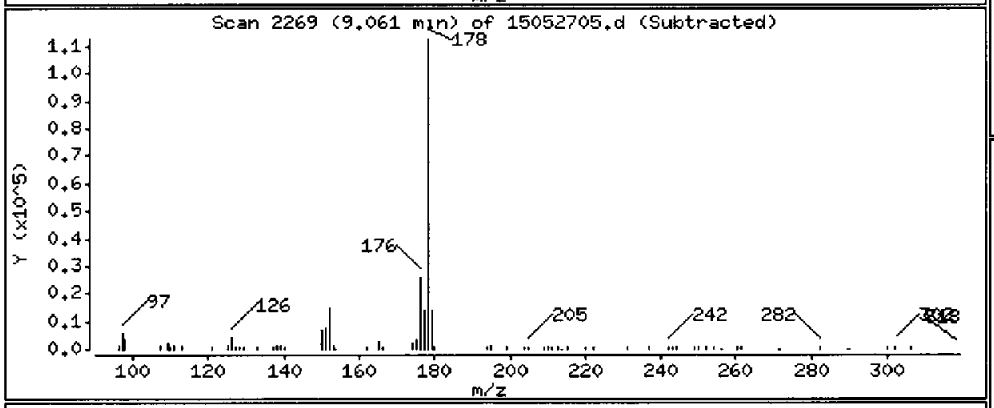
Column phase: ZB-35

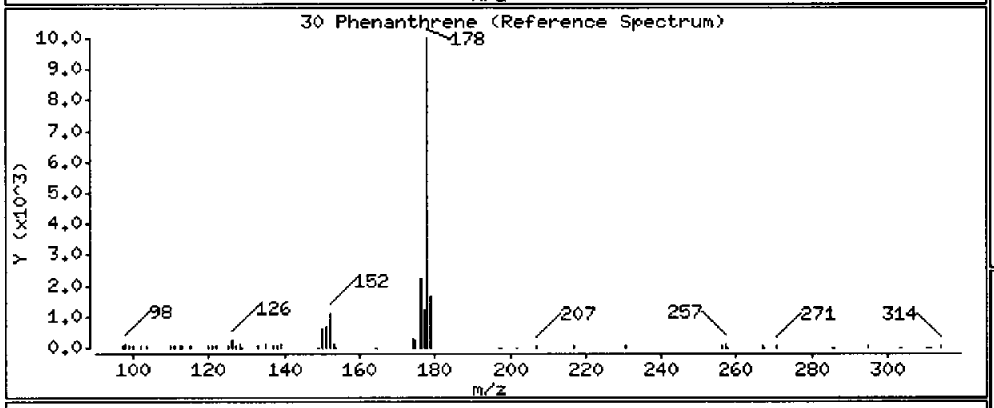
Column diameter: 0.25

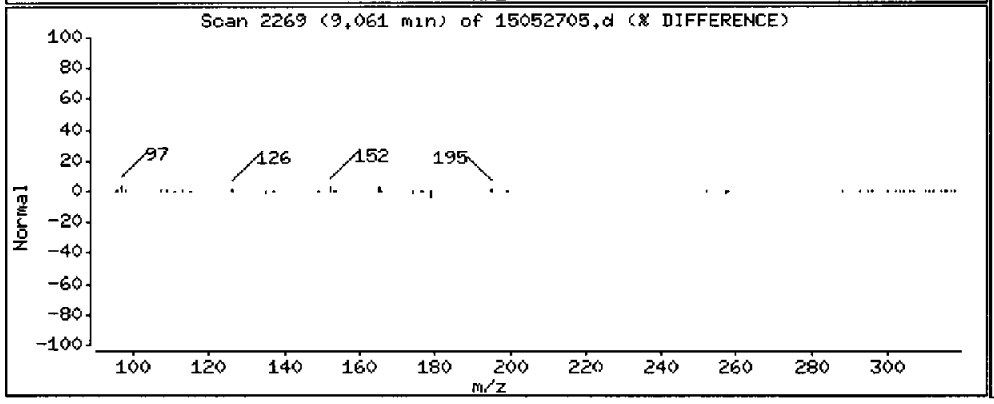
30 Phenanthrene

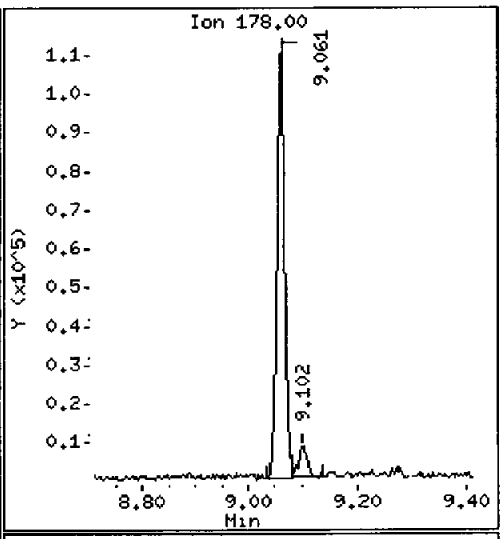
Concentration: 30.35 ug/kg

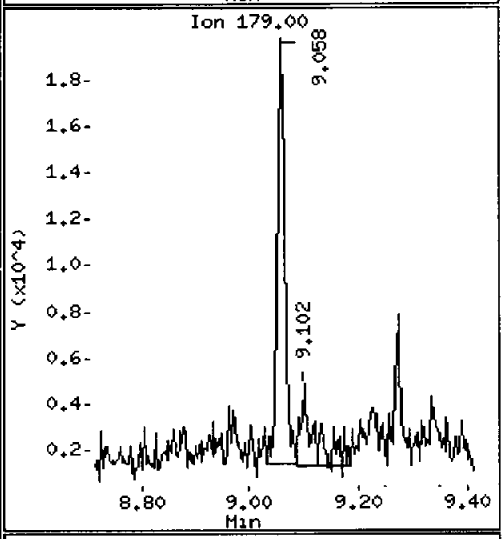


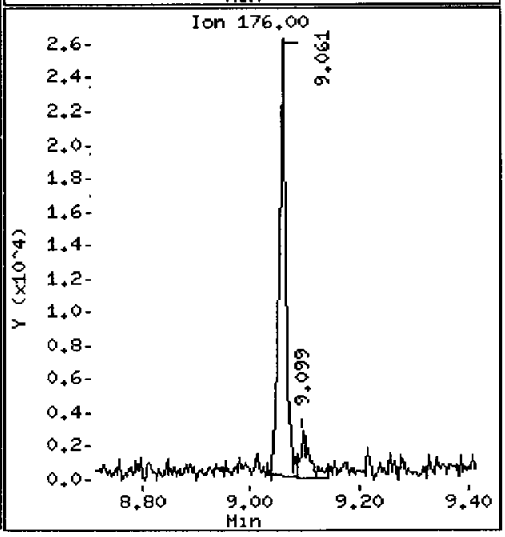












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

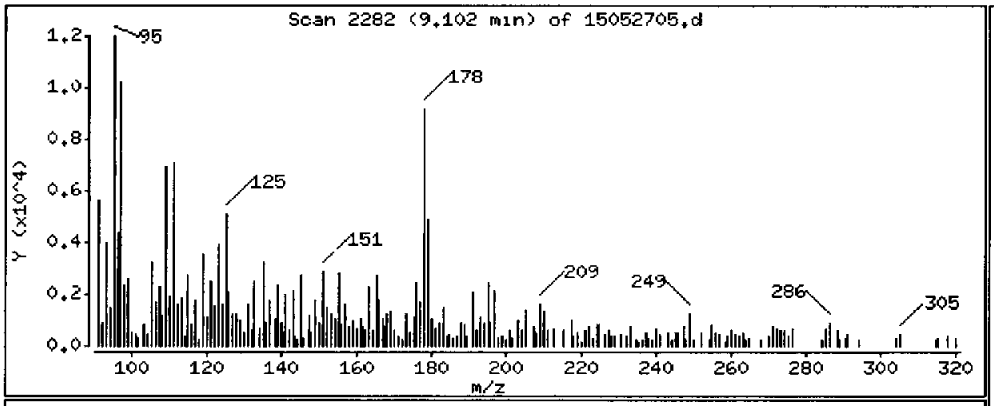
Operator: JZ

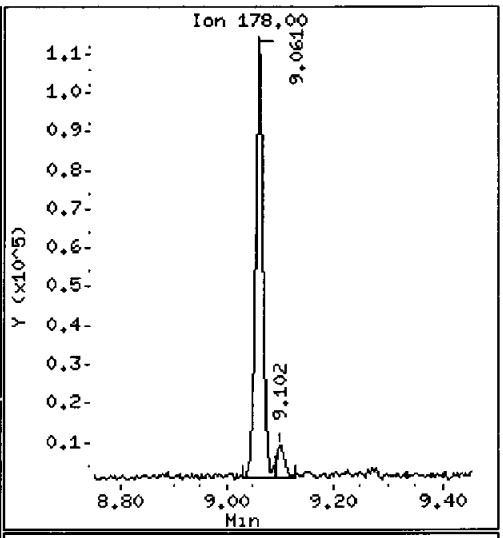
Column phase: ZB-35

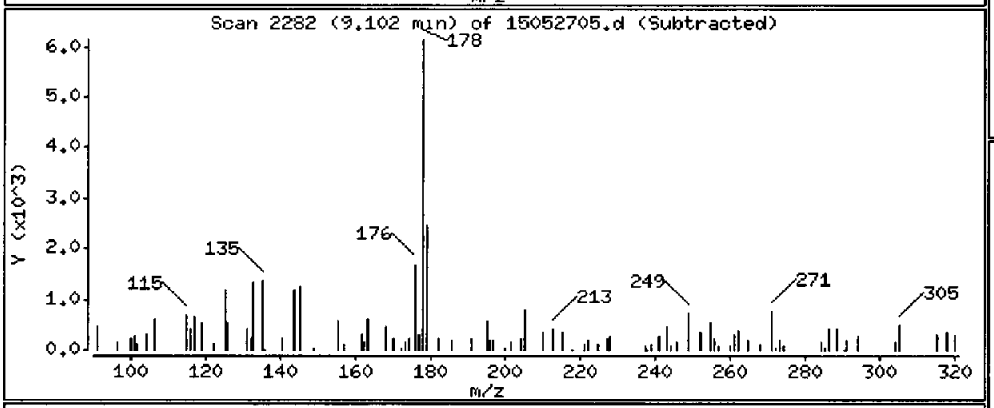
Column diameter: 0.25

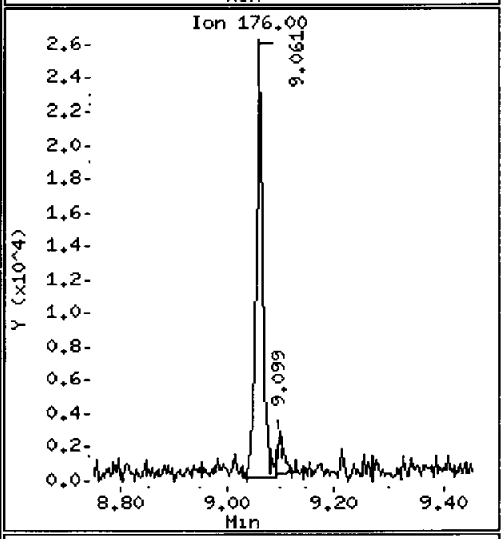
31 Anthracene

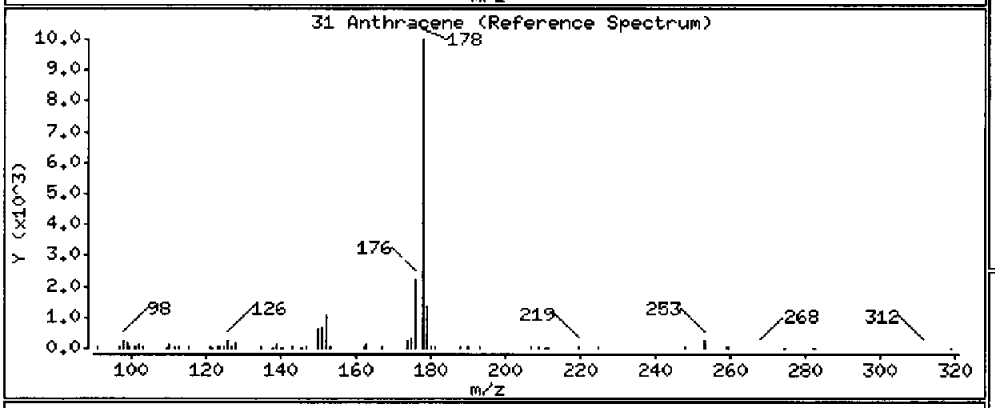
Concentration: 2.668 ug/kg

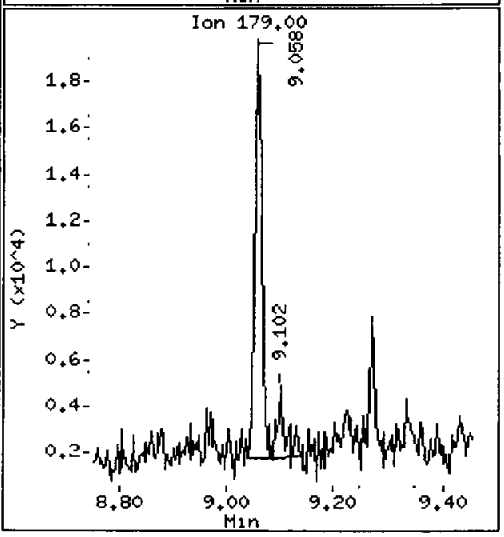


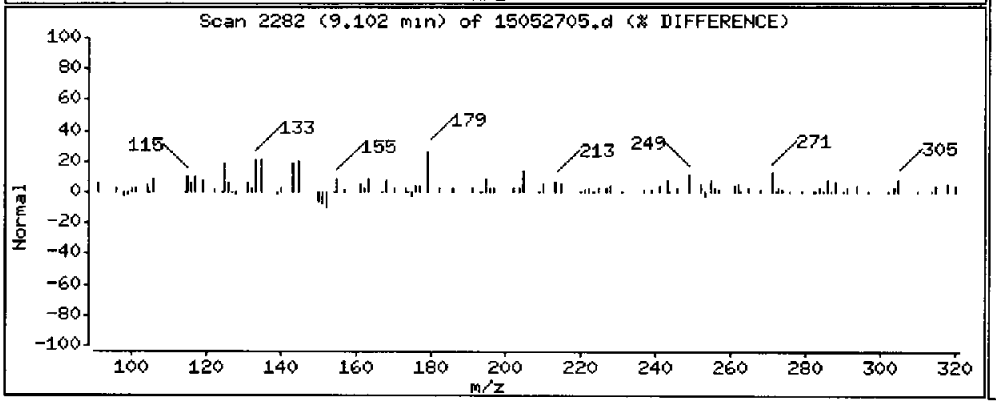












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

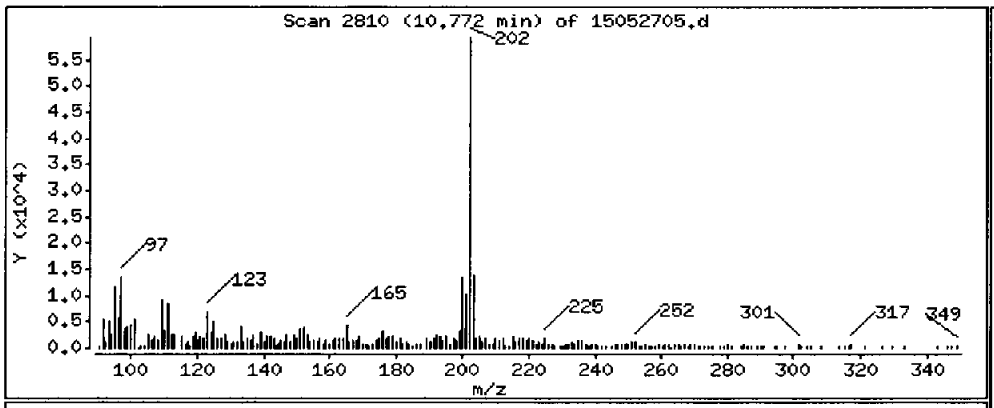
Operator: JZ

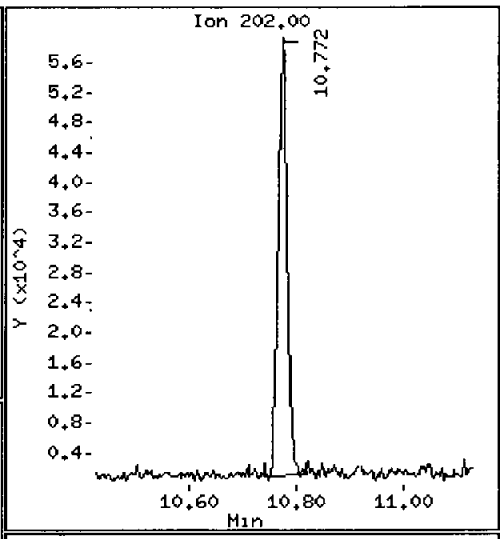
Column phase: ZB-35

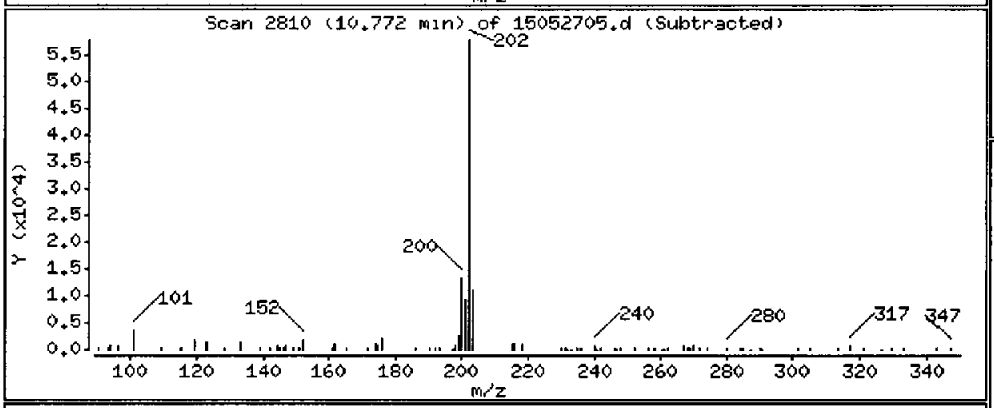
Column diameter: 0.25

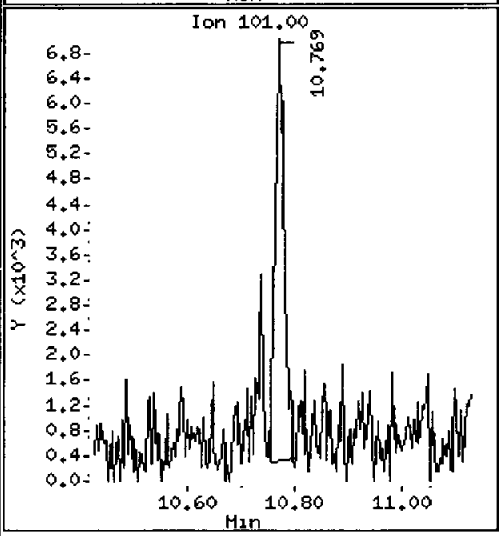
36 Fluoranthene

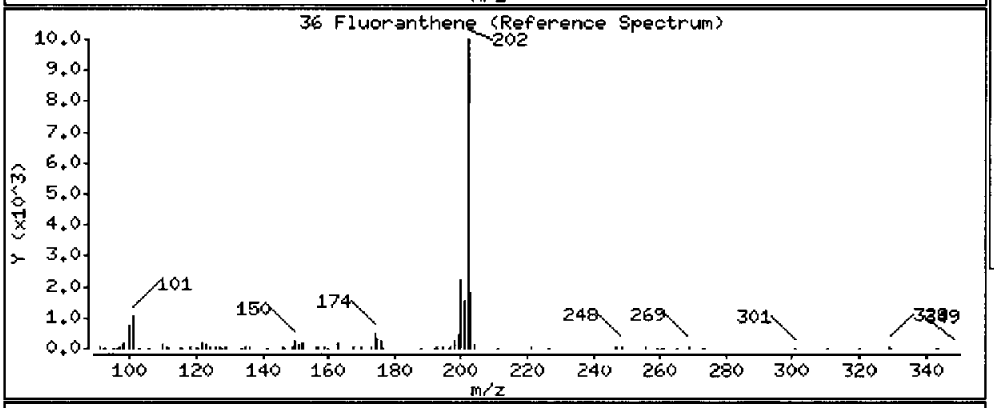
Concentration: 16.32 ug/kg

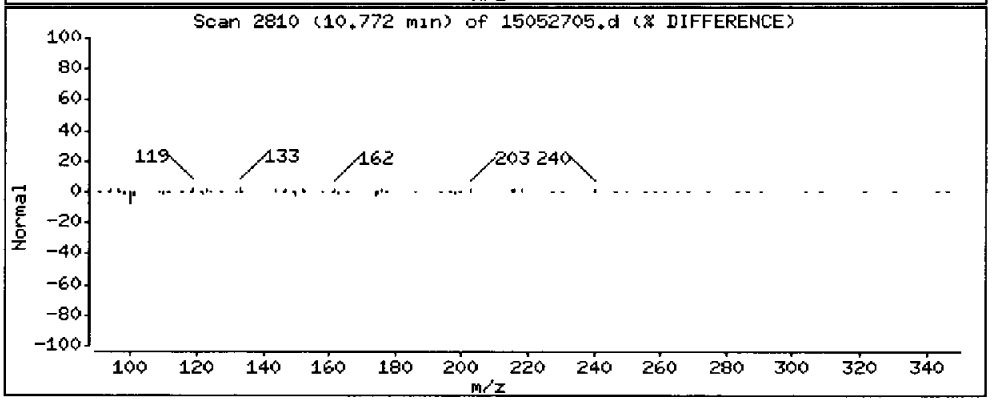












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

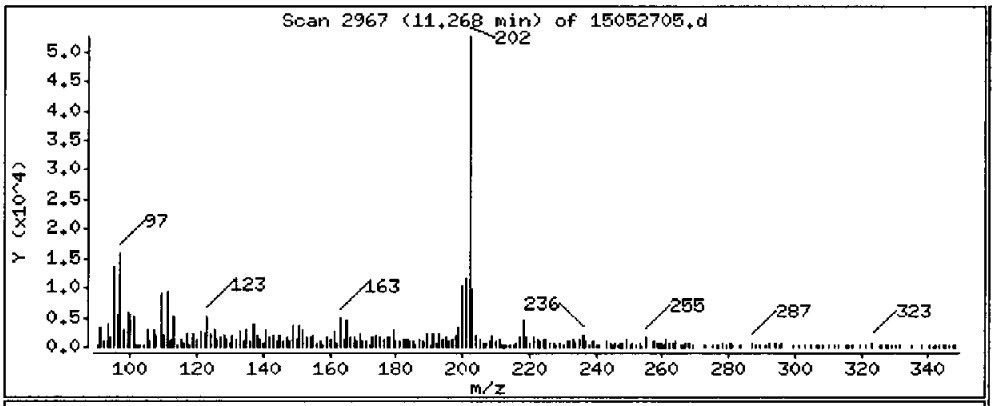
Operator: JZ

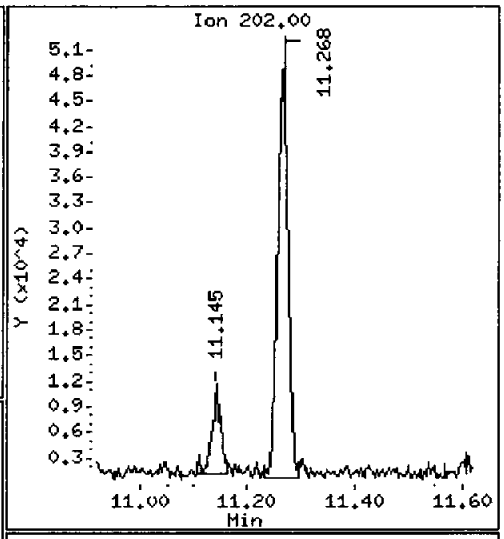
Column phase: ZB-35

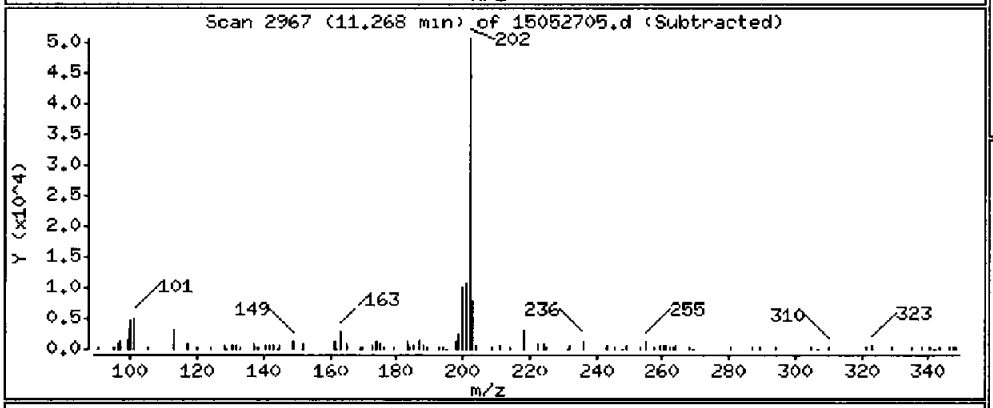
Column diameter: 0.25

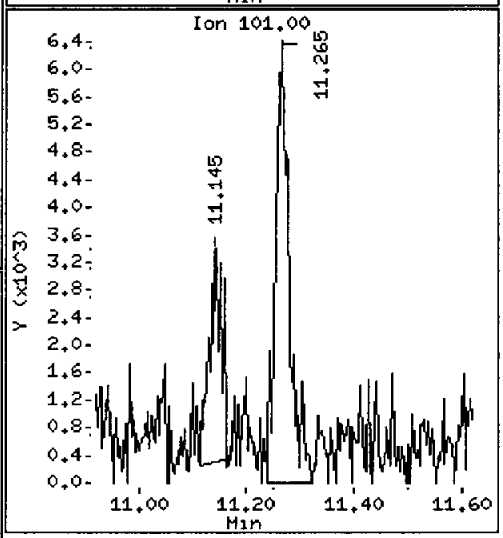
39 Pyrene

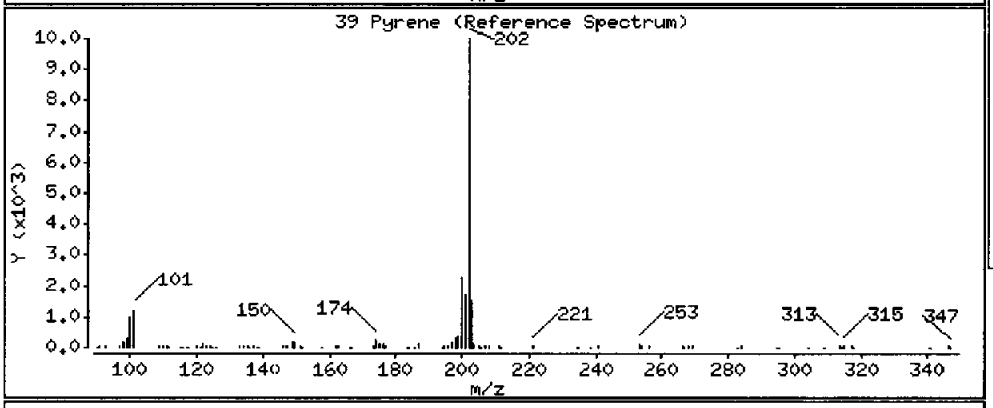
Concentration: 13.45 ug/kg

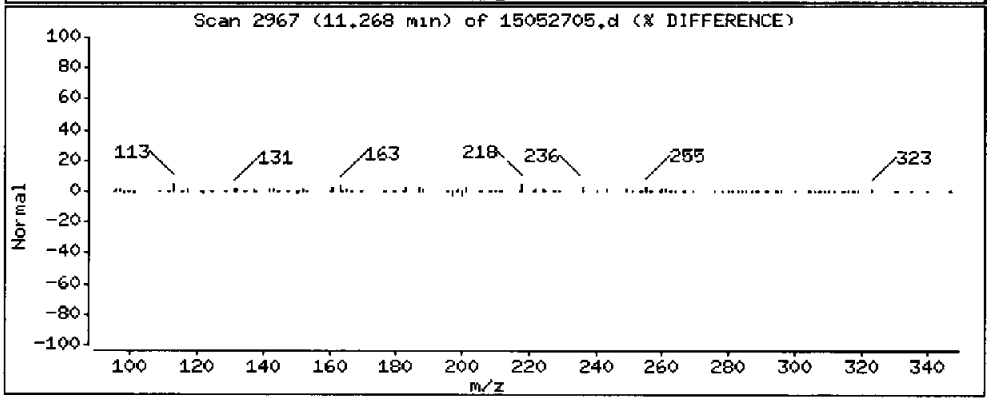












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGASA

Volume Injected (uL): 1.0

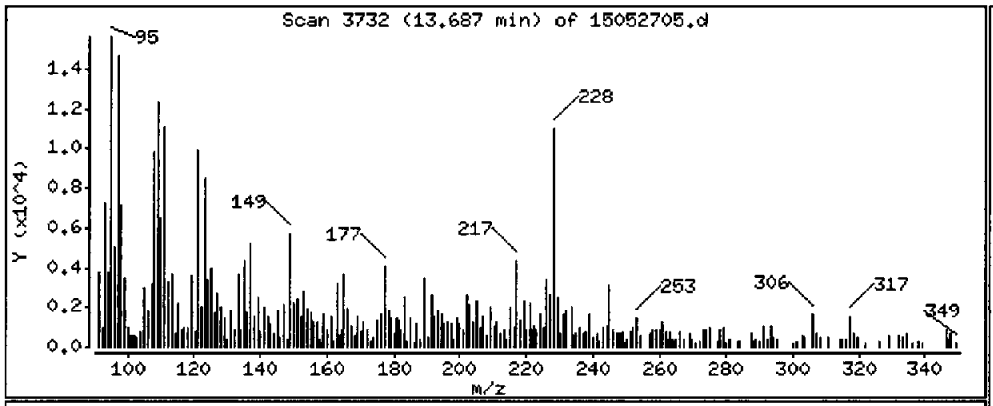
Operator: JZ

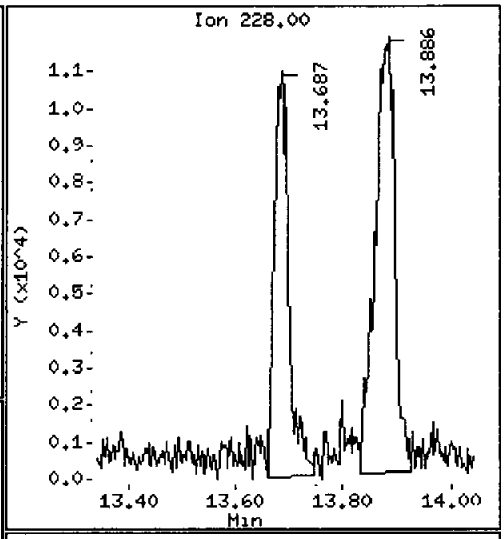
Column phase: ZB-35

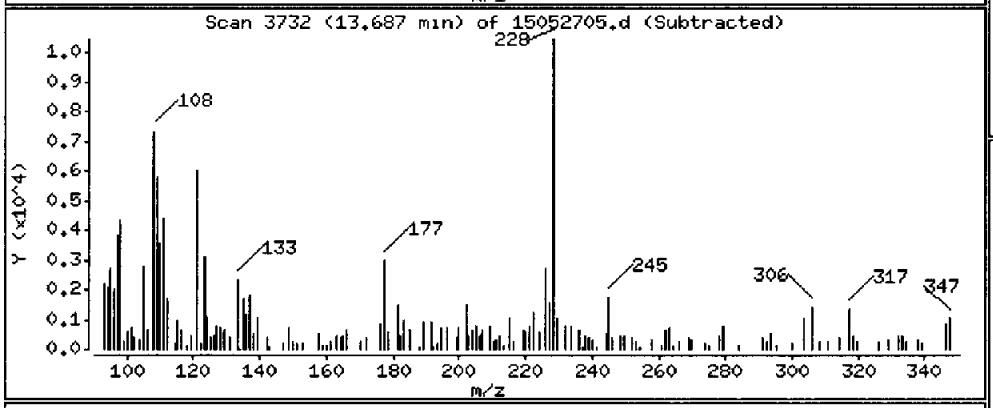
Column diameter: 0.25

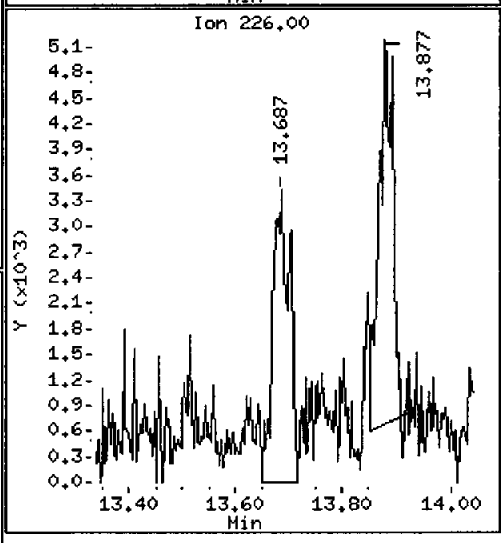
46 Benzo(a)anthracene

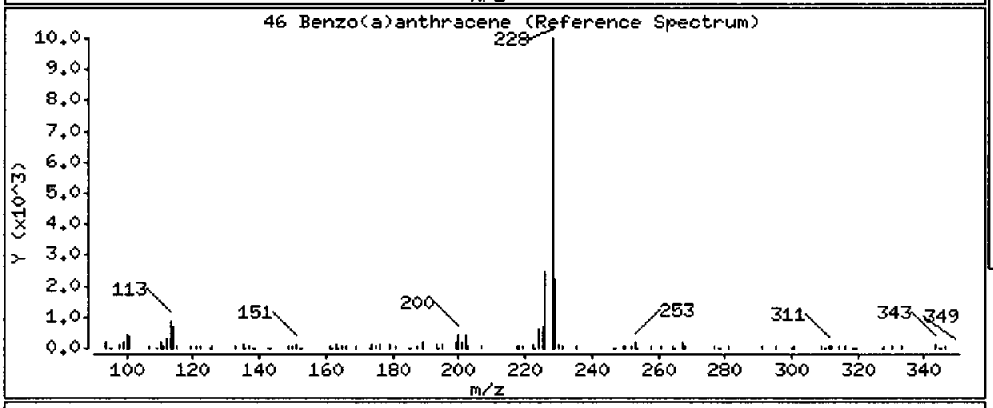
Concentration: 4.717 ug/kg

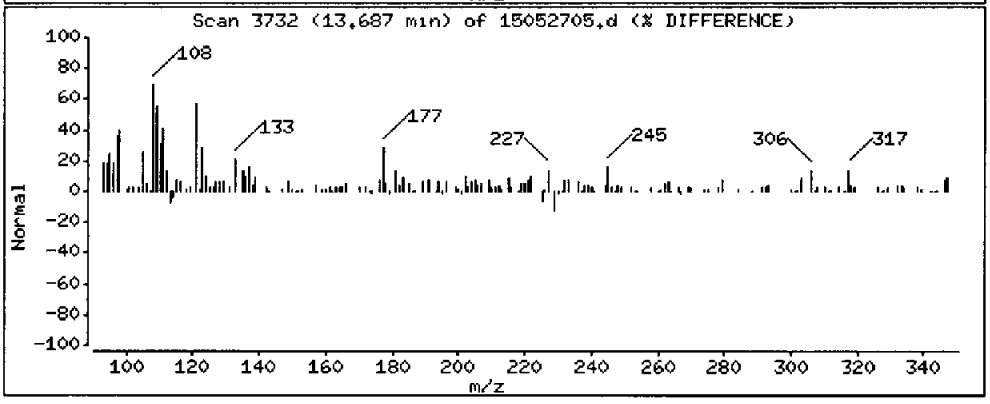












Data File: /chem3/nt8.i/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.i

Sample Info: AGA8A

Volume Injected (uL): 1.0

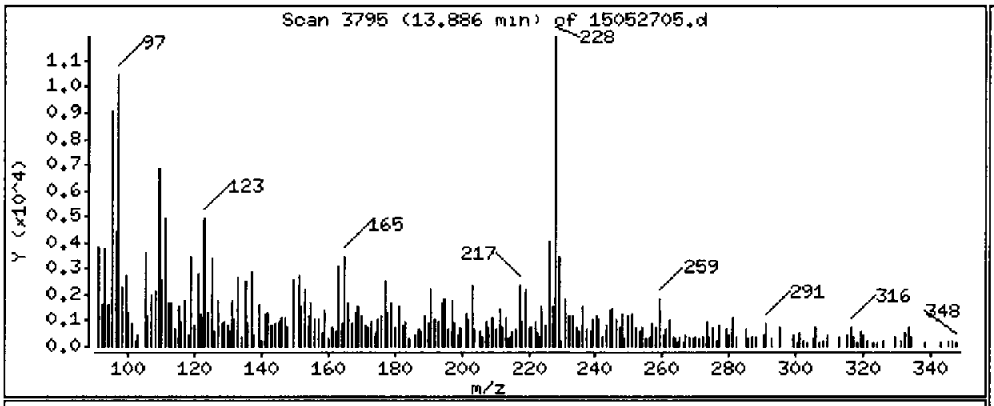
Operator: JZ

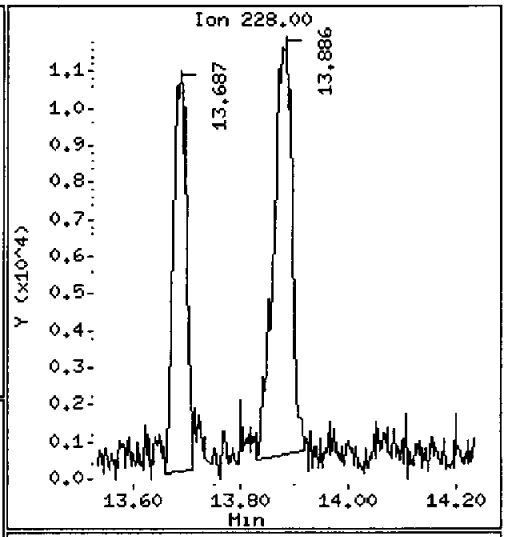
Column phase: ZB-35

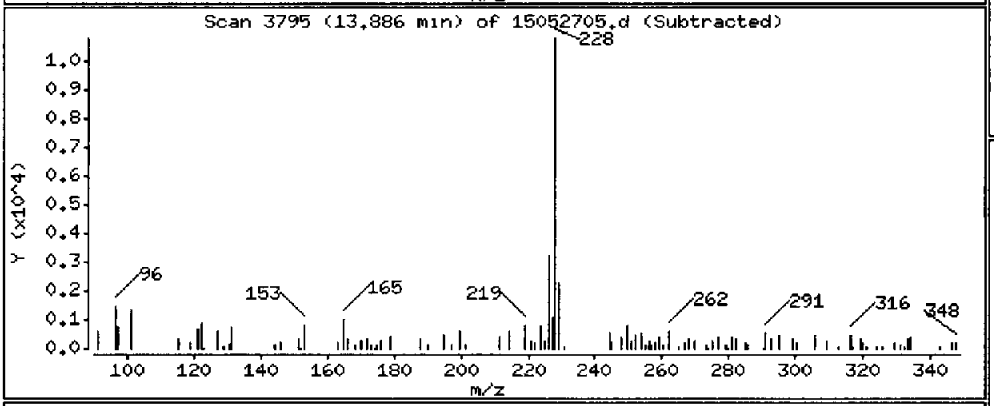
Column diameter: 0.25

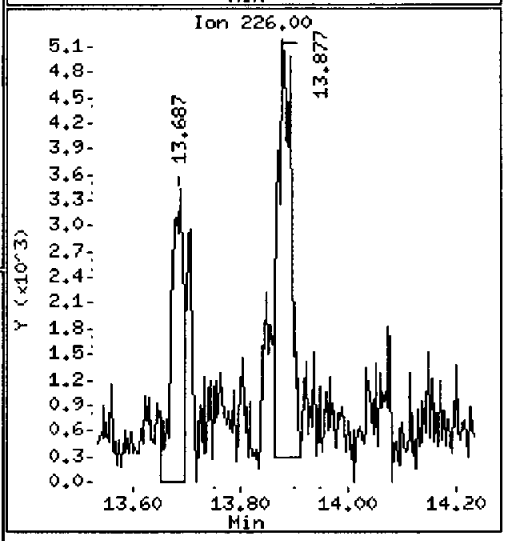
48 Chrysene

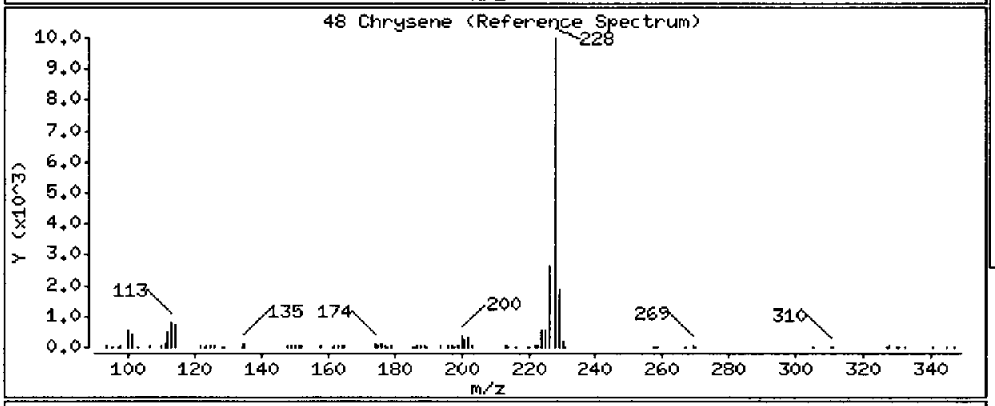
Concentration: 6.046 ug/kg

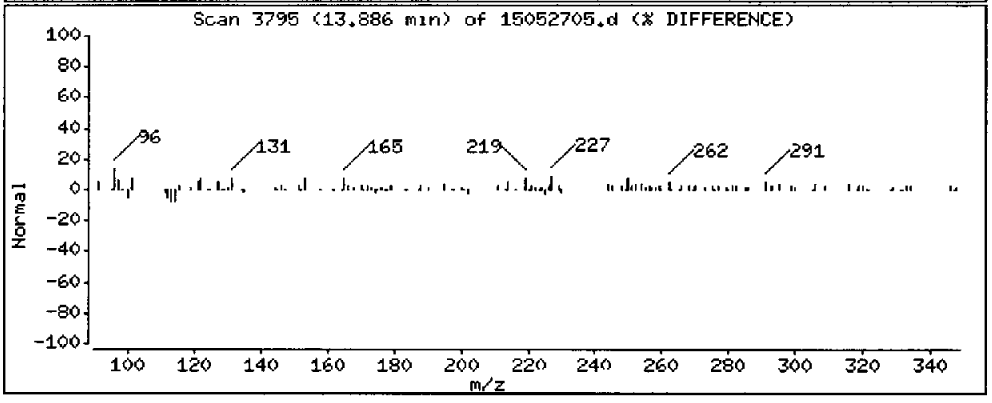












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

Operator: JZ

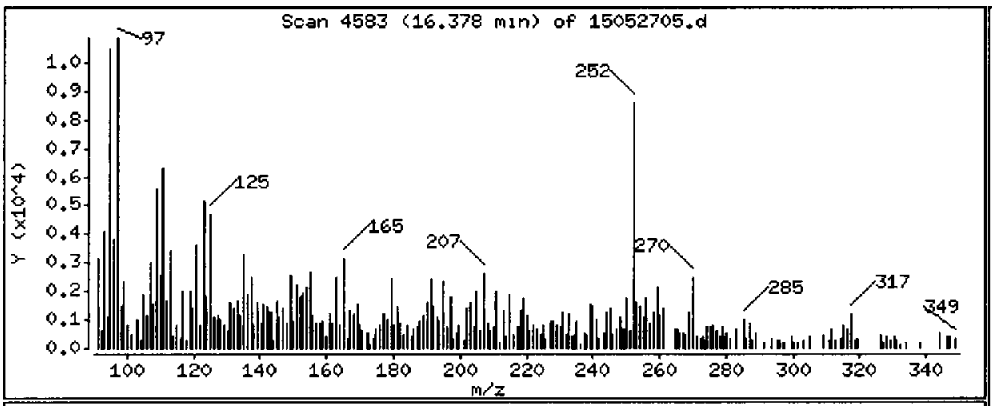
Column phase: ZB-35

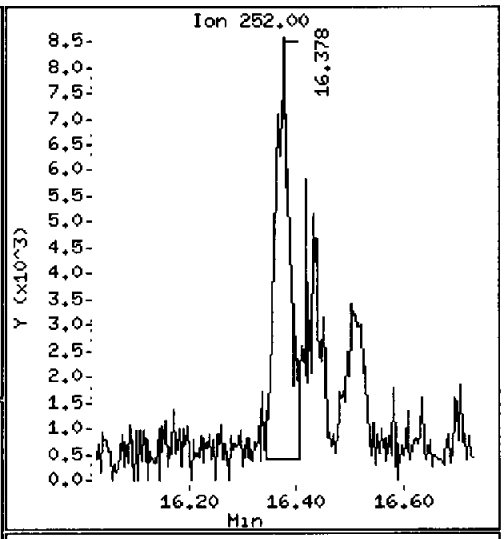
Column diameter: 0.25

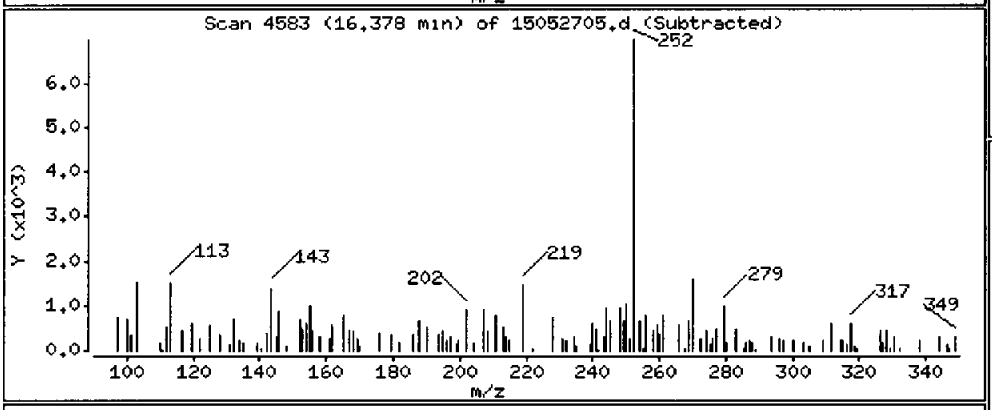
TUL

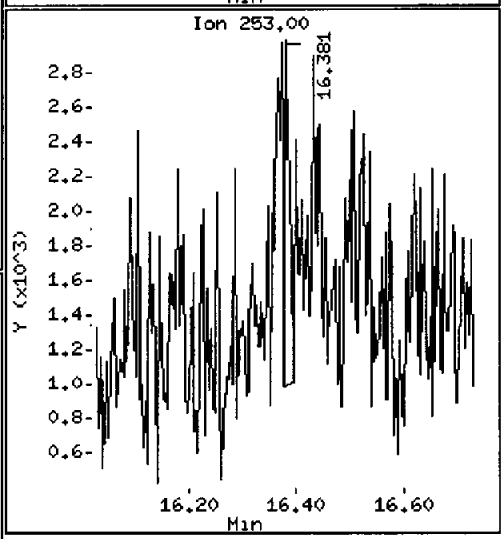
51 Benzo(b)fluoranthene

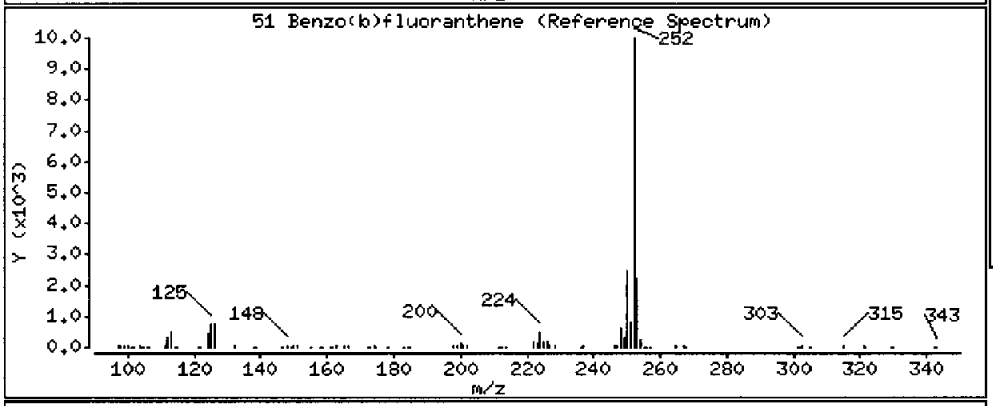
Concentration: 3.115 ug/kg

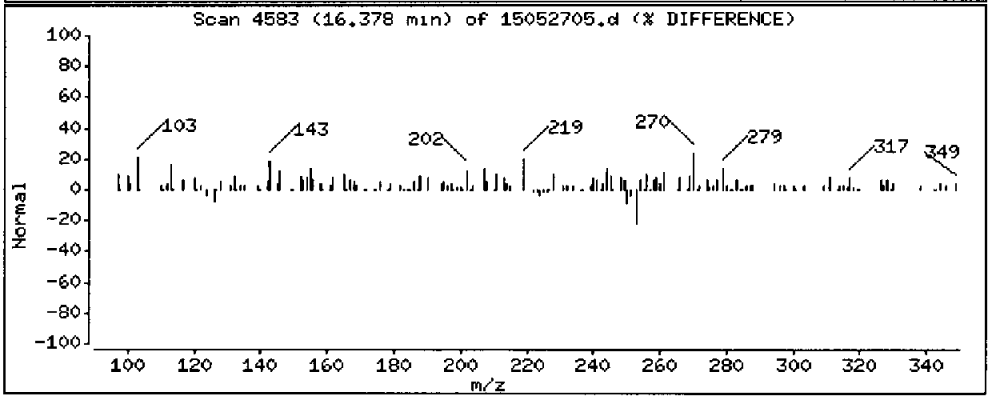






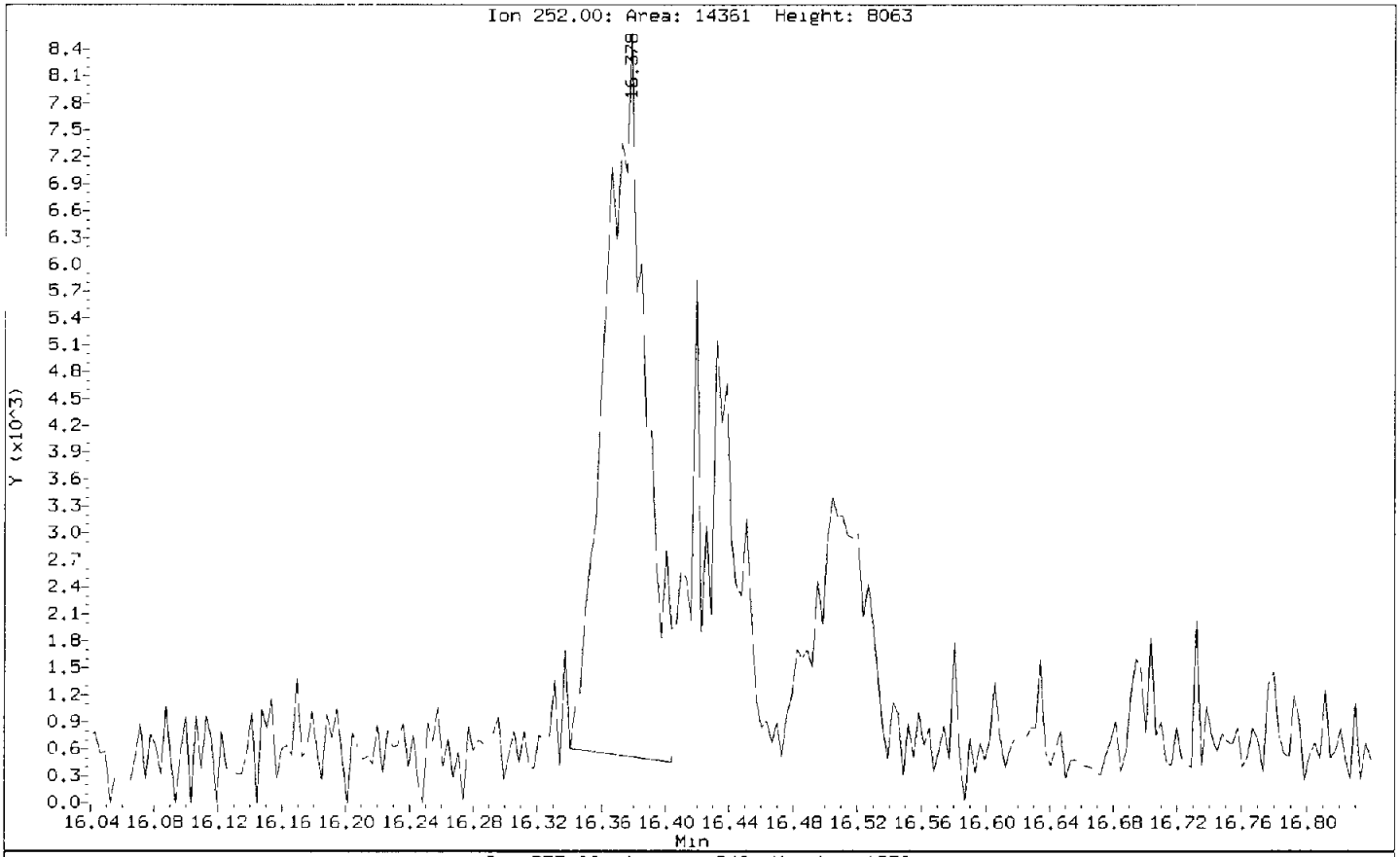


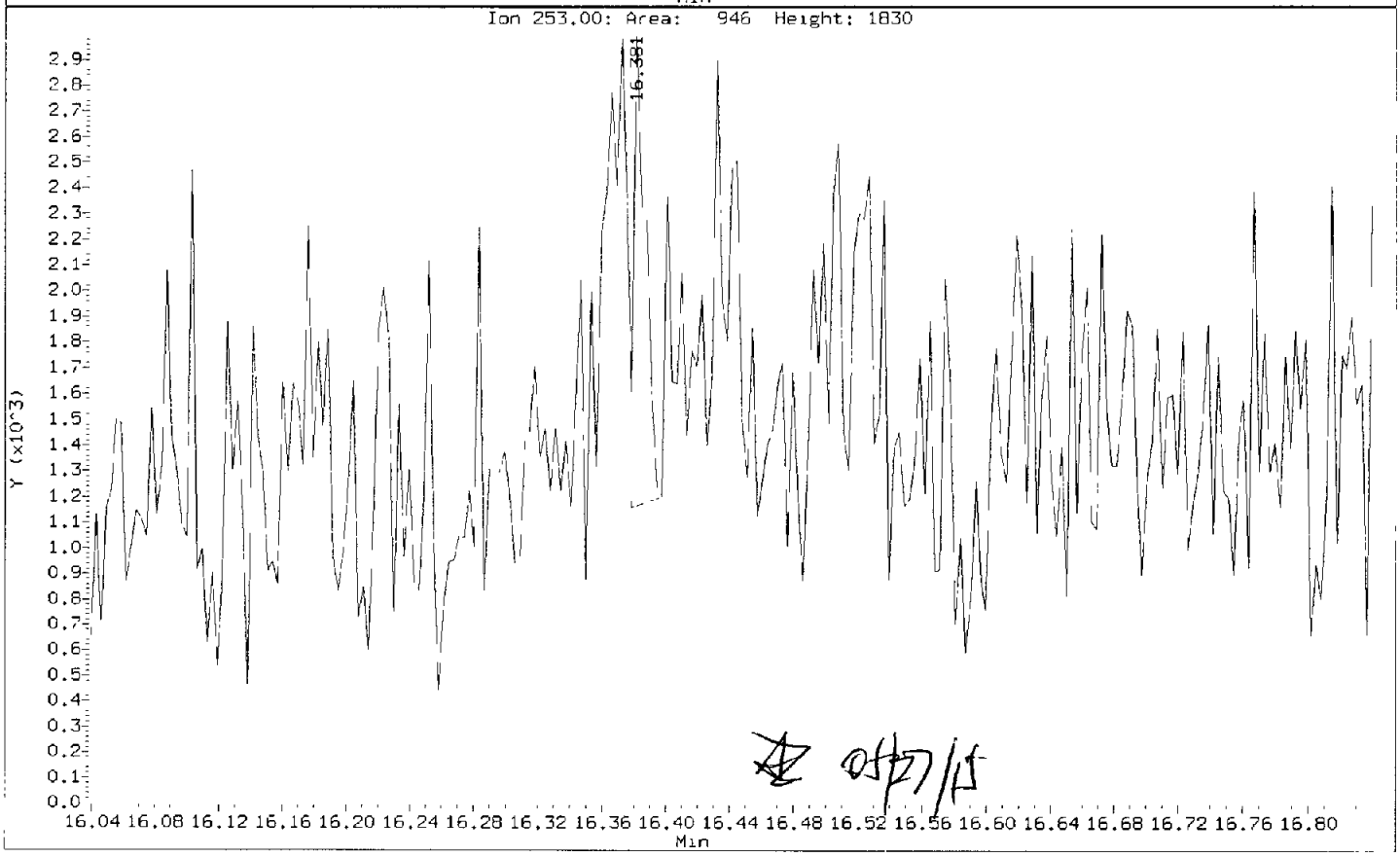




Data File: /chem3/nt8.i/20150527.b/15052705.d
Injection Date: 27-MAY-2015 17:16
Instrument: nt8.i
Client Sample ID: SDP-10(13.5-15.0)

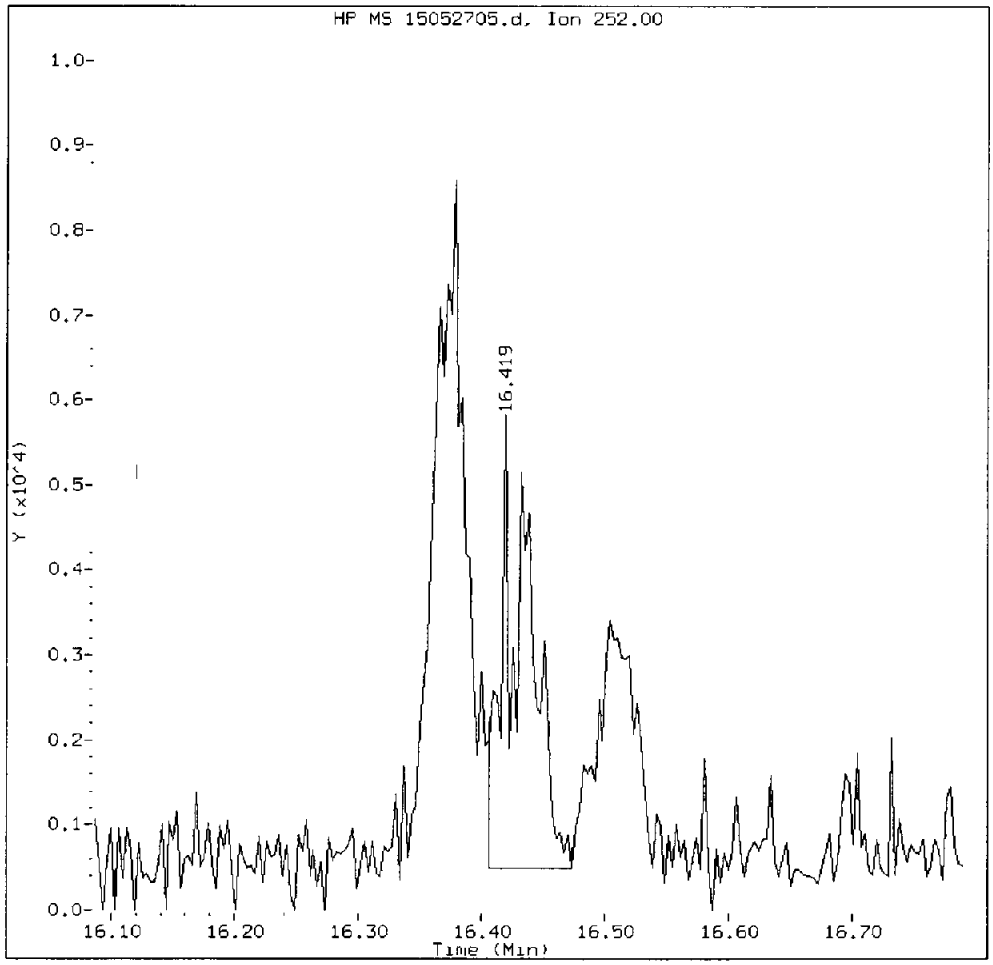
Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9





AGA8A, /chem3/nt8.i/20150527.b/15052705.d

Benzo(k)fluoranthene Amount: 0.03 Area: 8166



MANUAL INTEGRATION for Benzo(k)fluoranthene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 2/17/15

Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

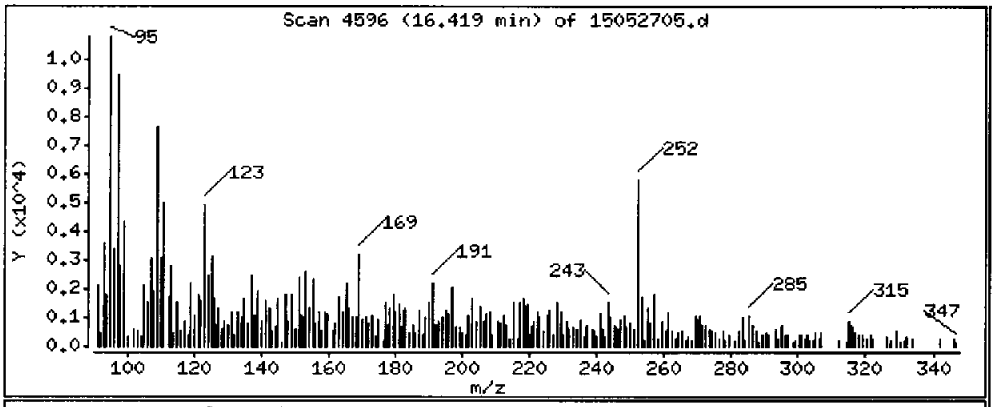
Operator: JZ

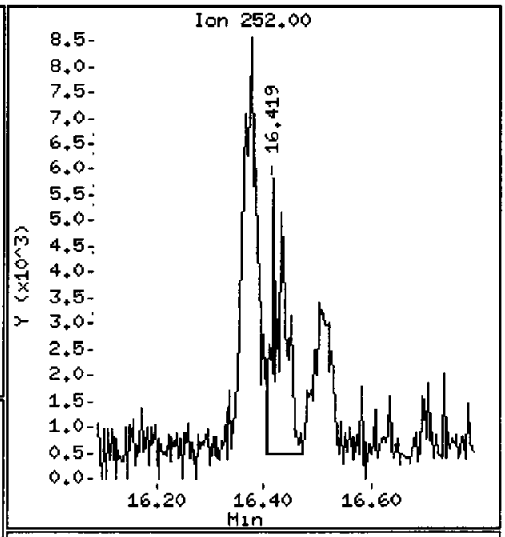
Column phase: ZB-35

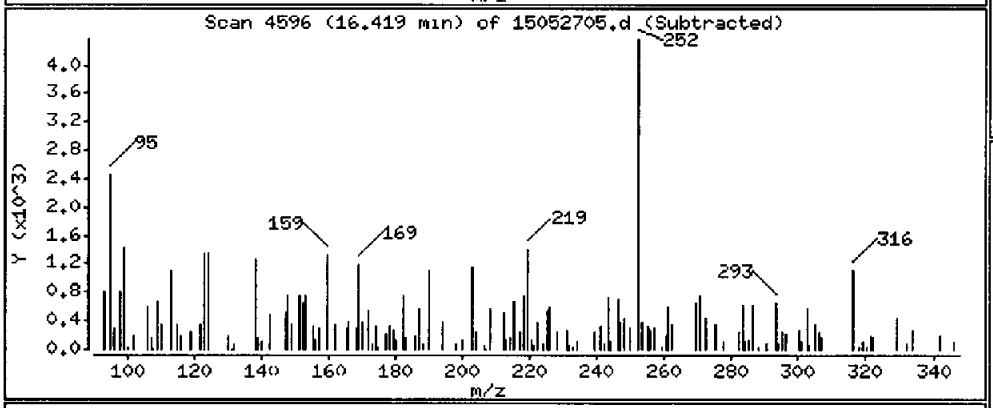
Column diameter: 0.25

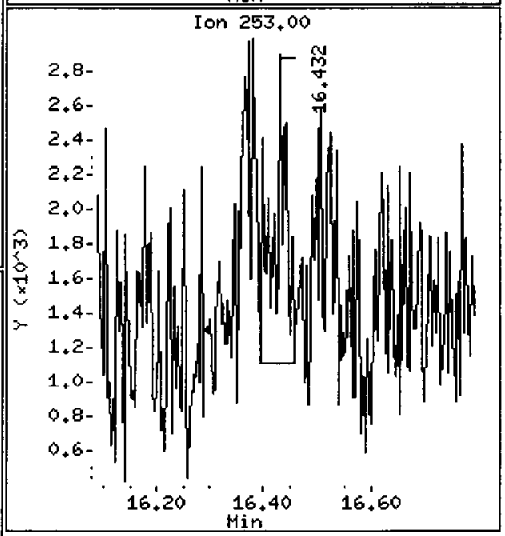
52 Benzo(k)fluoranthene

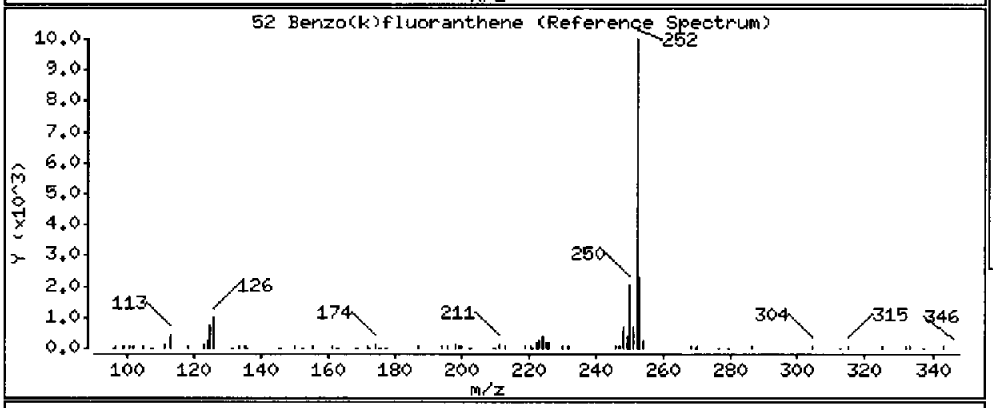
Concentration: 1.682 ug/kg

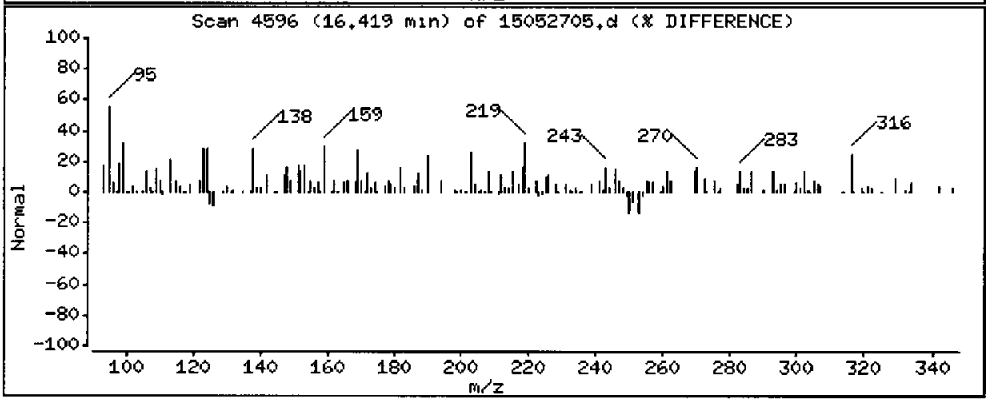












Data File: /chem3/nt8.i/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.i

Sample Info: AGA8A

Volume Injected (uL): 1.0

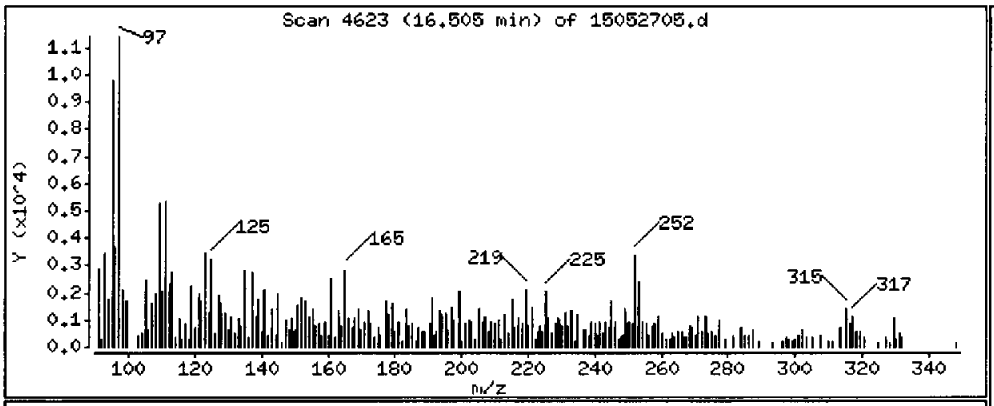
Operator: JZ

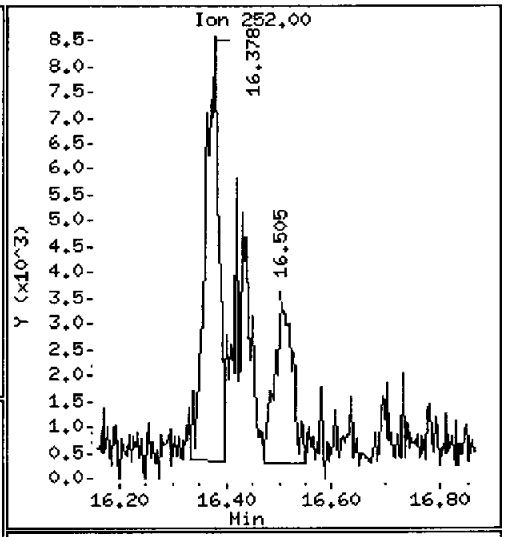
Column phase: ZB-35

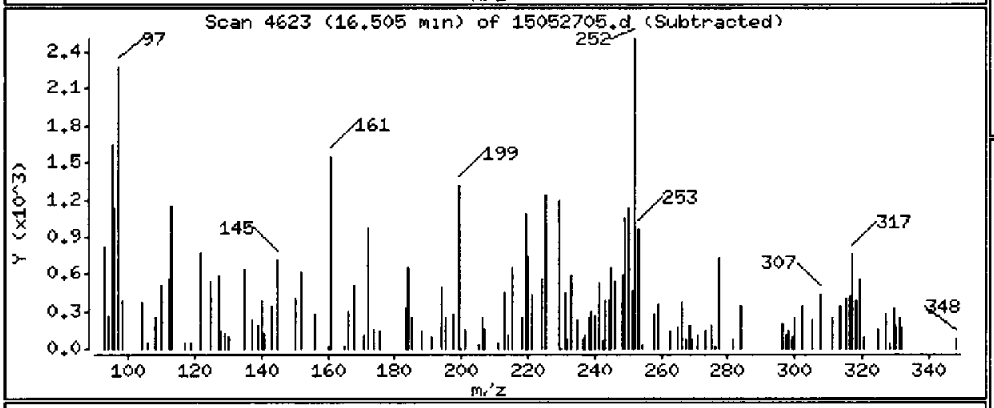
Column diameter: 0.25

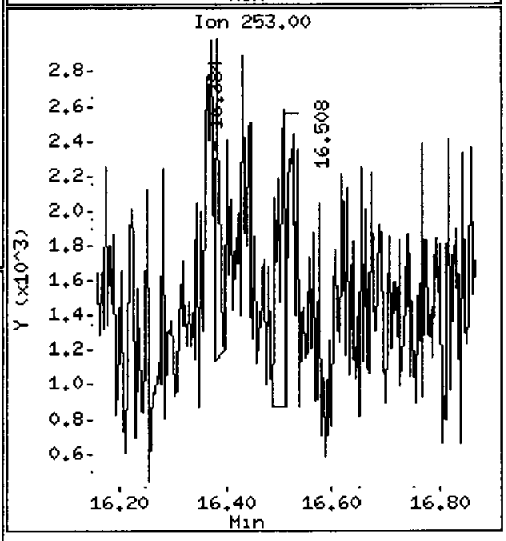
251 Benzo(j)fluoranthene

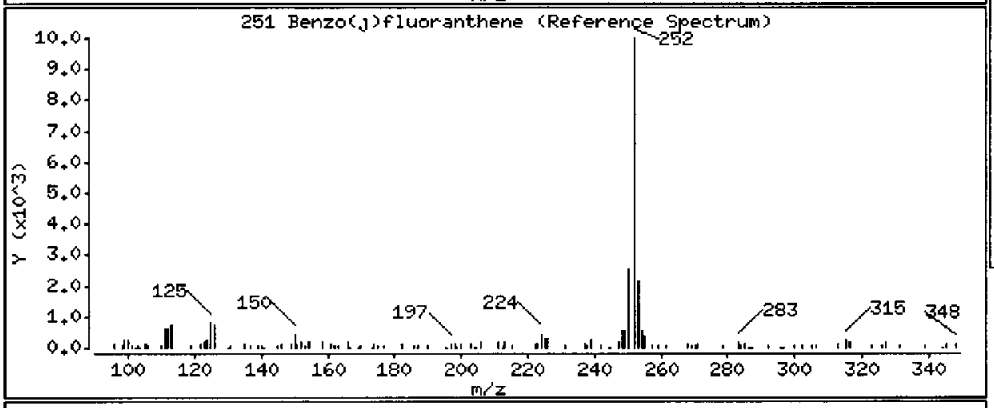
Concentration: 1.568 ug/kg

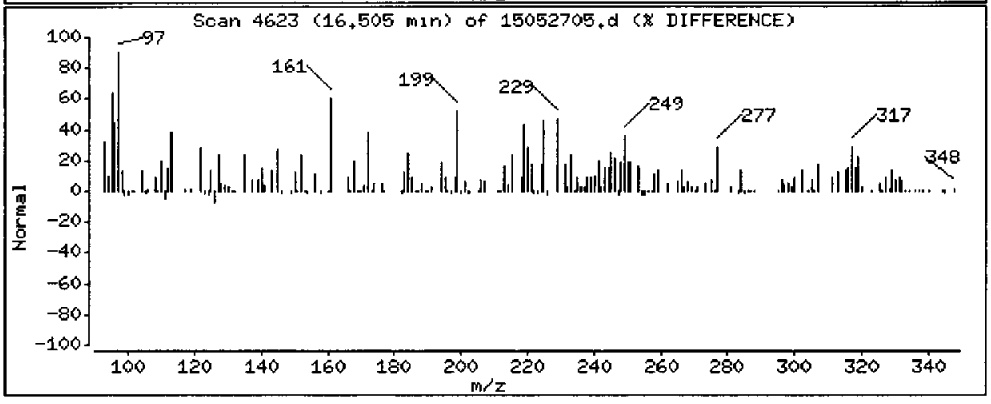












Data File: /chem3/nt8.i/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.i

Sample Info: AGA8A

Volume Injected (uL): 1.0

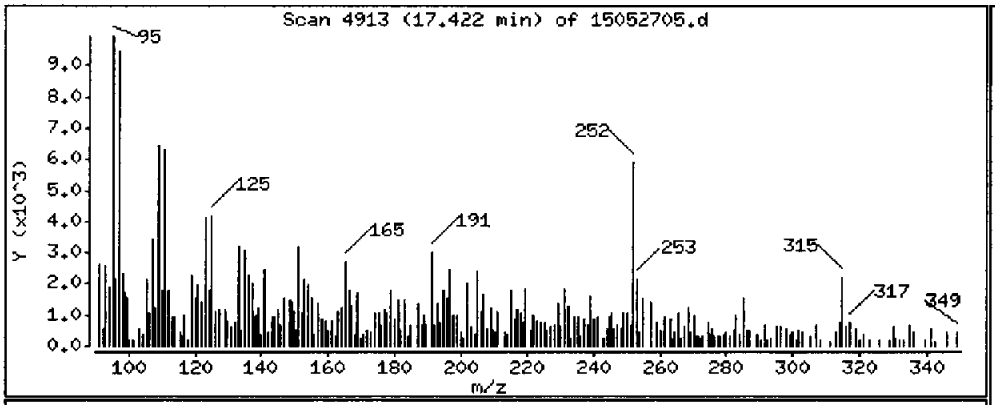
Operator: JZ

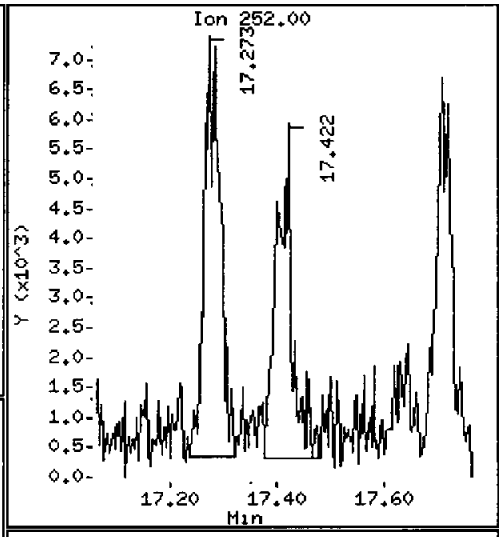
Column phase: ZB-35

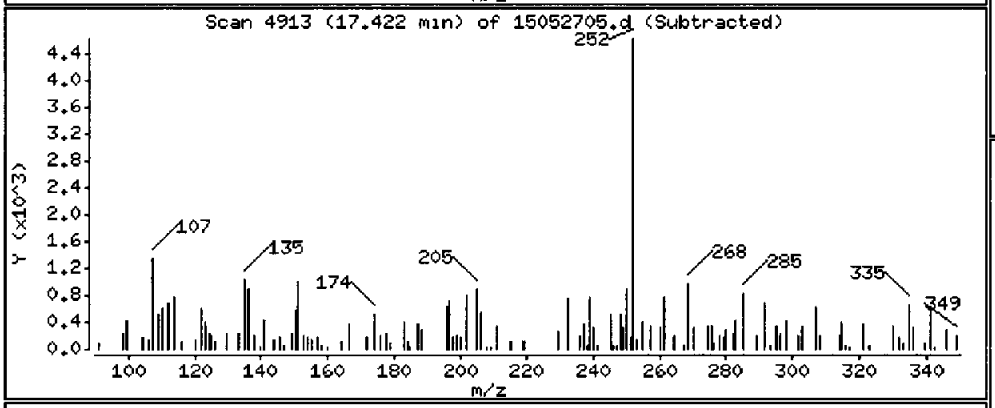
Column diameter: 0.25

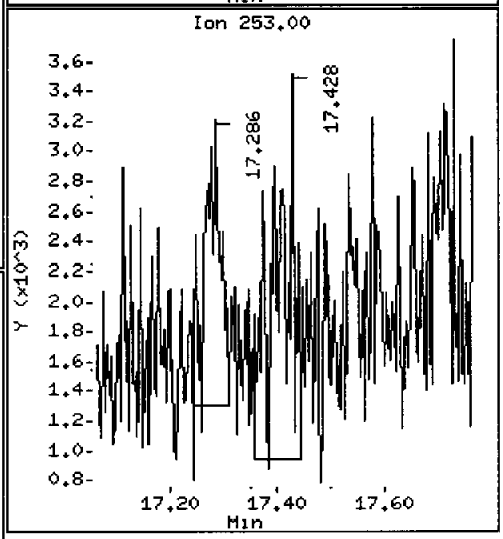
54 Benzo(a)pyrene

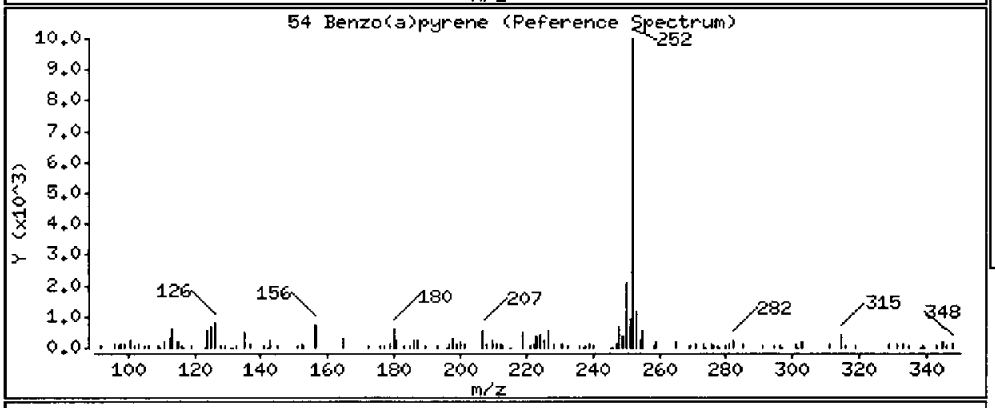
Concentration: 2.563 ug/kg

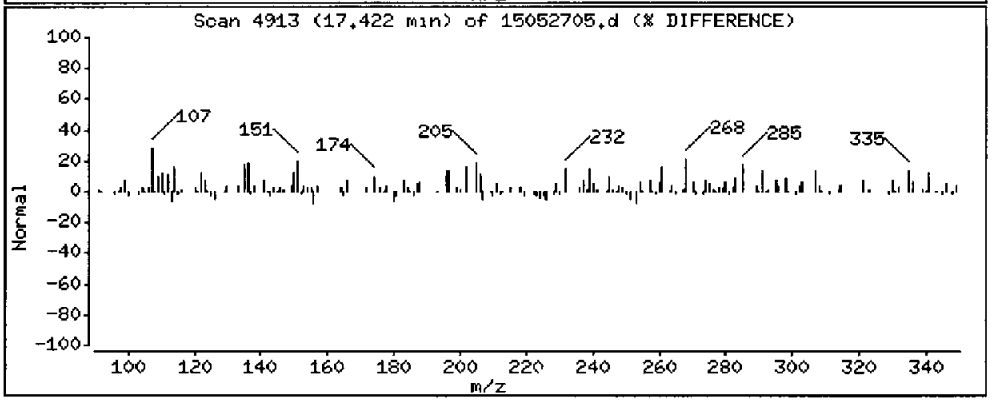






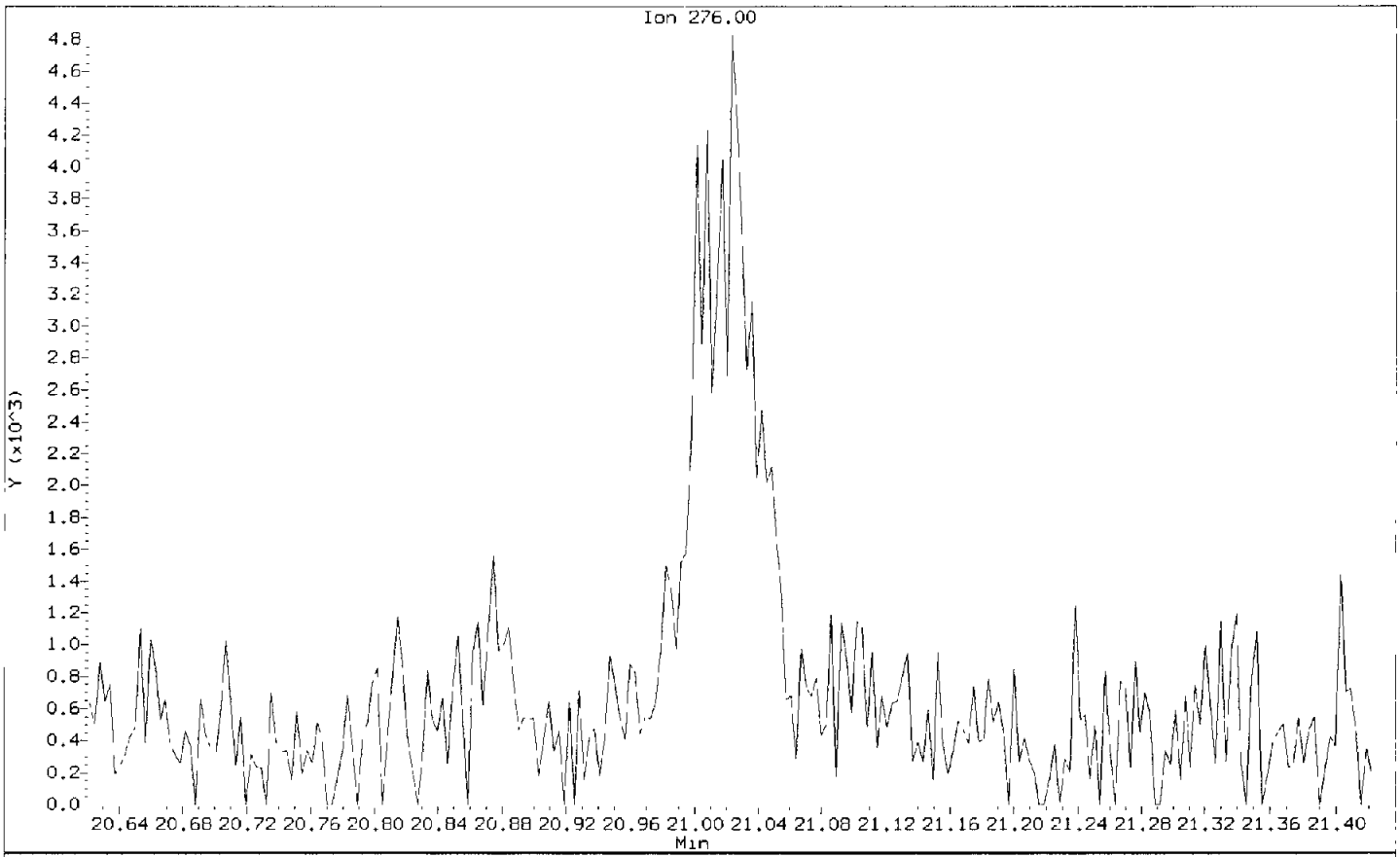


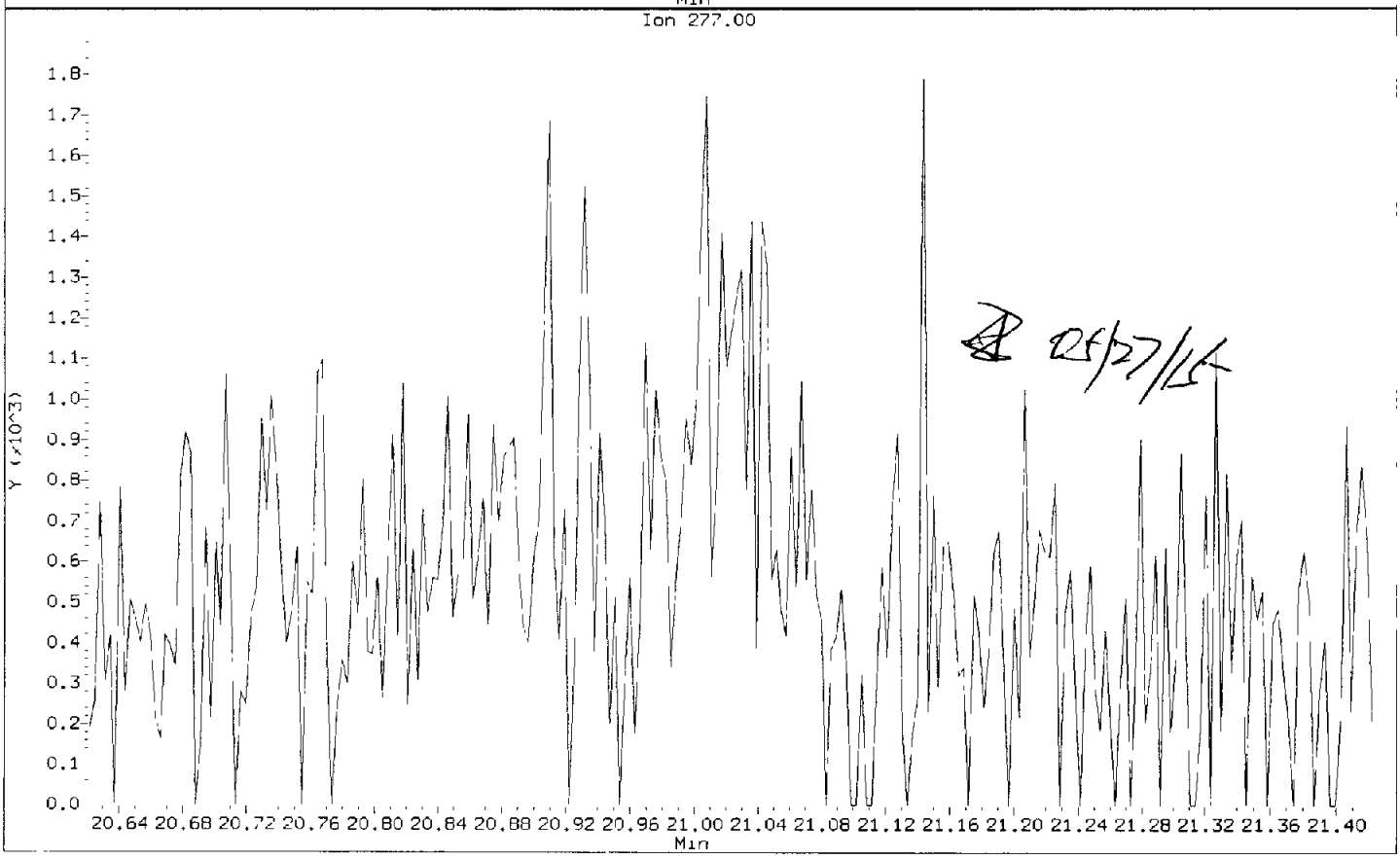




Data File: /chem3/nt8.i/20150527.b/15052705.d
Injection Date: 27-MAY-2015 17:16
Instrument: nt8.i
Client Sample ID: SDP-10(13.5-15.0)

Compound: Benzo(g,h,i)perylene
CAS Number: 191-24-2

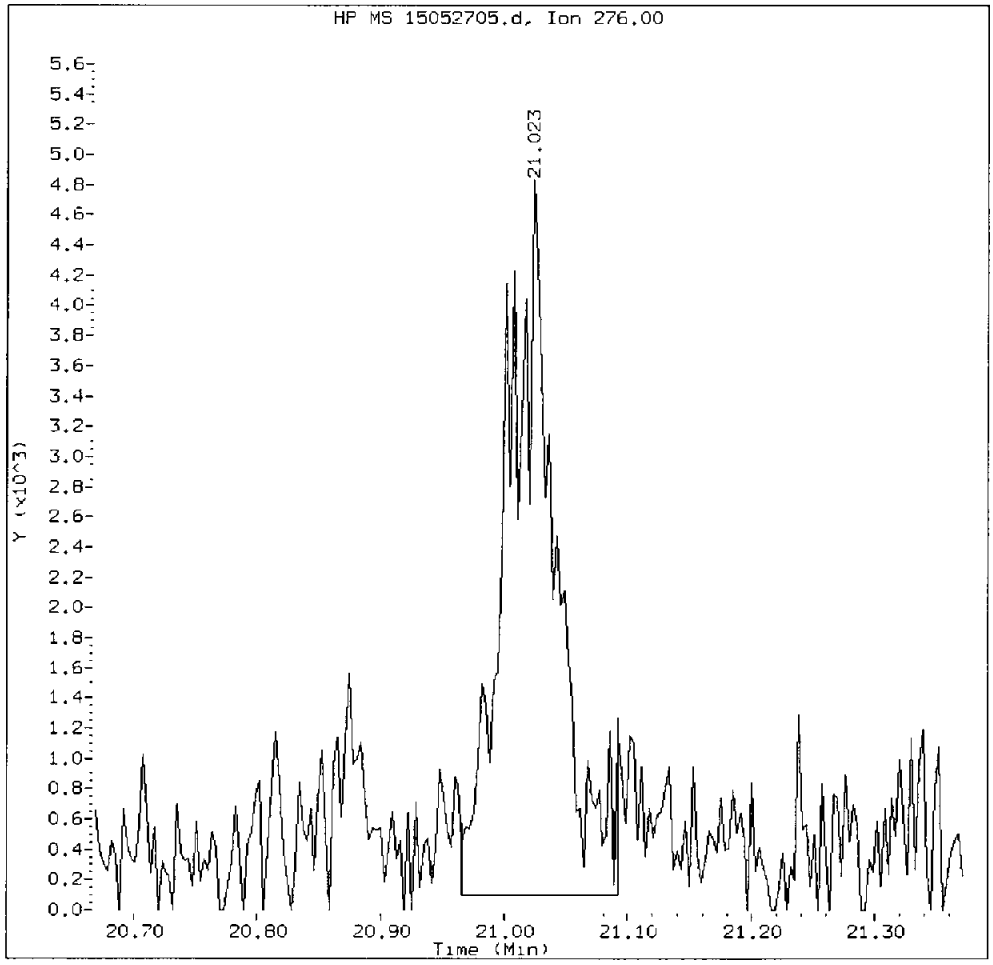




6/27/15

AGA8A, /chem3/nt8.i/20150527.b/15052705.d

Benzo(g,h,i)perylene Amount: 0.06 Area: 13366



MANUAL INTEGRATION for Benzo(g,h,i)perylene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 05/27/15

Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

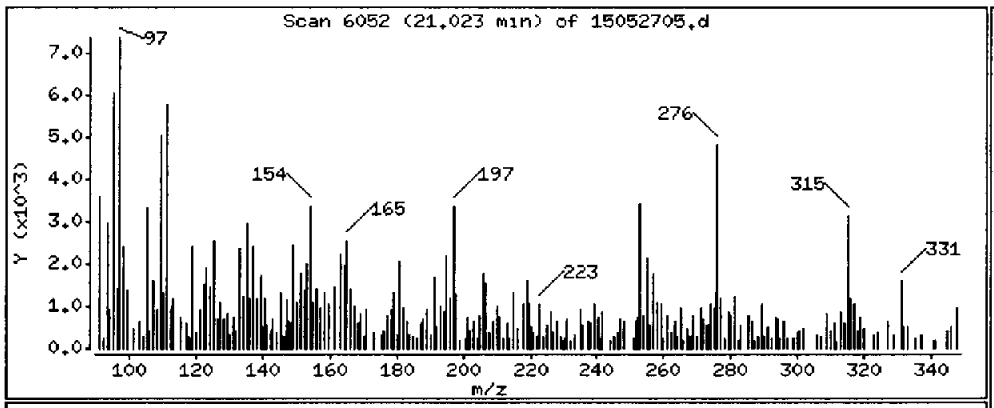
Operator: JZ

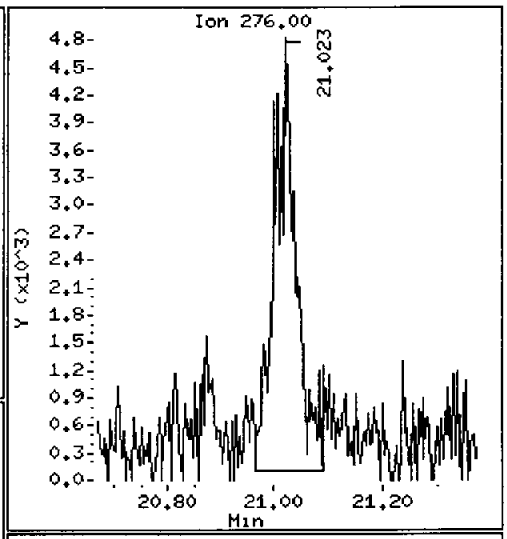
Column phase: ZB-35

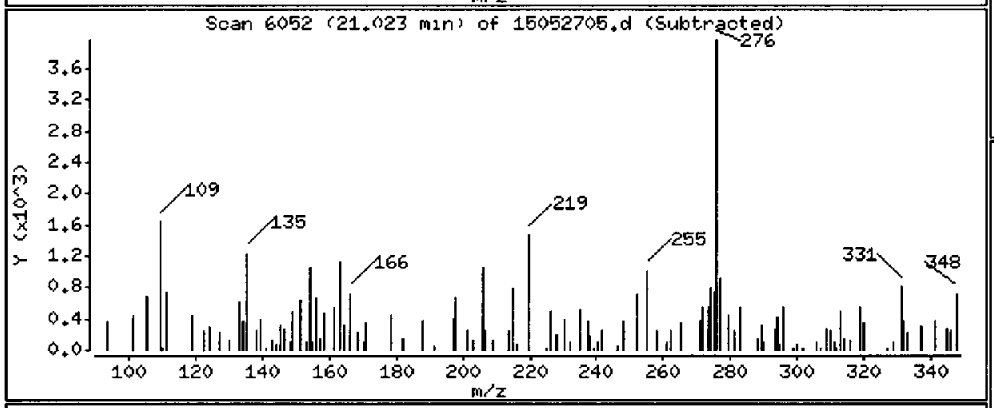
Column diameter: 0.25

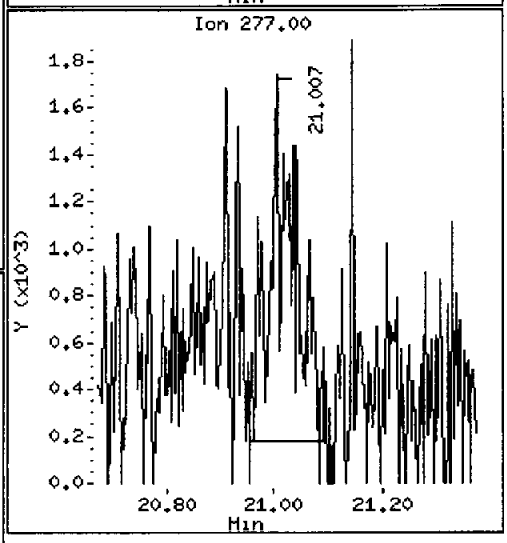
61 Benzo(g,h,i)perylene

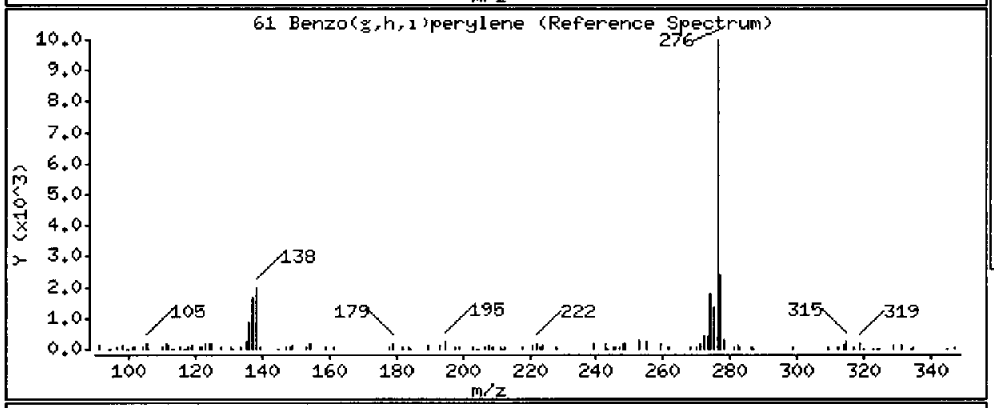
Concentration: 2.920 ug/kg

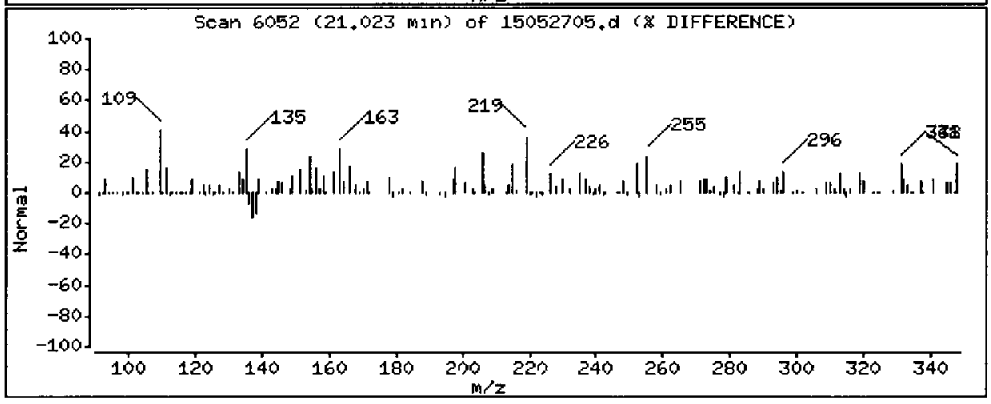












Data File: /chem3/nt8.1/20150527.b/15052705.d

Date : 27-MAY-2015 17:16

Client ID: SDP-10(13.5-15.0)

Instrument: nt8.1

Sample Info: AGA8A

Volume Injected (uL): 1.0

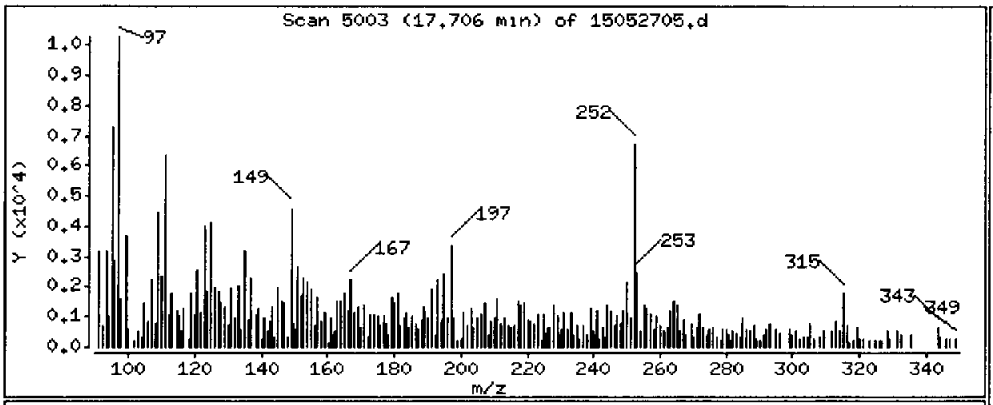
Operator: JZ

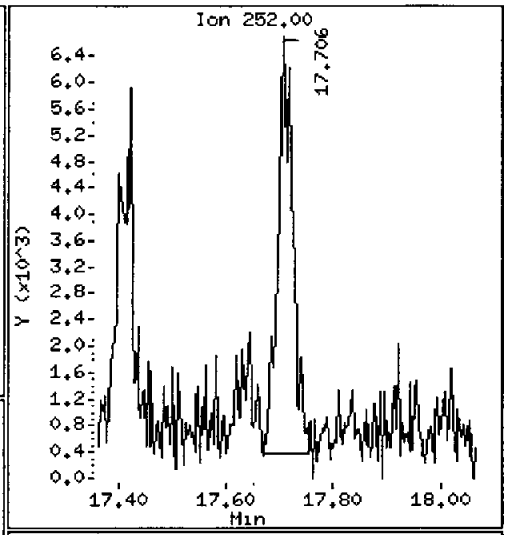
Column phase: ZB-35

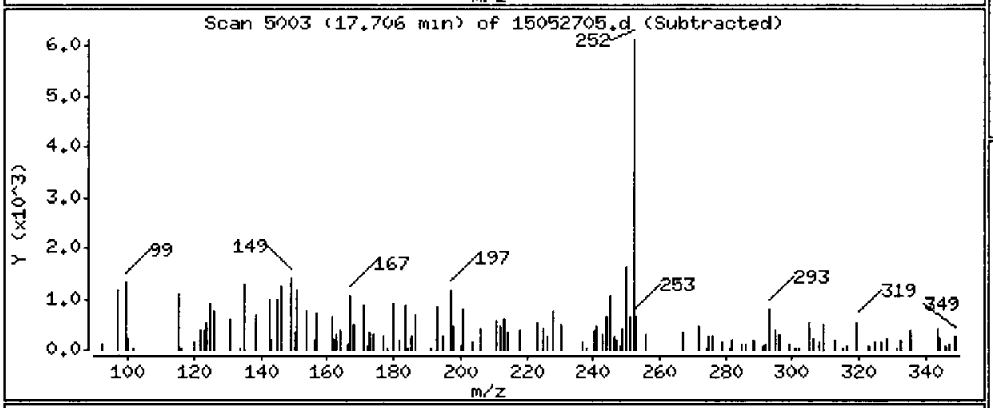
Column diameter: 0.25

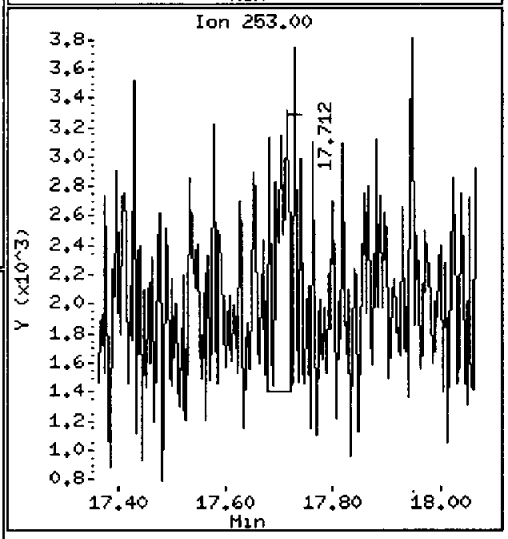
57 Perylene

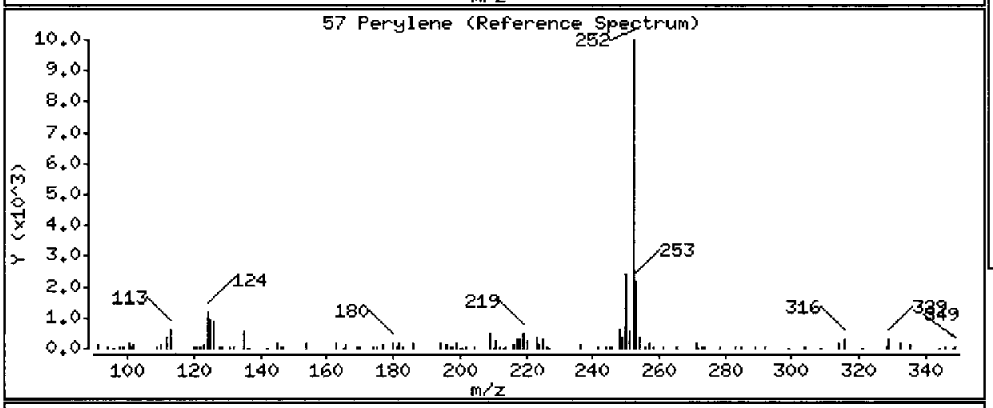
Concentration: 2.705 ug/kg

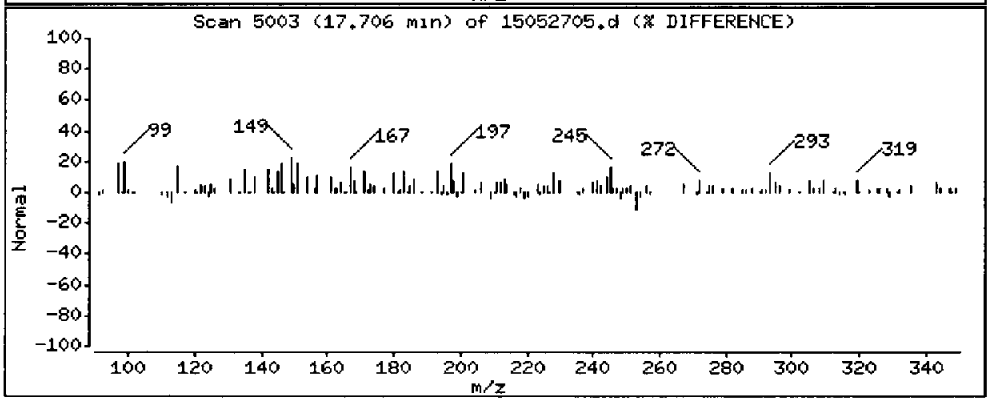












CO-ELUTION SUMMARY FOR FILE - 15052705.d

Lab ID: AGA8A, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052706.d
Lab Smp Id: AGA8B Client Smp ID: SDP-10(15.5-16.5)
Inj Date : 27-MAY-2015 17:42
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8B
Misc Info : 15-9290
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:28 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/27/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.08000	Weight of sample extracted (g)
M	23.60000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.739	4.745	(1.000)	384878	2.00000	
7 Naphthalene	128	4.767	4.774	(1.006)	179173	0.96638	44.92
$ 12 2-Methylnaphthalene-d10	152	5.469	5.469	(1.154)	149066	1.26832	58.95
14 2-Methylnaphthalene	141	5.517	5.520	(1.164)	27808	0.25153	11.69
15 1-methylnaphthalene	141	5.710	5.713	(1.205)	21274	0.19802	9.204
21 Acenaphthylene	152	6 899	6.899	(0.985)	25712	0.14404	6.695
* 22 Acenaphthene-d10	164	7.006	7.009	(1.000)	244430	2.00000	
23 Acenaphthene	153	7.057	7.057	(1.007)	156677	1.31909	61.31
11 Dibenzofuran	168	7.208	7.208	(1.029)	92098	0.56065	26.06
25 Fluorene	166	7.680	7.680	(1.096)	59947	0.45186	21.00
* 28 Phenanthrene-d10	188	9.027	9.027	(1.000)	422078	2.00000	
30 Phenanthrene	178	9.061	9.061	(1 004)	366258	1.82006	84.60
31 Anthracene	178	9.099	9.102	(1.008)	28797	0.15895	7.388
36 Fluoranthene	202	10.772	10.775	(1.193)	290784	1.23548	57.43
$ 253 Fluoranthene-d10	212	10.737	10.737	(1.190)	404748	1.94951	90.61

AGA8 84525

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.268	11.268	(0.816)	242493	0.92205	42.86
	46 Benzo(a)anthracene	228	13.687	13.691	(0.991)	34666	0.14649	6.809
*	47 Chrysene-d12	240	13.814	13.811	(1.000)	471771	2.00000	
	48 Chrysene	228	13.887	13.883	(1.005)	71218	0.30015	13.95
	51 Benzo(b)fluoranthene	252	16.375	16 375	(0.928)	44953	0.17782	8.265
	52 Benzo(k)fluoranthene	252	16.432	16.438	(0 932)	19863	0.07864	3.655
	251 Benzo(j)fluoranthene	252	16.508	16.511	(0.936)	20822	0.08448	3.927
	54 Benzo(a)pyrene	252	17.406	17.412	(0.987)	24495	0.10868	5.051(M)
*	56 Perylene-d12	264	17.640	17 640	(1.000)	481386	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.049	20.052	(1 137)	35094	0.12963	6.025
$	60 Dibenzo(a,h)anthracene-d14	292	19.939	19.939	(1.130)	341388	1.86212	86.55
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	21.023	21.020	(1.192)	46518	0.19534	9.079
	57 Perylene	252	17.719	17.713	(1.004)	1599688	6.83651	317.8

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052706.d
Lab Smp Id: AGA8B
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9290

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-10(15.5-16.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	384878	12.18
22 Acenaphthene-d10	230598	115299	461196	244430	6.00
28 Phenanthrene-d10	373928	186964	747856	422078	12.88
47 Chrysene-d12	381262	190631	762524	471771	23.74
56 Perylene-d12	380825	190412	761650	481386	26.41

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	-0.05
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.02
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

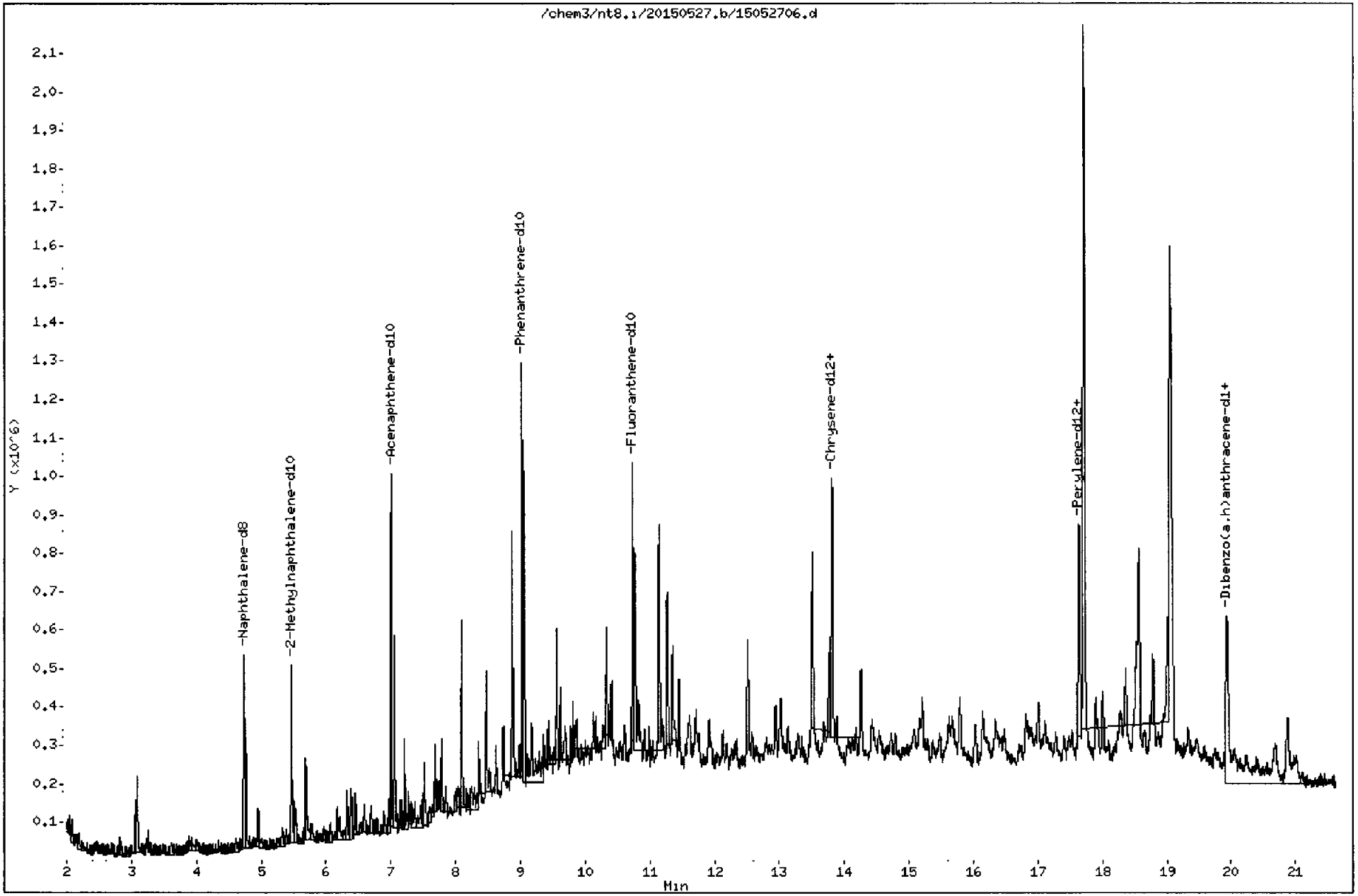
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8B
Client Smp ID: SDP-10(15.5-16.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9290

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	139.4	58.95	42.28	32-120
$ 253 Fluoranthene-d10	139.4	90.61	64.98	36-134
$ 60 Dibenzo(a,h)anthra	139.4	86.55	62.07	21-133

Data File: /chem3/nt8.1/20150527.b/15052706.d
Date : 27-MAY-2015 17:42
Client ID: SDP-10(15.5-16.5)
Sample Info: AGA8B
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

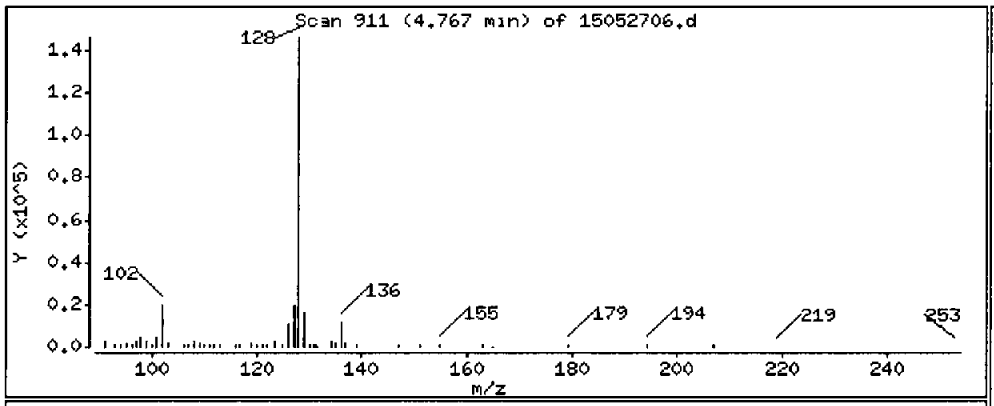
Operator: JZ

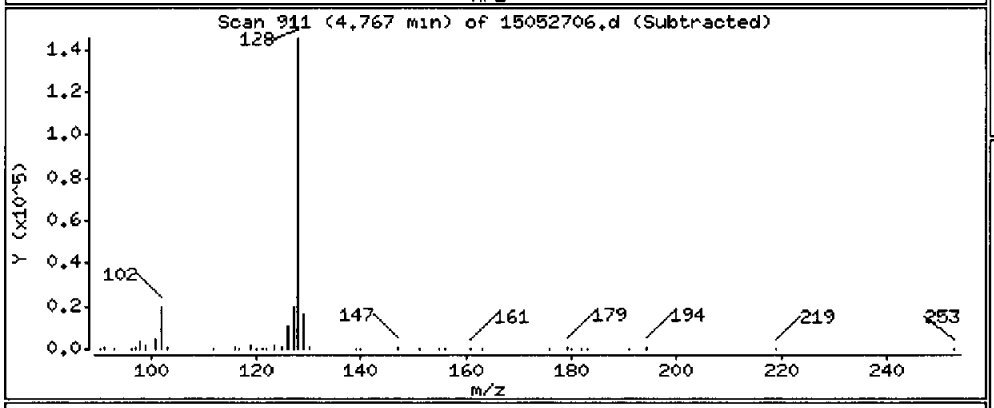
Column phase: ZB-35

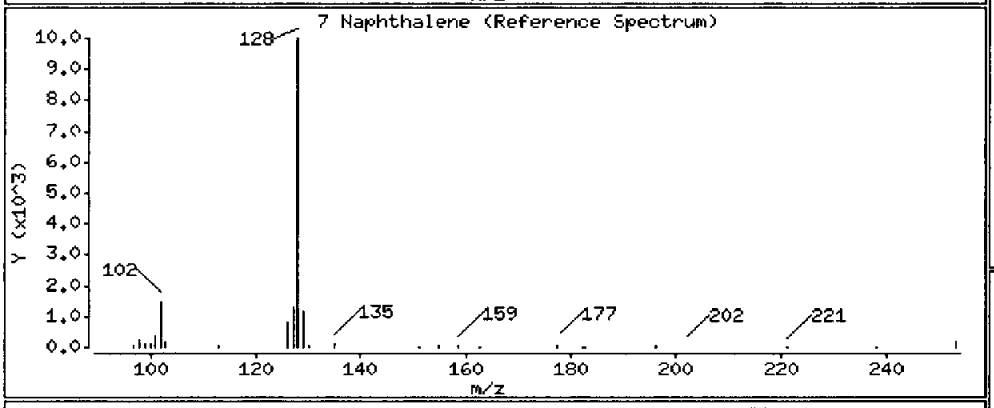
Column diameter: 0.25

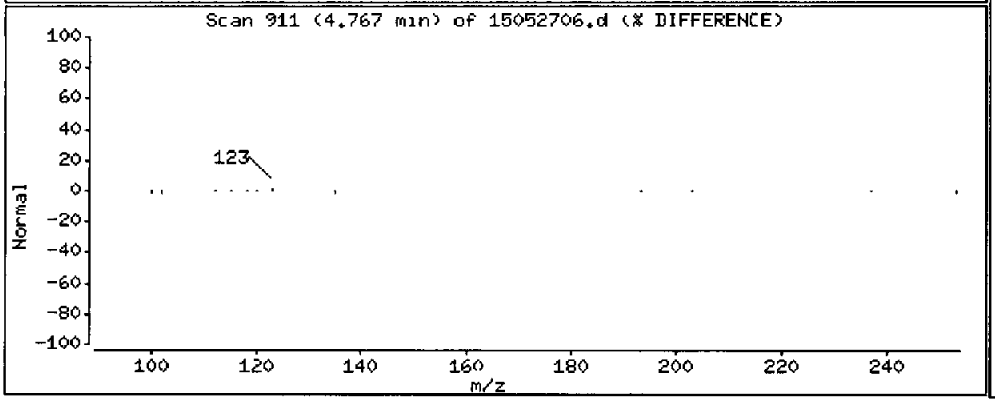
7 Naphthalene

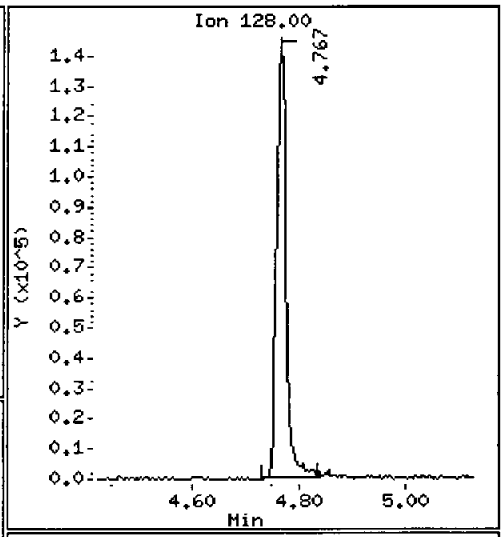
Concentration: 44.92 ug/kg

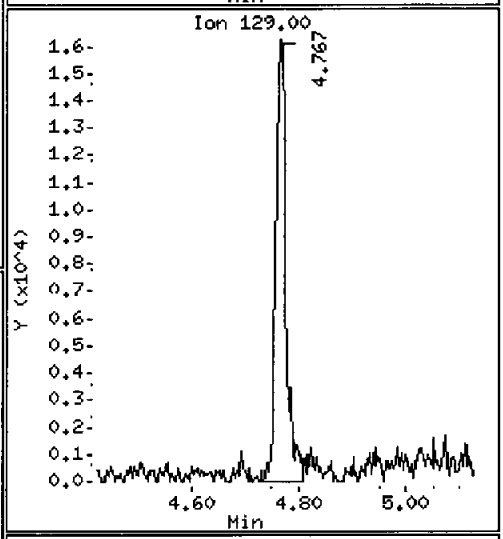


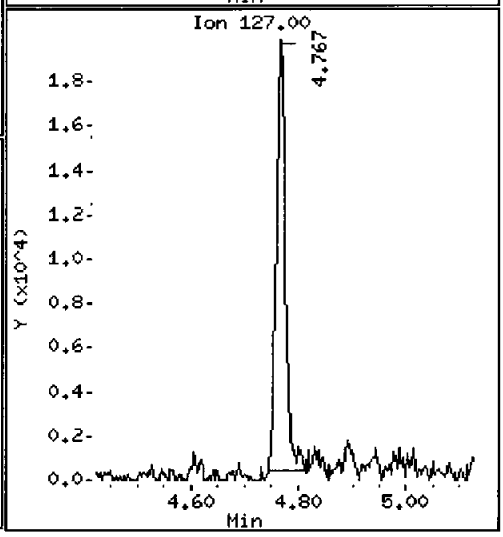












Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

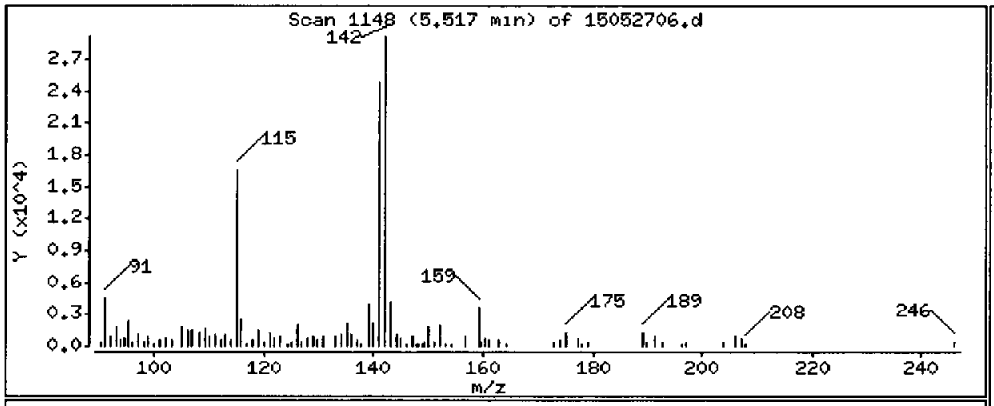
Operator: JZ

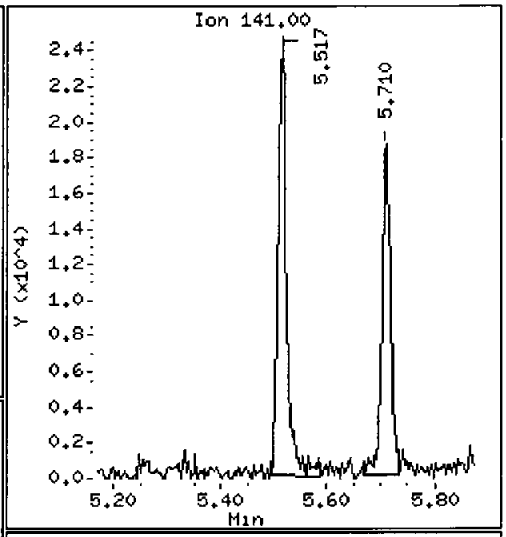
Column phase: ZB-35

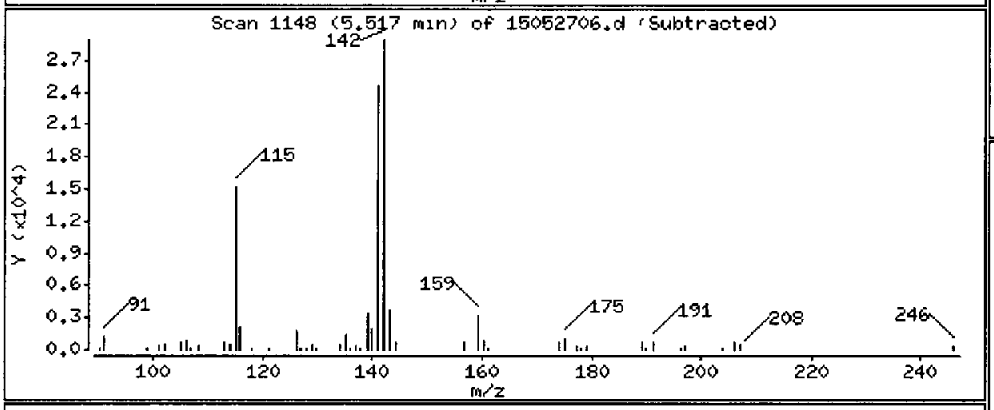
Column diameter: 0.25

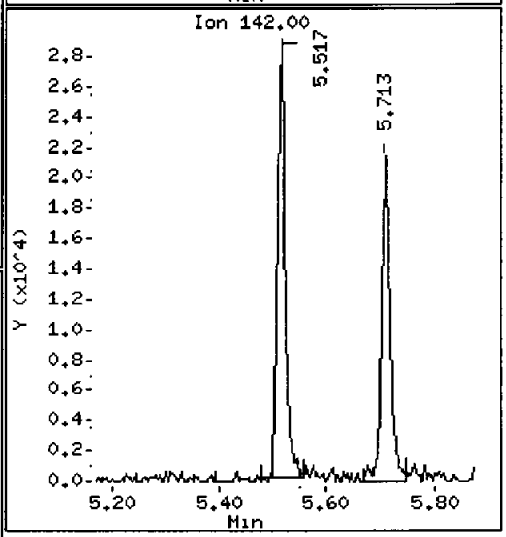
14 2-Methylnaphthalene

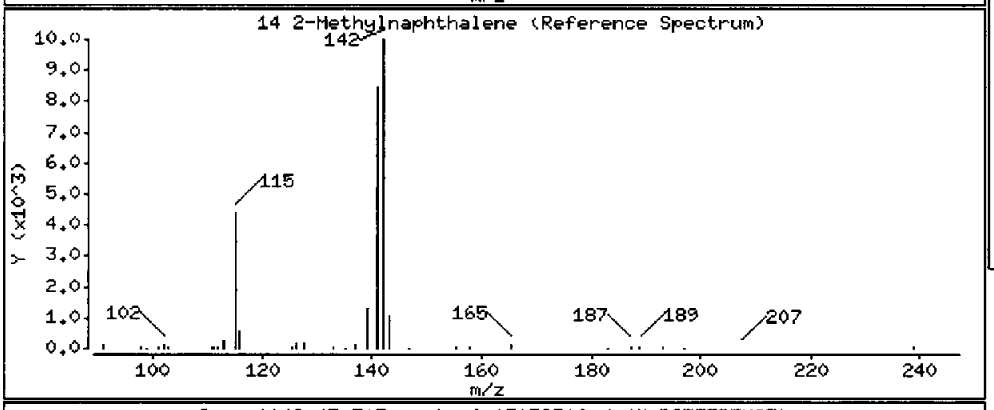
Concentration: 11.69 ug/kg

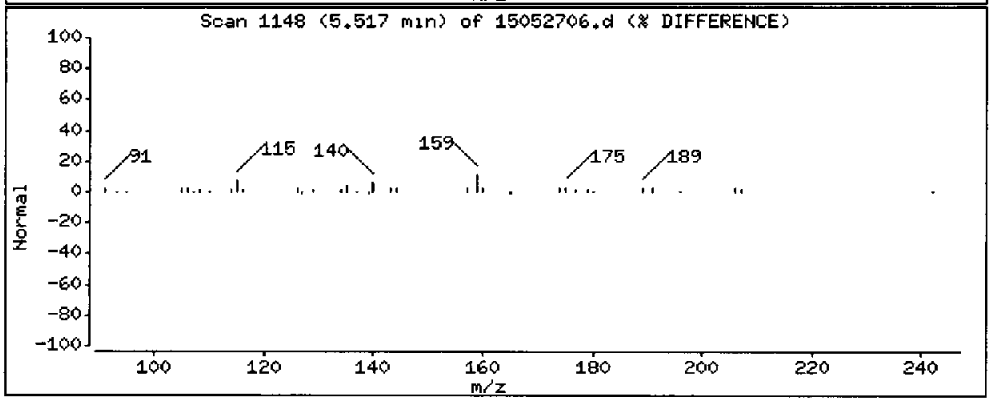












Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

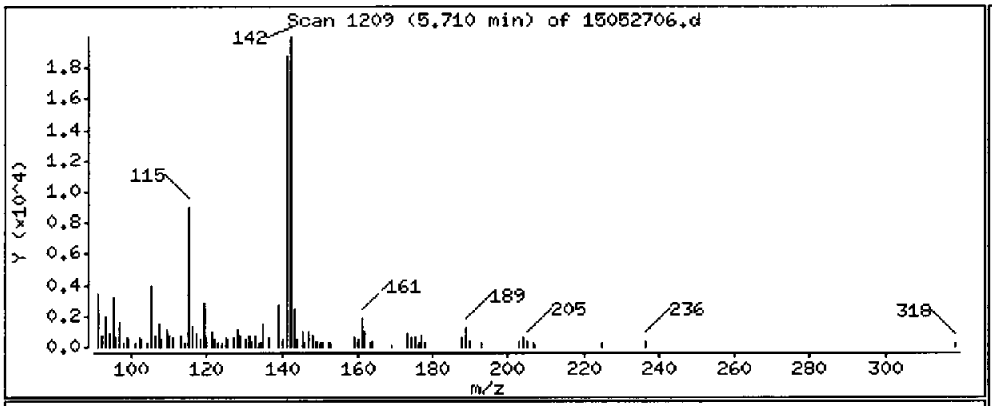
Operator: JZ

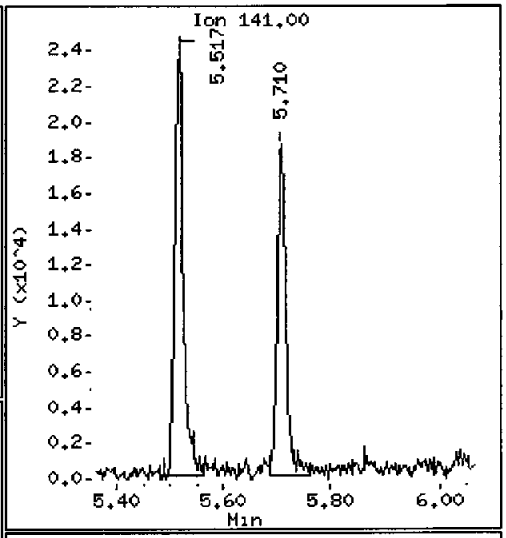
Column phase: ZB-35

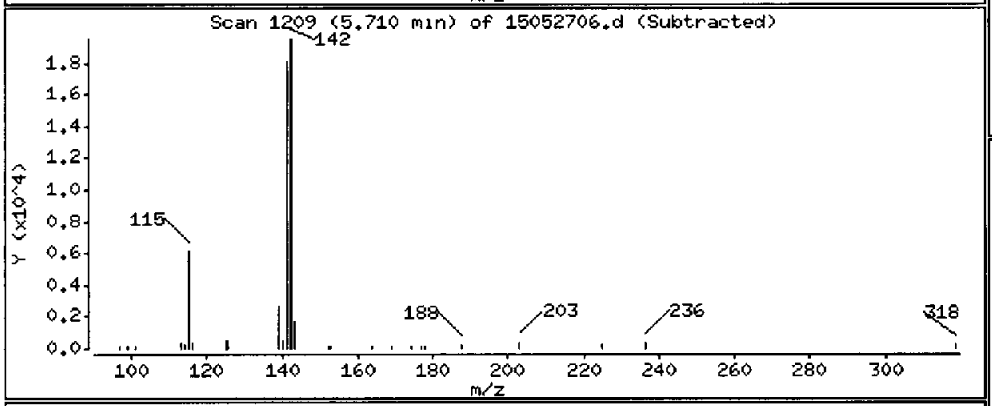
Column diameter: 0.25

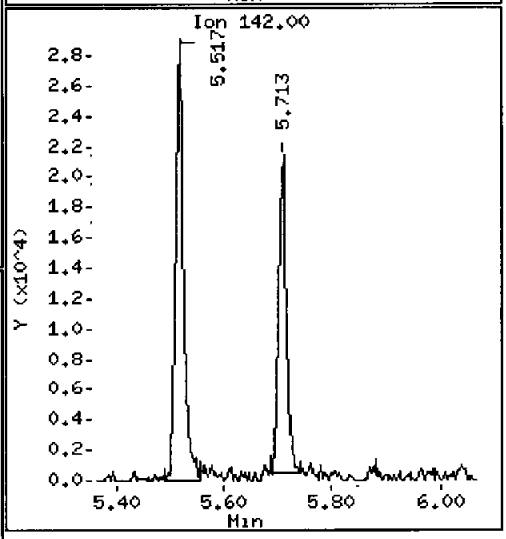
15 1-methylnaphthalene

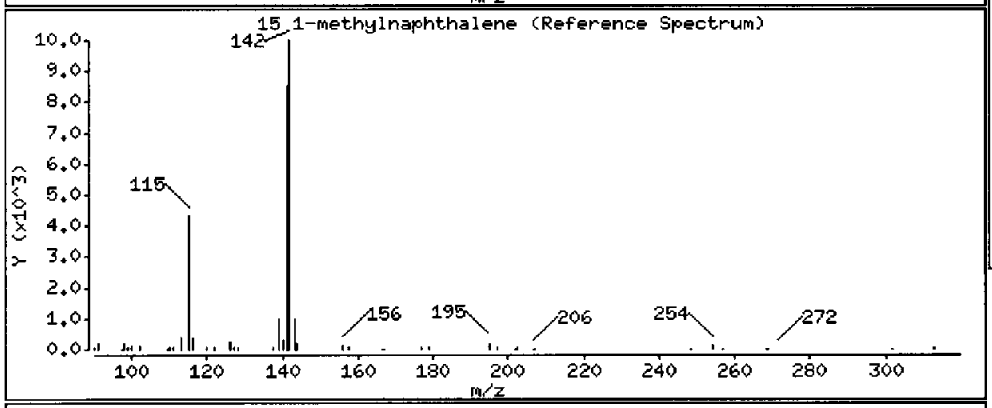
Concentration: 9.204 ug/kg

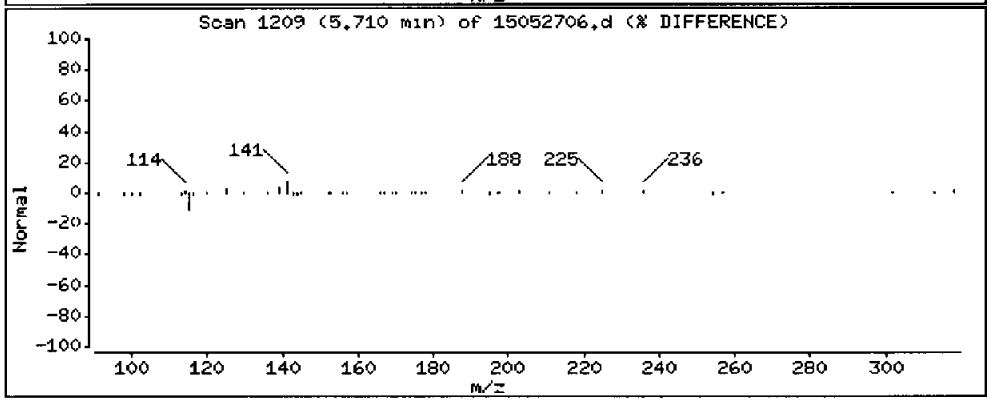












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

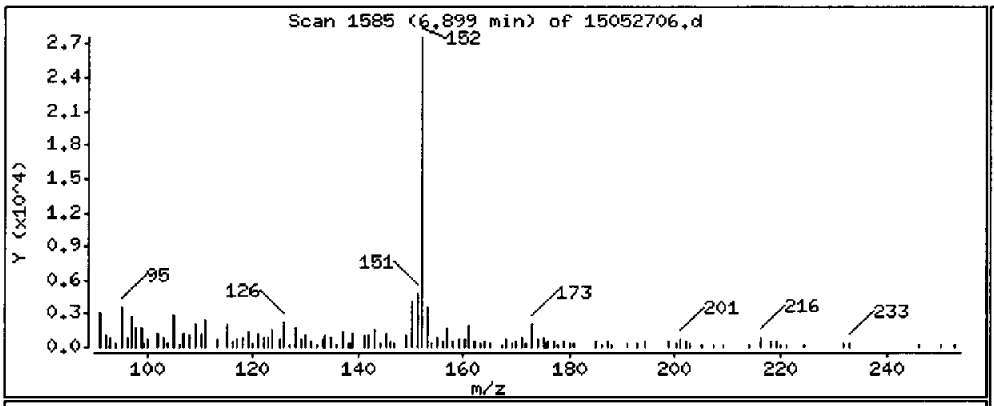
Operator: JZ

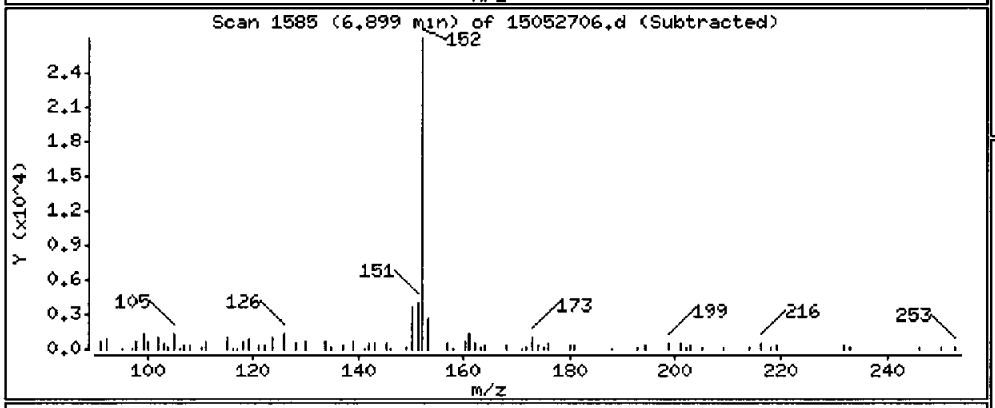
Column phase: ZB-35

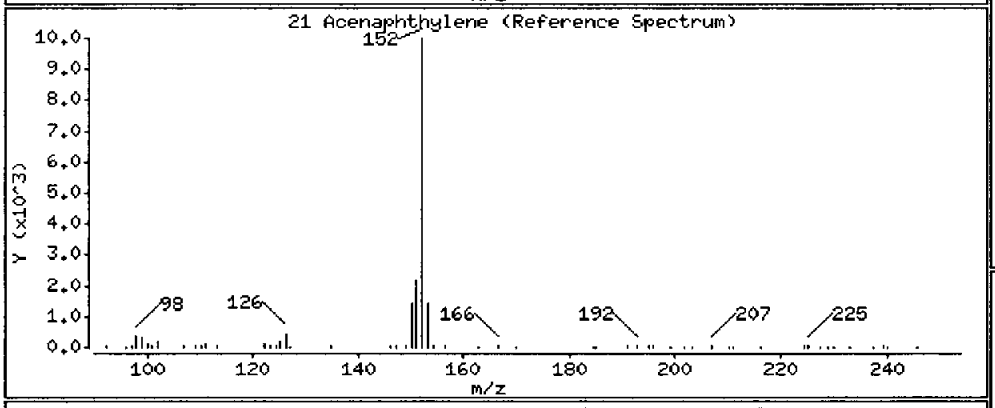
Column diameter: 0.25

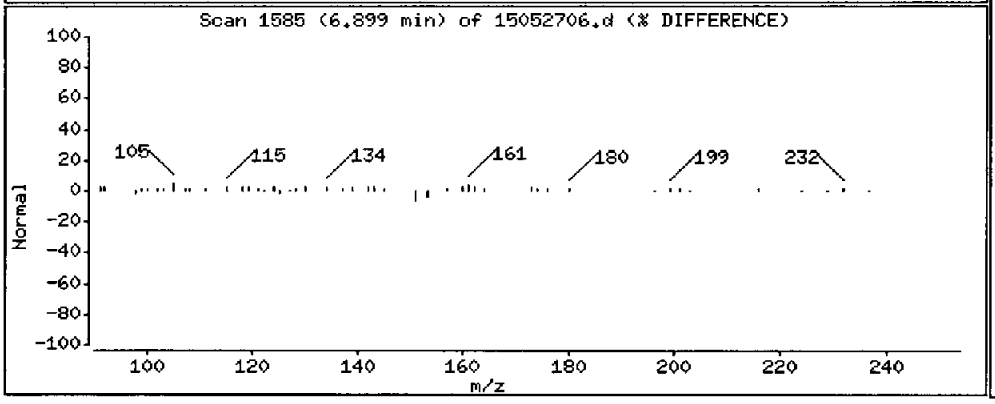
21 Acenaphthylene

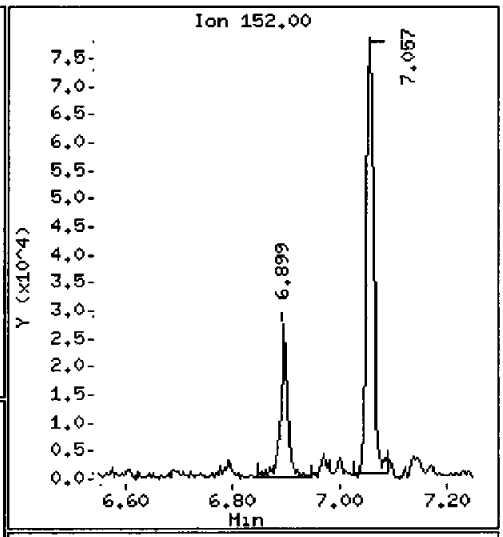
Concentration: 6.695 ug/kg

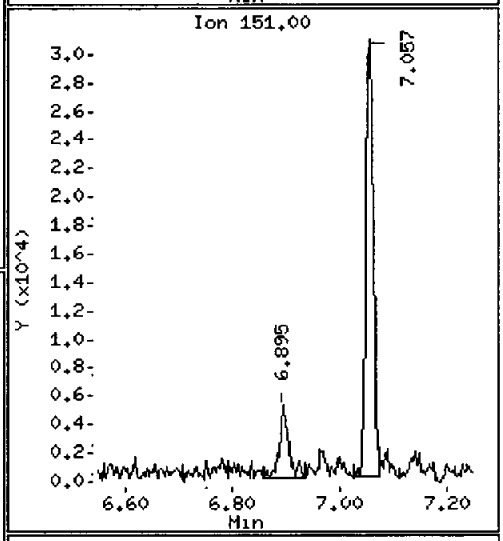


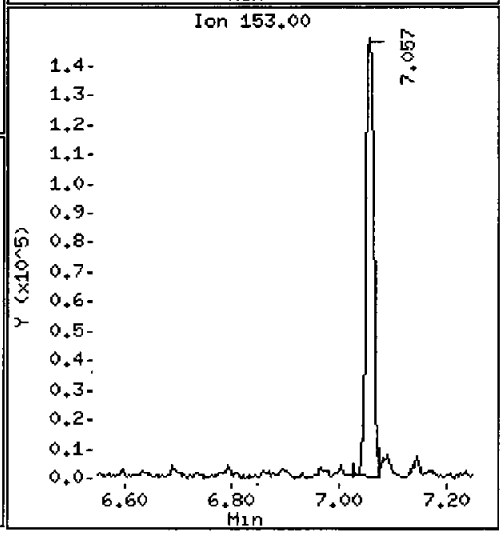












Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

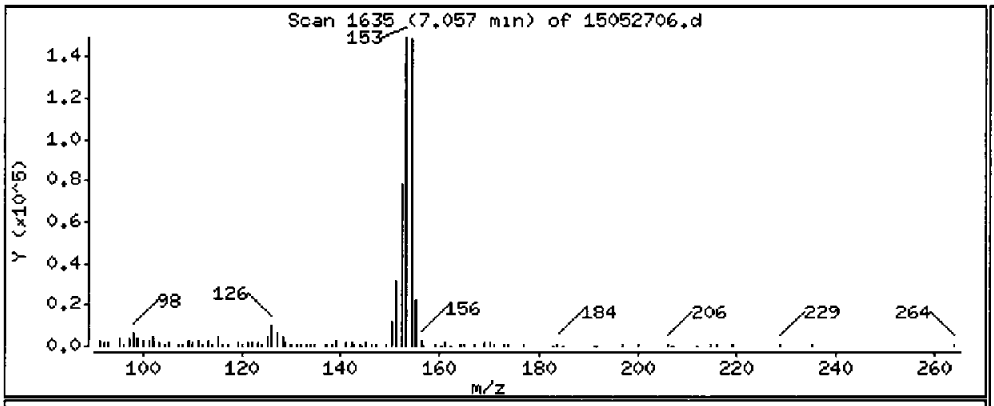
Operator: JZ

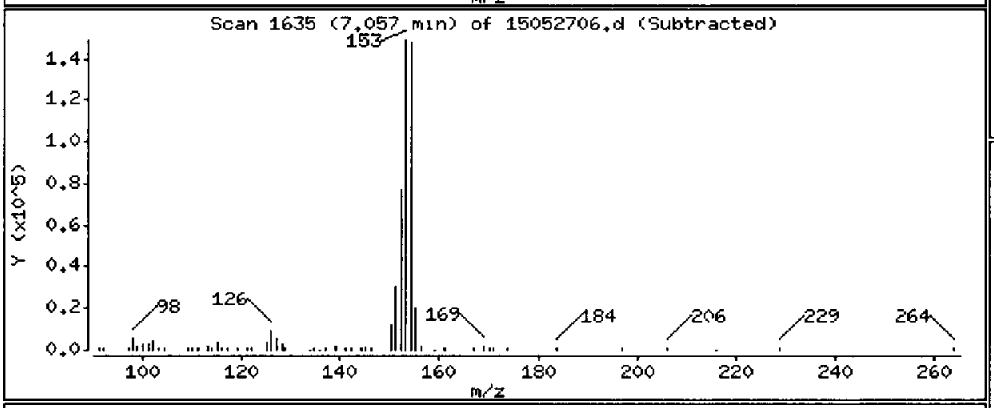
Column phase: ZB-35

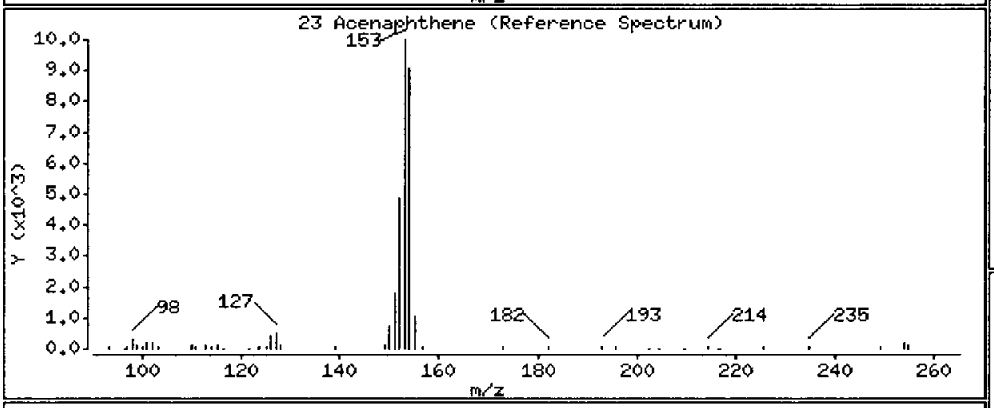
Column diameter: 0.25

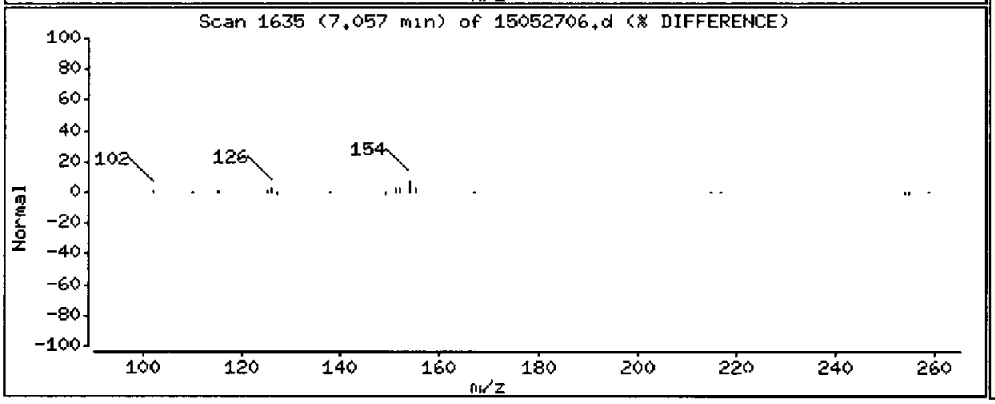
23 Acenaphthene

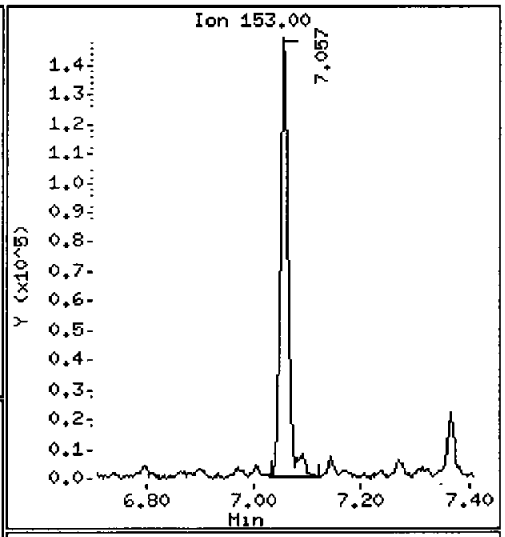
Concentration: 61.31 ug/kg

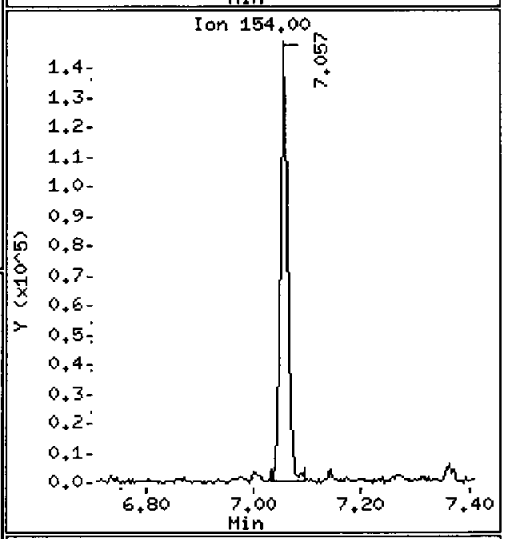


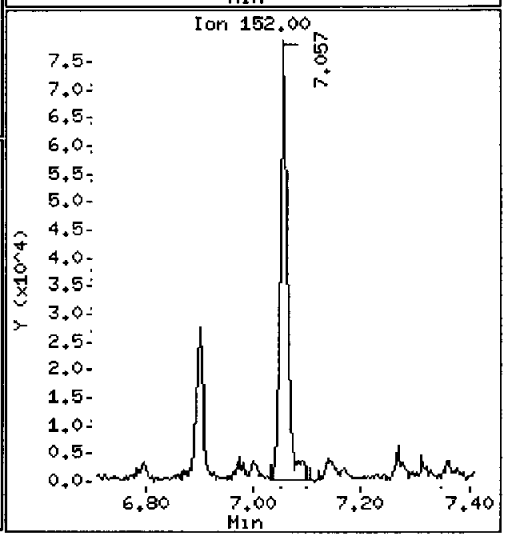












AGA8 8838

Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

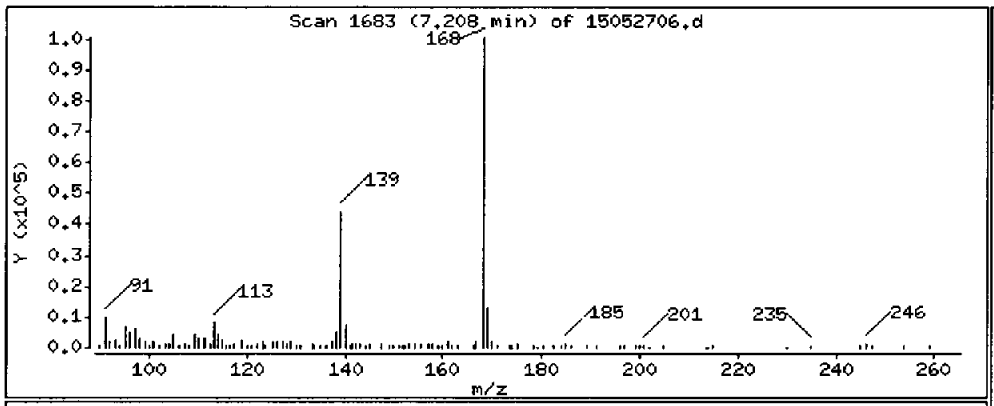
Operator: JZ

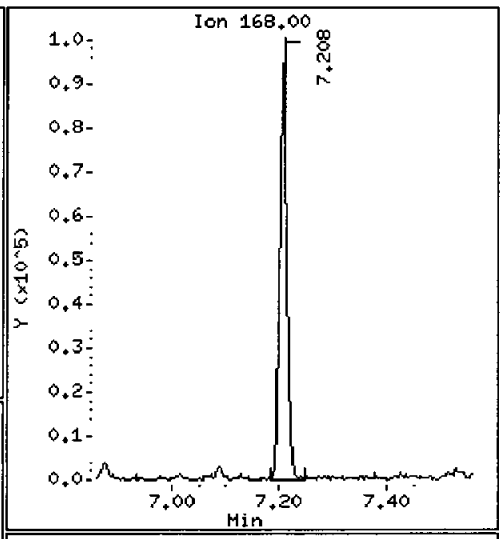
Column phase: ZB-35

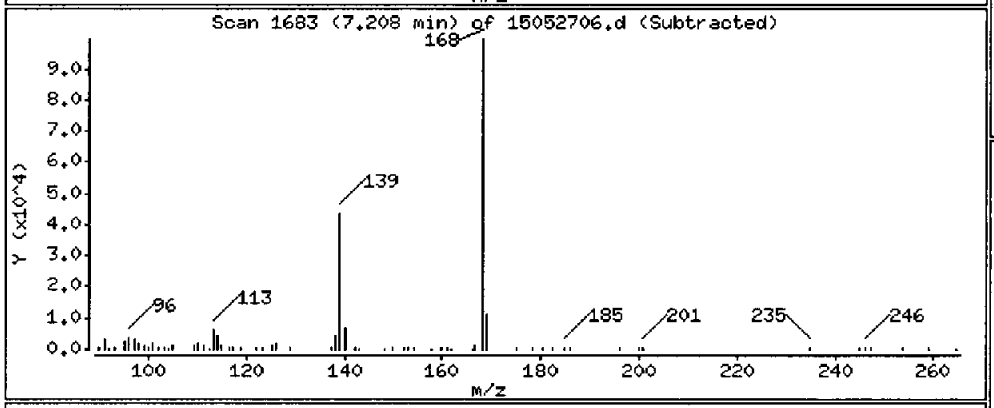
Column diameter: 0.25

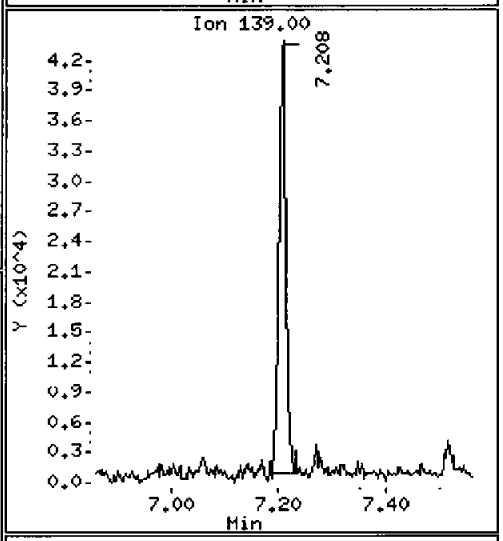
11 Dibenzofuran

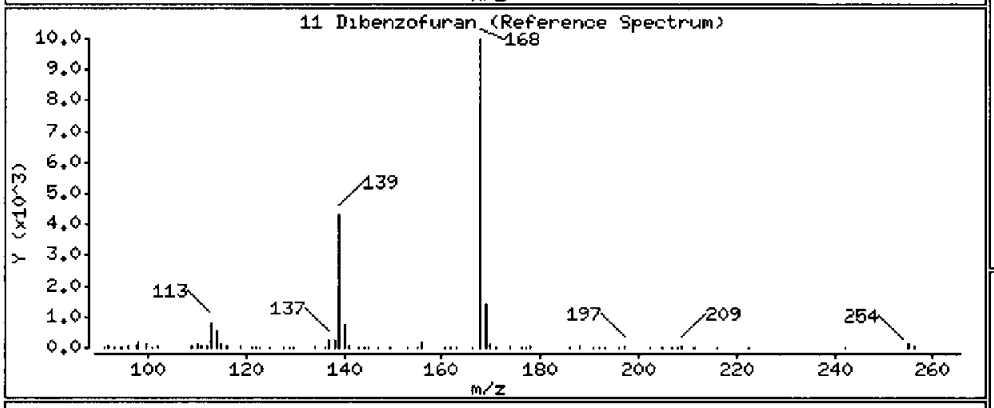
Concentration: 26.06 ug/kg

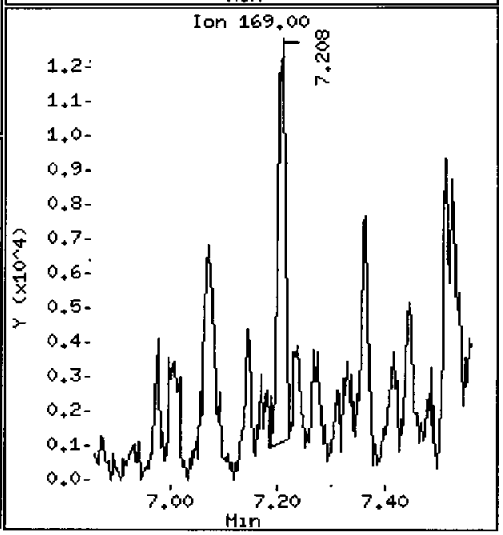


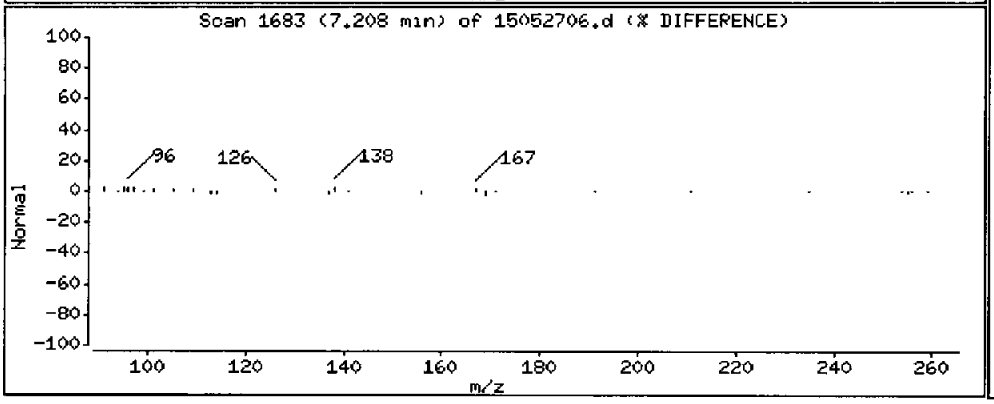












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

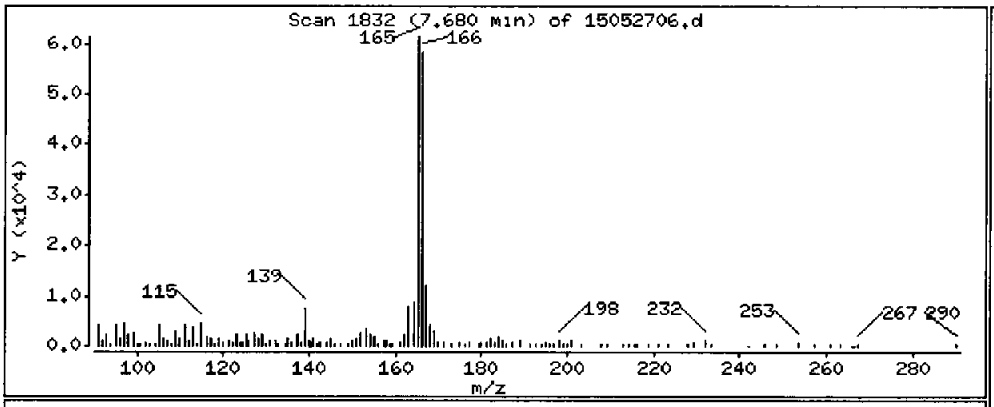
Operator: JZ

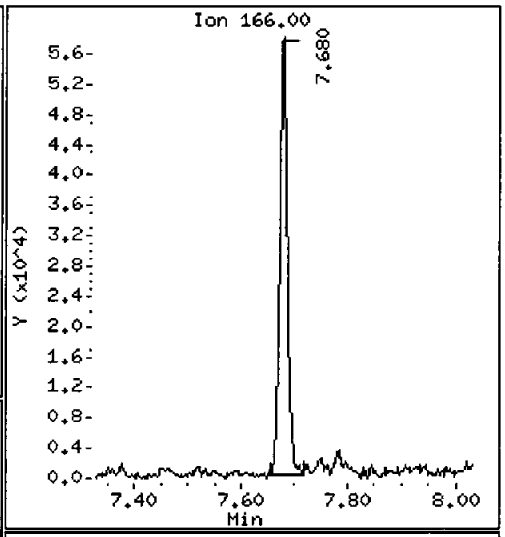
Column phase: ZB-35

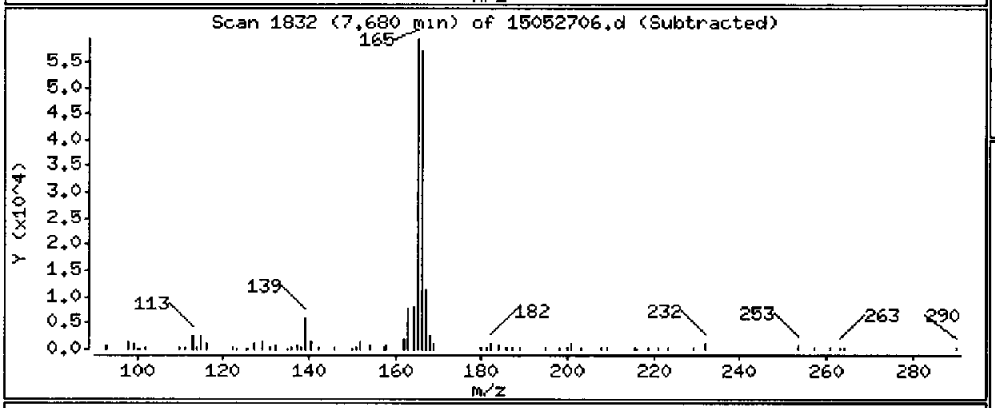
Column diameter: 0.25

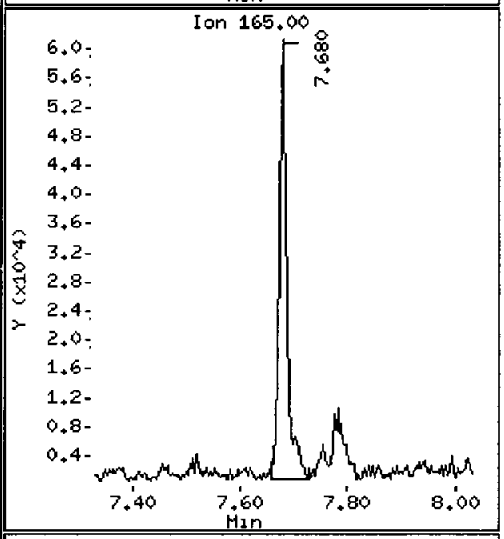
25 Fluorene

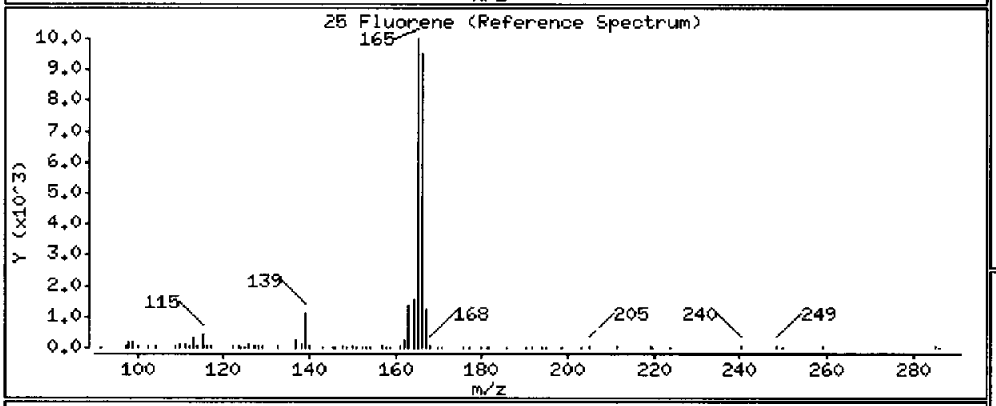
Concentration: 21.00 ug/kg

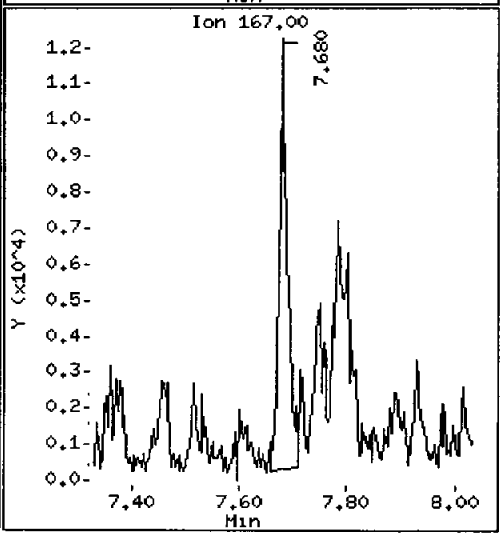


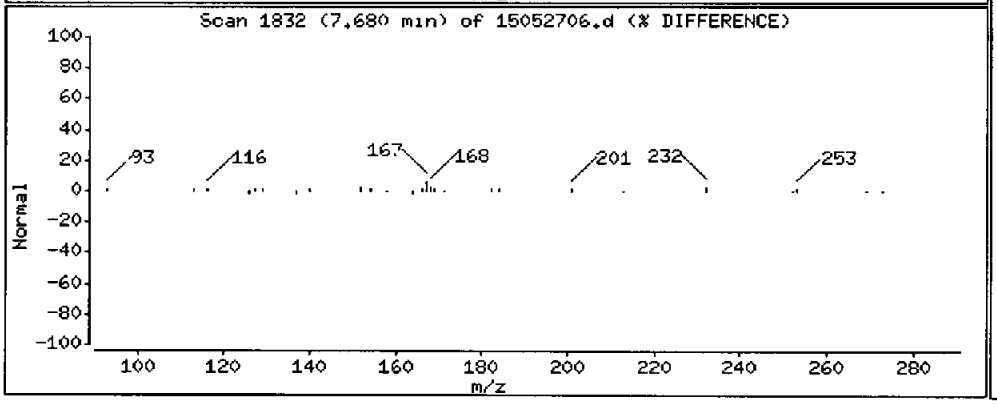












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

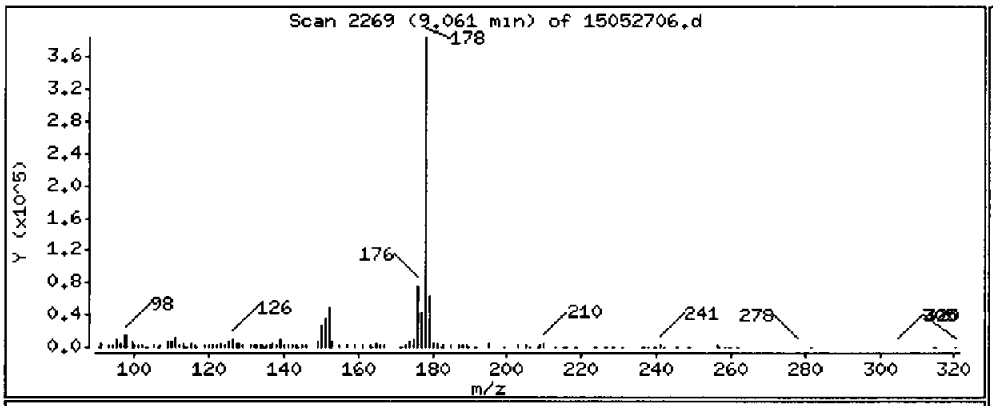
Operator: JZ

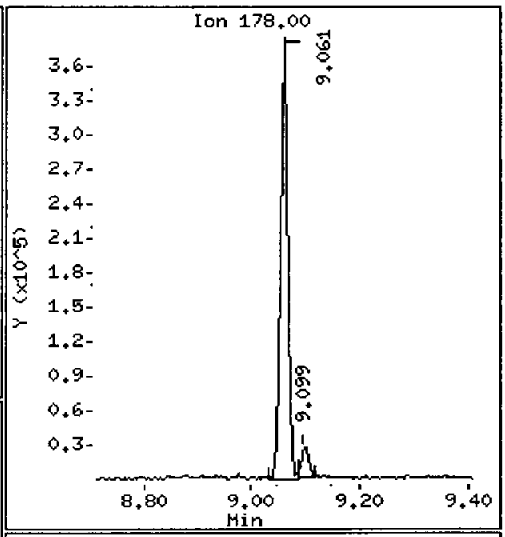
Column phase: ZB-35

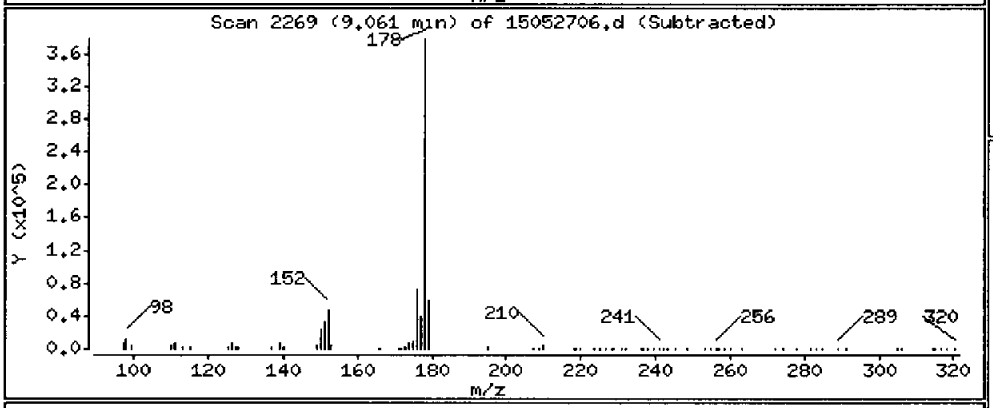
Column diameter: 0.25

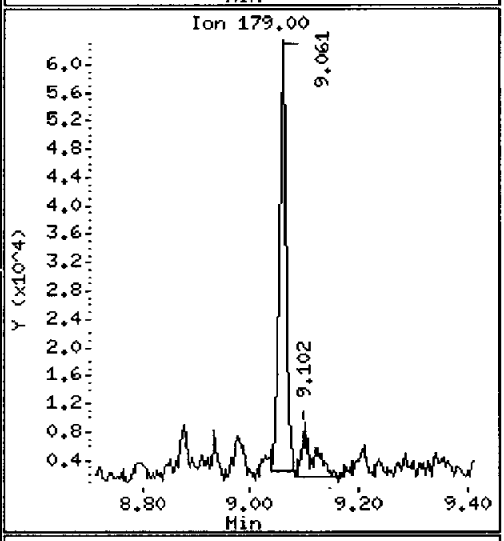
30 Phenanthrene

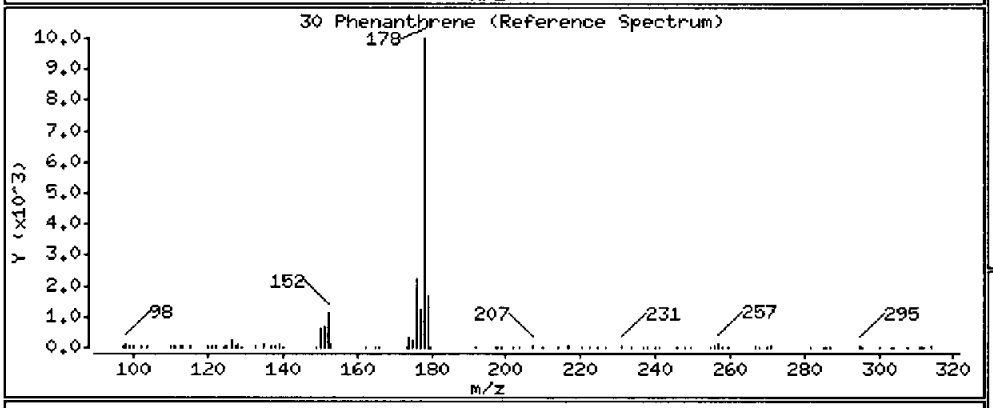
Concentration: 84.60 ug/kg

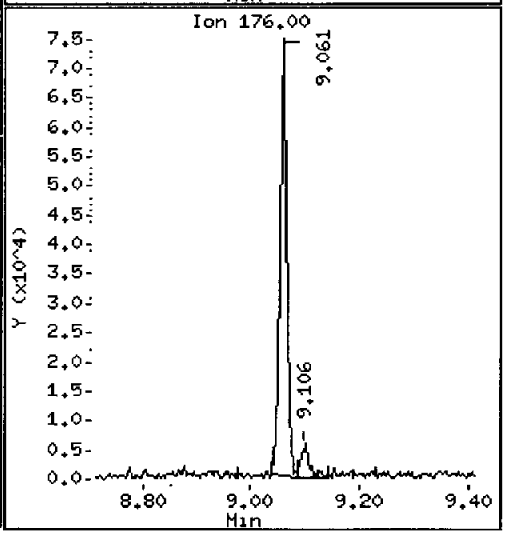


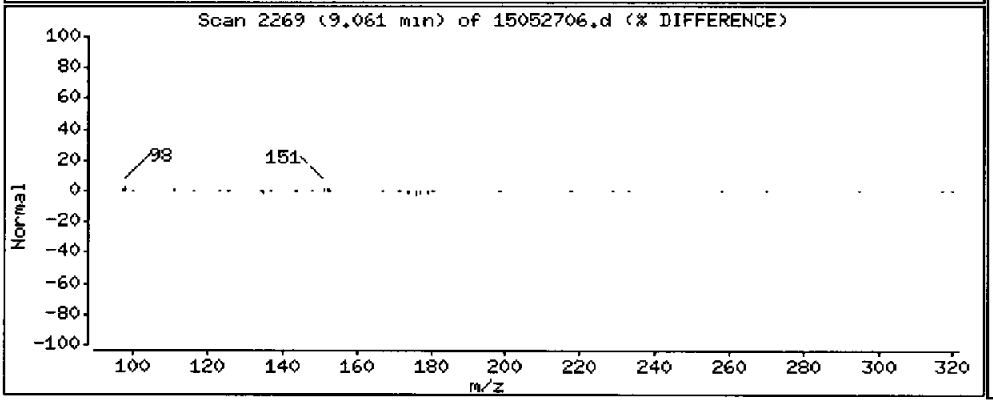












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

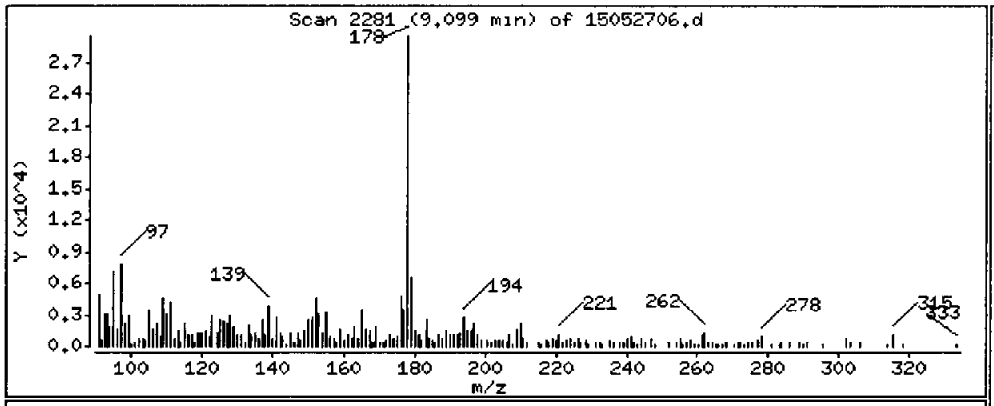
Operator: JZ

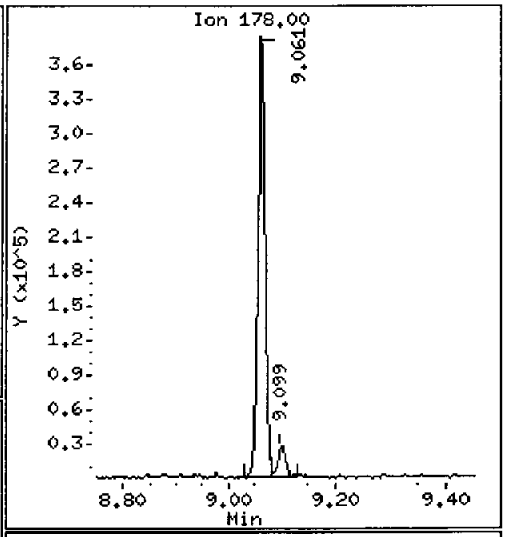
Column phase: ZB-35

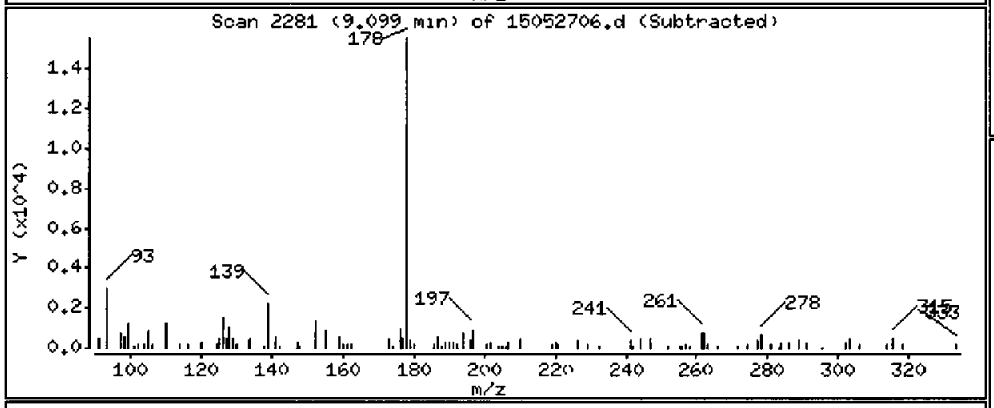
Column diameter: 0.25

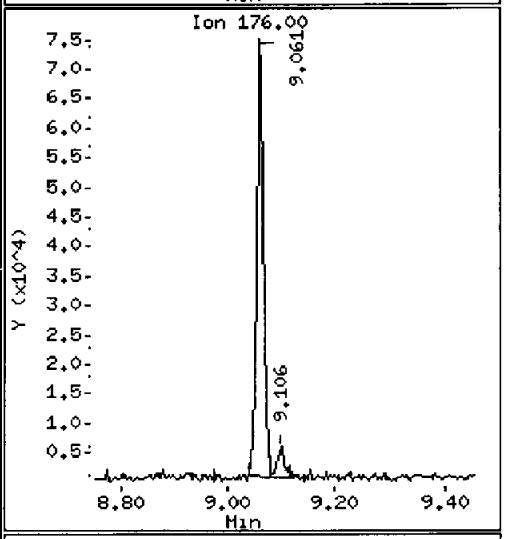
31 Anthracene

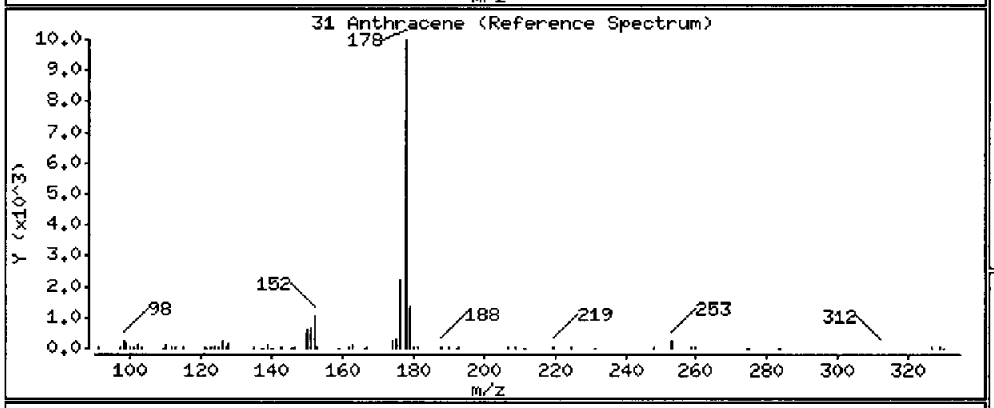
Concentration: 7.388 ug/kg

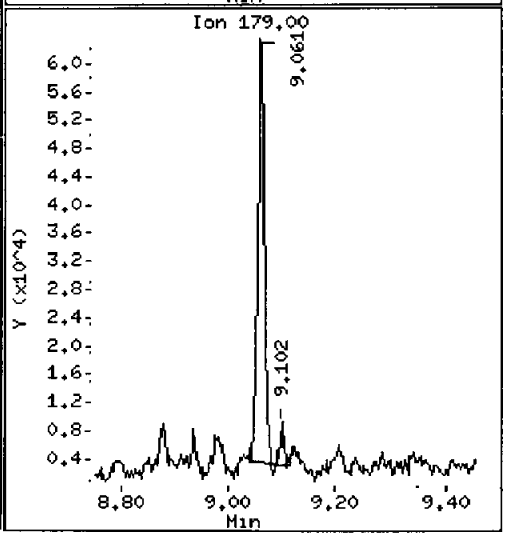


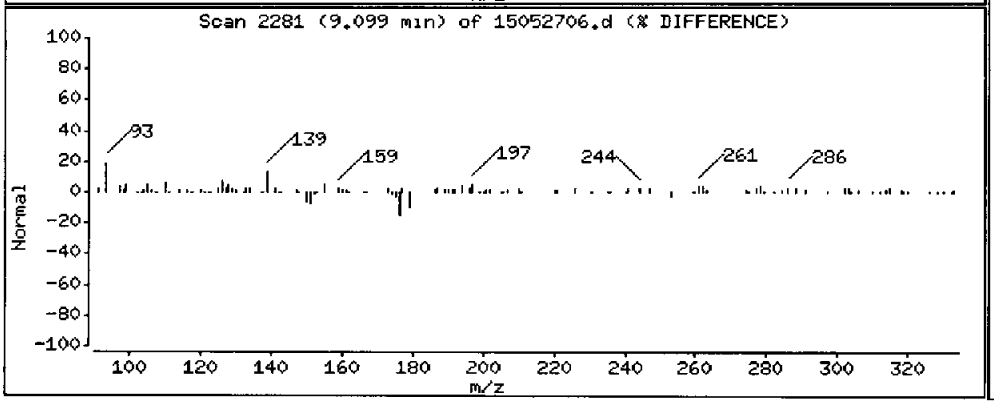












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

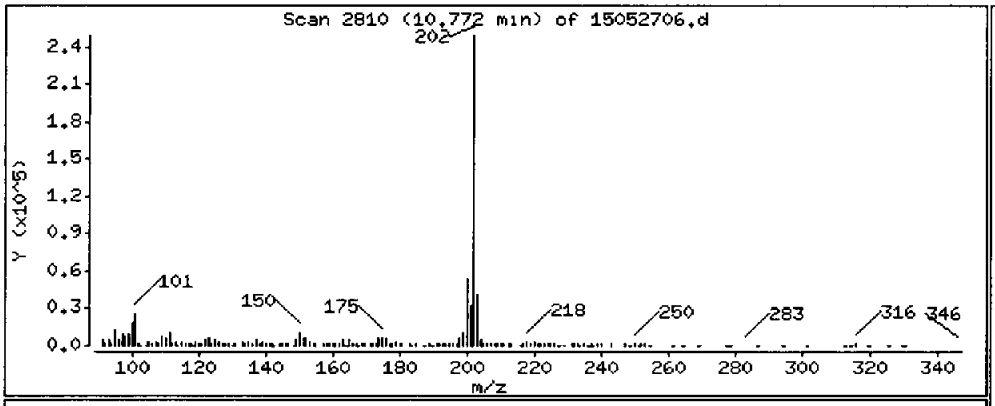
Operator: JZ

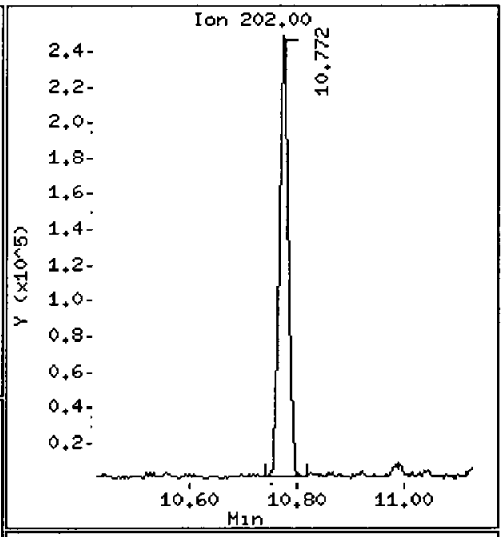
Column phase: ZB-35

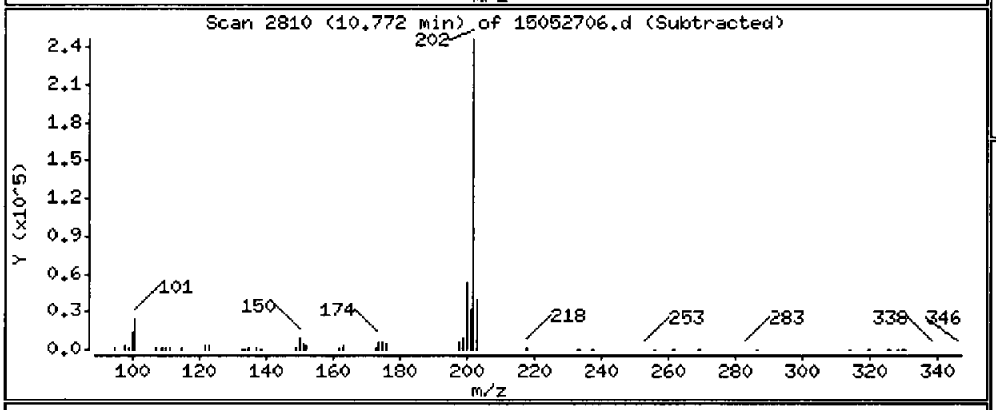
Column diameter: 0.25

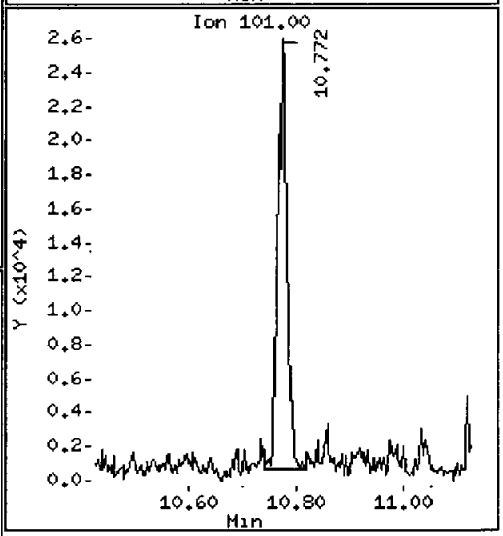
36 Fluoranthene

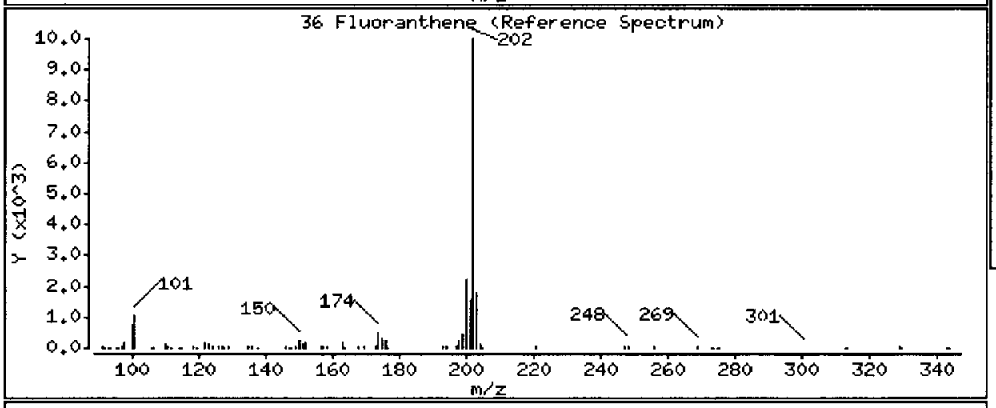
Concentration: 57.43 ug/kg

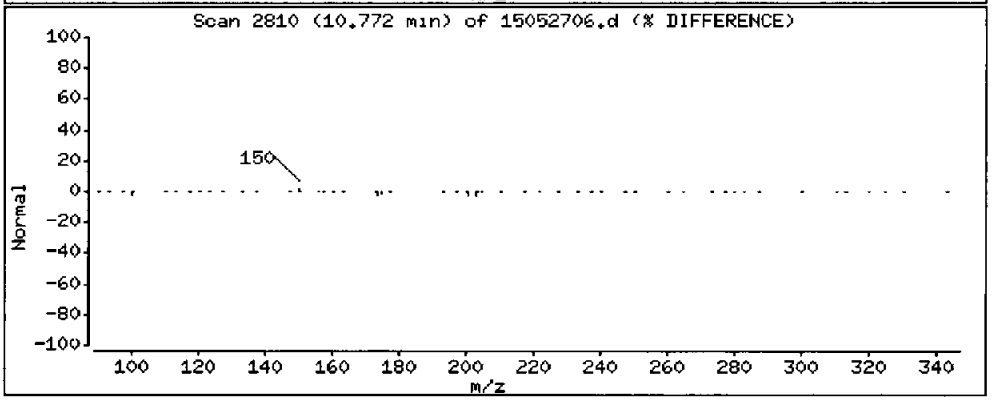












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

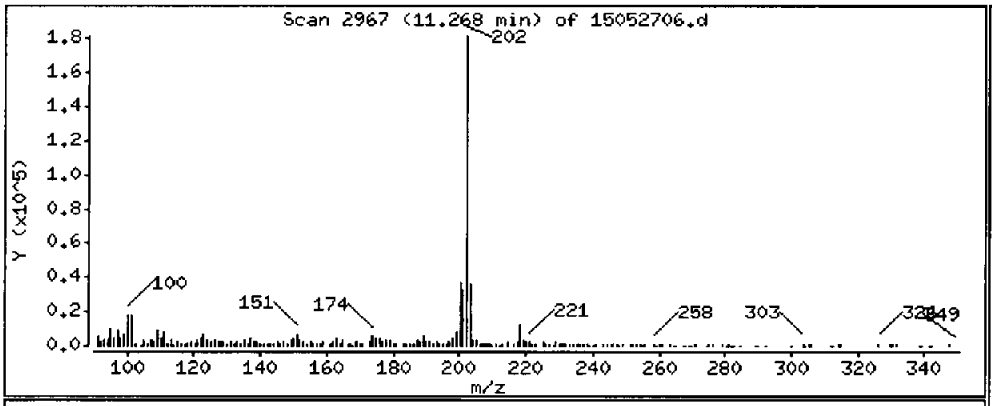
Operator: JZ

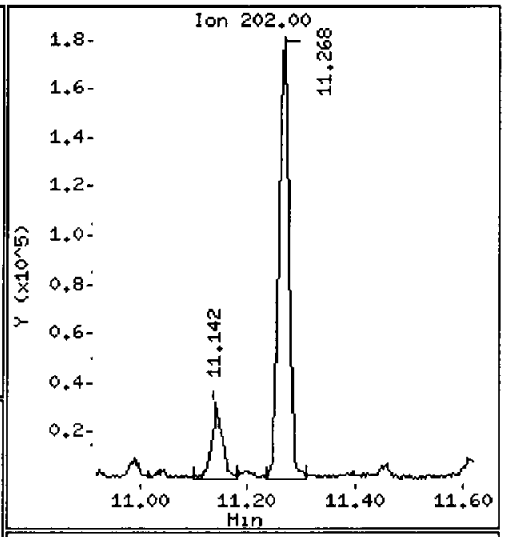
Column phase: ZB-35

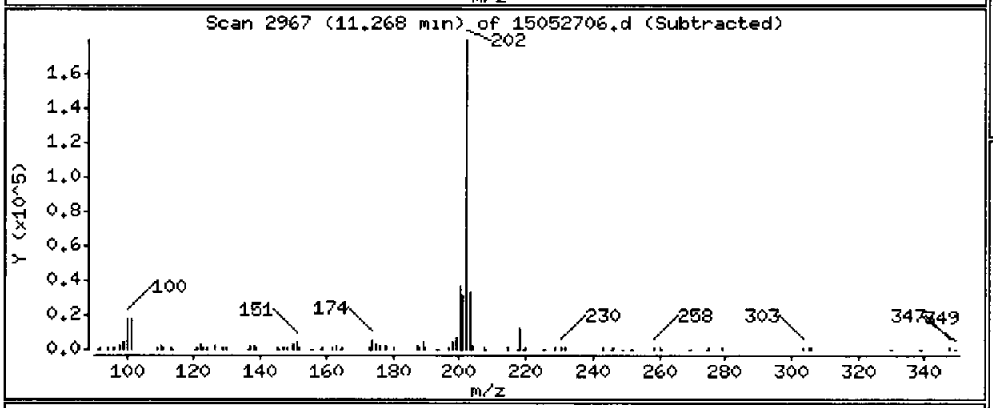
Column diameter: 0.25

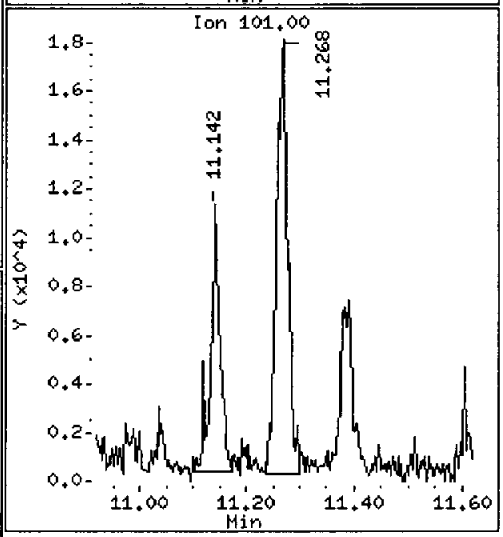
39 Pyrene

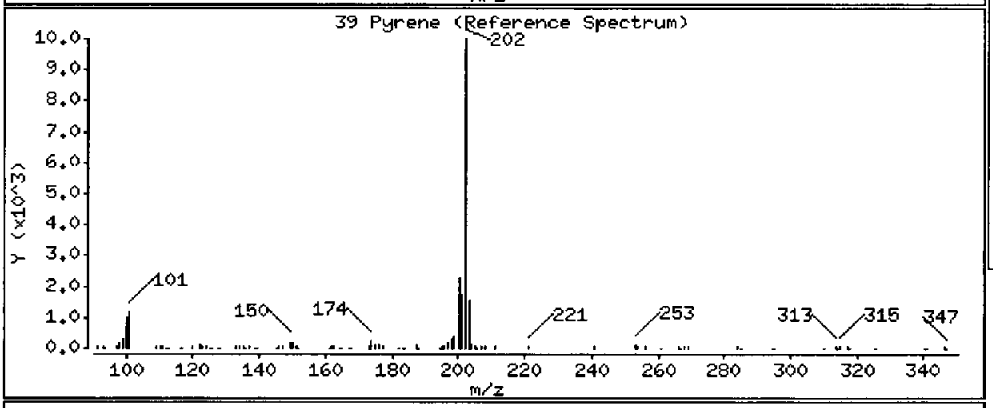
Concentration: 42.86 ug/kg

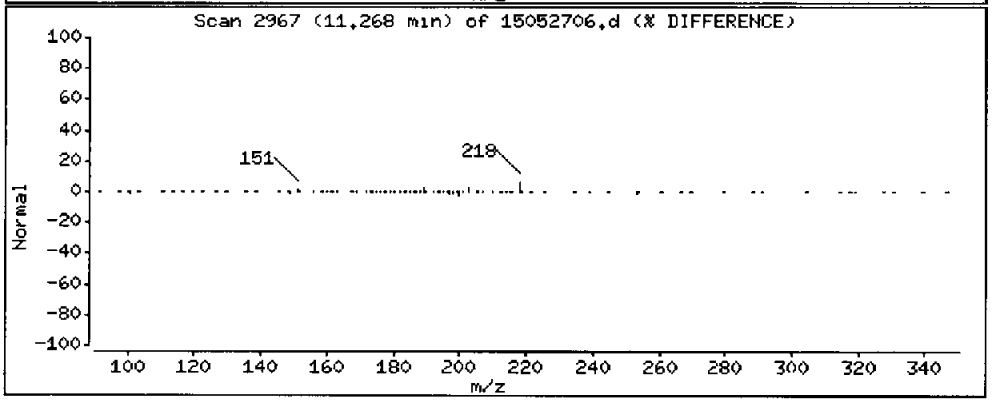












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

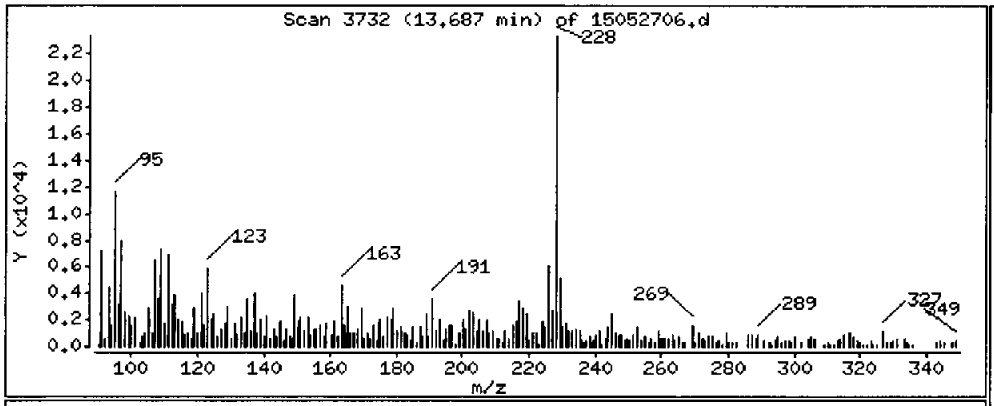
Operator: JZ

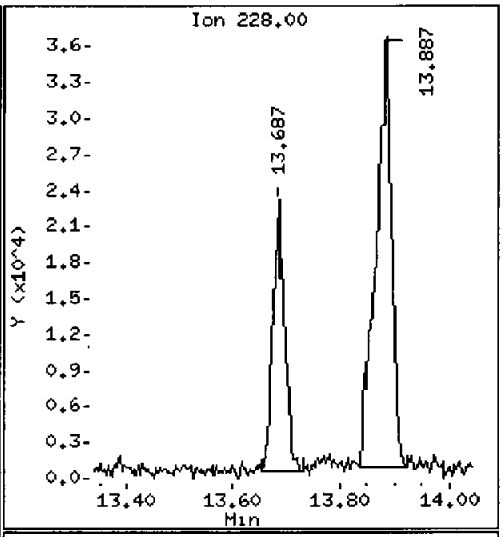
Column phase: ZB-35

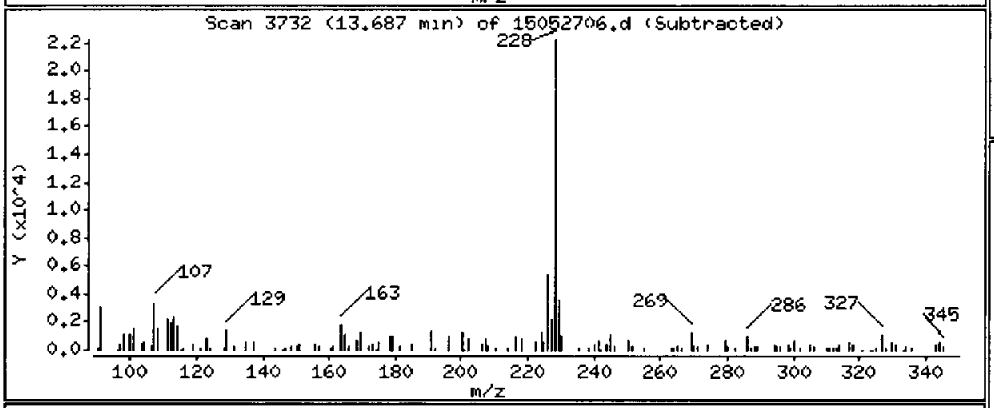
Column diameter: 0.25

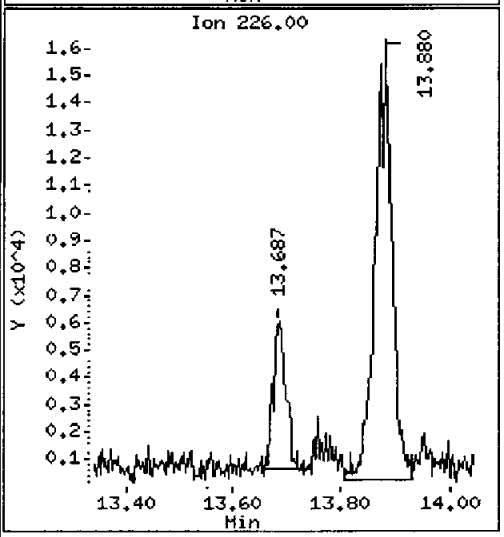
46 Benzo(a)anthracene

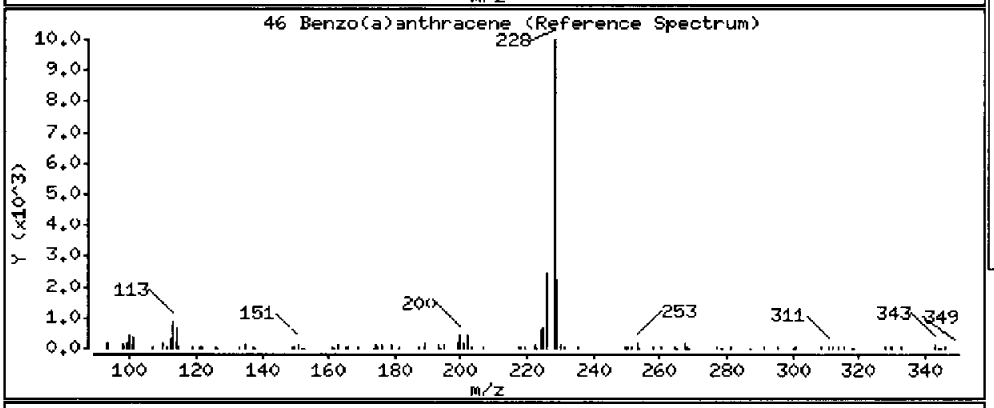
Concentration: 6.809 ug/kg

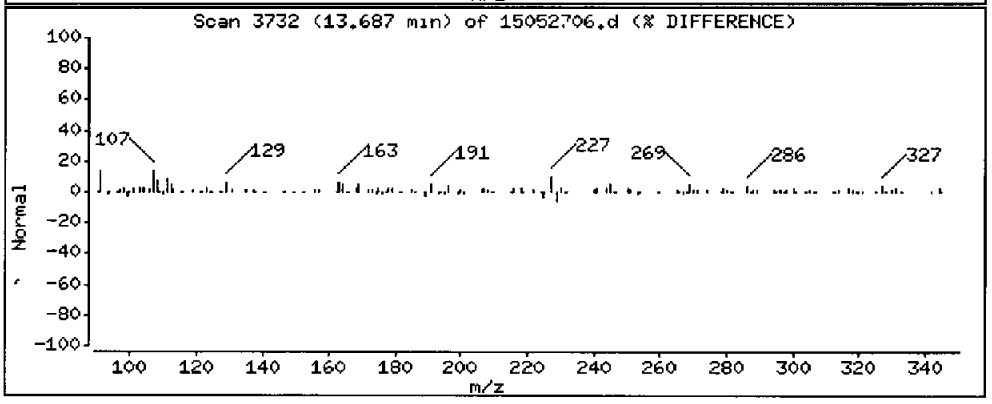












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

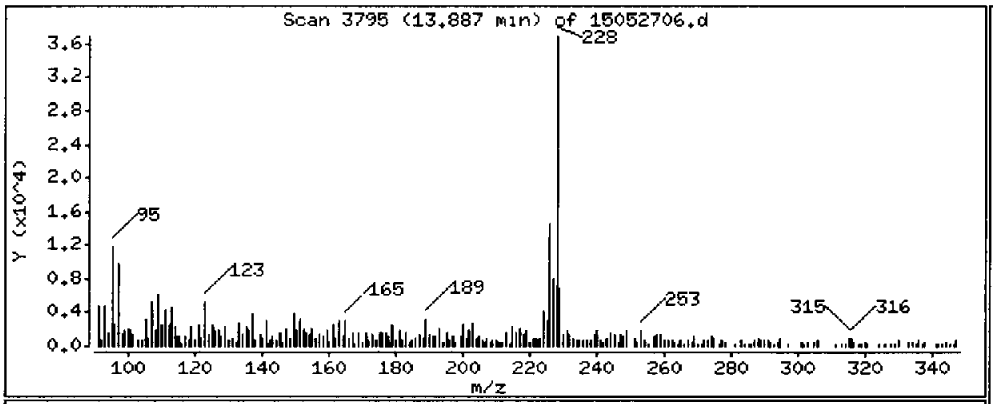
Operator: JZ

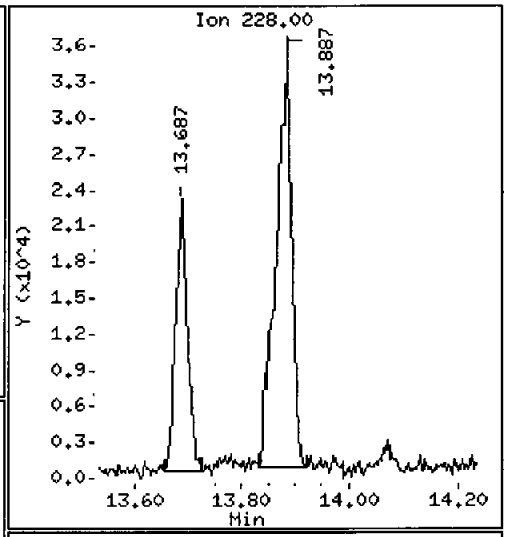
Column phase: ZB-35

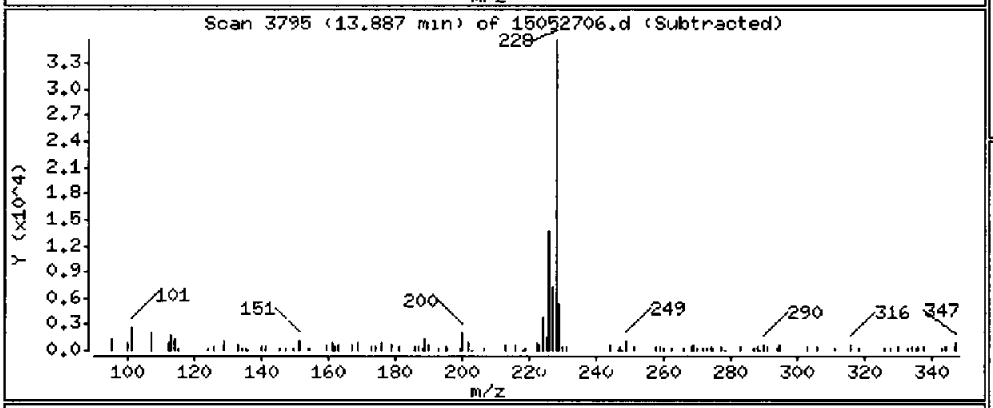
Column diameter: 0.25

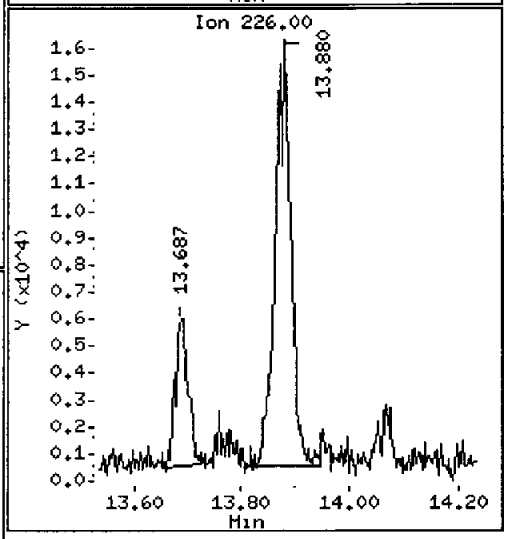
48 Chrysene

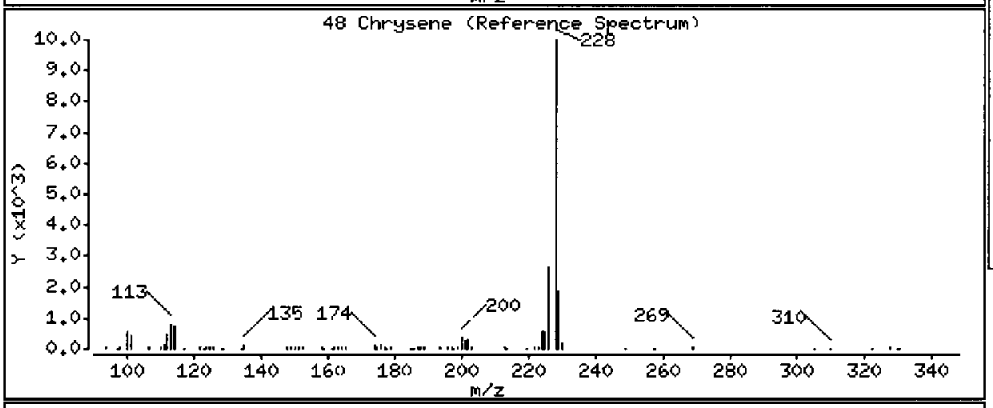
Concentration: 13.95 ug/kg

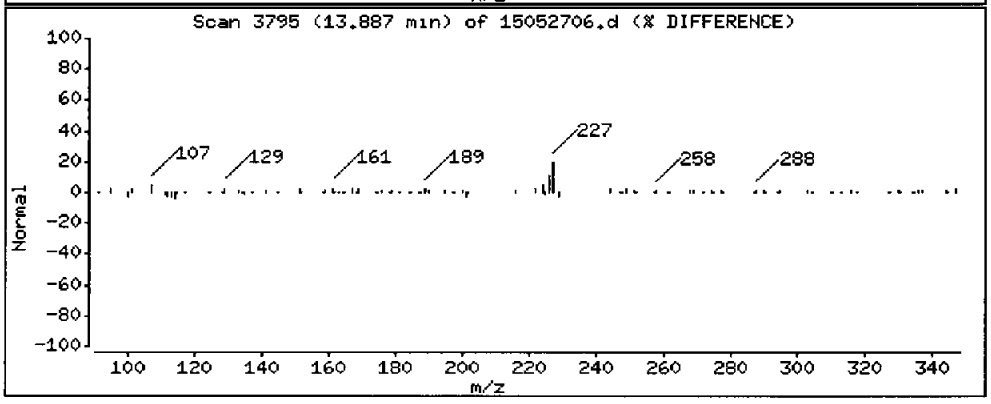












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

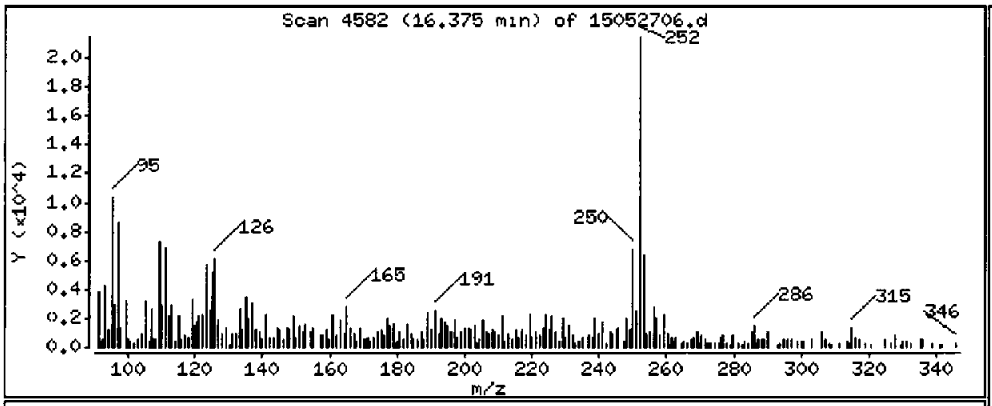
Operator: JZ

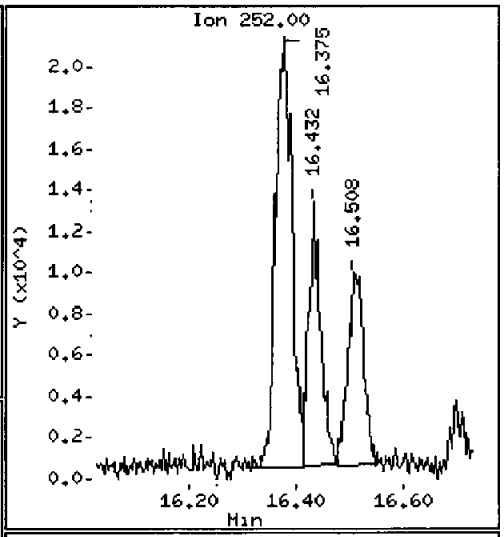
Column phase: ZB-35

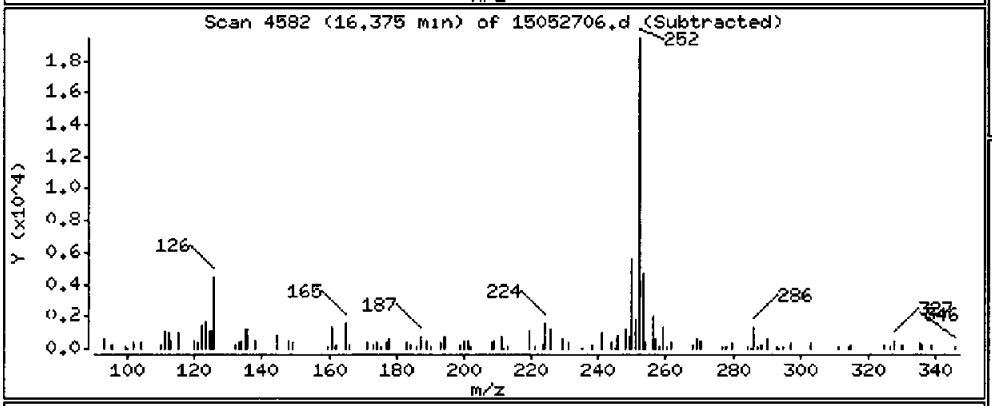
Column diameter: 0.25

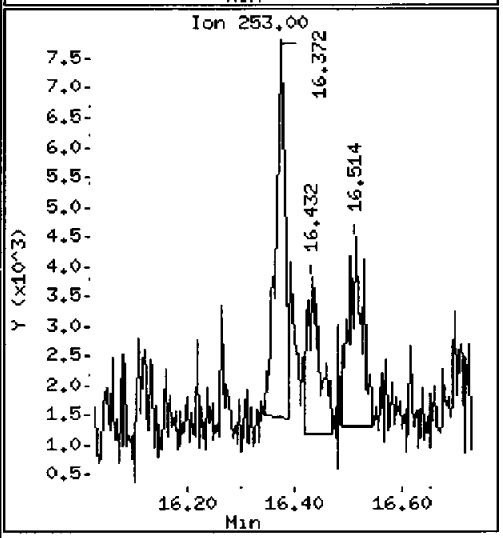
51 Benzo(b)fluoranthene

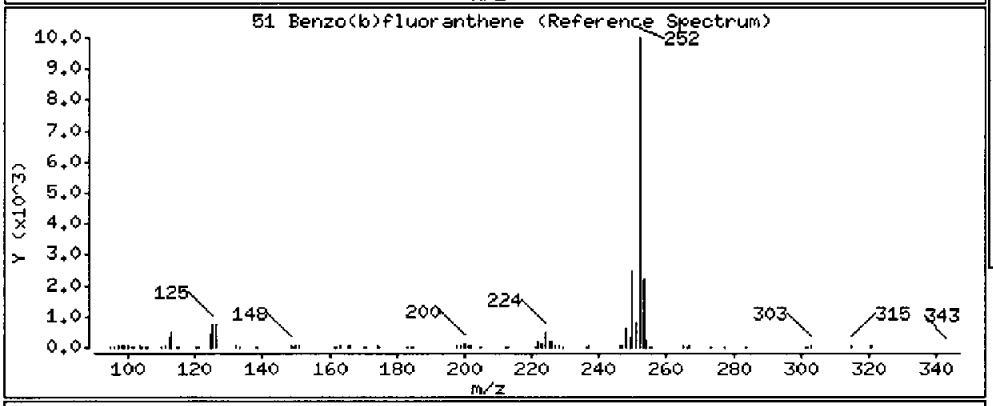
Concentration: 8.265 ug/kg

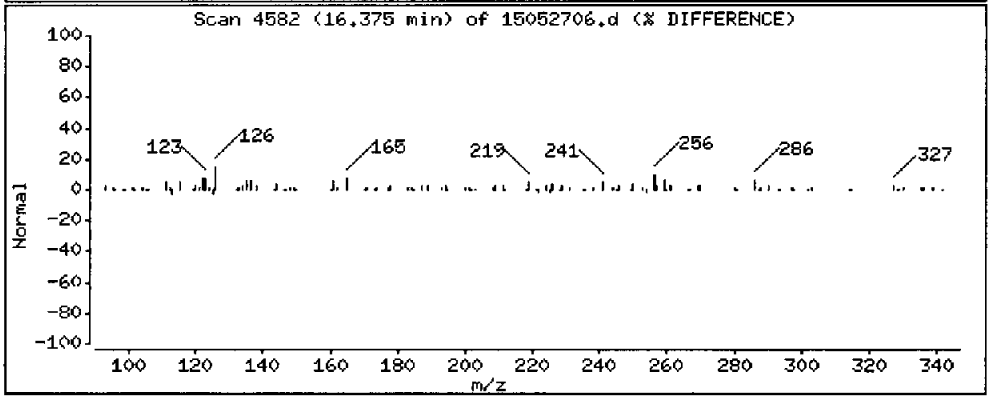












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

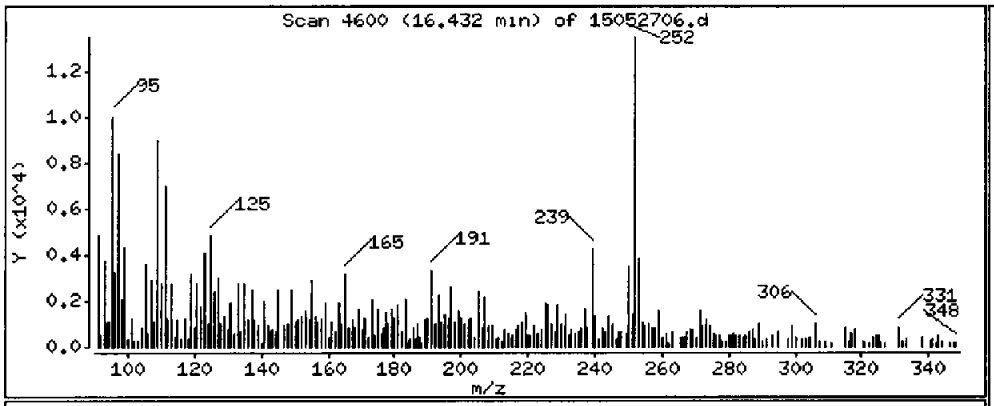
Operator: JZ

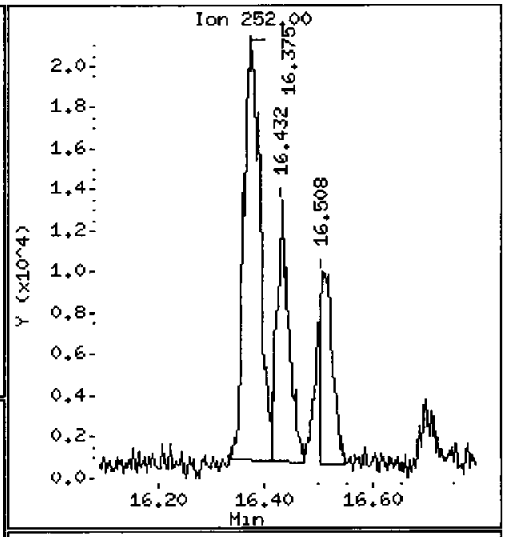
Column phase: ZB-35

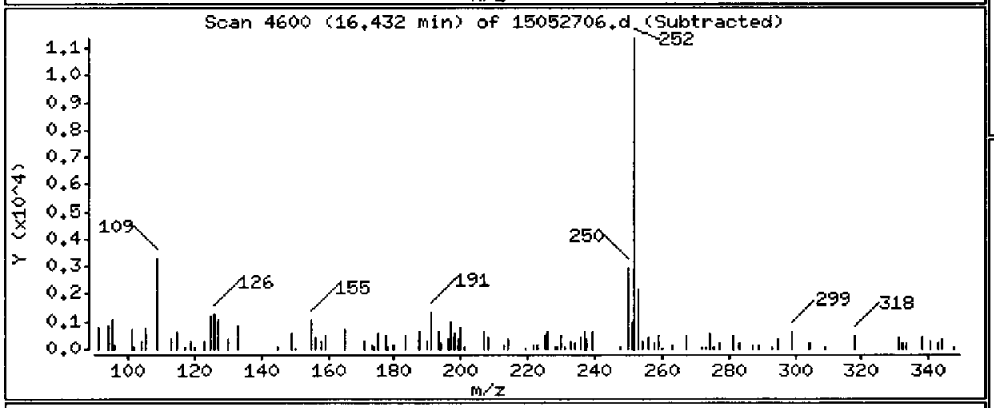
Column diameter: 0.25

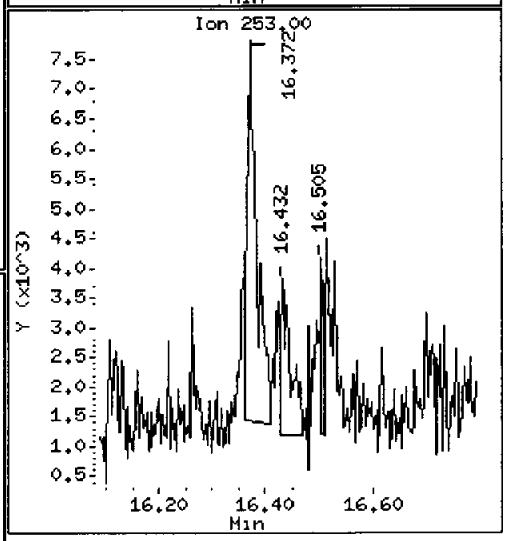
52 Benzo(k)fluoranthene

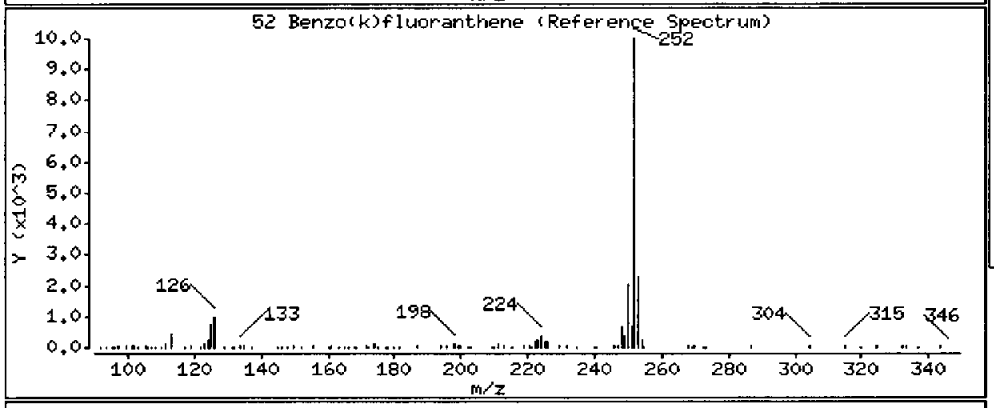
Concentration: 3.655 ug/kg

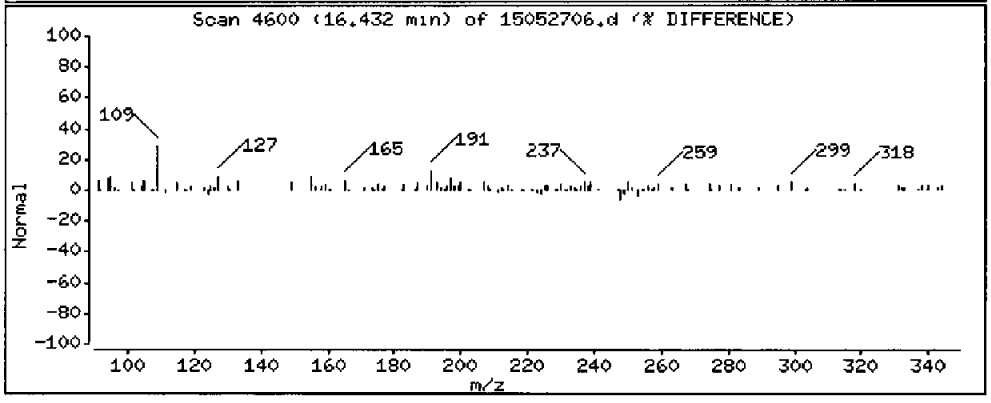












Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

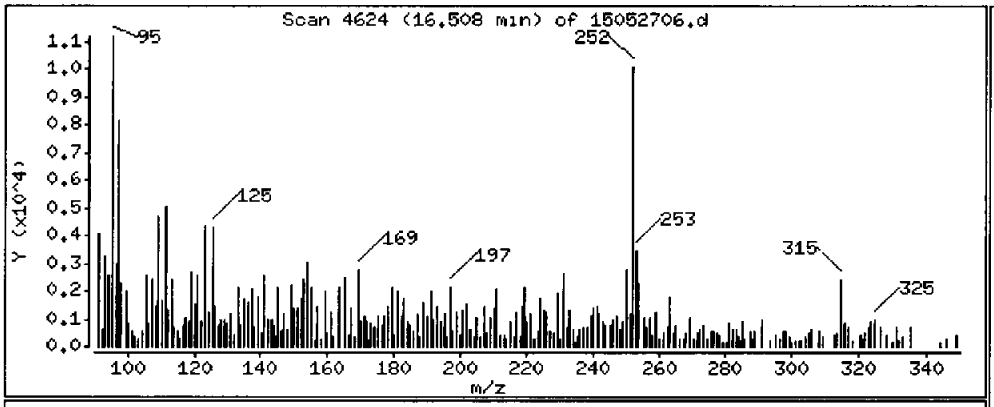
Operator: JZ

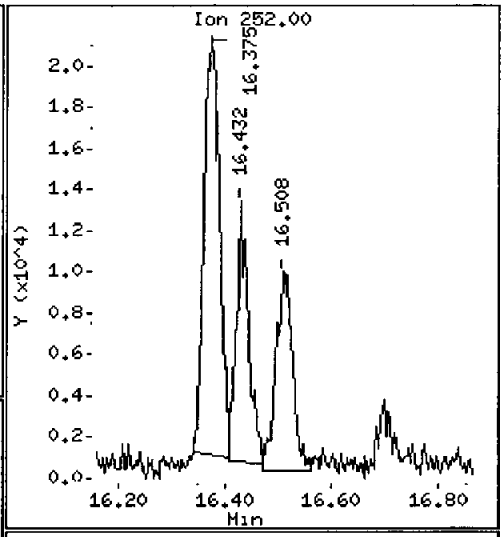
Column phase: ZB-35

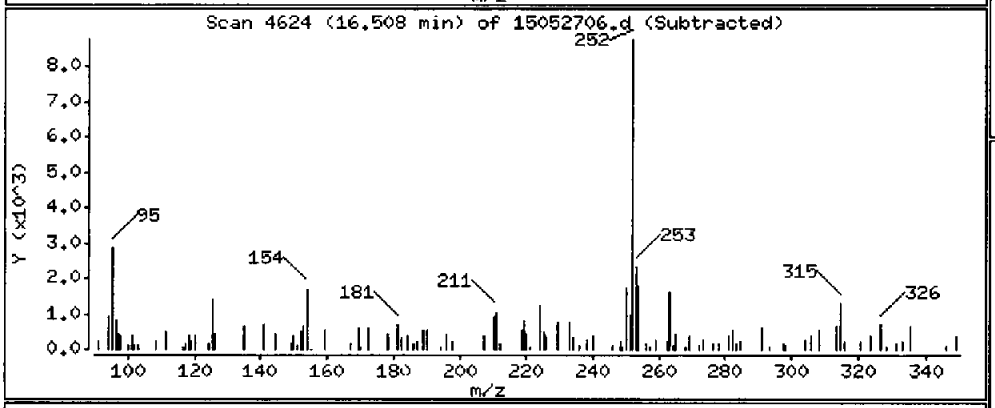
Column diameter: 0.25

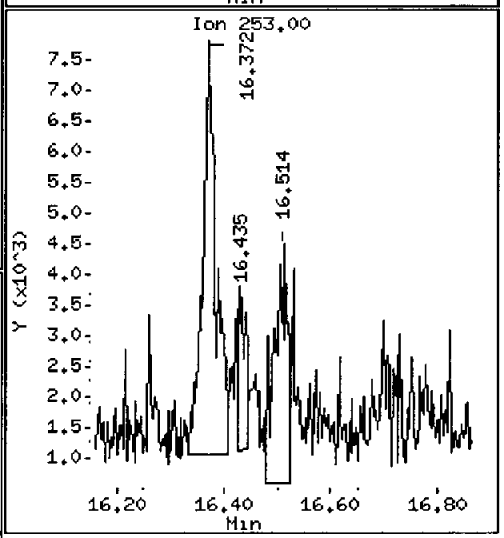
251 Benzo(j)fluoranthene

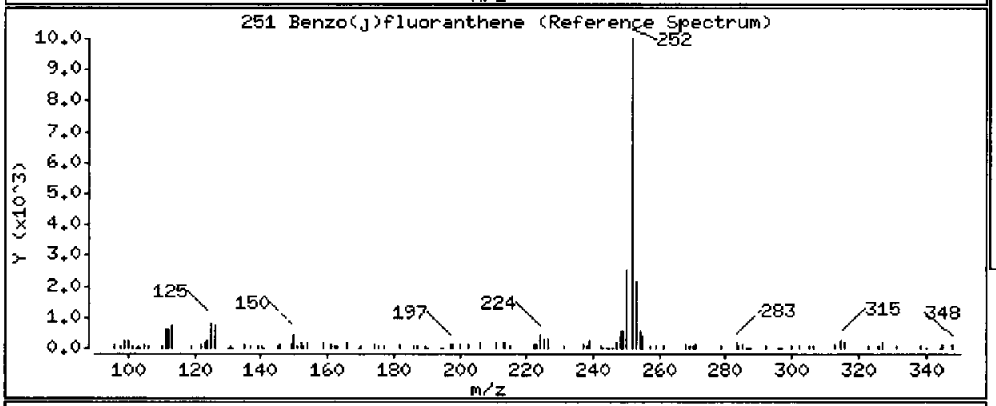
Concentration: 3.927 ug/kg

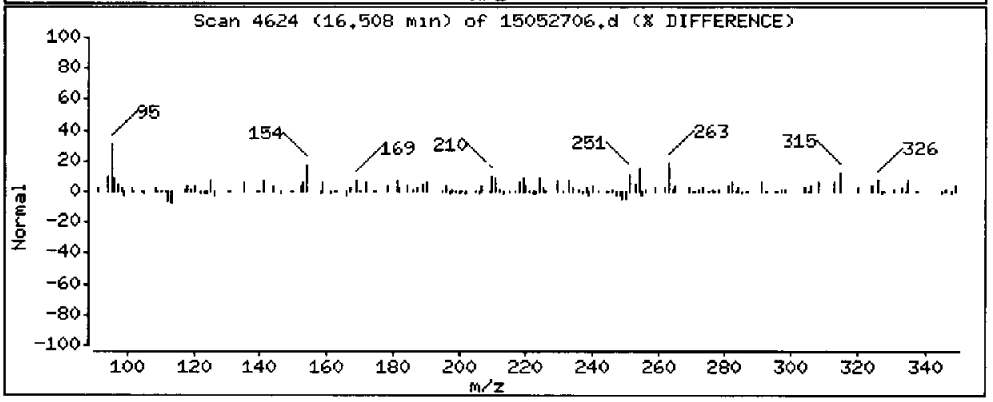






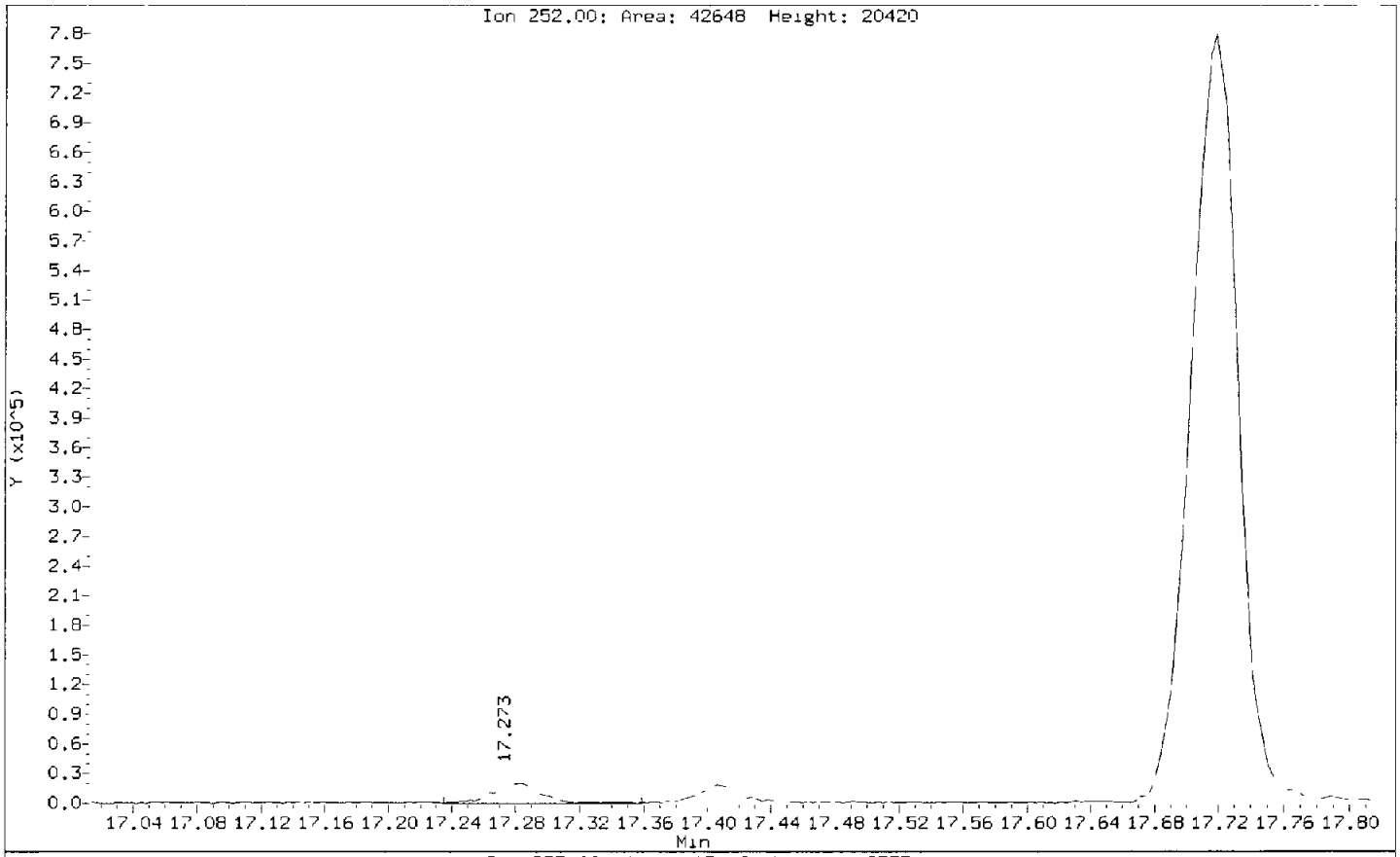


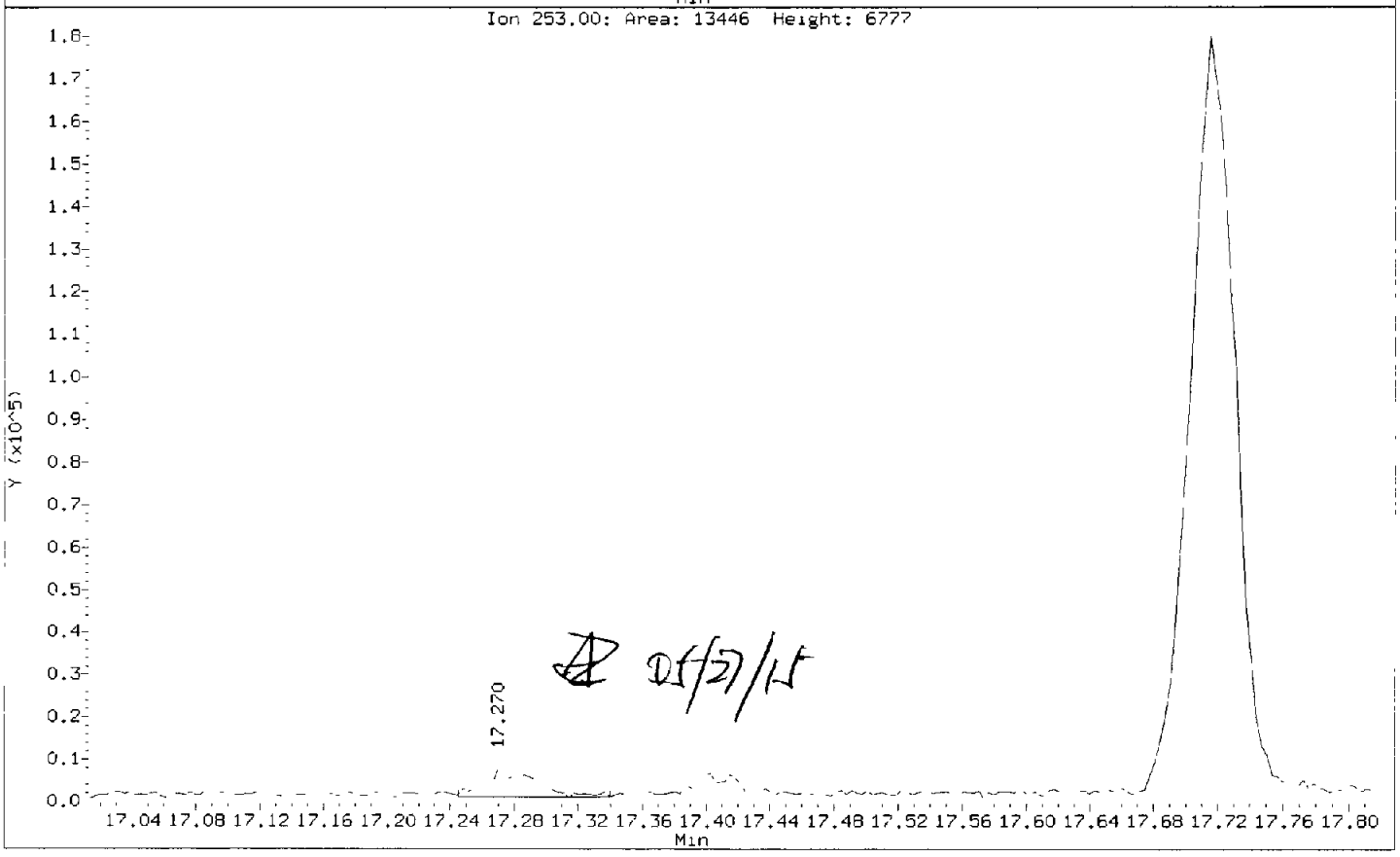




Data File: /chem3/nt8.1/20150527.b/15052706.d
Injection Date: 27-MAY-2015 17:42
Instrument: nt8.1
Client Sample ID: SDP-10(15.5-16.5)

Compound: Benzo(a)pyrene
CAS Number: 50-32-8

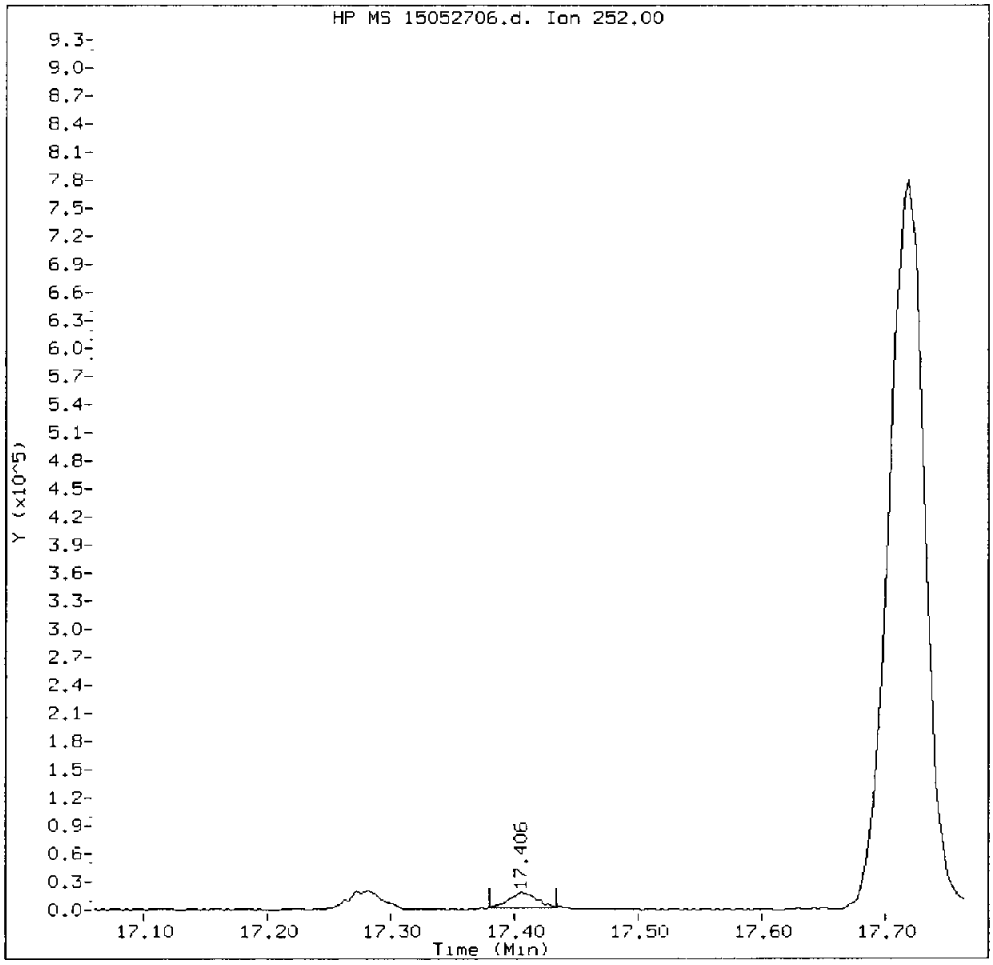




05/27/15

AGA8B, /chem3/nt8.i/20150527.b/15052706.d

Benzo(a)pyrene Amount: 0.11 Area: 24495



MANUAL INTEGRATION for Benzo(a)pyrene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 05/27/15

AGA8 - 20151

Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

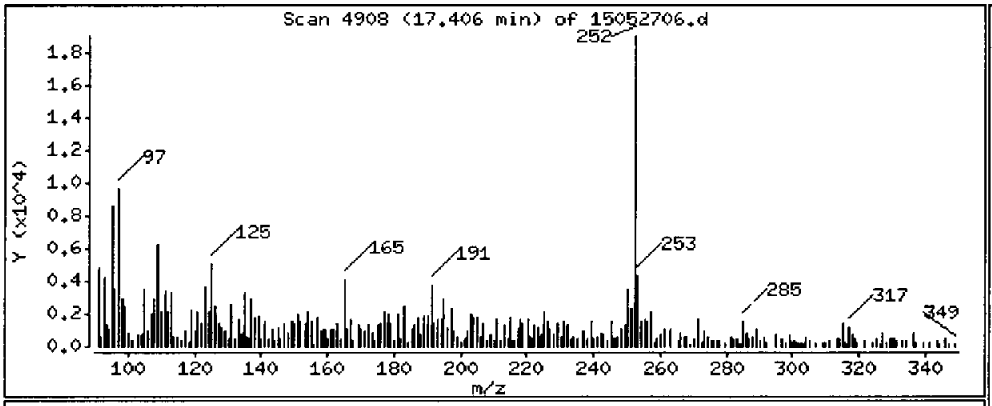
Operator: JZ

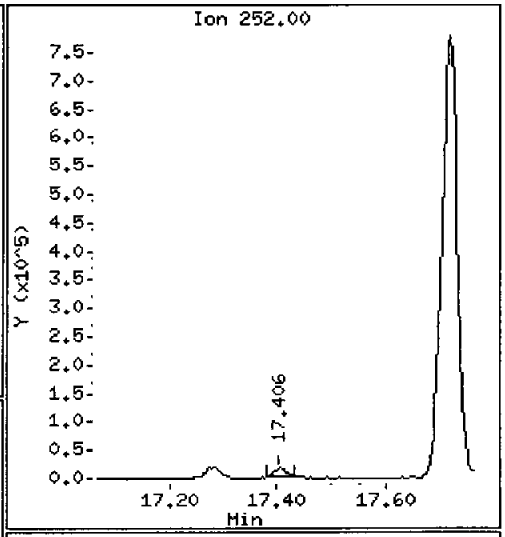
Column phase: ZB-35

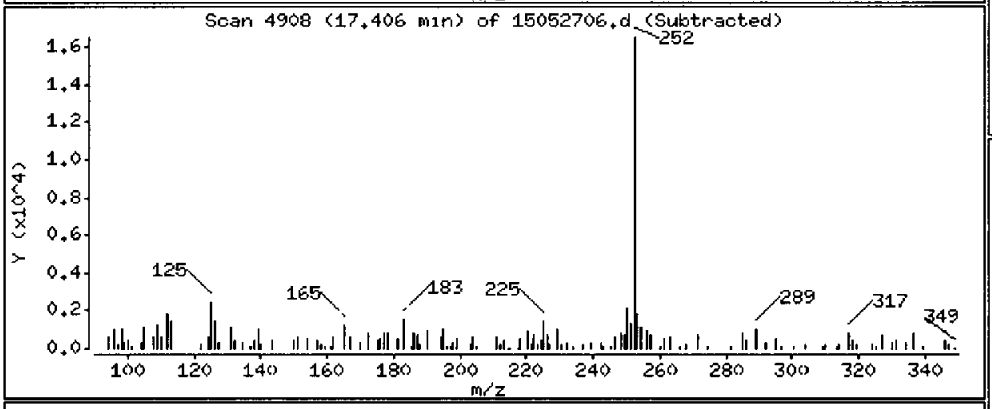
Column diameter: 0.25

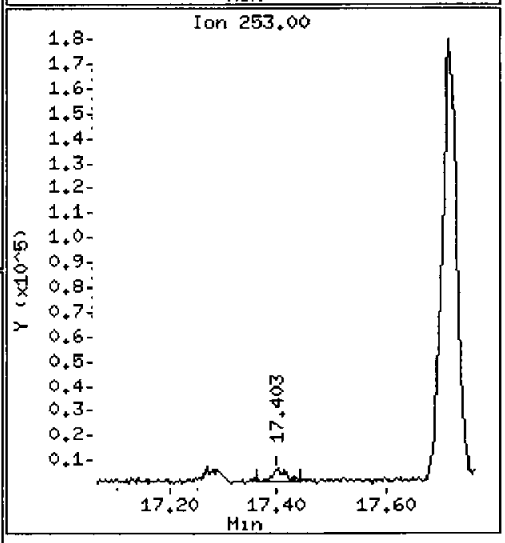
54 Benzo(a)pyrene

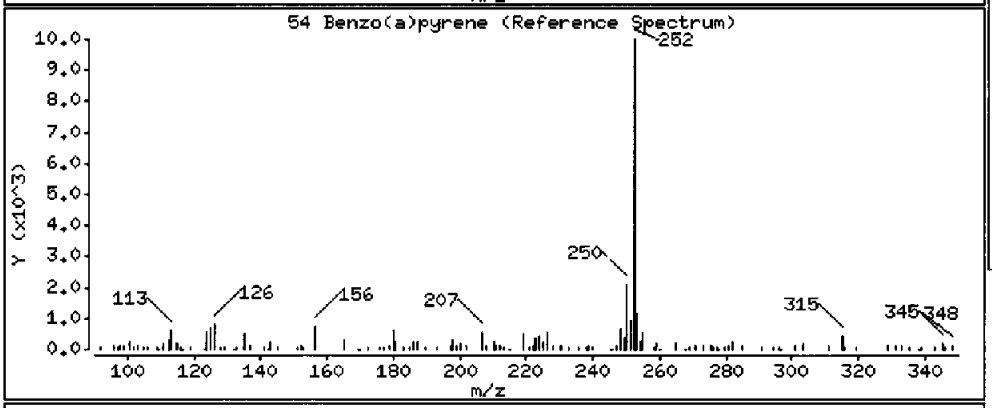
Concentration: 5.051 ug/kg

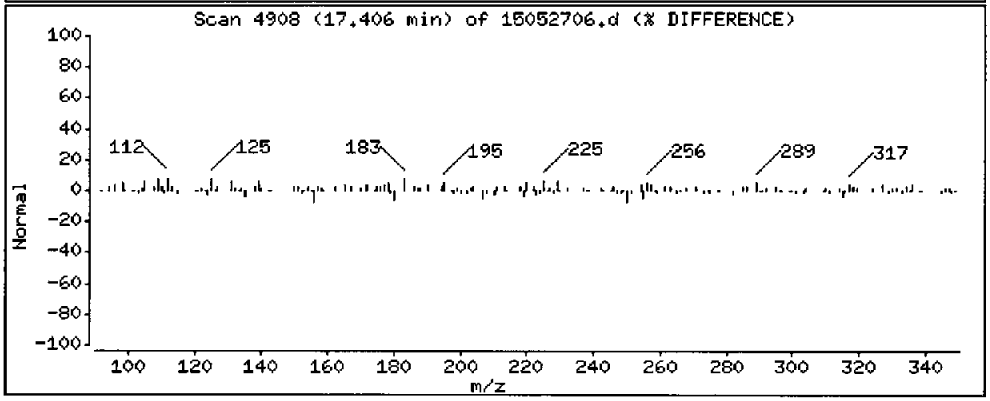












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

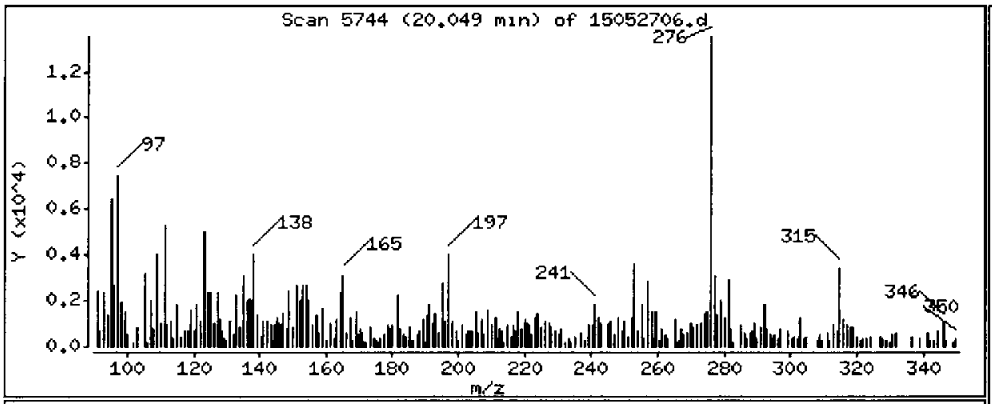
Operator: JZ

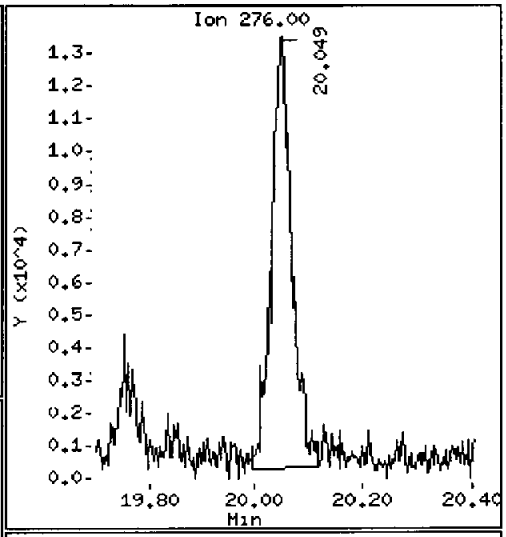
Column phase: ZB-35

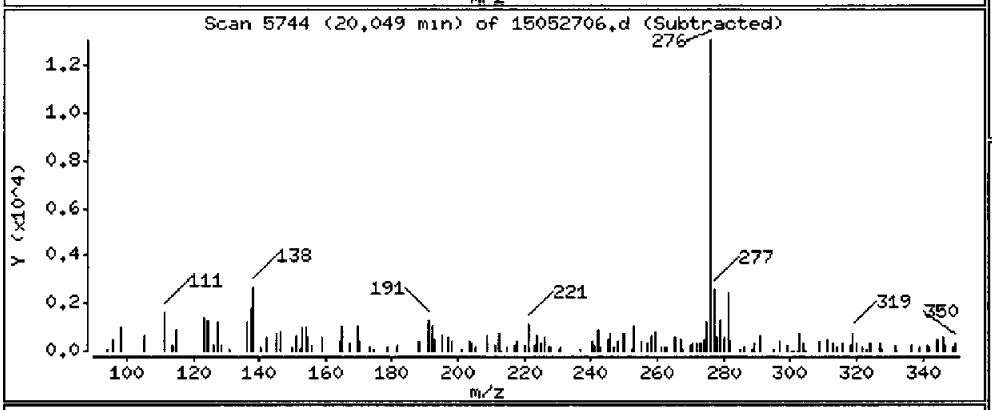
Column diameter: 0.25

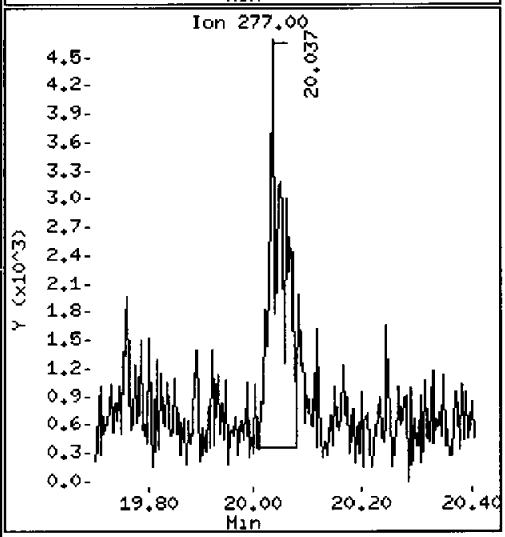
63 Indeno(1,2,3-cd)pyrene

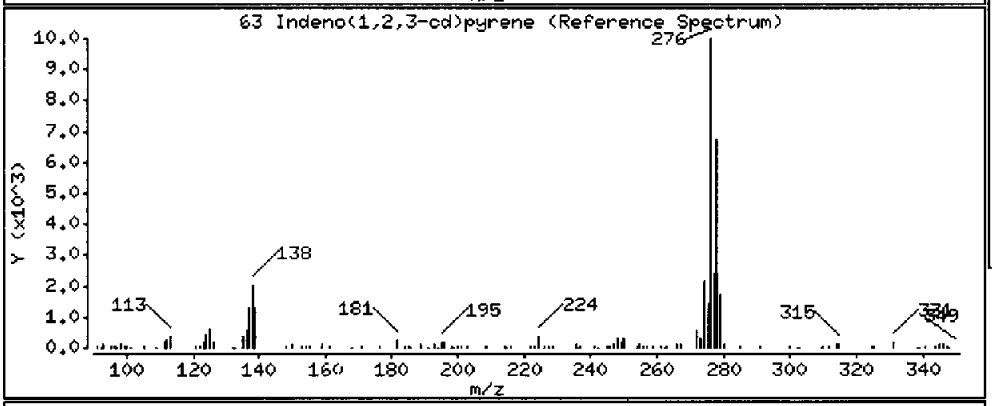
Concentration: 6.025 ug/kg

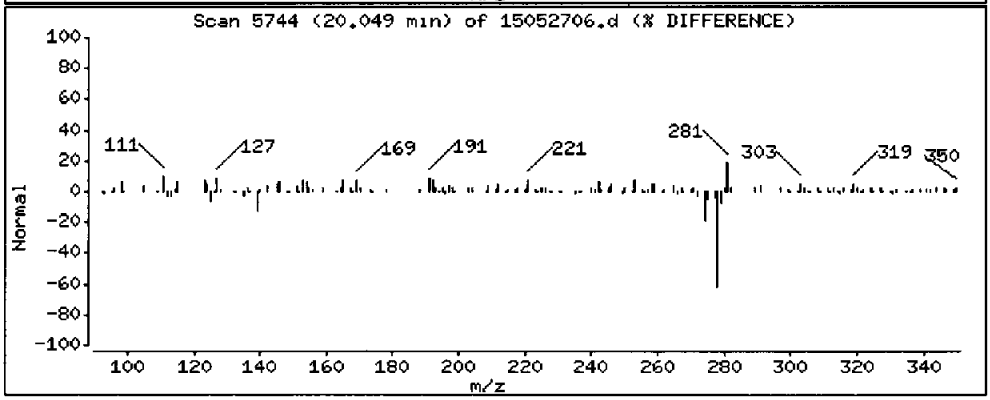












Data File: /chem3/nt8.i/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.i

Sample Info: AGA8B

Volume Injected (uL): 1.0

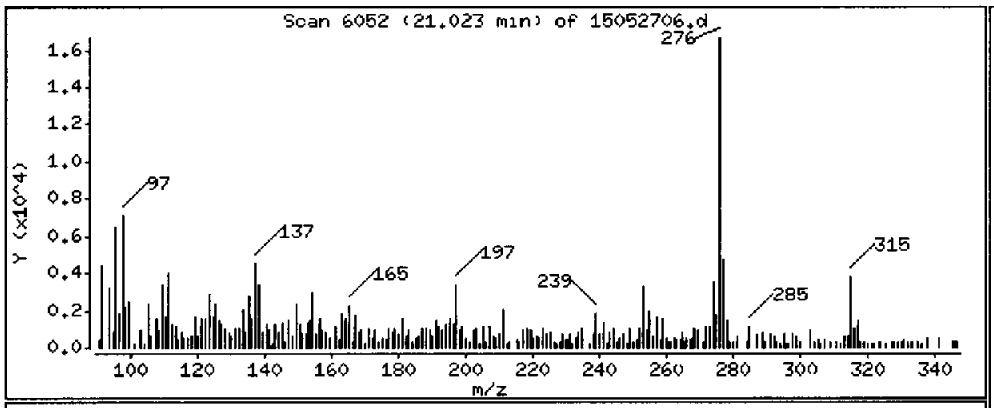
Operator: JZ

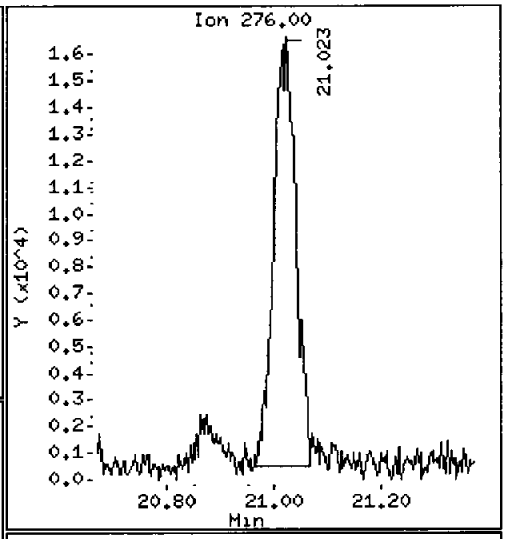
Column phase: ZB-35

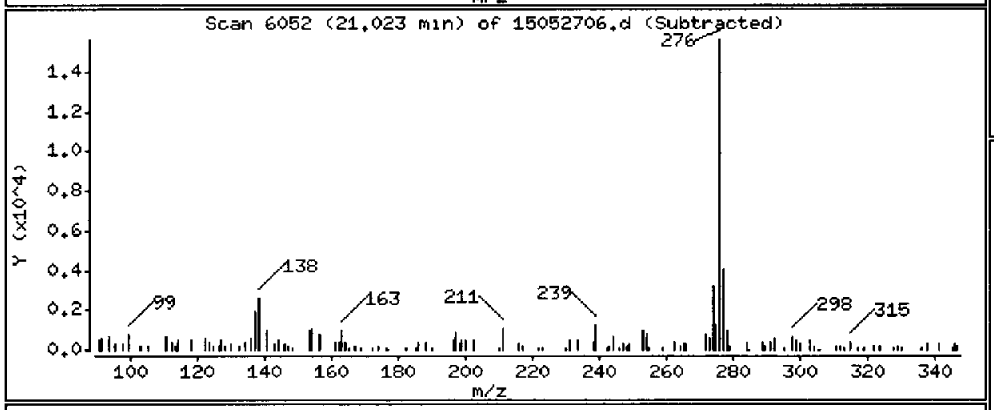
Column diameter: 0.25

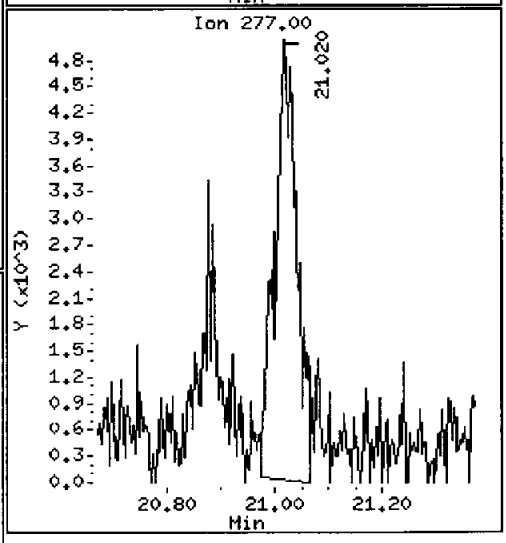
61 Benzo(g,h,i)perylene

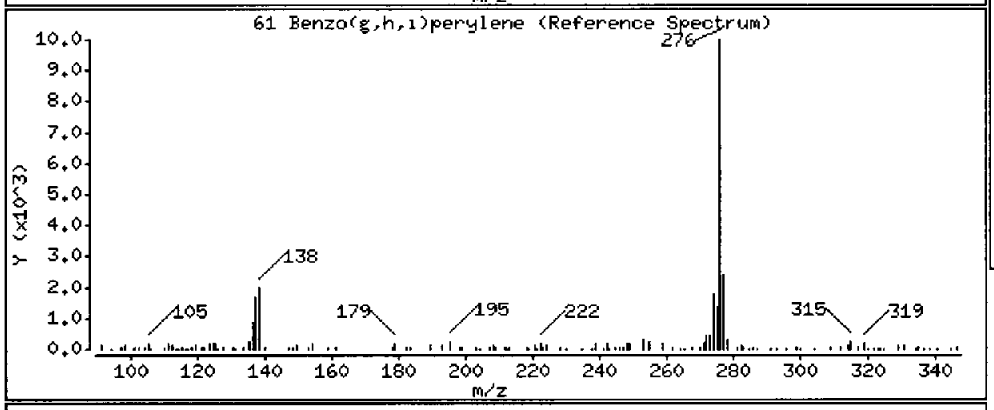
Concentration: 9.079 ug/kg

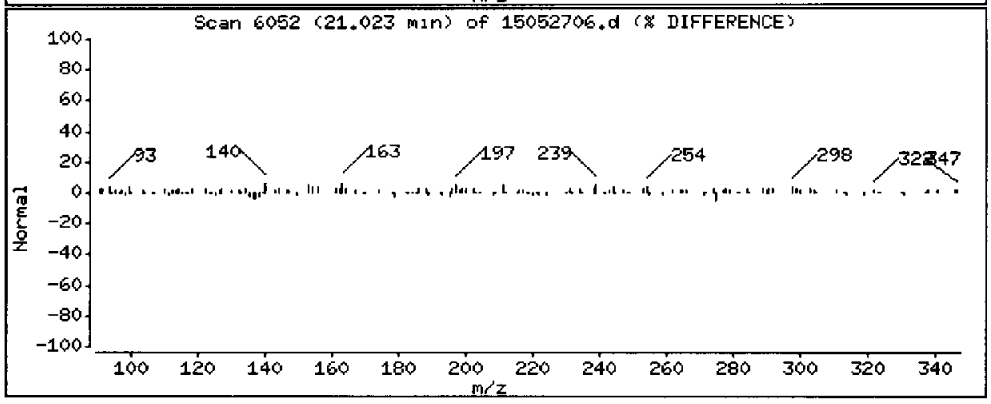












Data File: /chem3/nt8.1/20150527.b/15052706.d

Date : 27-MAY-2015 17:42

Client ID: SDP-10(15.5-16.5)

Instrument: nt8.1

Sample Info: AGA8B

Volume Injected (uL): 1.0

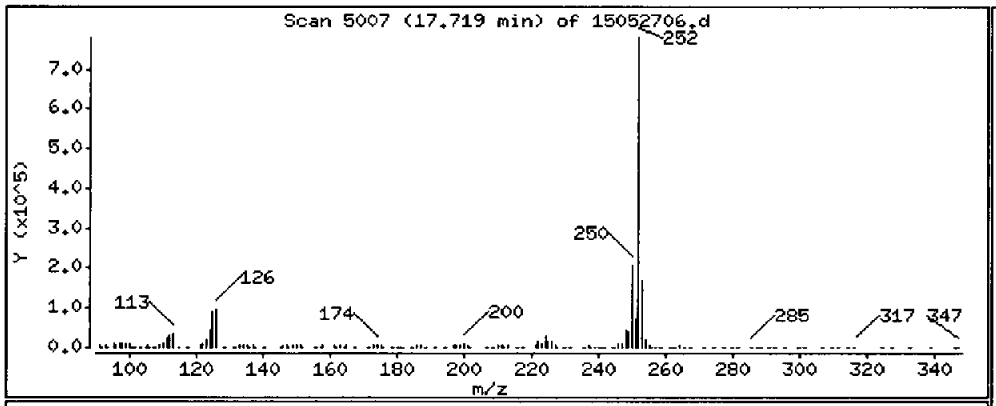
Operator: JZ

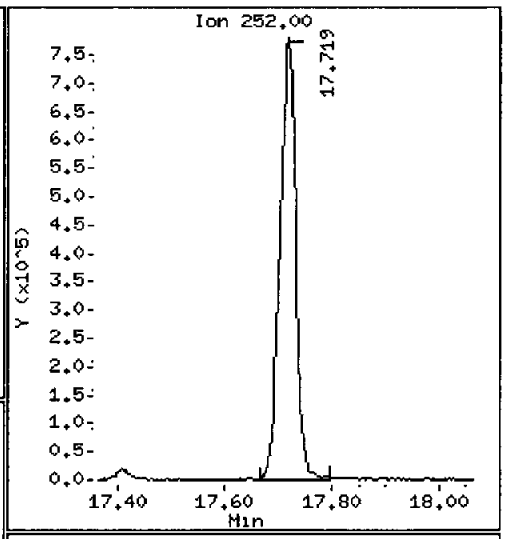
Column phase: ZB-35

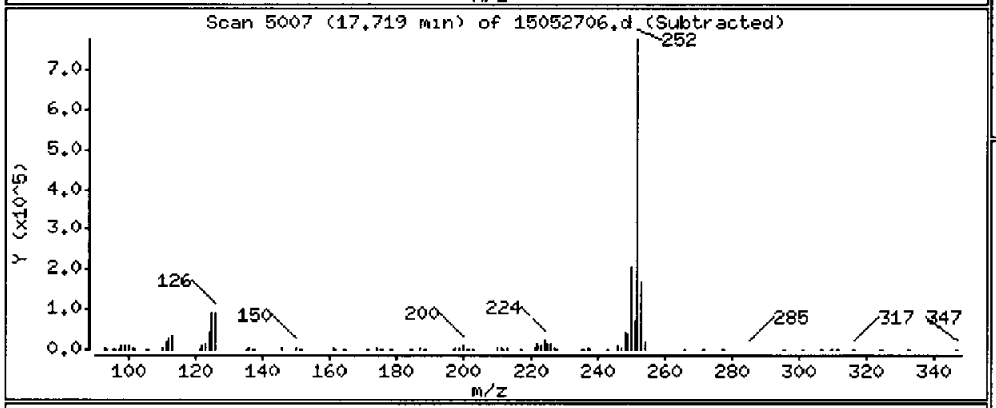
Column diameter: 0.25

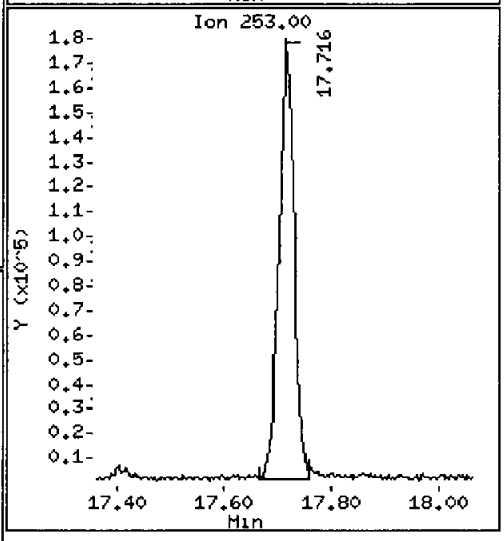
57 Perylene

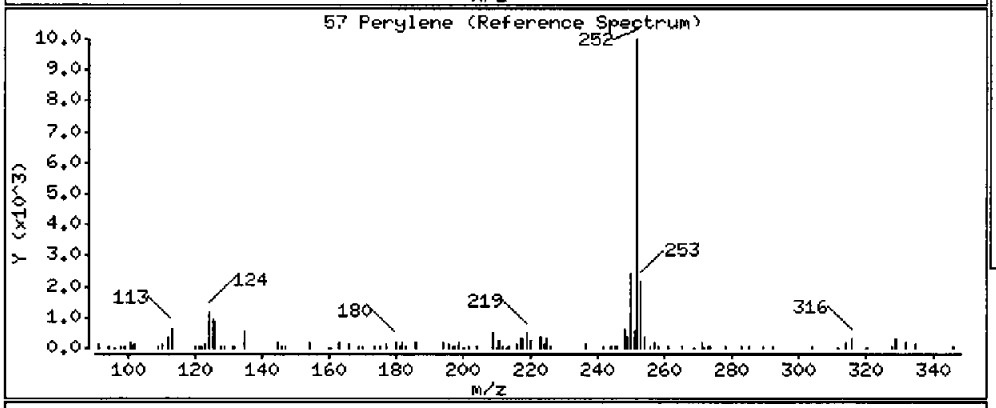
Concentration: 317.8 ug/kg

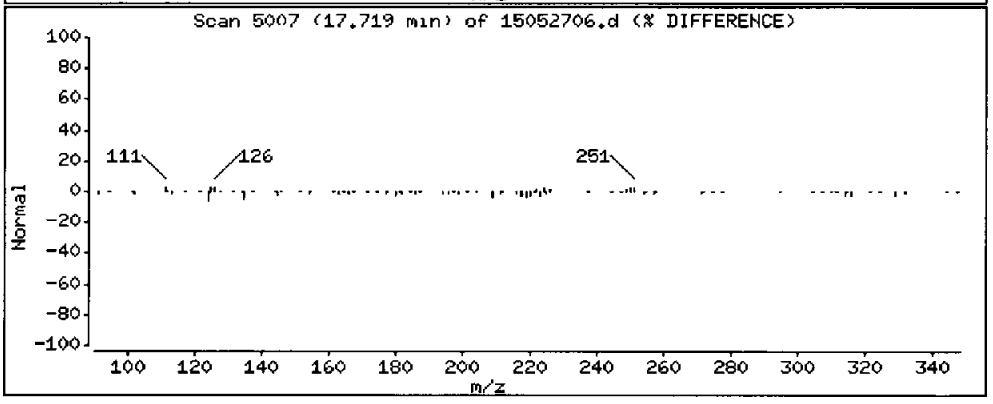












CO-ELUTION SUMMARY FOR FILE - 15052706.d

Lab ID: AGA8B, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052707.d
Lab Smp Id: AGA8C Client Smp ID: SDP-10(16.5-17.5)
Inj Date : 27-MAY-2015 18:07
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8C
Misc Info : 15-9291
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 27-May-2015 18:28 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 05/27/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.03000	Weight of sample extracted (g)
M	23.30000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.739	4 745	(1.000)	380954	2 00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.469	5.469	(1.154)	163626	1.40655	65.35
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.009	7 009	(1.000)	249211	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.027	9.027	(1.000)	429848	2.00000	
	30 Phenanthrene	178	9 058	9.061	(1.004)	24187	0 11802	5.484
	31 Anthracene	178	Compound Not Detected					
	36 Fluoranthene	202	Compound Not Detected					
$	253 Fluoranthene-d10	212	10.737	10 737	(1 190)	430842	2.03769	94.68
	39 Pyrene	202	Compound Not Detected					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.811	13.811	(1.000)	479365	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.637	17.640	(1.000)	486152	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.935	19 939	(1.130)	380817	2.05682	95.57
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	17.706	17.713	(1.004)	152597	0.64575	30.00

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052707.d
Lab Smp Id: AGA8C
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9291

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-10(16.5-17.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	380954	11.04
22 Acenaphthene-d10	230598	115299	461196	249211	8.07
28 Phenanthrene-d10	373928	186964	747856	429848	14.95
47 Chrysene-d12	381262	190631	762524	479365	25.73
56 Perylene-d12	380825	190412	761650	486152	27.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

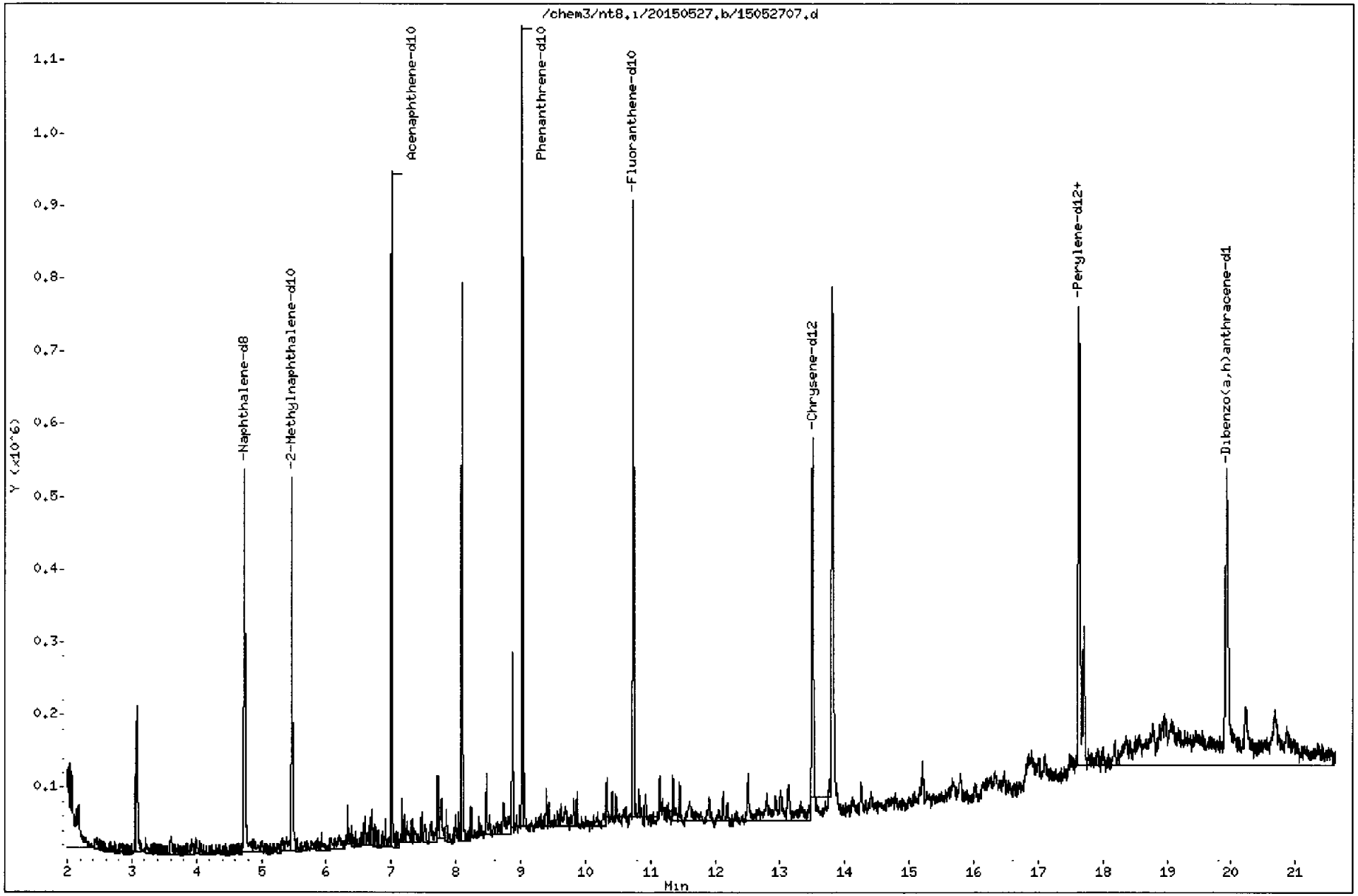
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8C
Client Smp ID: SDP-10(16.5-17.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9291

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	139.4	65.35	46.88	32-120
$ 253 Fluoranthene-d10	139.4	94.68	67.92	36-134
$ 60 Dibenzo(a,h)anthra	139.4	95.57	68.56	21-133

Data File: /chem3/nt8.i/20150527.b/15052707.d
Date : 27-MAY-2015 18:07
Client ID: SDP-10(16.5-17.5)
Sample Info: AGA8C
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052707.d

Date : 27-MAY-2015 18:07

Client ID: SDP-10(16.5-17.5)

Instrument: nt8.1

Sample Info: AGA8C

Volume Injected (uL): 1.0

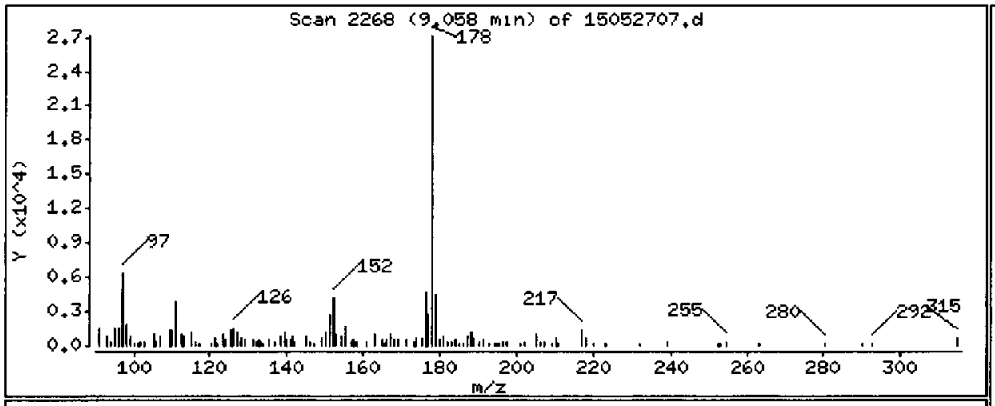
Operator: JZ

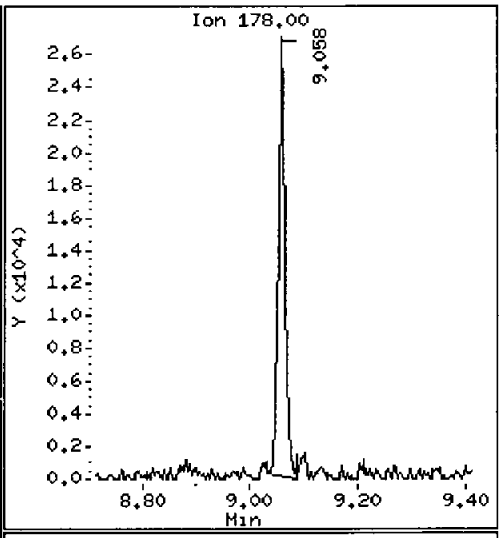
Column phase: ZB-35

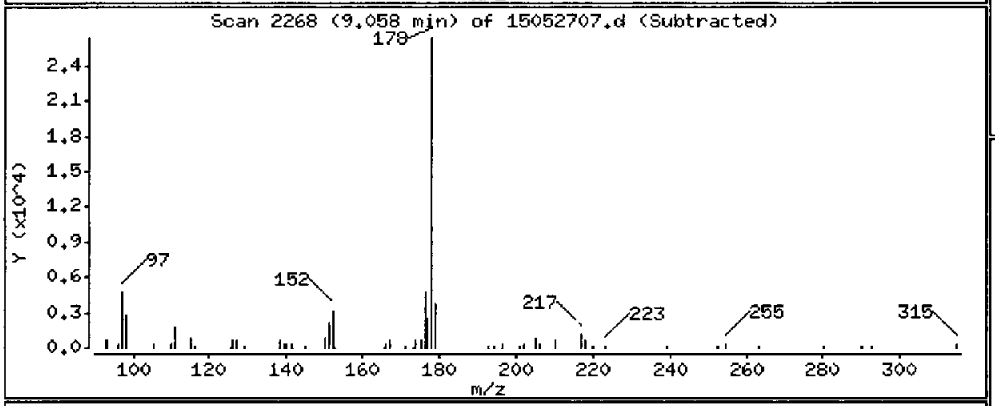
Column diameter: 0.25

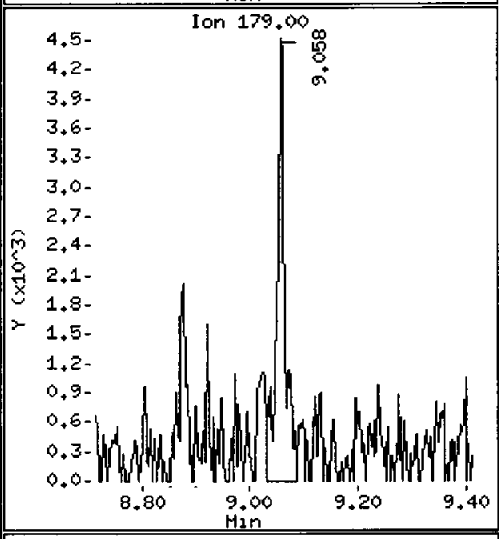
30 Phenanthrene

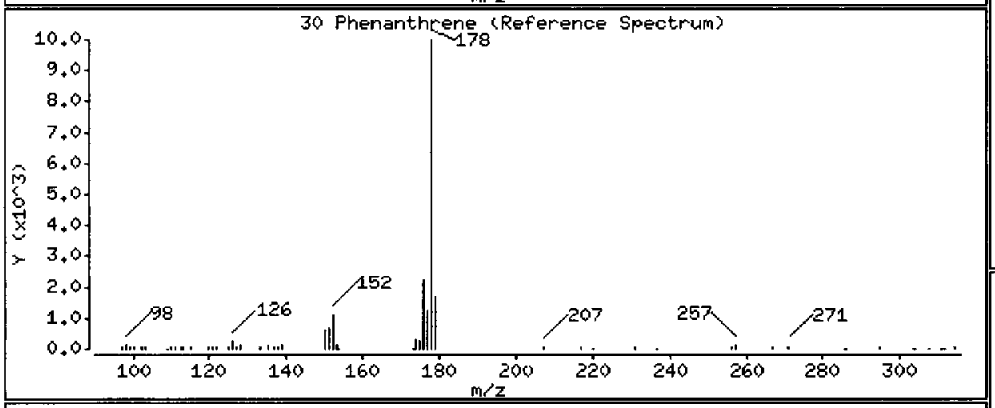
Concentration: 5.484 ug/kg

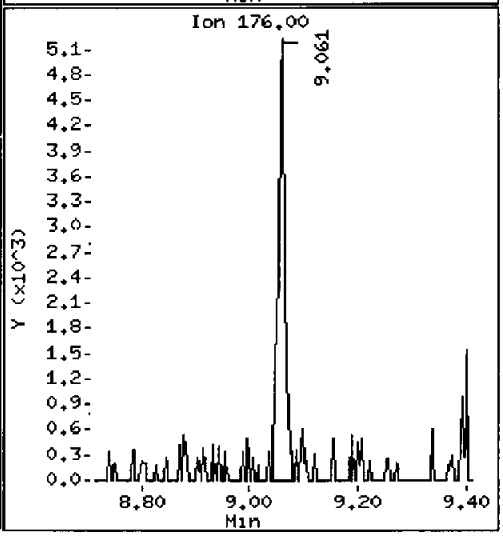


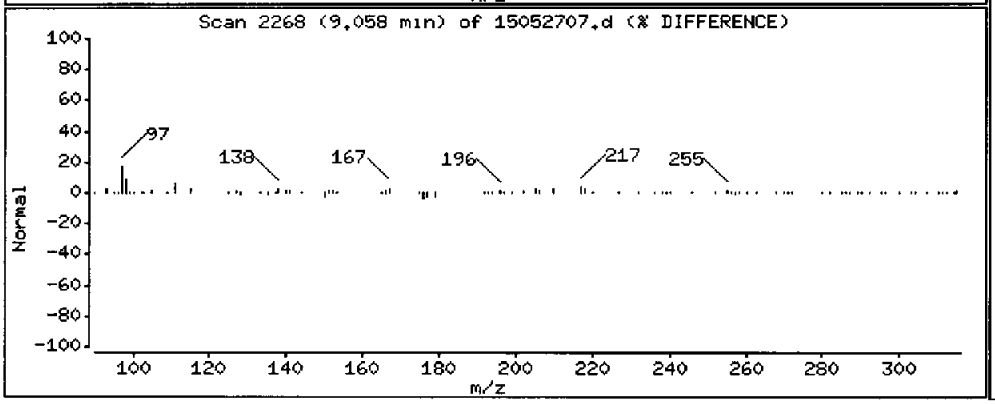












Data File: /chem3/nt8.1/20150527.b/15052707.d

Date : 27-MAY-2015 18:07

Client ID: SDP-10(16.5-17.5)

Instrument: nt8.1

Sample Info: AGA8C

Volume Injected (uL): 1.0

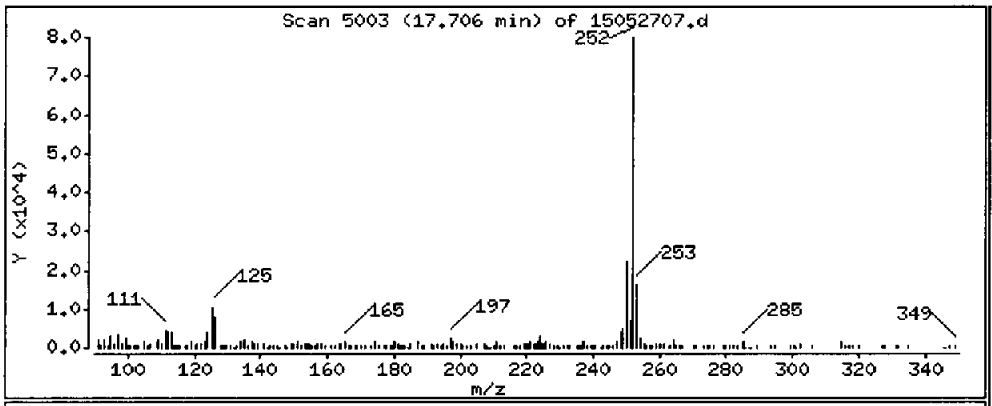
Operator: JZ

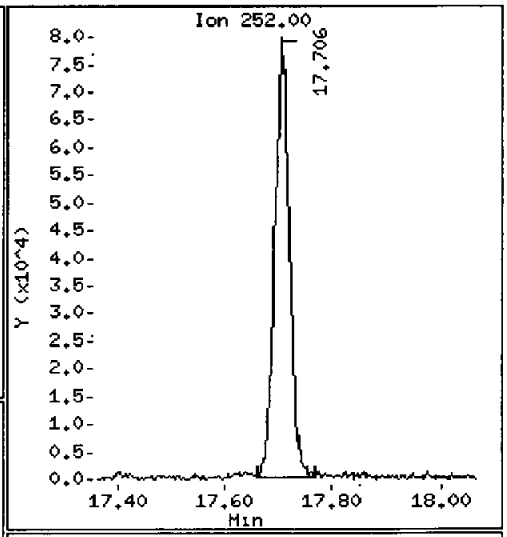
Column phase: ZB-35

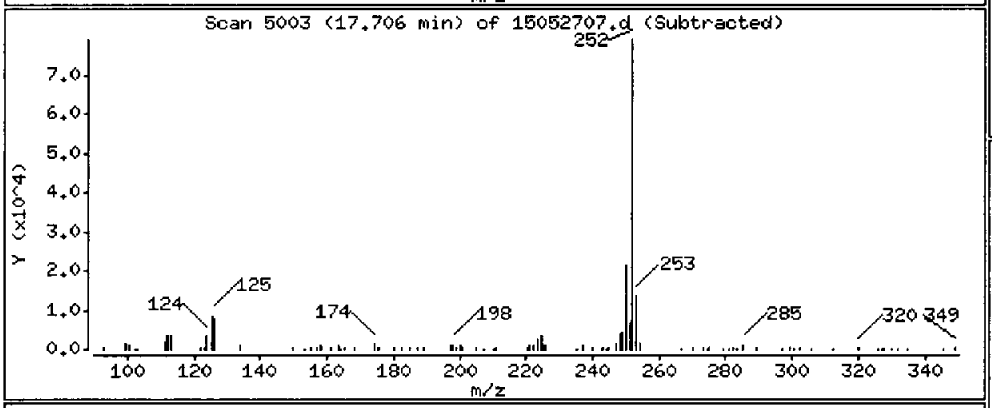
Column diameter: 0.25

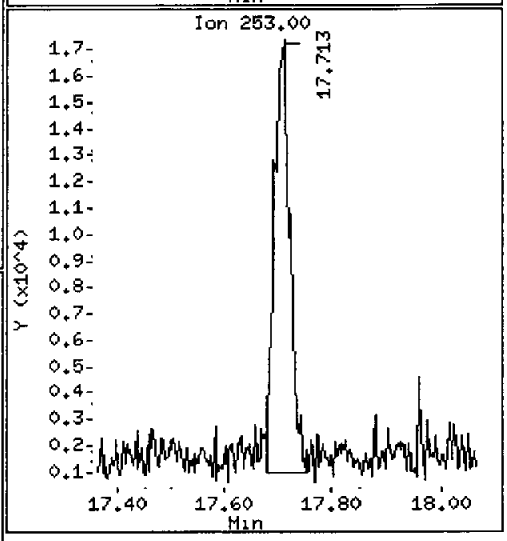
57 Perylene

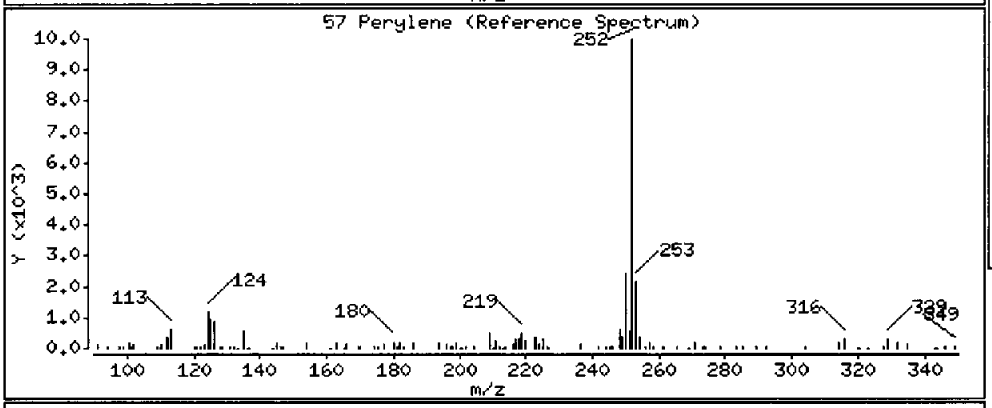
Concentration: 30.00 ug/kg

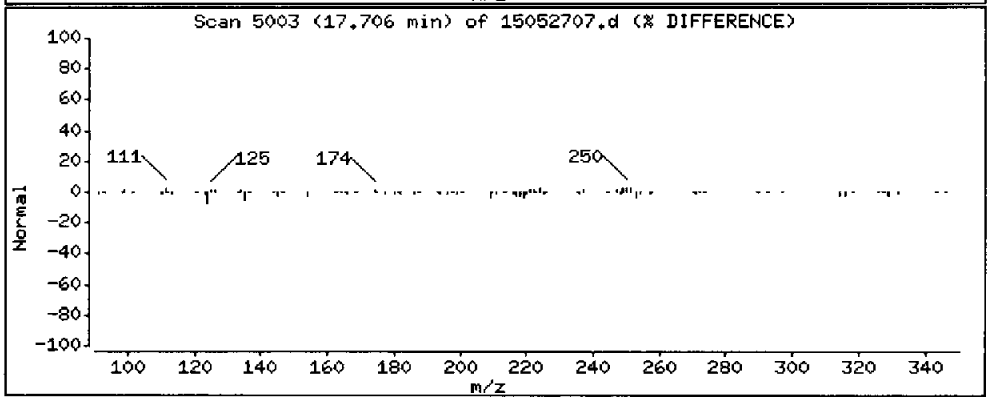












CO-ELUTION SUMMARY FOR FILE - 15052707.d

Lab ID: AGA8C, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052708.d
Lab Smp Id: AGA8D Client Smp ID: SDP-09(2.5-4.0)
Inj Date : 27-MAY-2015 18:33
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8D
Misc Info : 15-9292
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/28/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.06000	Weight of sample extracted (g)
M	16.00000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.739	4.745	(1.000)	369183	2.00000	
7 Naphthalene	128	4.771	4.774	(1.007)	60183	0.33840	16.70
$ 12 2-Methylnaphthalene-d10	152	5.469	5.469	(1.154)	166132	1.47362	72.73
14 2-Methylnaphthalene	141	5 517	5.520	(1.164)	22601	0.21313	10.52
15 1-methylnaphthalene	141	5.713	5.713	(1.206)	9944	0.09649	4.763
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	240902	2.00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	7.208	7.208	(1.028)	88798	0.54848	27.07
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9 027	9.027	(1.000)	421209	2.00000	
30 Phenanthrene	178	9 065	9.061	(1.004)	1105117	5.50302	271.6
31 Anthracene	178	9.102	9.102	(1.008)	17394	0.09621	4.748(M)
36 Fluoranthene	202	10.778	10.775	(1.194)	811866	3.45655	170.6
$ 253 Fluoranthene-d10	212	10.740	10.737	(1.190)	442197	2.13428	105.3

AGA8 0025

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.272	11.268	(0.816)	613300	2.30292	113.7
	46 Benzo(a)anthracene	228	13 694	13 691	(0.991)	119336	0.49799	24.58
*	47 Chrysene-d12	240	13 817	13 811	(1.000)	477730	2.00000	
	48 Chrysene	228	13.890	13.883	(1.005)	351481	1.46286	72.20
	51 Benzo(b)fluoranthene	252	16.381	16.375	(0.928)	178053	0.67731	33.43
	52 Benzo(k)fluoranthene	252	16.441	16.438	(0.932)	73585	0.28015	13.83
	251 Benzo(j)fluoranthene	252	16.517	16.511	(0 936)	69040	0.26937	13 30
	54 Benzo(a)pyrene	252	17 412	17 412	(0.987)	45014	0.19205	9 479
*	56 Perylene-d12	264	17 643	17.640	(1.000)	500585	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.056	20 052	(1.137)	75944	0.26975	13.31
$	60 Dibenzo(a,h)anthracene-d14	292	19.945	19.939	(1.130)	348666	1 82888	90.27
	62 Dibenzo(a,h)anthracene	278	20.043	20.037	(1.136)	16704	0 07285	3.595
	61 Benzo(g,h,i)perylene	276	21.029	21.020	(1.192)	92555	0 37375	18.45
	57 Perylene	252	17.712	17.713	(1.004)	18323	0.07530	3.717

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052708.d
Lab Smp Id: AGA8D
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9292

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-09(2.5-4.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	369183	7.61
22 Acenaphthene-d10	230598	115299	461196	240902	4.47
28 Phenanthrene-d10	373928	186964	747856	421209	12.64
47 Chrysene-d12	381262	190631	762524	477730	25.30
56 Perylene-d12	380825	190412	761650	500585	31.45

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.05
56 Perylene-d12	17.64	17.14	18.14	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

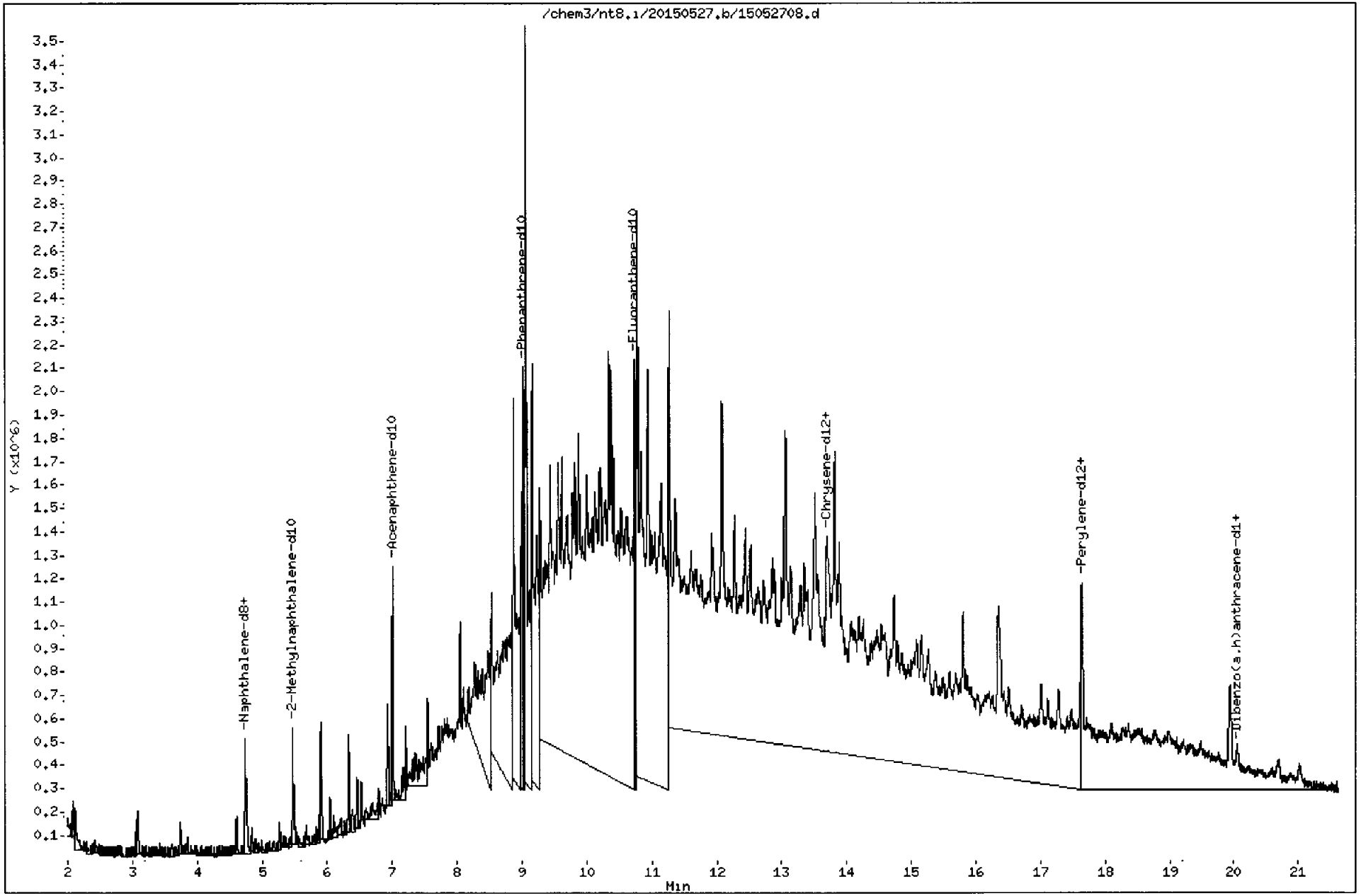
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8D
Client Smp ID: SDP-09(2.5-4.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9292

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	148.1	72.73	49.12	32-120
$ 253 Fluoranthene-d10	148.1	105.3	71.14	36-134
$ 60 Dibenzo(a,h)anthra	148.1	90.27	60.96	21-133

Data File: /chem3/nt8.i/20150527.b/15052708.d
Date : 27-MAY-2015 18:33
Client ID: SDP-09(2.5-4.0)
Sample Info: AGA8D
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

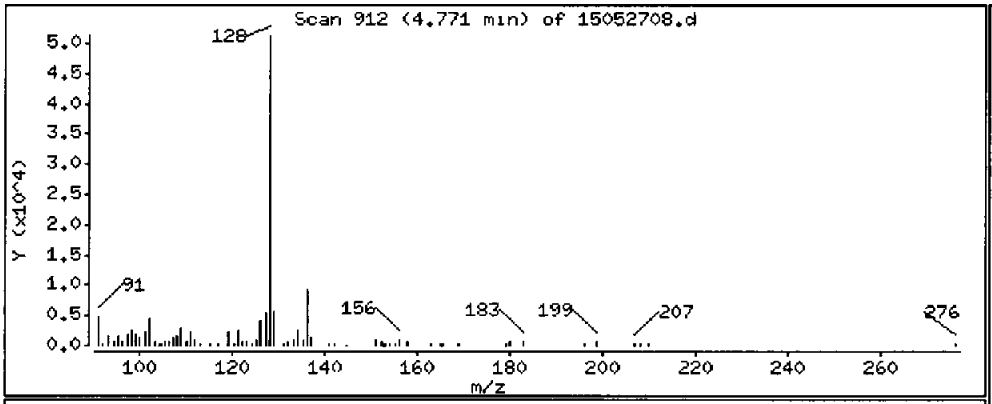
Operator: JZ

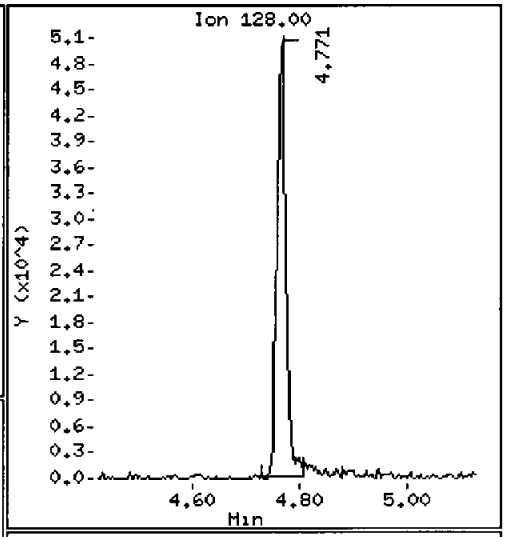
Column phase: ZB-35

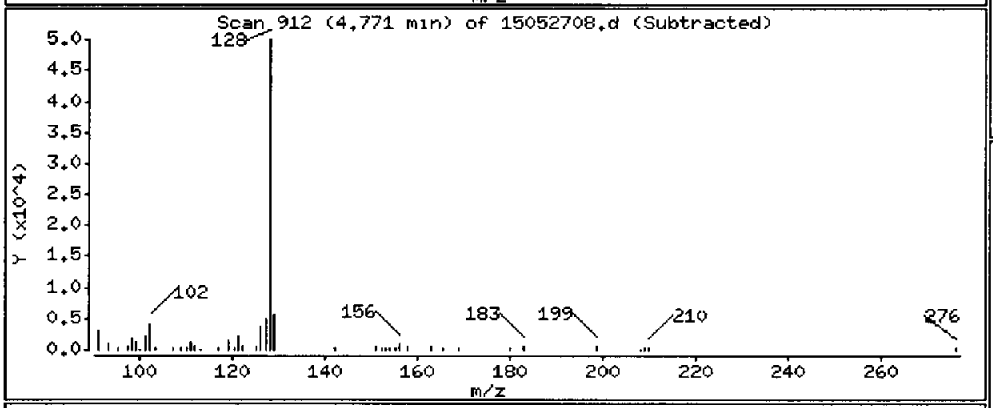
Column diameter: 0.25

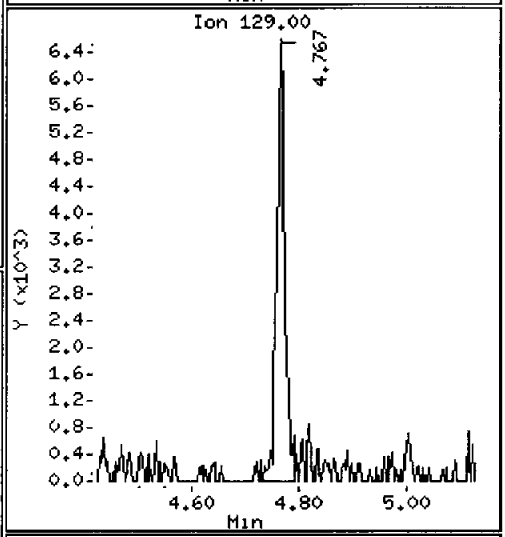
7 Naphthalene

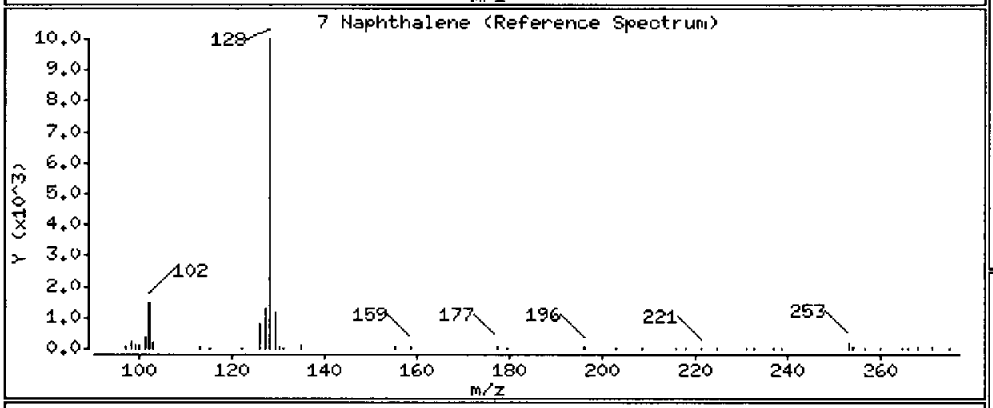
Concentration: 16.70 ug/kg

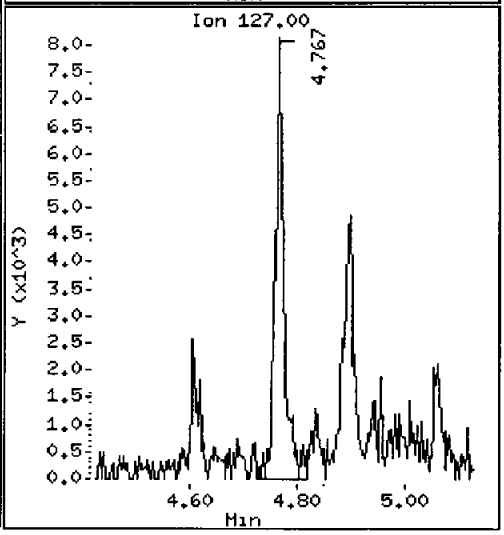


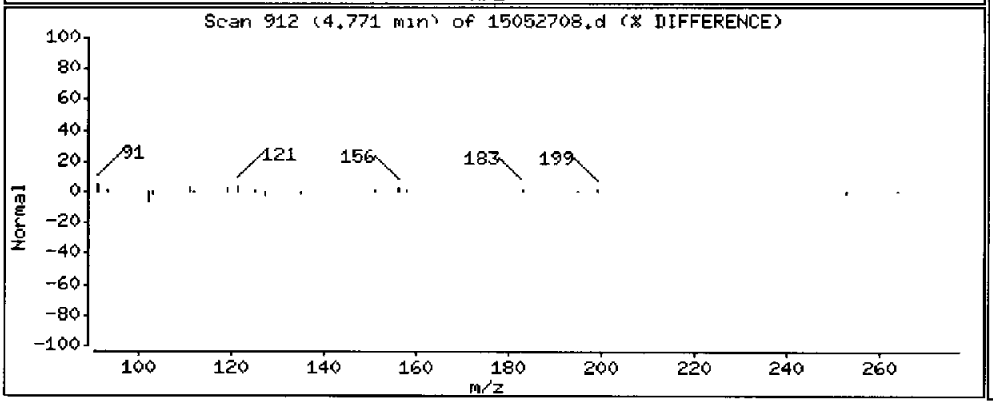












Data File: /chem3/nt8.i/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.i

Sample Info: AGA8D

Volume Injected (uL): 1.0

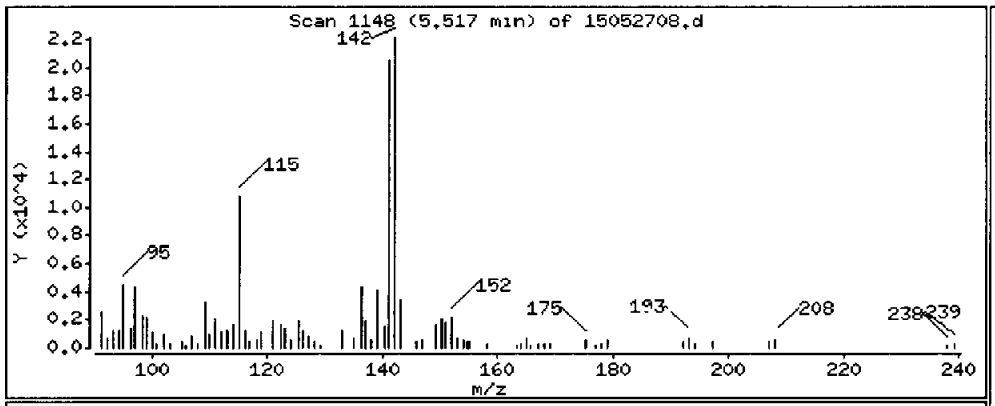
Operator: JZ

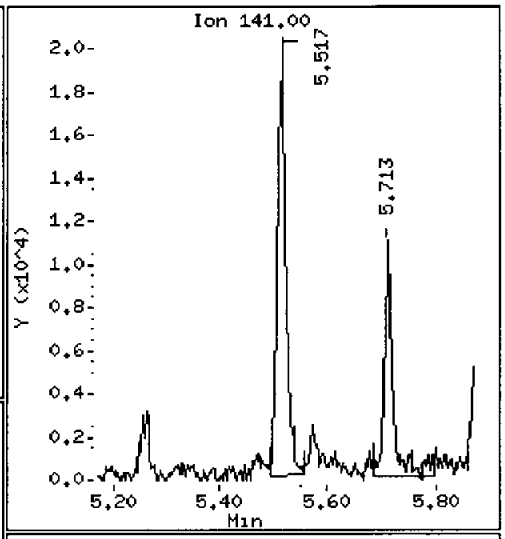
Column phase: ZB-35

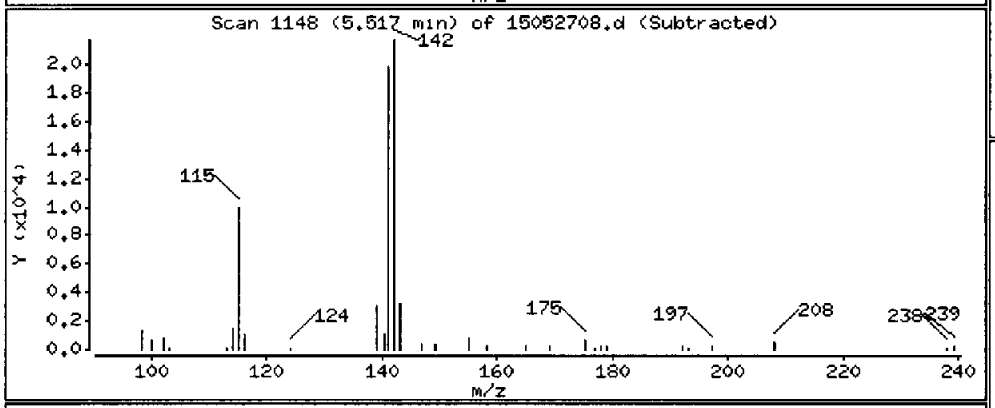
Column diameter: 0.25

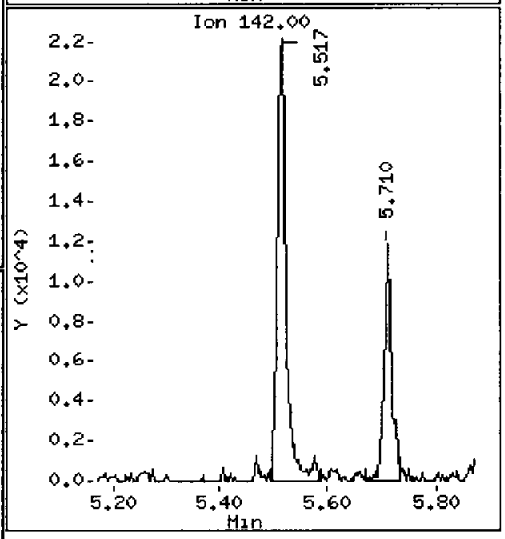
14 2-Methylnaphthalene

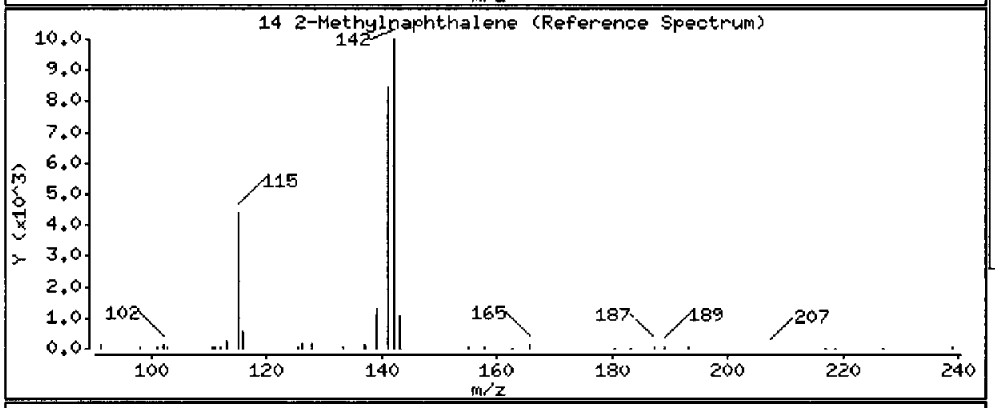
Concentration: 10.52 ug/kg

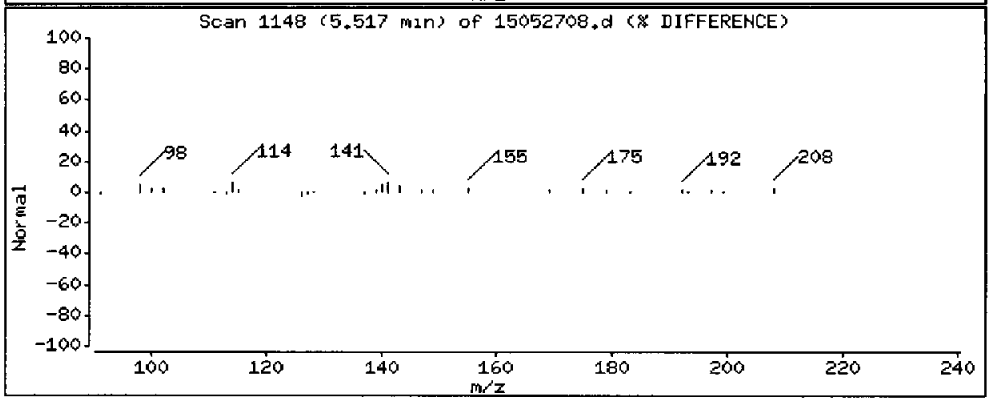












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

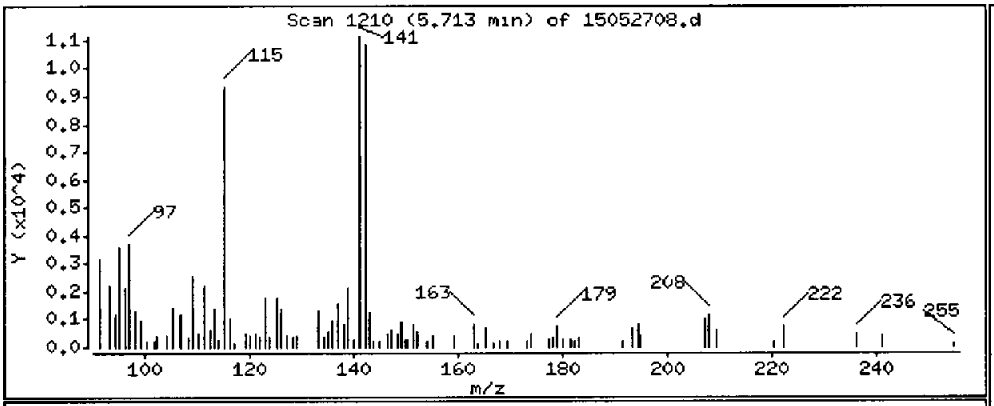
Operator: JZ

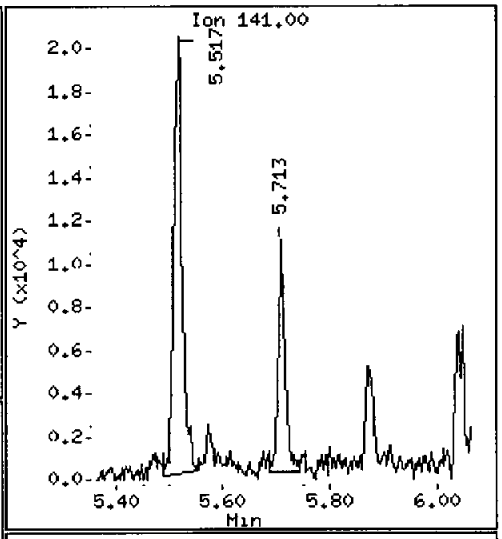
Column phase: ZB-35

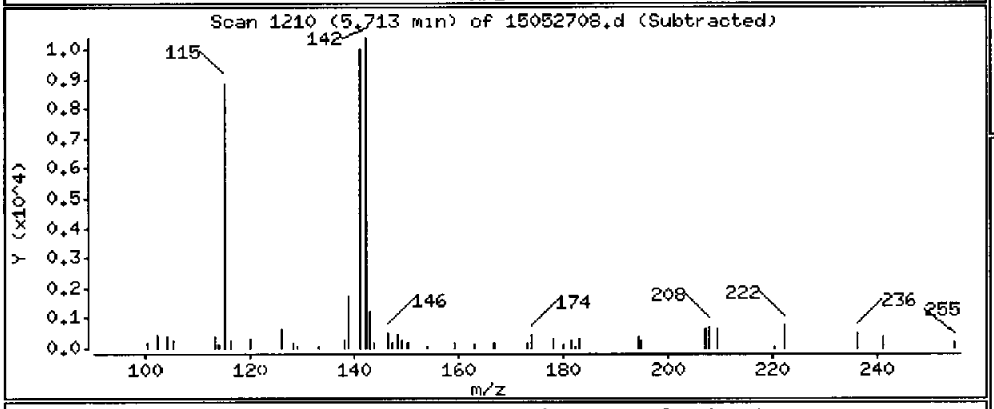
Column diameter: 0.25

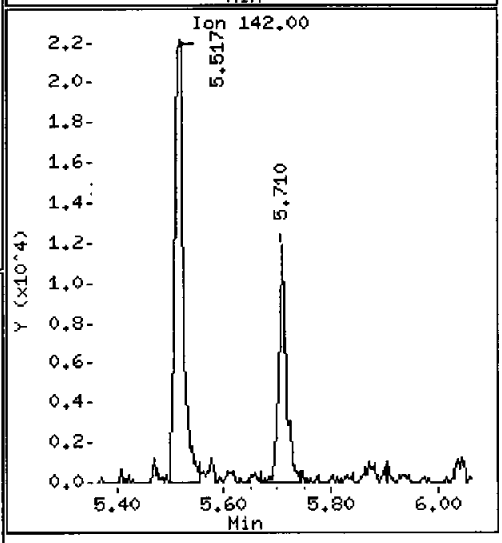
15 1-methylnaphthalene

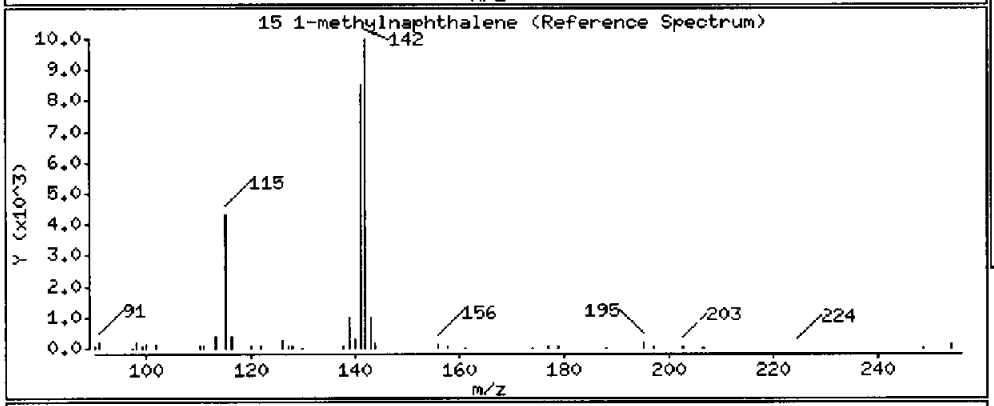
Concentration: 4.763 ug/kg

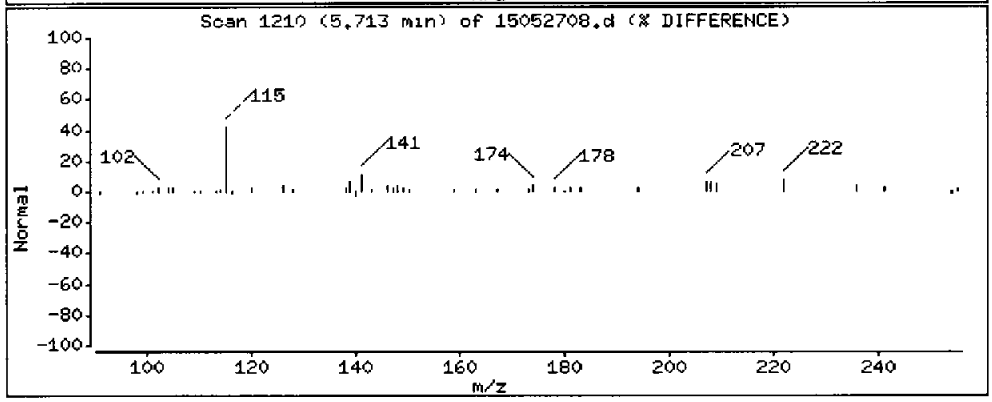












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

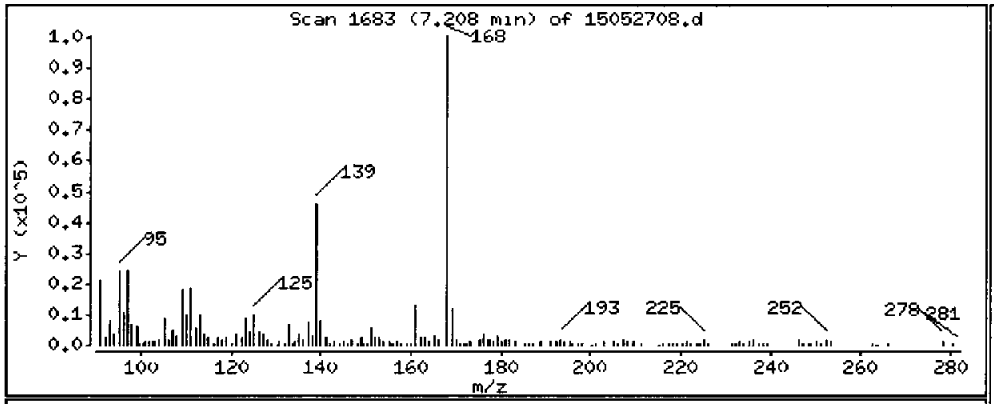
Operator: JZ

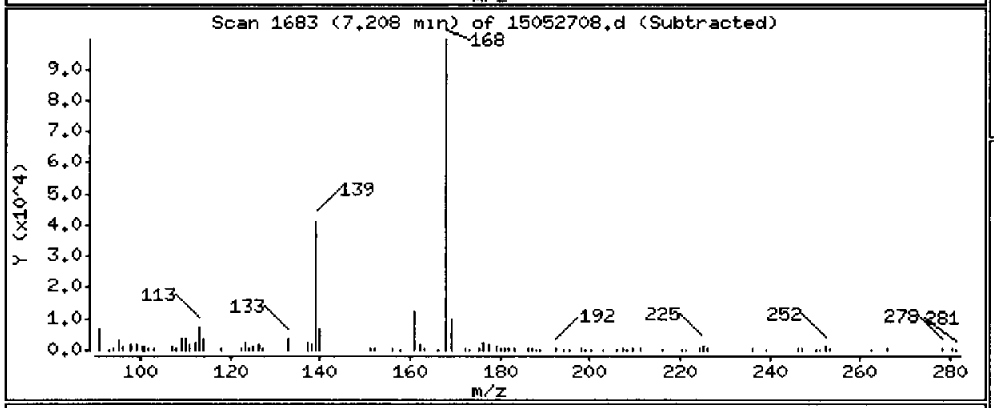
Column phase: ZB-35

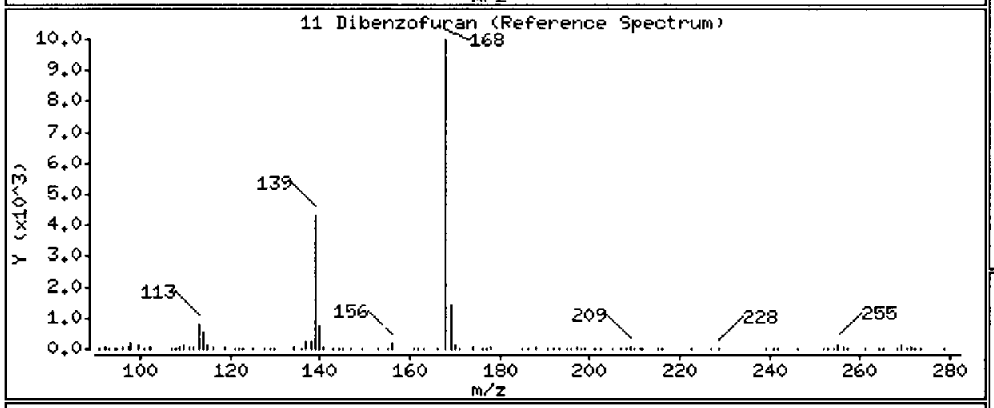
Column diameter: 0.25

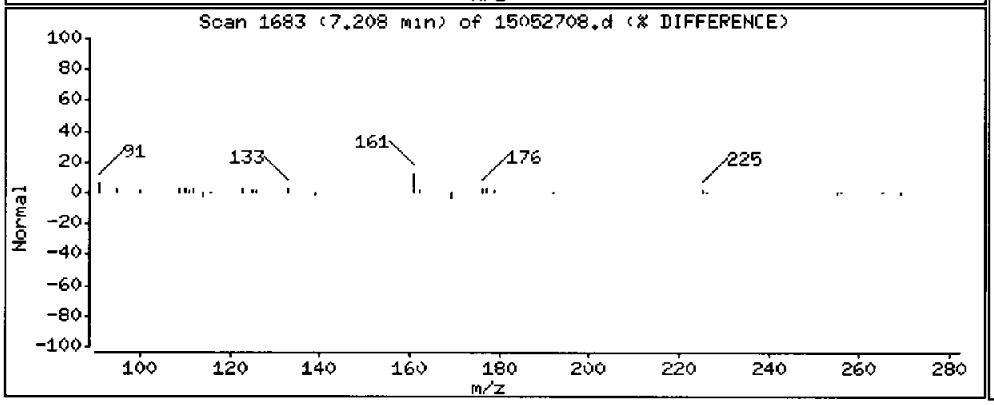
11 Dibenzofuran

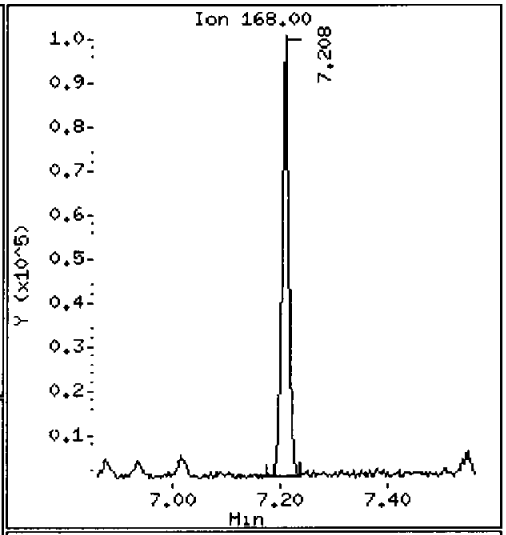
Concentration: 27.07 ug/kg

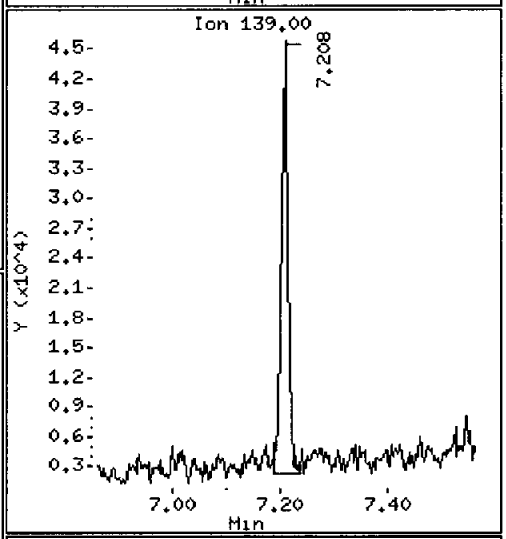


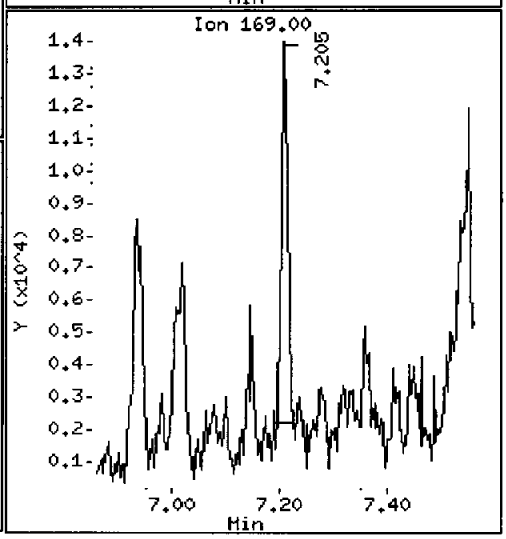












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

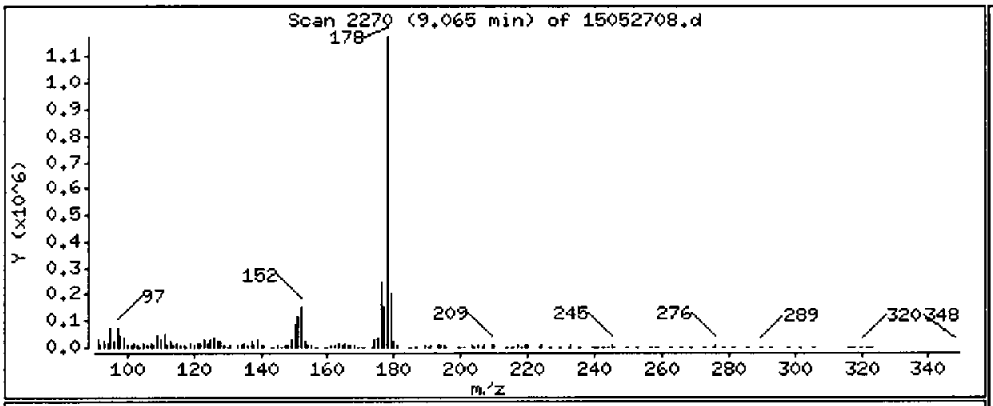
Operator: JZ

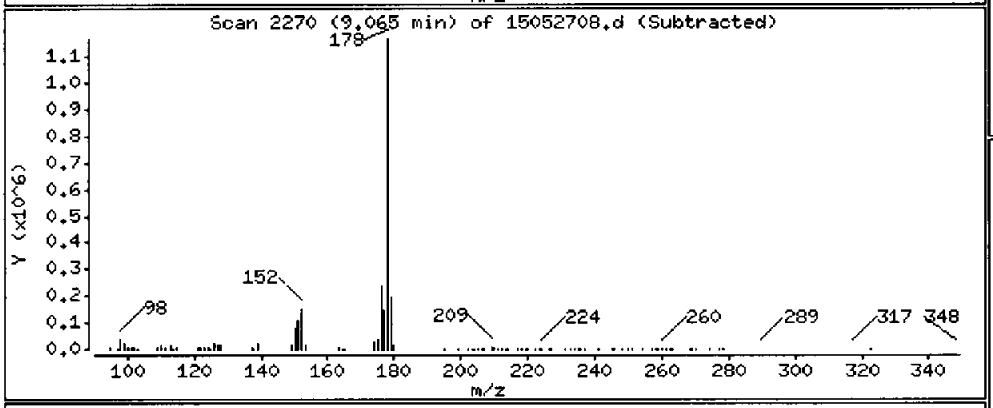
Column phase: ZB-35

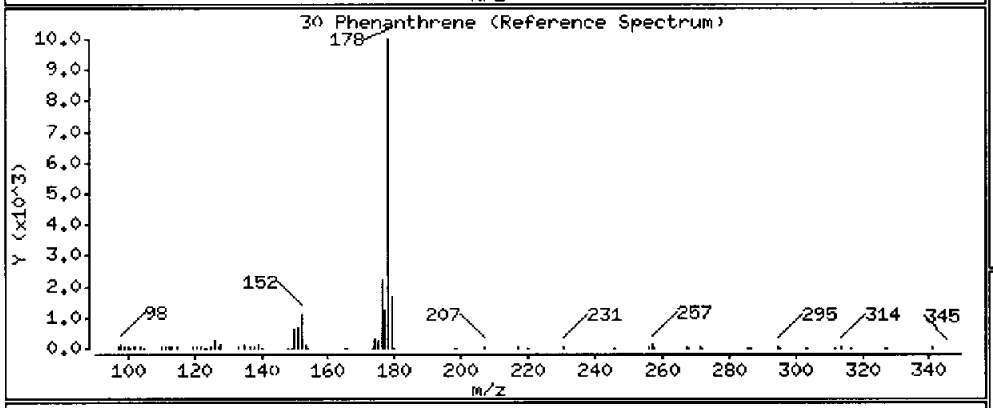
Column diameter: 0.25

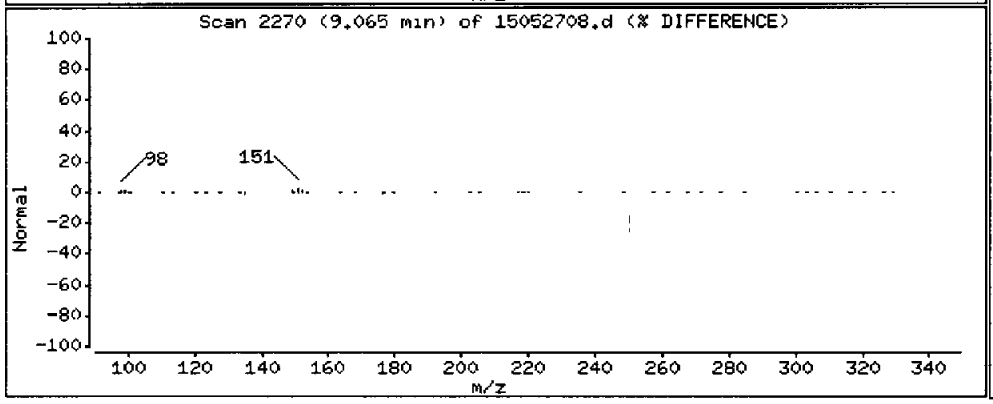
30 Phenanthrene

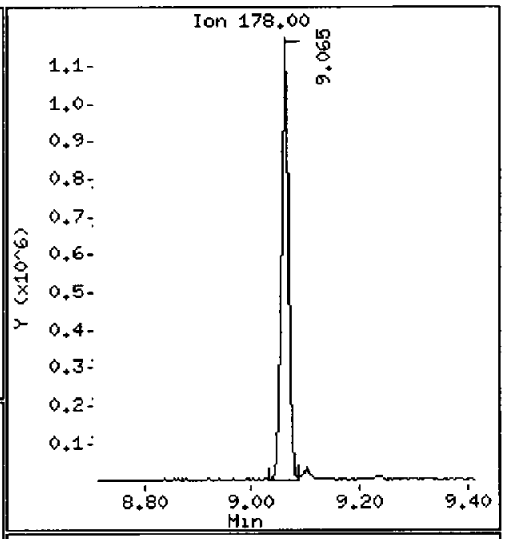
Concentration: 271.6 ug/kg

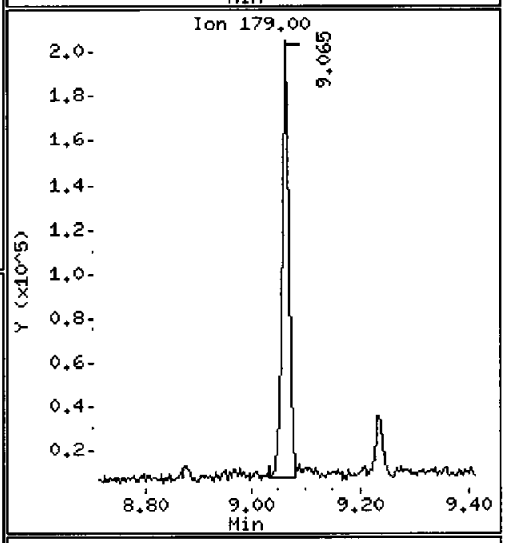


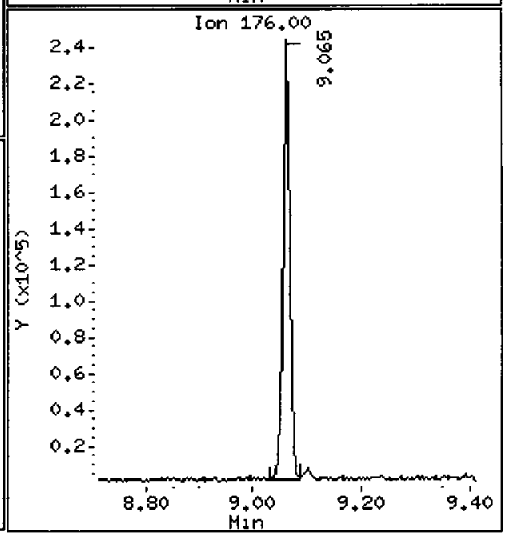






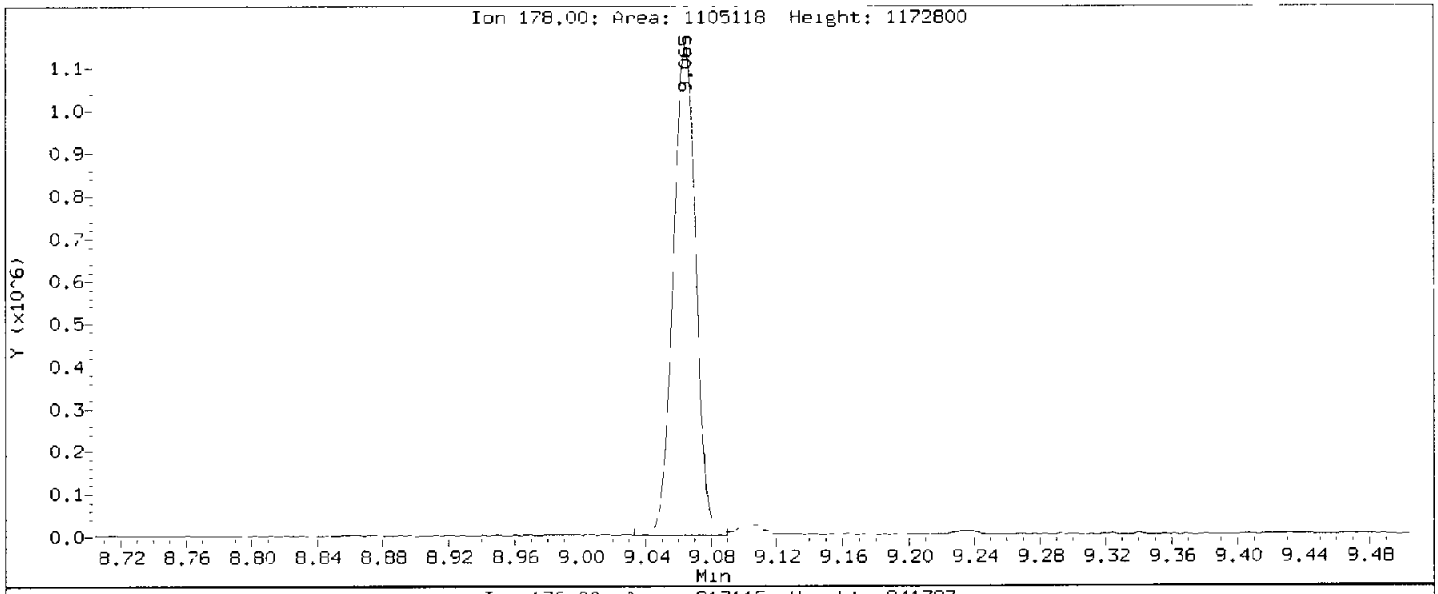


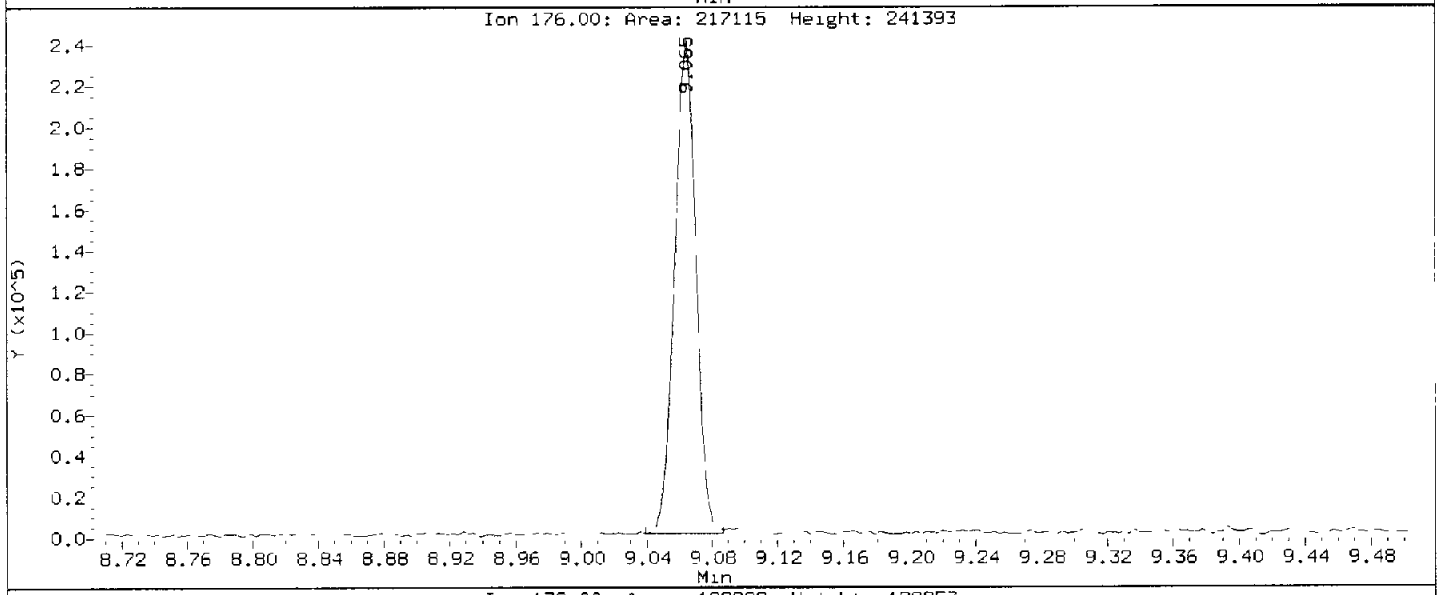


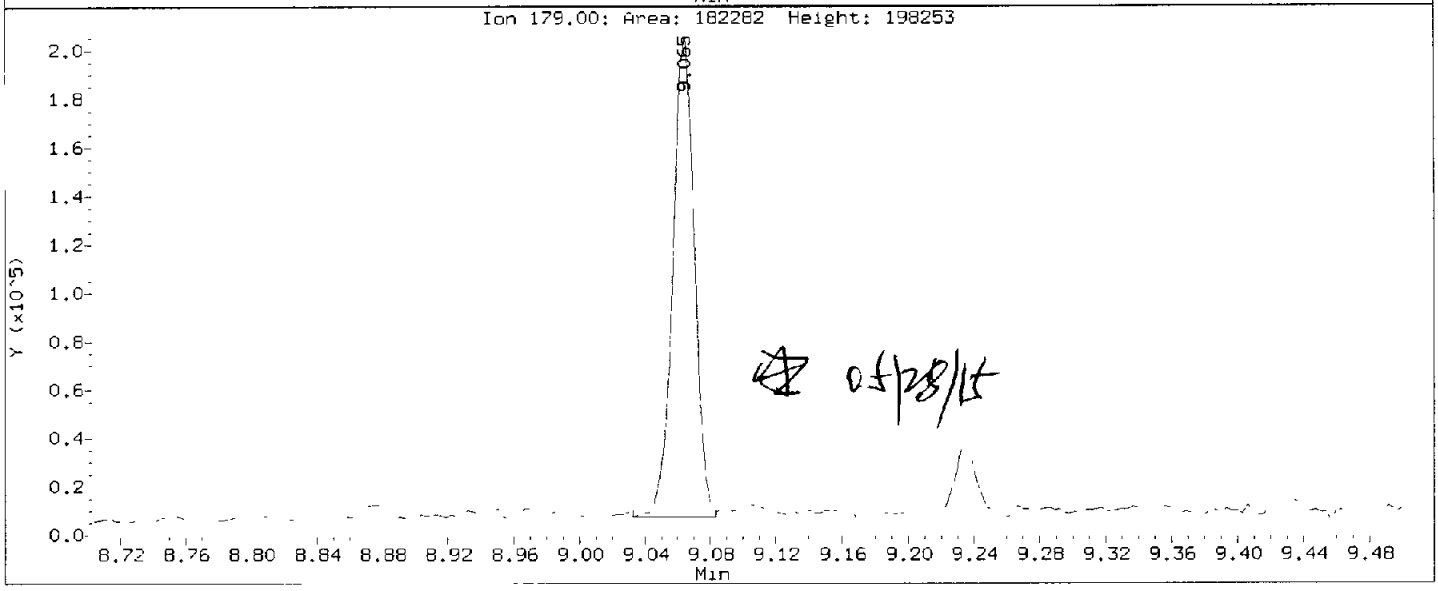


Data File: /chem3/nt8.1/20150527.b/15052708.d
Injection Date: 27-MAY-2015 18:33
Instrument: nt8.1
Client Sample ID: SDP-09(2.5-4.0)

Compound: Anthracene
CAS Number: 120-12-7



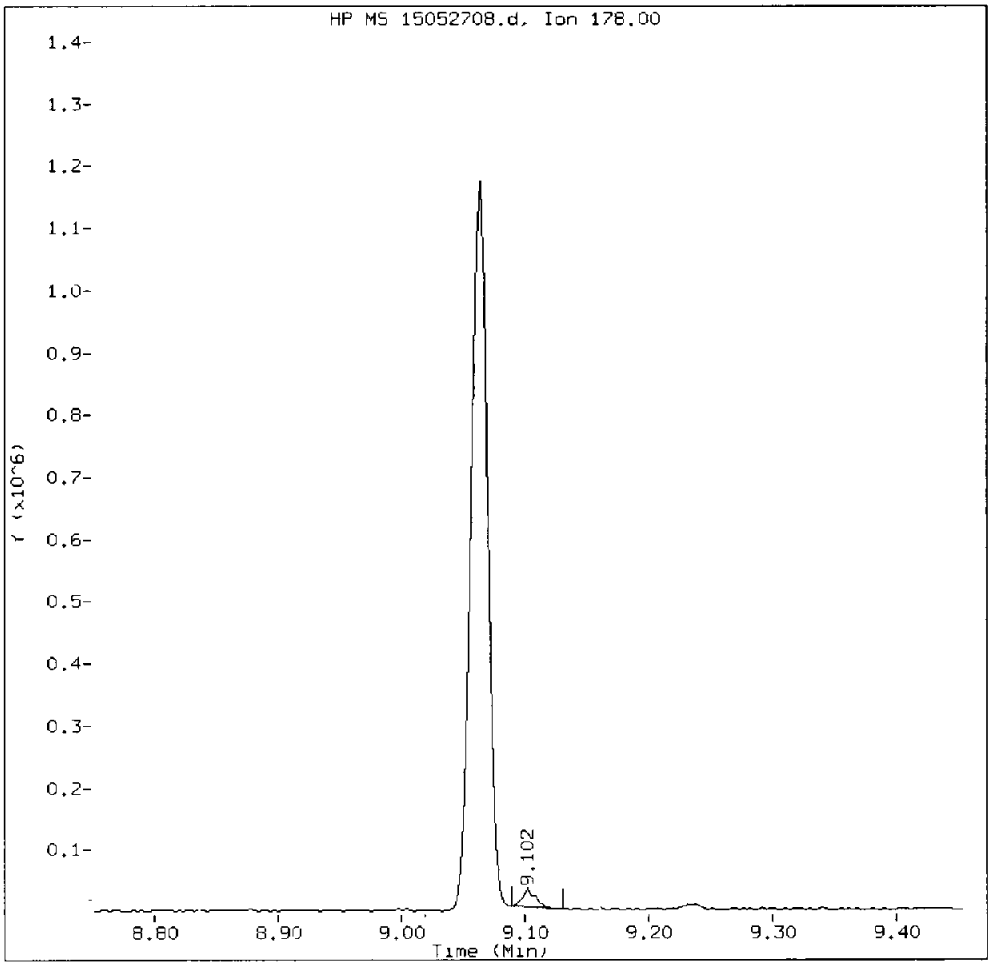




05/28/15

AGA8D, /chem3/nt8.i/20150527.b/15052708.d

Anthracene Amount: 0.10 Area: 17394



MANUAL INTEGRATION for Anthracene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 05/26/16

Data File: /chem3/nt8.i/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.i

Sample Info: AGA8D

Volume Injected (uL): 1.0

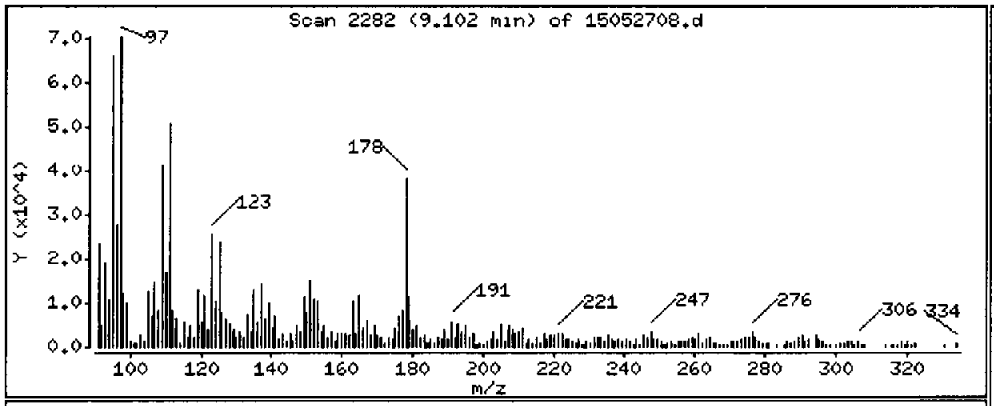
Operator: JZ

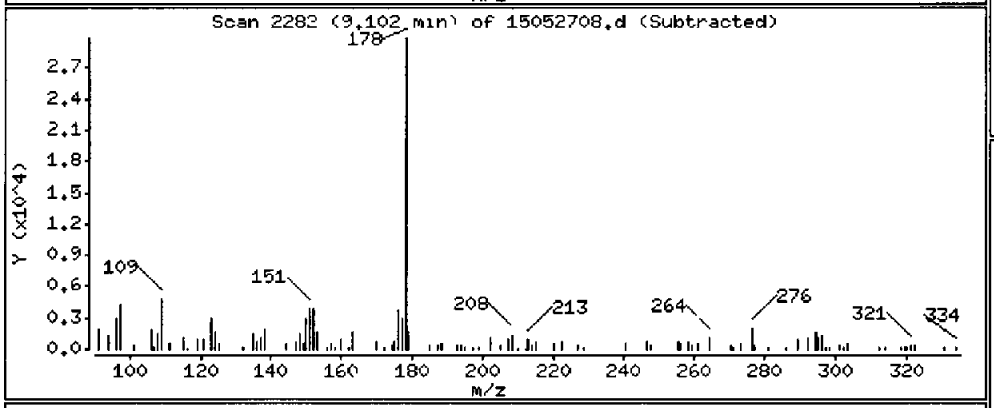
Column phase: ZB-35

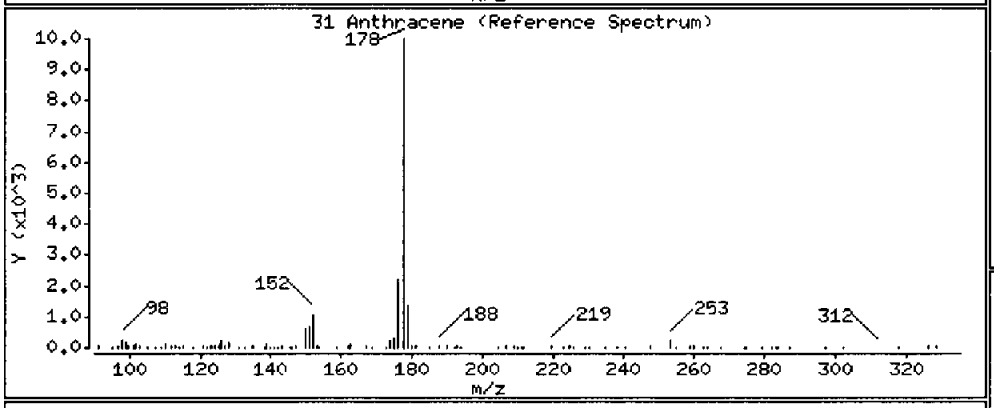
Column diameter: 0.25

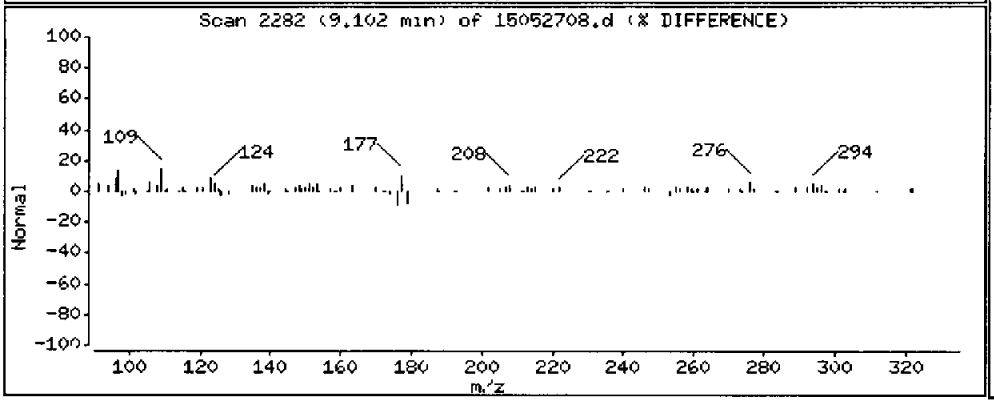
31 Anthracene

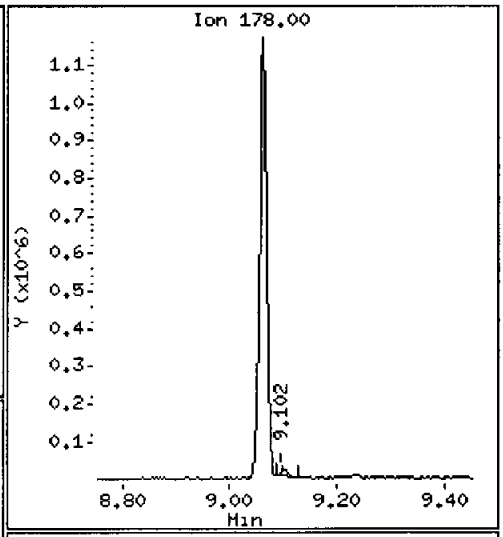
Concentration: 4.748 ug/kg

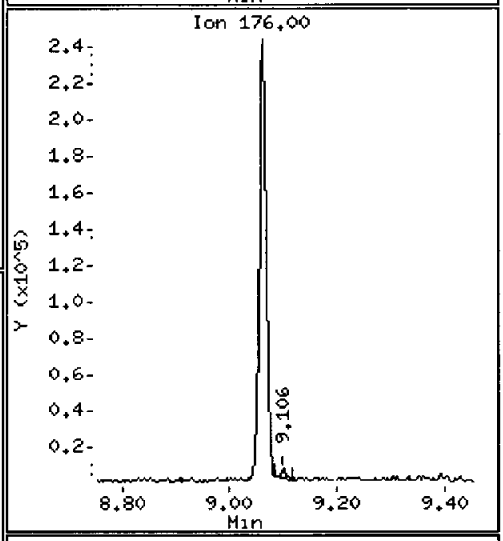


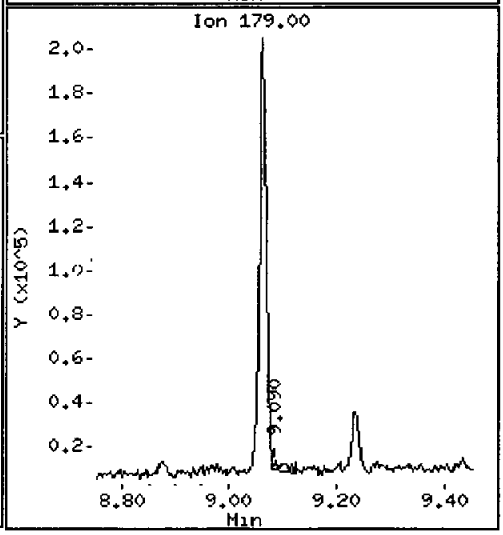












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

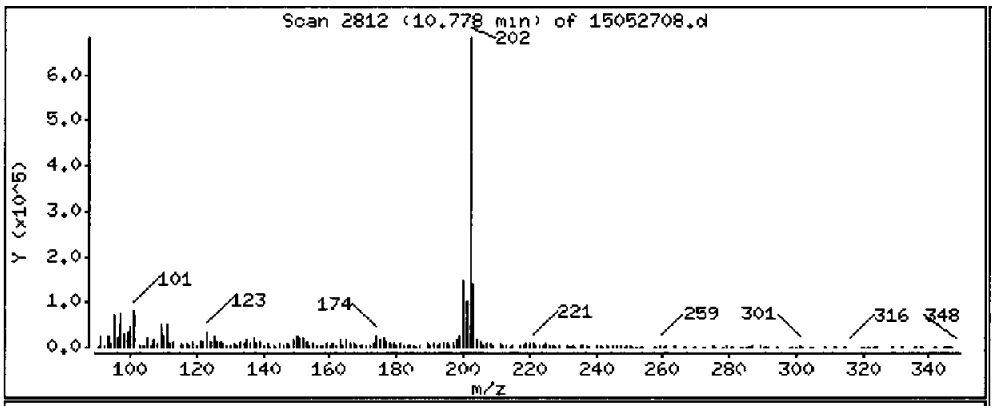
Operator: JZ

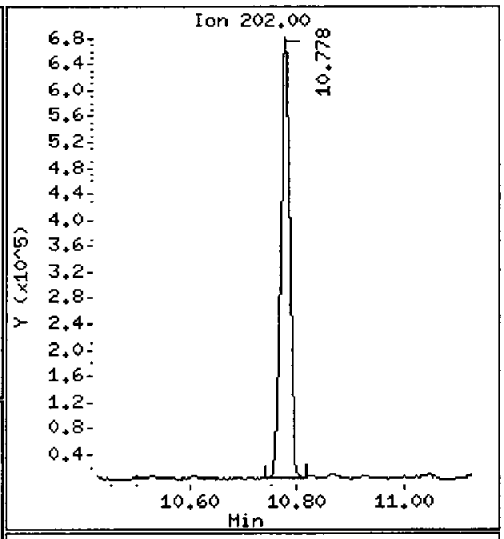
Column phase: ZB-35

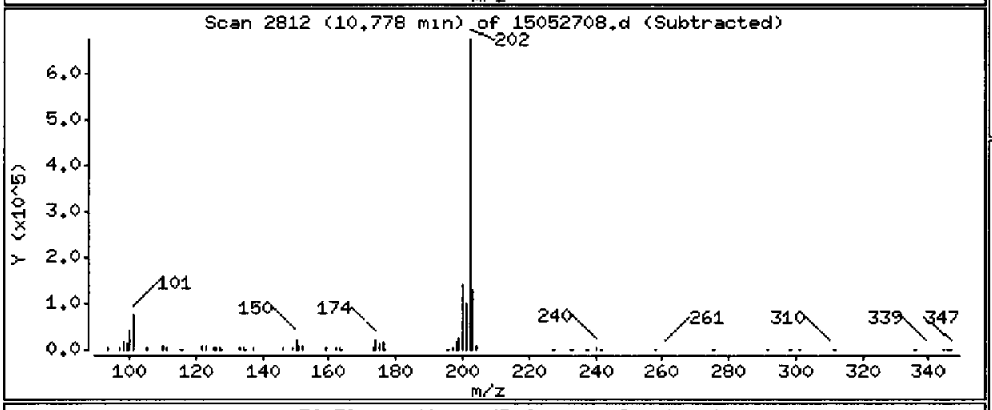
Column diameter: 0.25

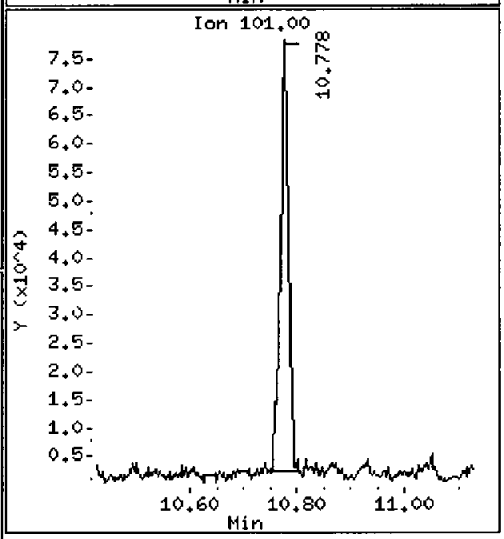
36 Fluoranthene

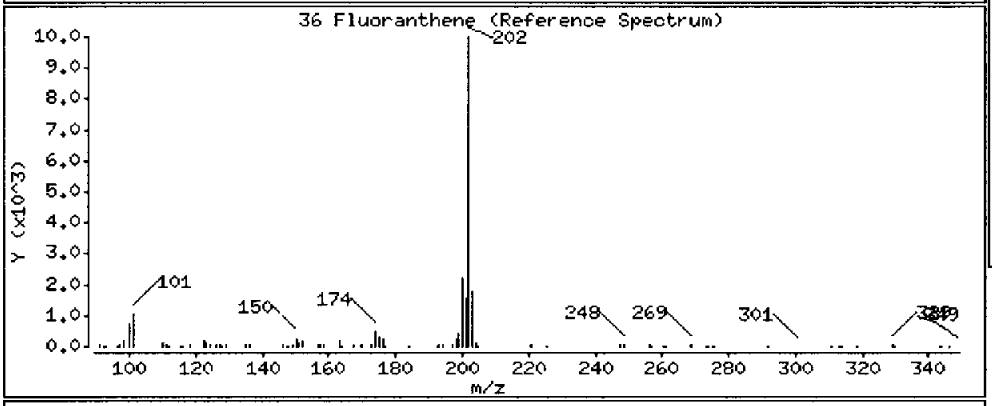
Concentration: 170.6 ug/kg

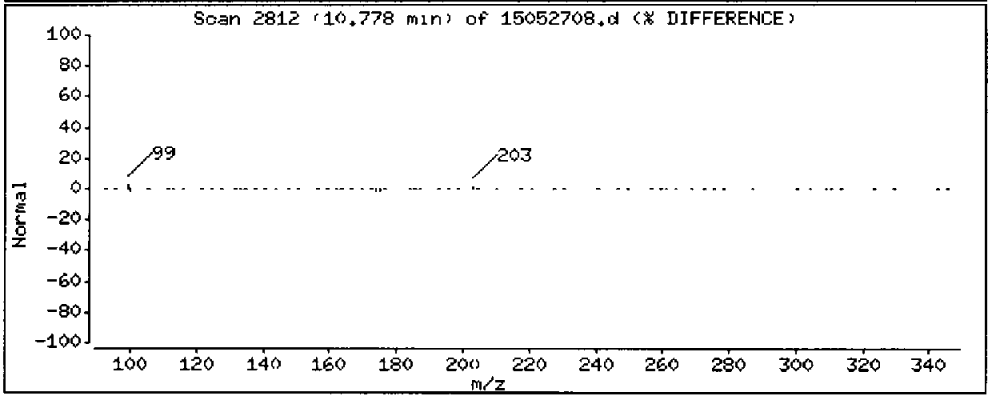












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

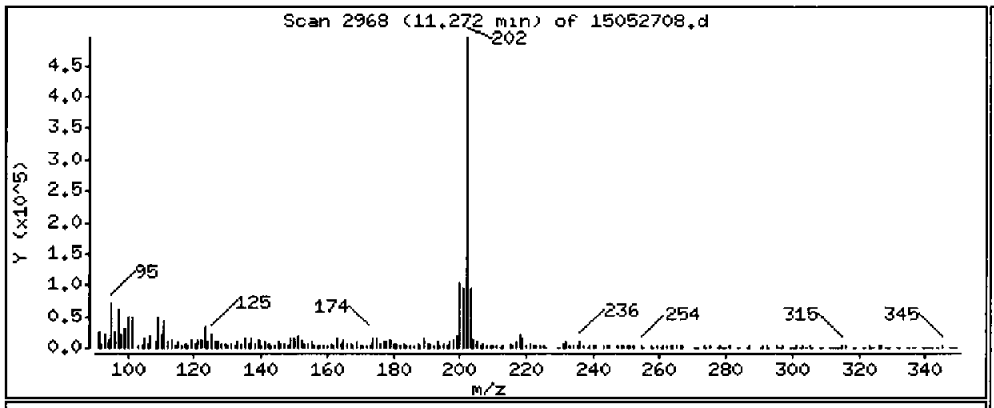
Operator: JZ

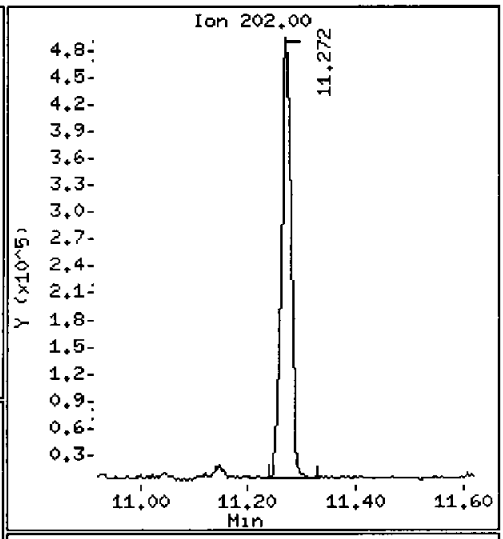
Column phase: ZB-35

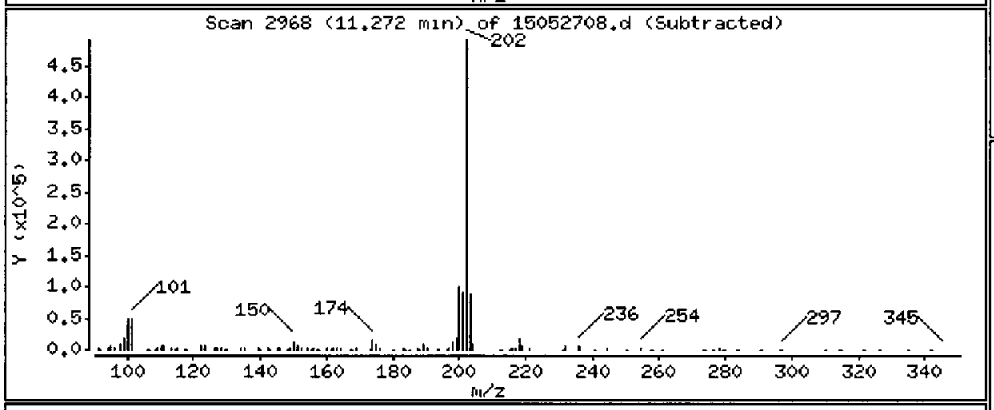
Column diameter: 0.25

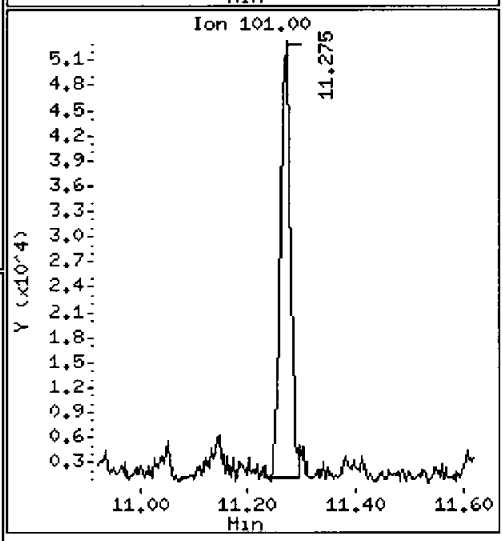
39 Pyrene

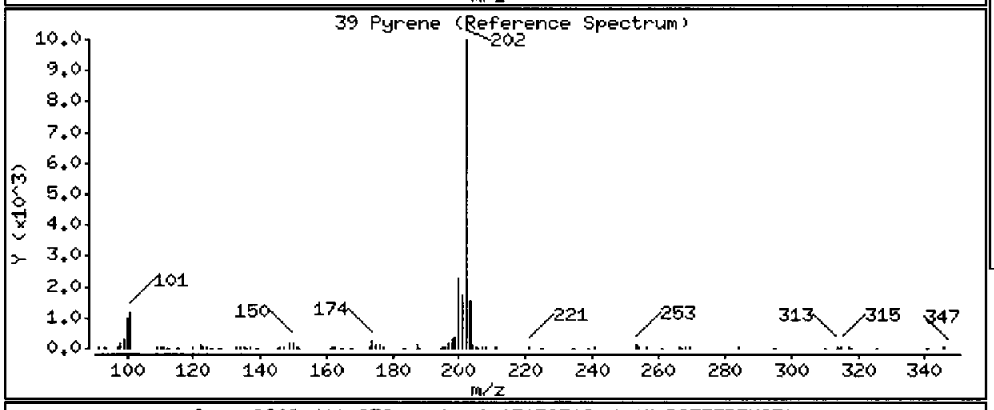
Concentration: 113.7 ug/kg

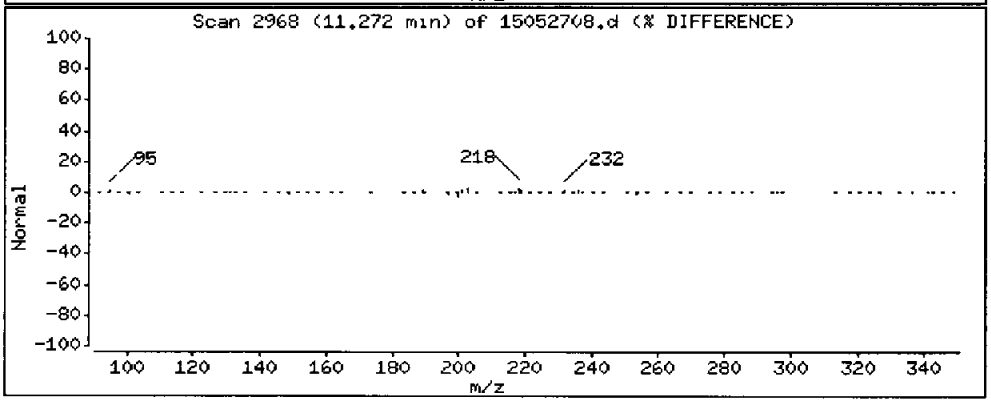












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

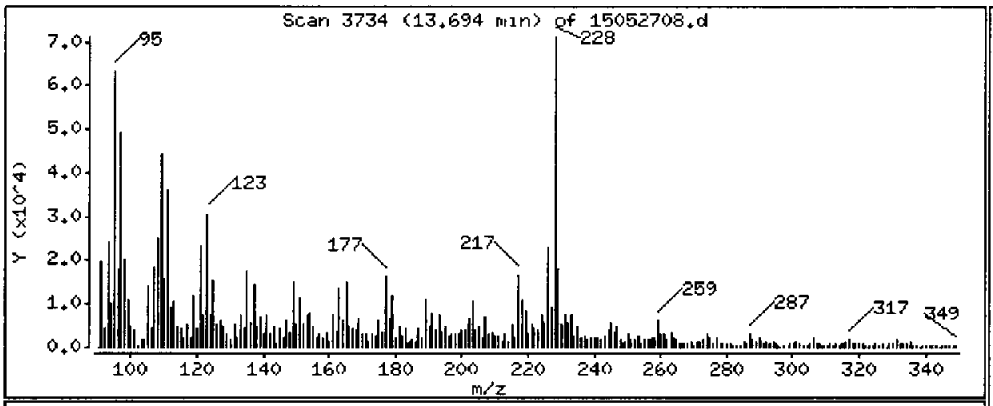
Operator: JZ

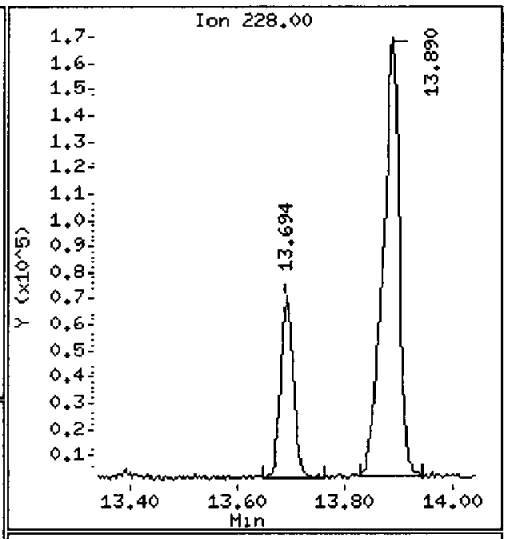
Column phase: ZB-35

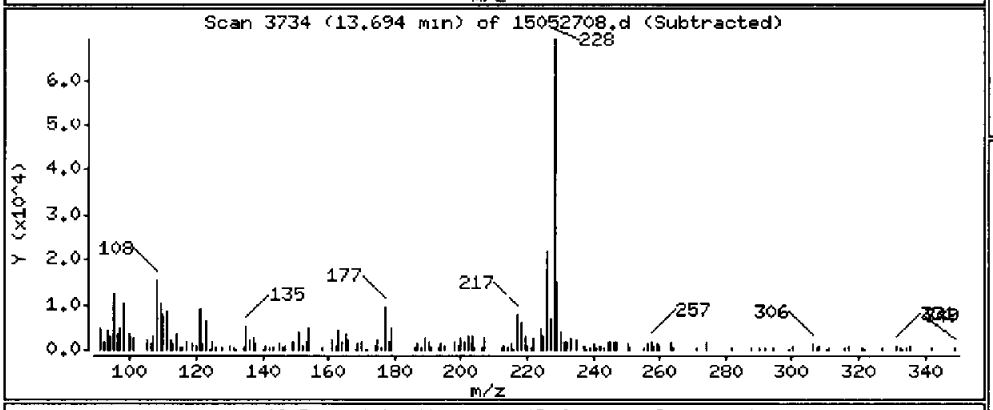
Column diameter: 0.25

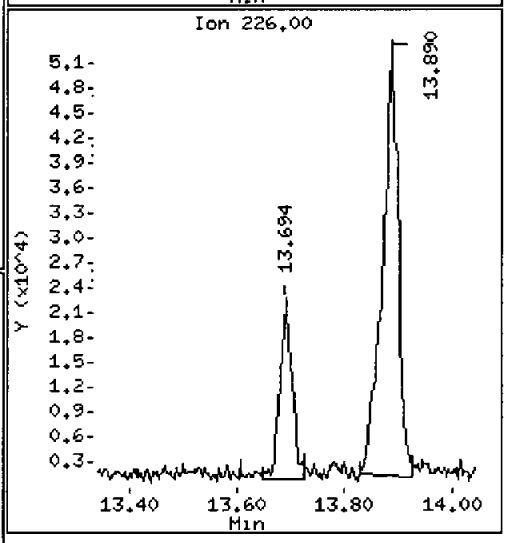
46 Benzo(a)anthracene

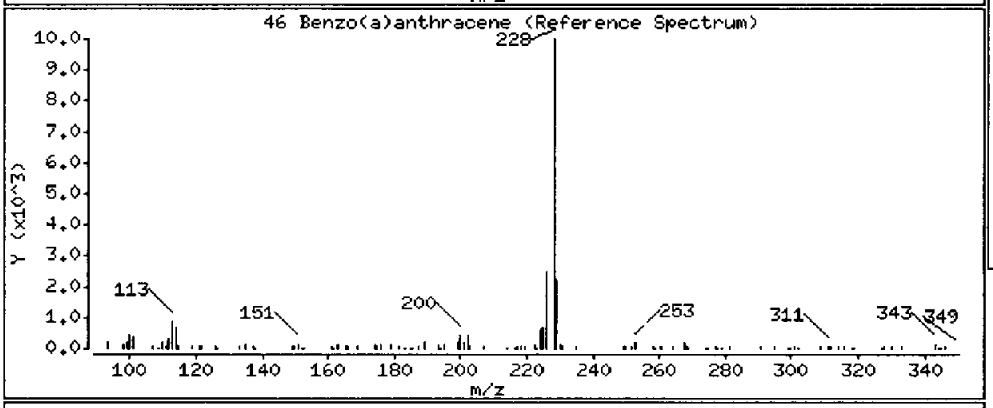
Concentration: 24.58 ug/kg

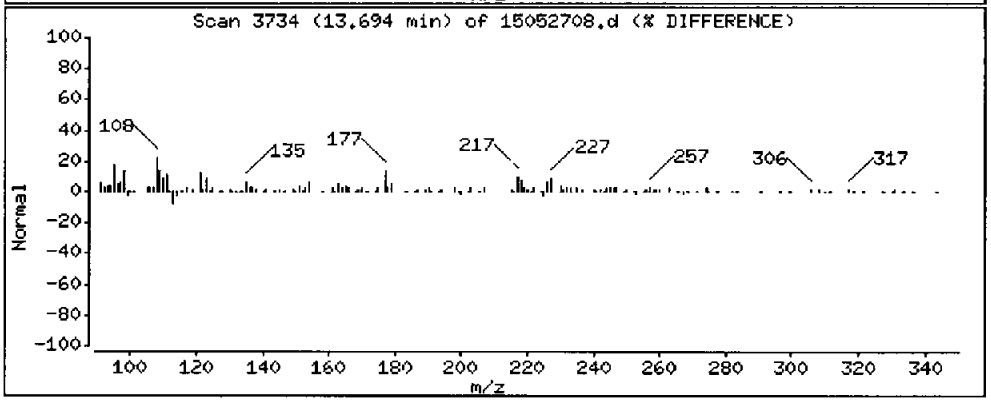












Data File: /chem3/nt8.i/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.i

Sample Info: AGA8D

Volume Injected (uL): 1.0

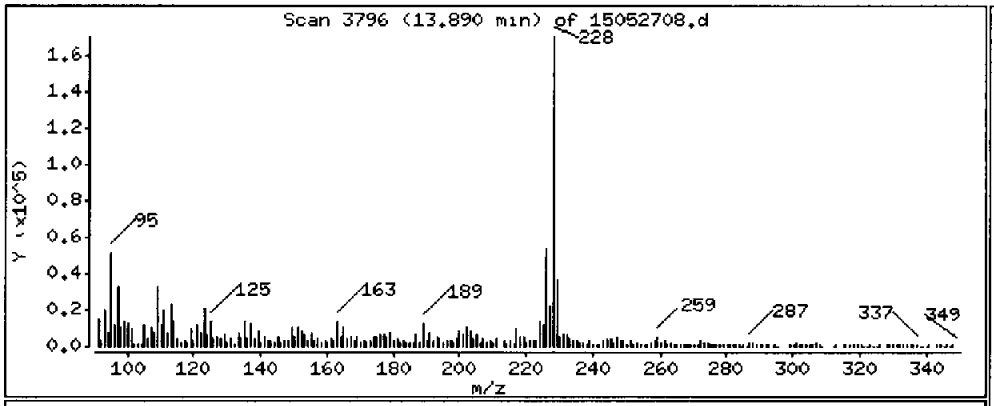
Operator: JZ

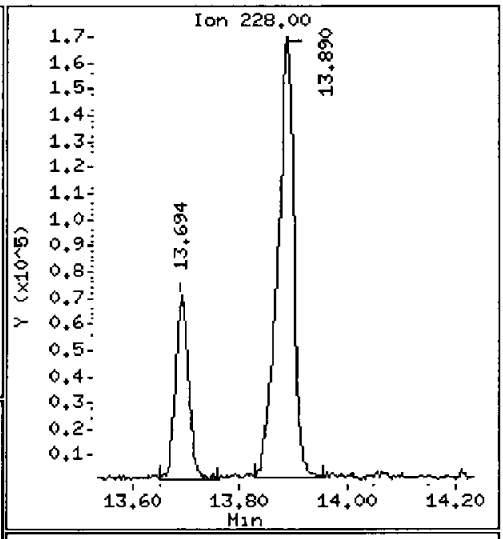
Column phase: ZB-35

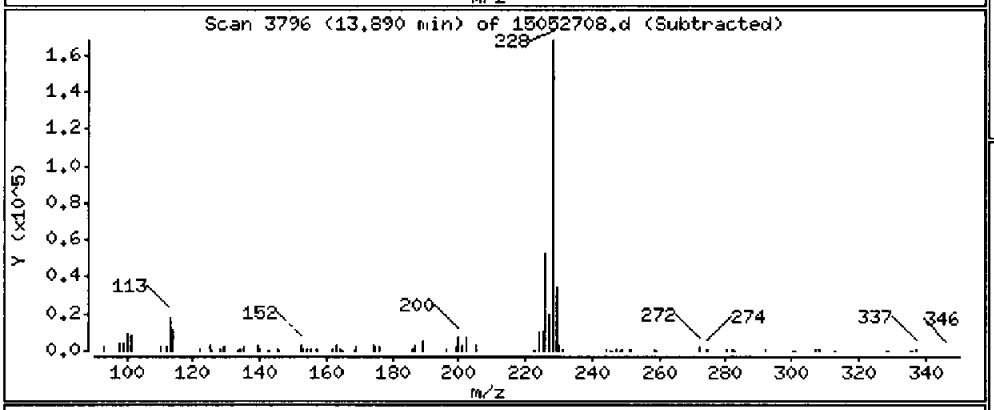
Column diameter: 0.25

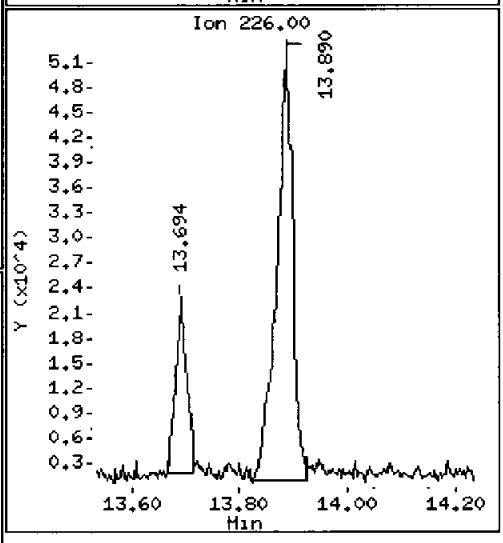
48 Chrysene

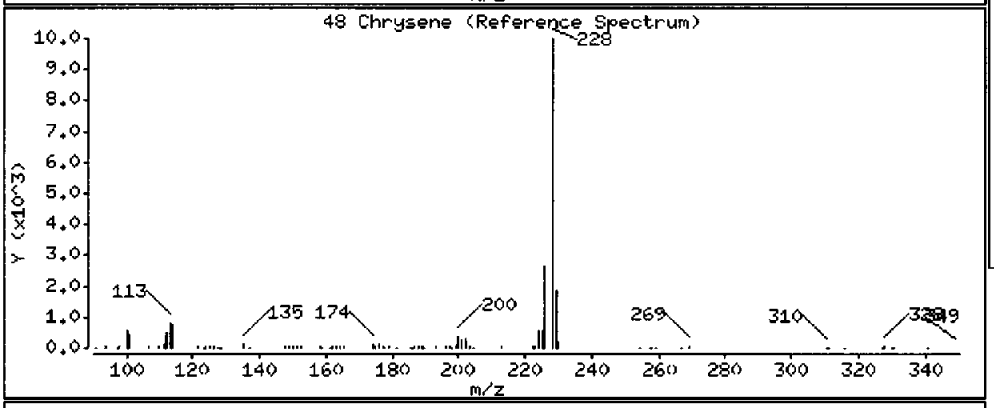
Concentration: 72.20 ug/kg

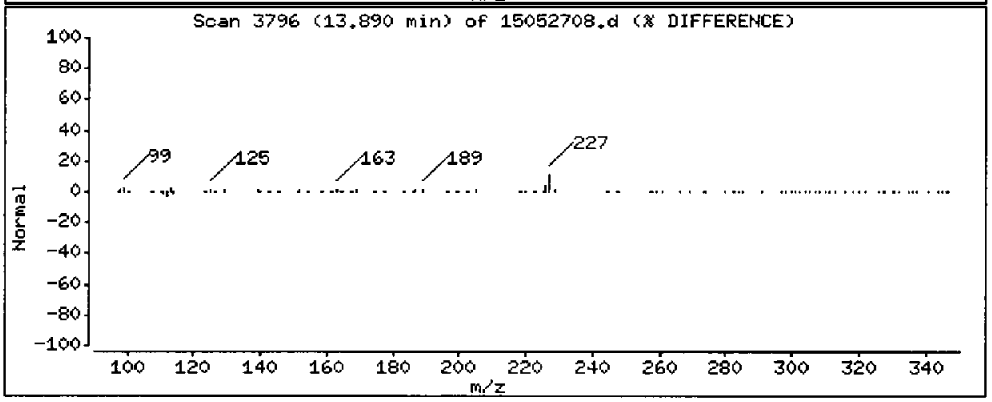












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

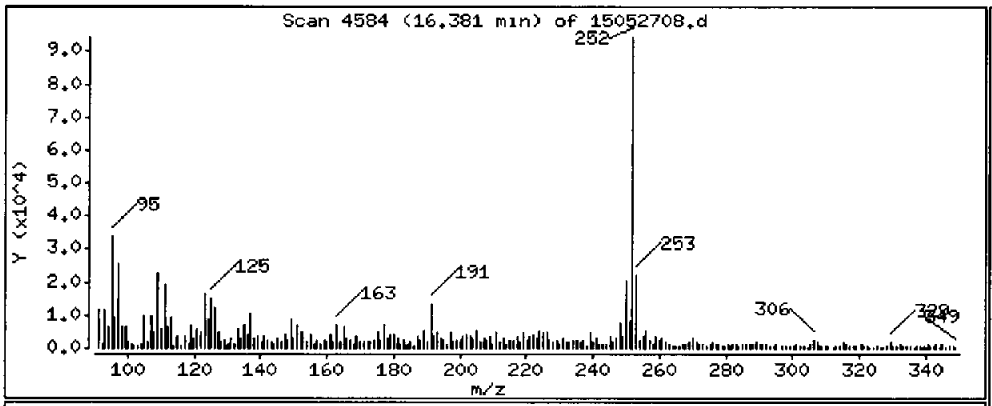
Operator: JZ

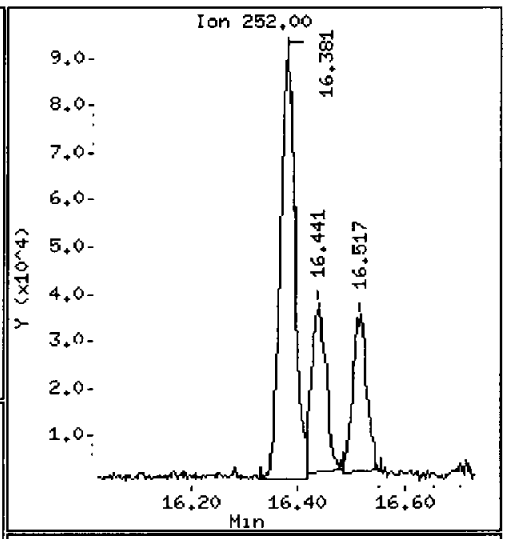
Column phase: ZB-35

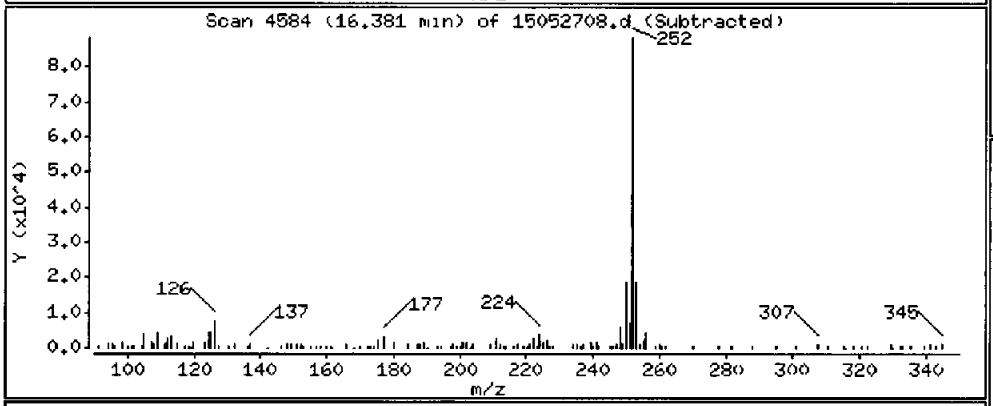
Column diameter: 0.25

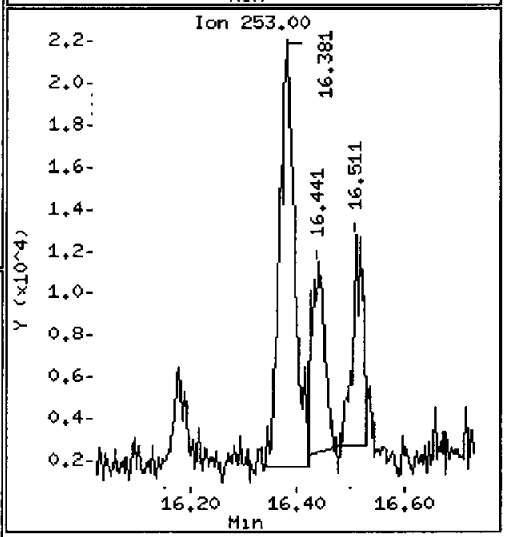
51 Benzo(b)fluoranthene

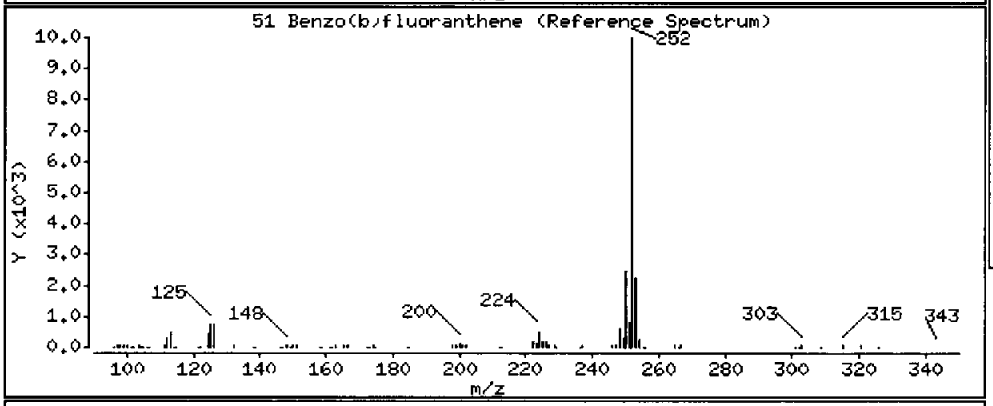
Concentration: 33.43 ug/kg

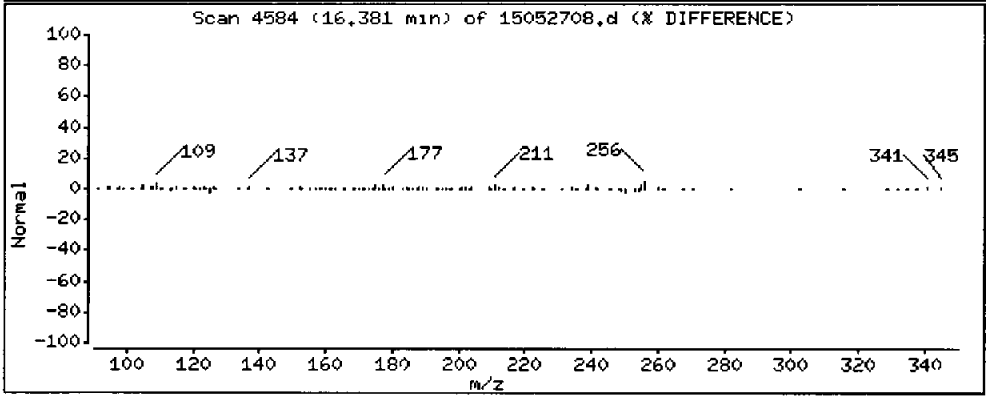












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

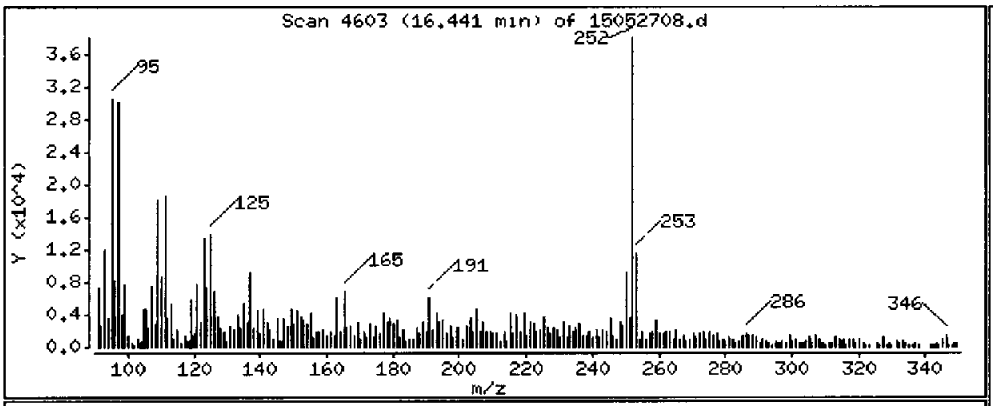
Operator: JZ

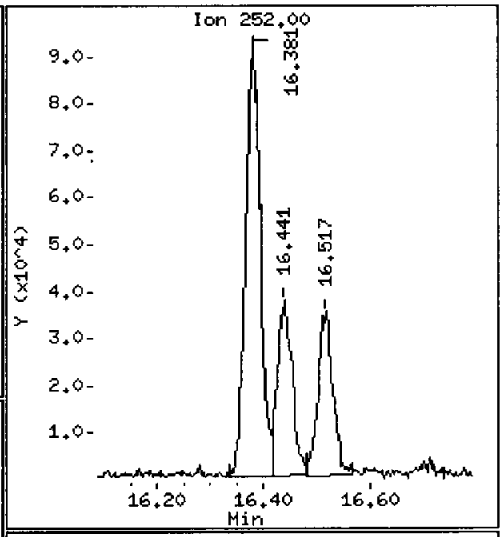
Column phase: ZB-35

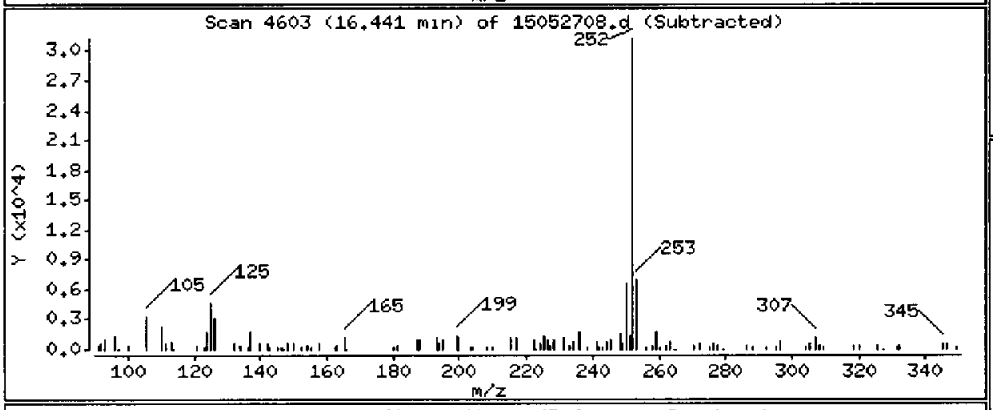
Column diameter: 0.25

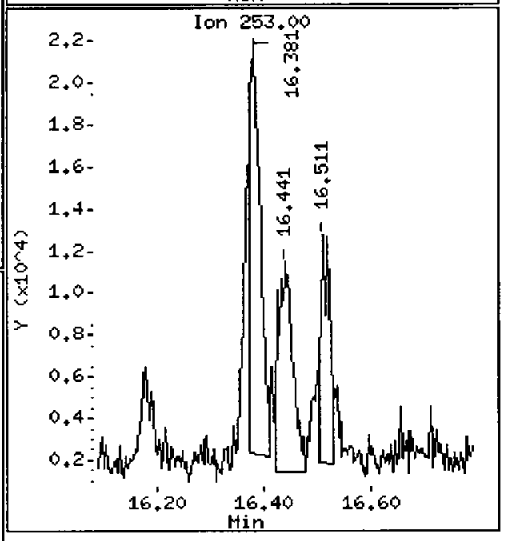
52 Benzo(k)fluoranthene

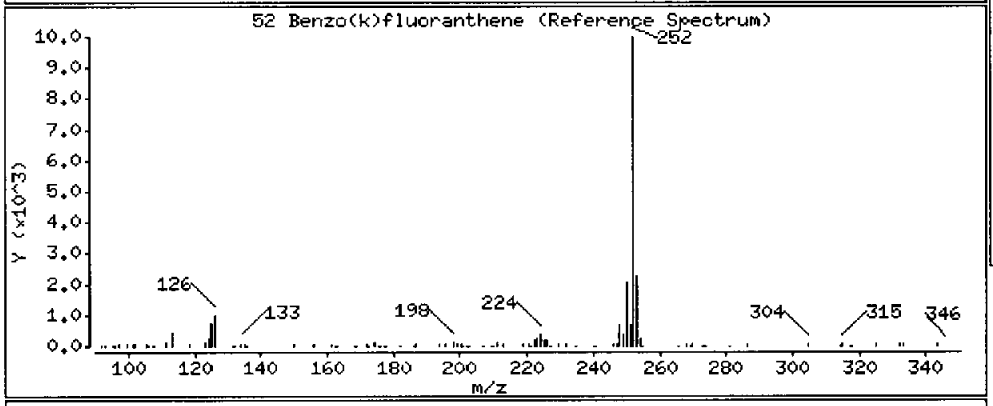
Concentration: 13.83 ug/kg

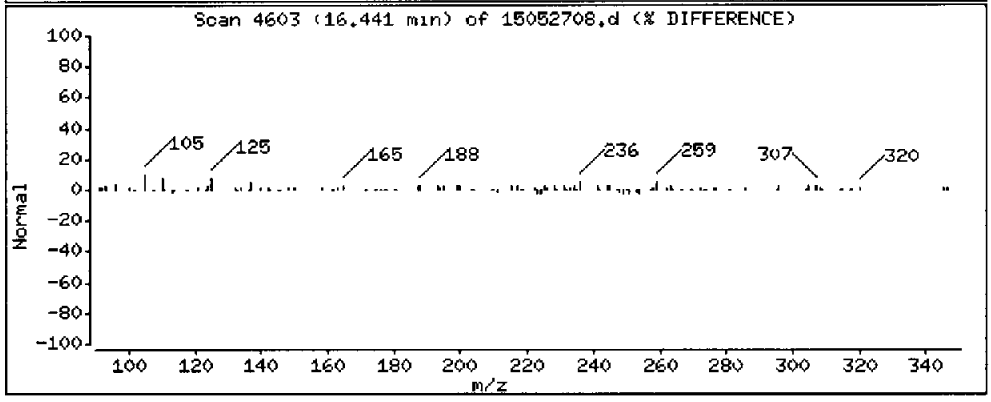












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

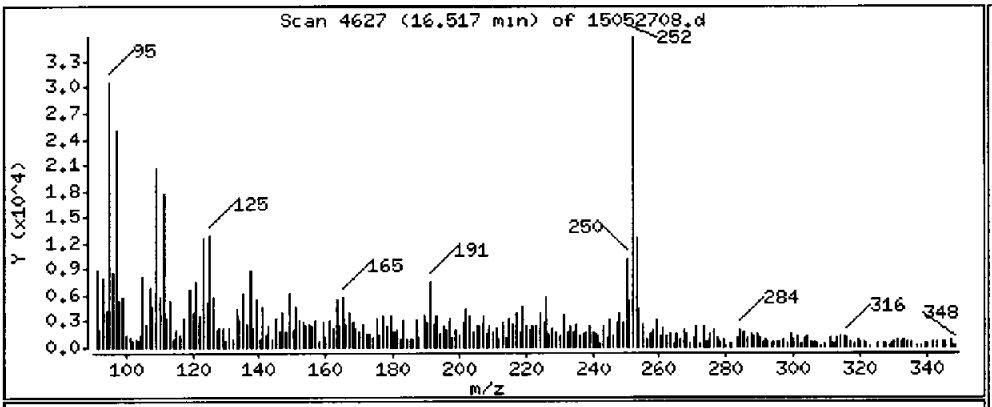
Operator: JZ

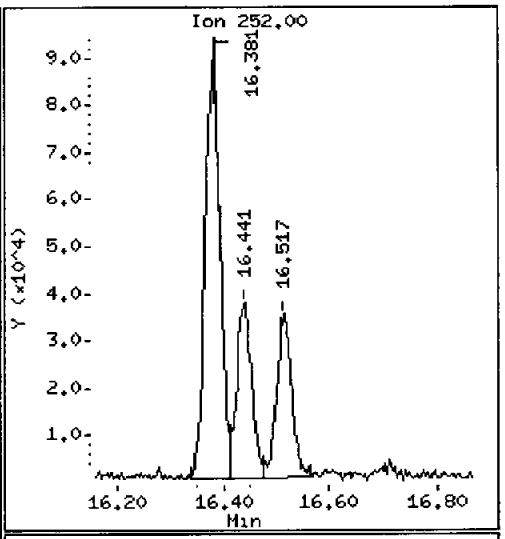
Column phase: ZB-35

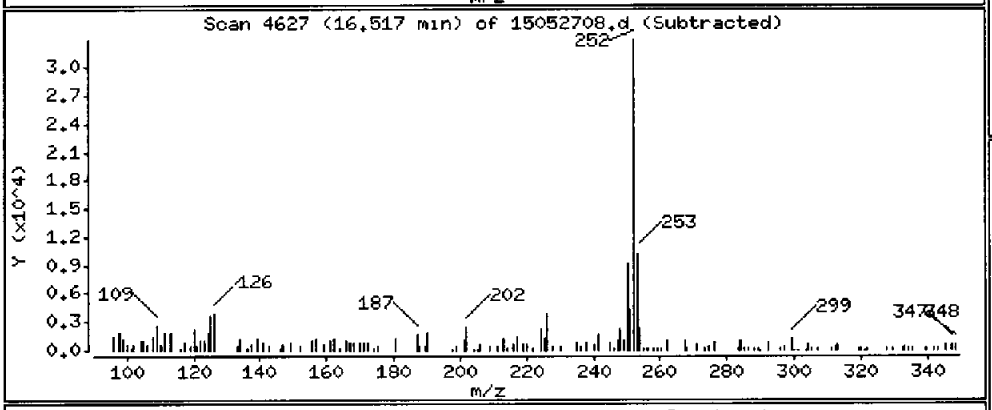
Column diameter: 0.25

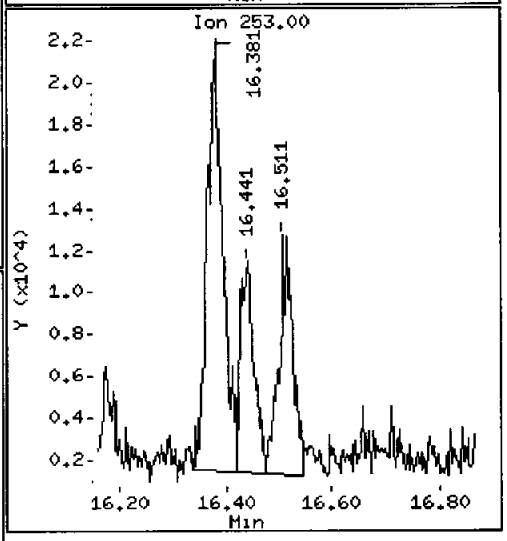
251 Benzo(j)fluoranthene

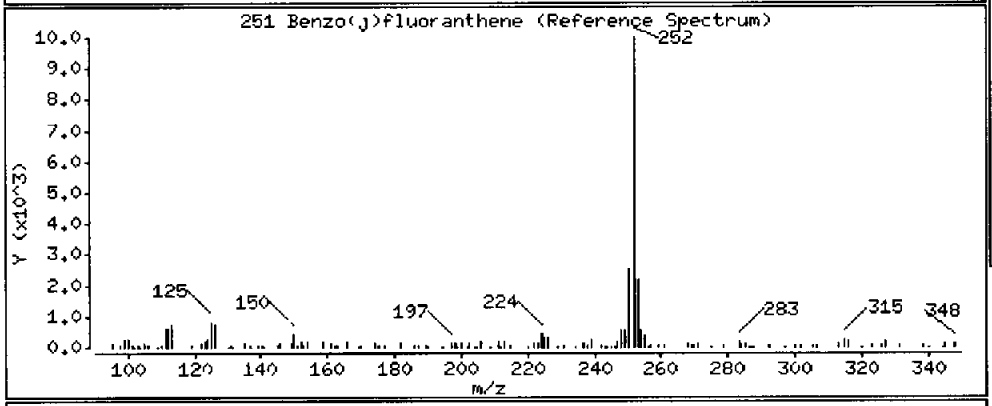
Concentration: 13.30 ug/kg

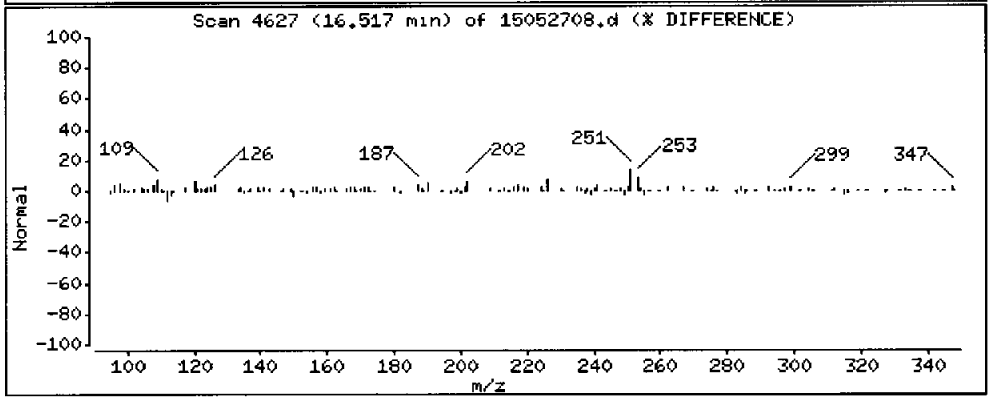












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

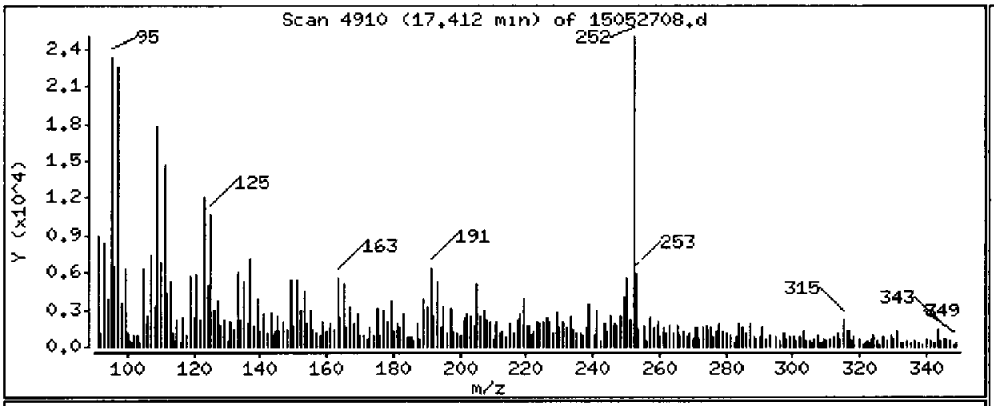
Operator: JZ

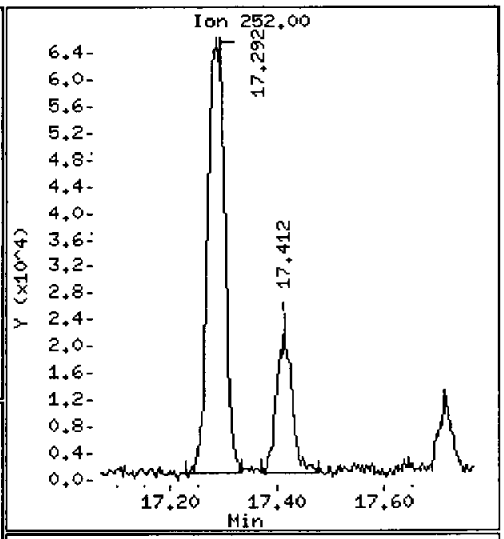
Column phase: ZB-35

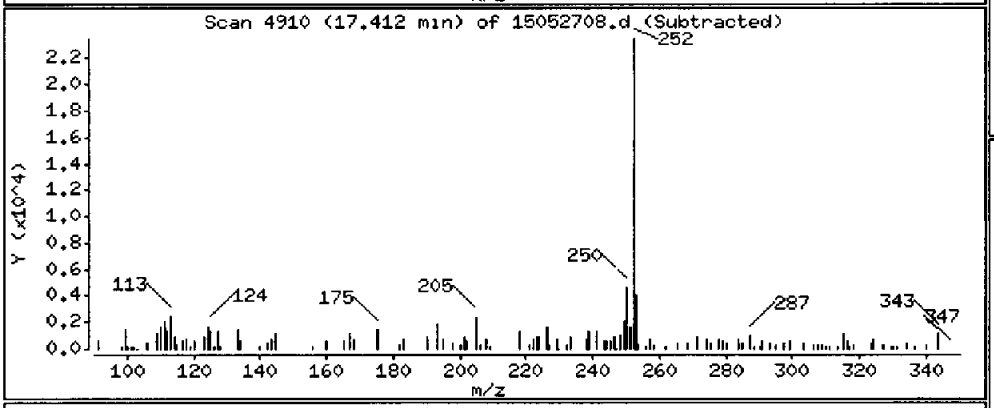
Column diameter: 0.25

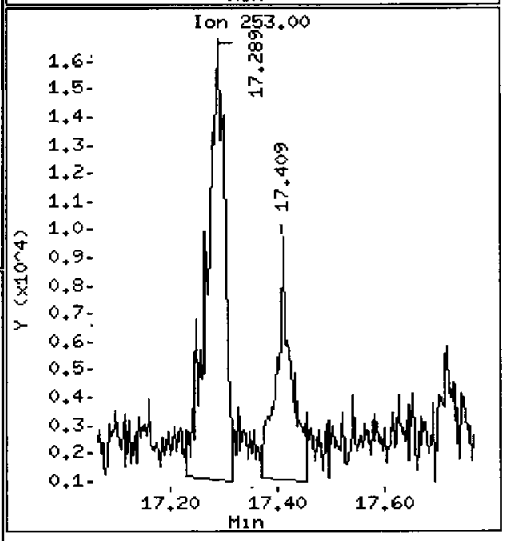
54 Benzo(a)pyrene

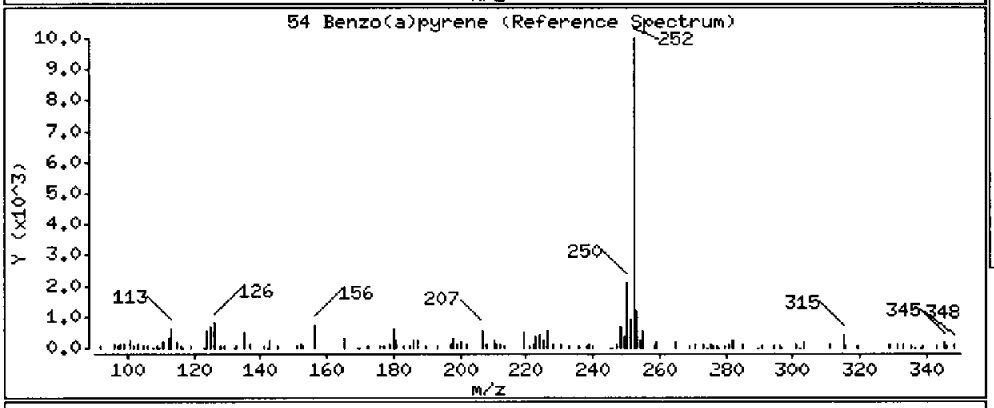
Concentration: 9.479 ug/kg

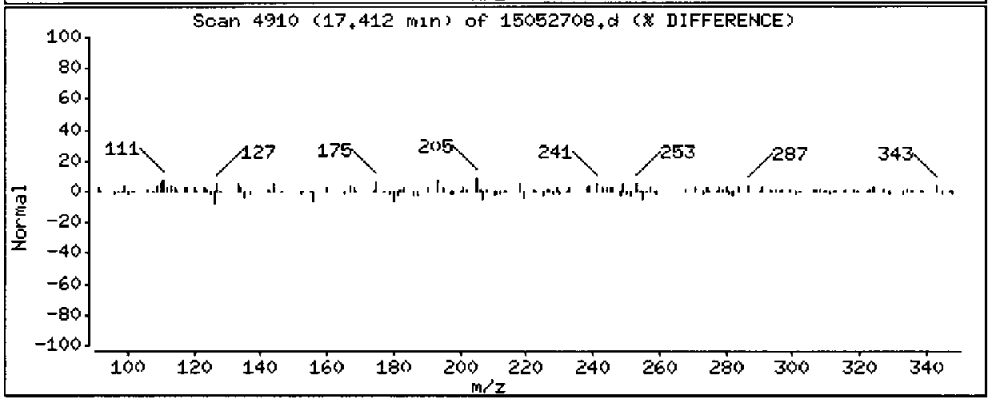












Data File: /chem3/nt8.i/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.i

Sample Info: AGA8D

Volume Injected (uL): 1.0

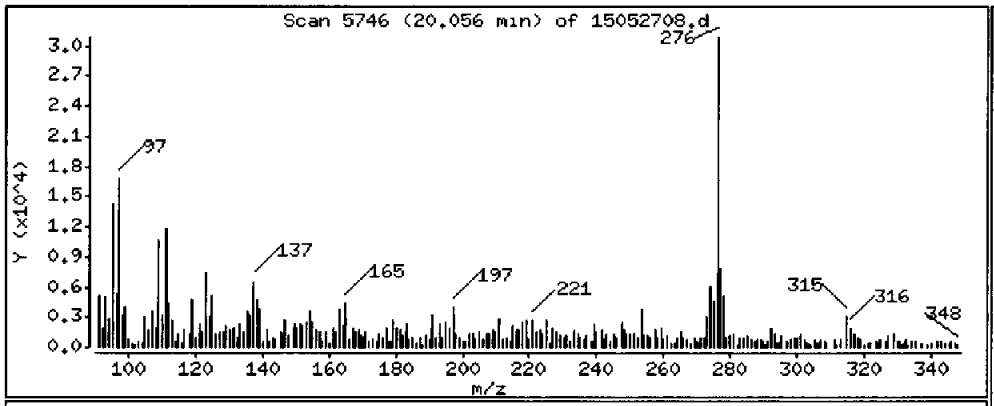
Operator: JZ

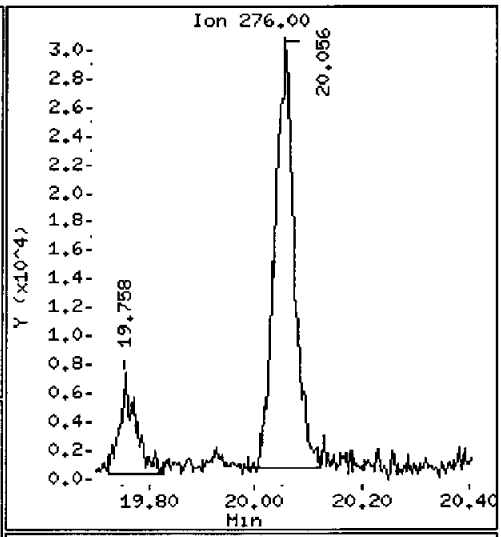
Column phase: ZB-35

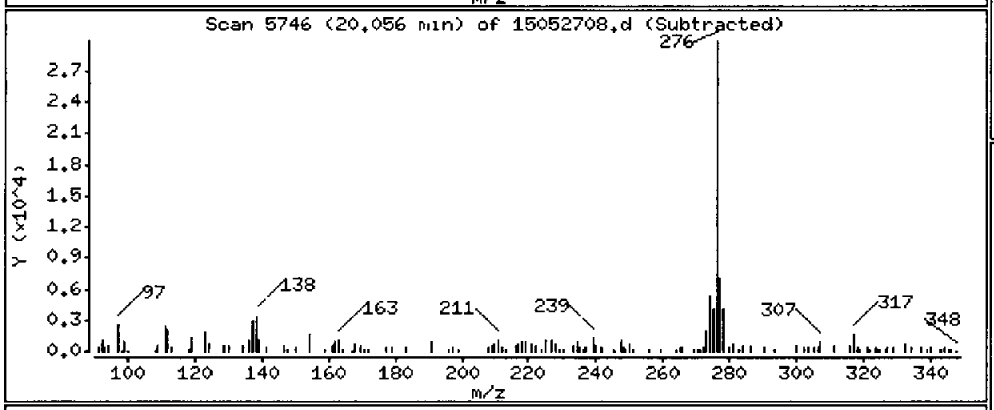
Column diameter: 0.25

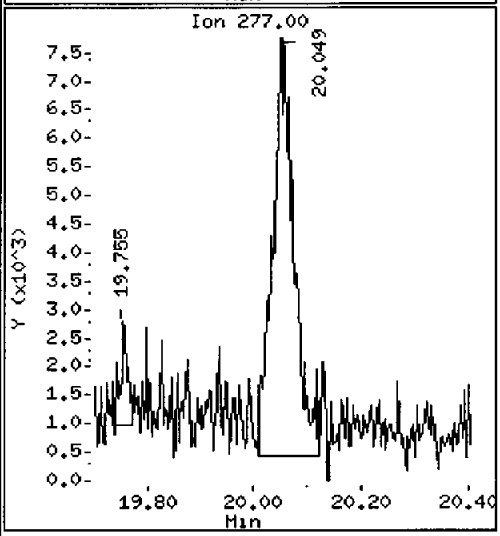
63 Indeno(1,2,3-cd)pyrene

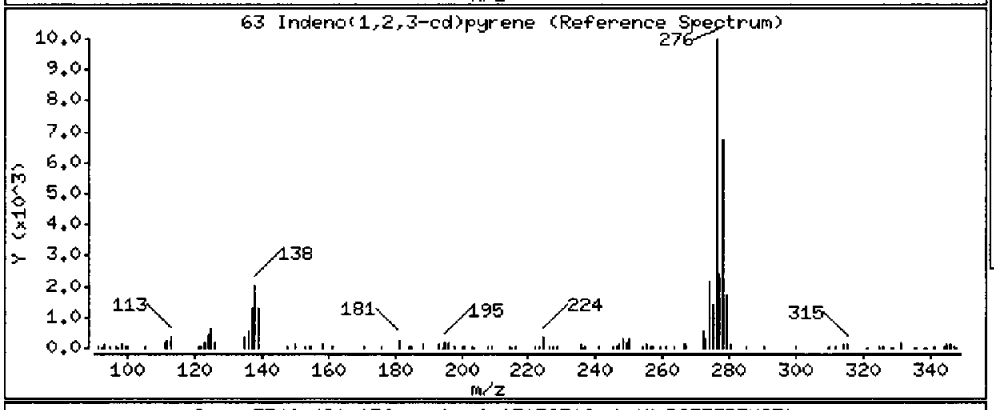
Concentration: 13.31 ug/kg

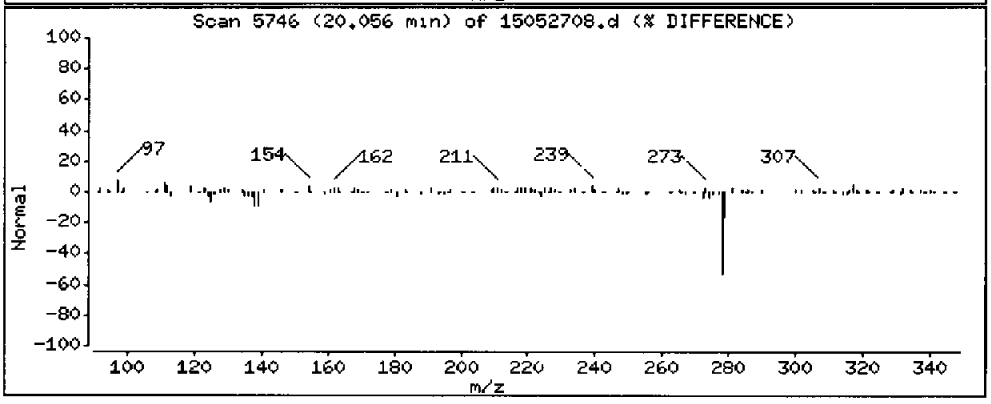












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

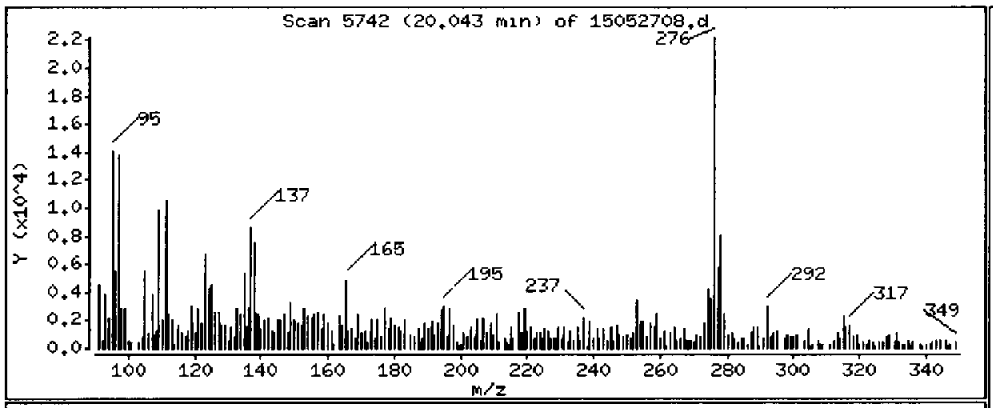
Operator: JZ

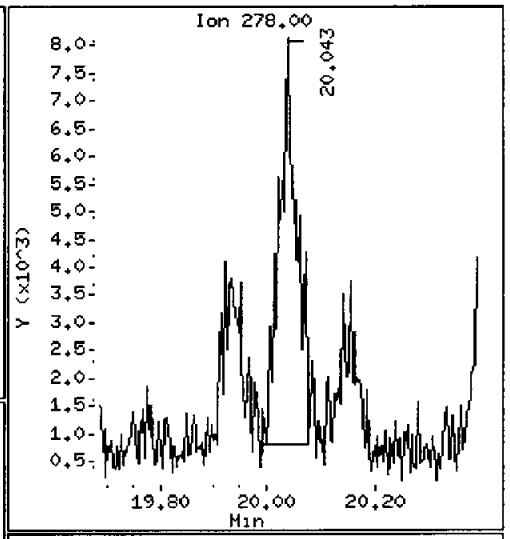
Column phase: ZB-35

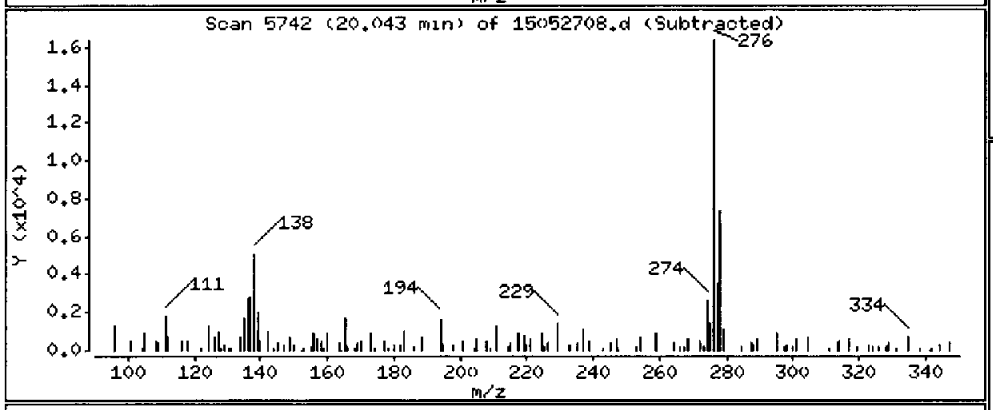
Column diameter: 0.25

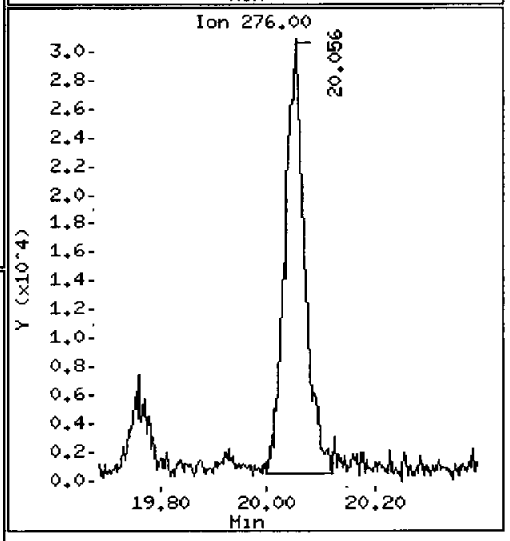
62 Dibenzo(a,h)anthracene

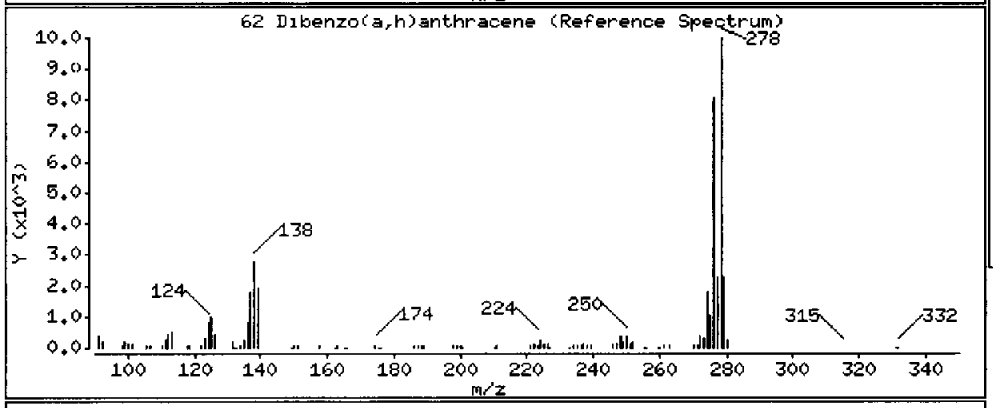
Concentration: 3.595 ug/kg

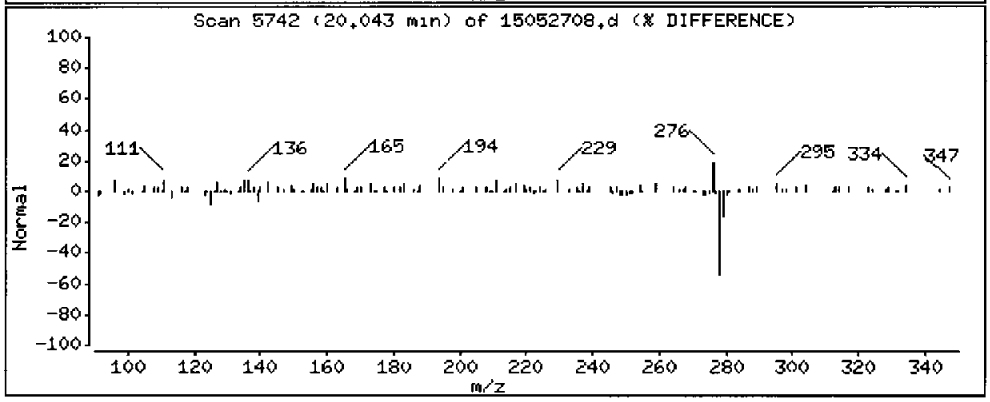












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

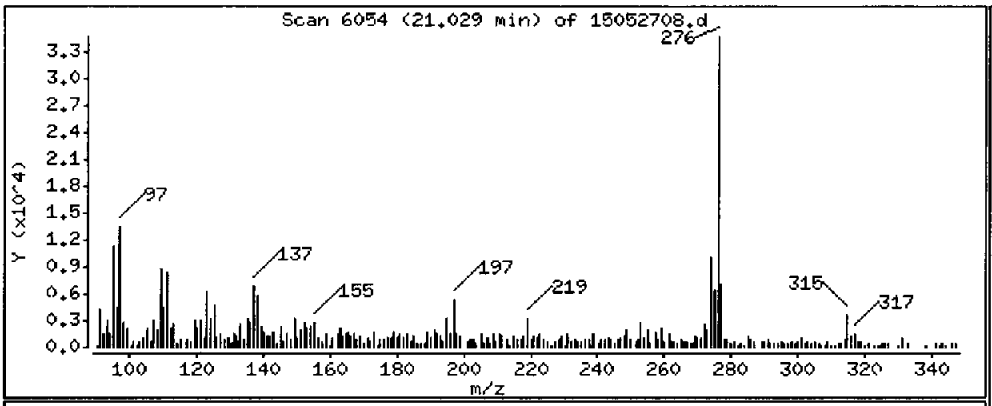
Operator: JZ

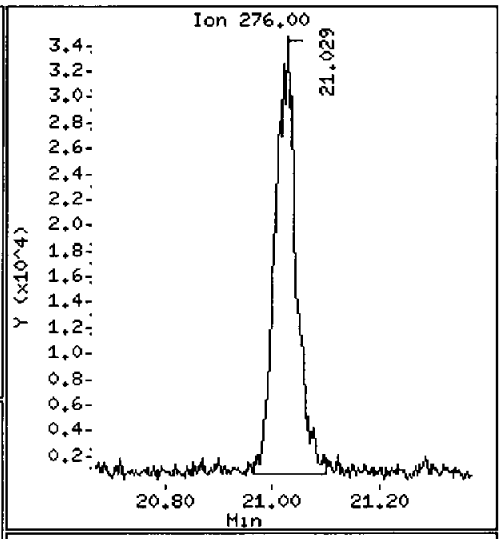
Column phase: ZB-35

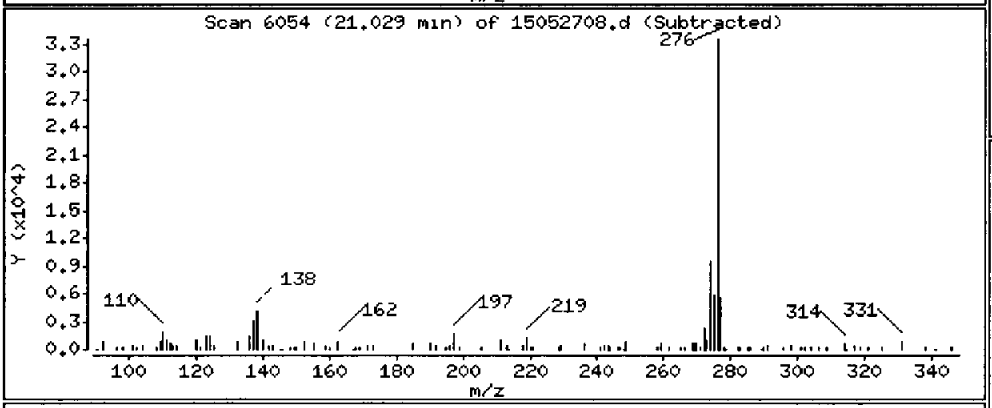
Column diameter: 0.25

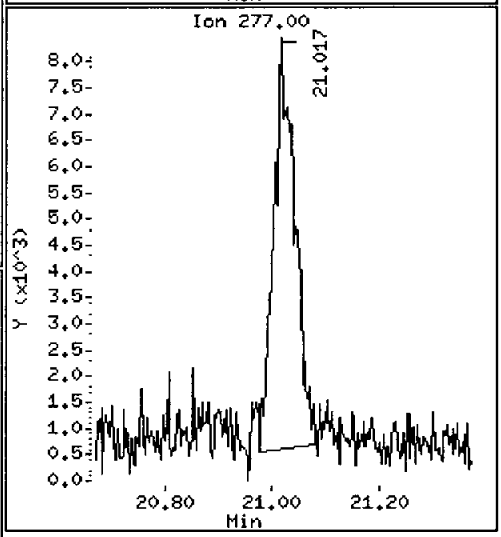
61 Benzo(g,h,i)perylene

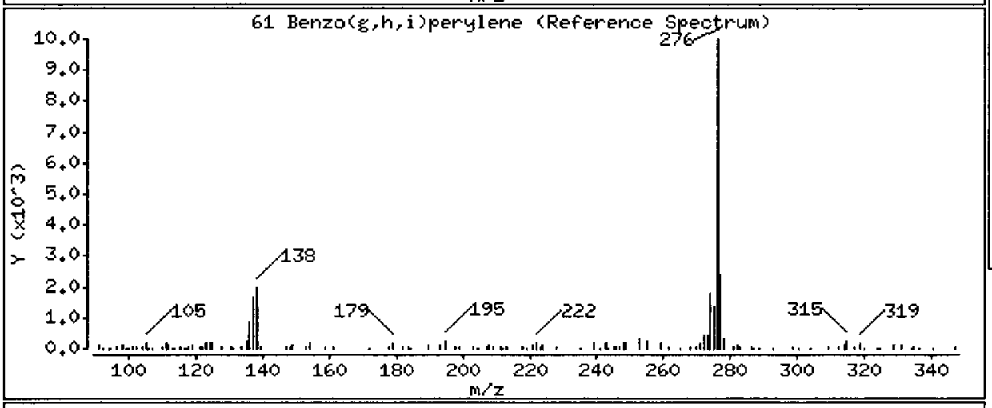
Concentration: 18.45 ug/kg

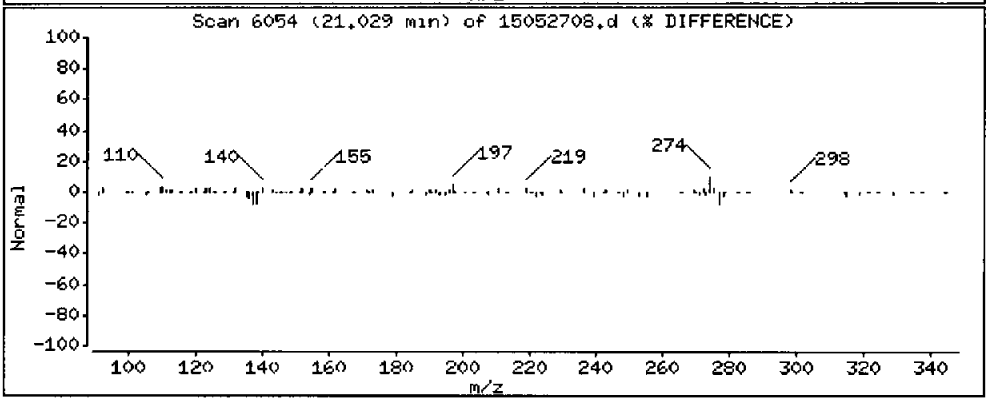












Data File: /chem3/nt8.1/20150527.b/15052708.d

Date : 27-MAY-2015 18:33

Client ID: SDP-09(2.5-4.0)

Instrument: nt8.1

Sample Info: AGA8D

Volume Injected (uL): 1.0

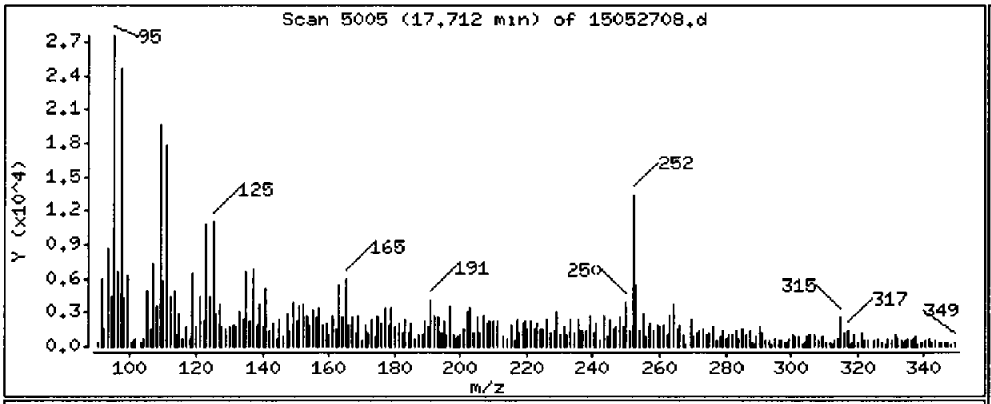
Operator: JZ

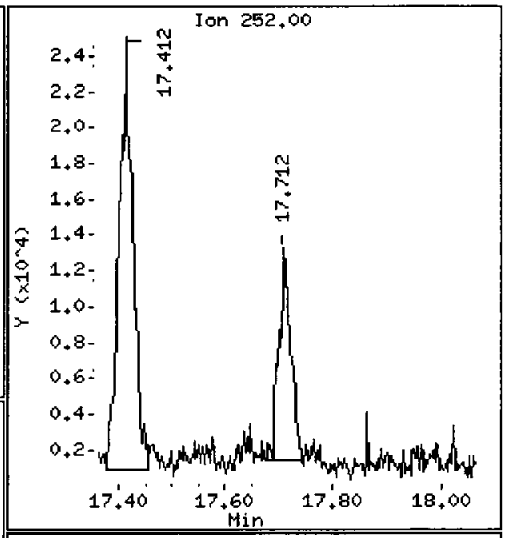
Column phase: ZB-35

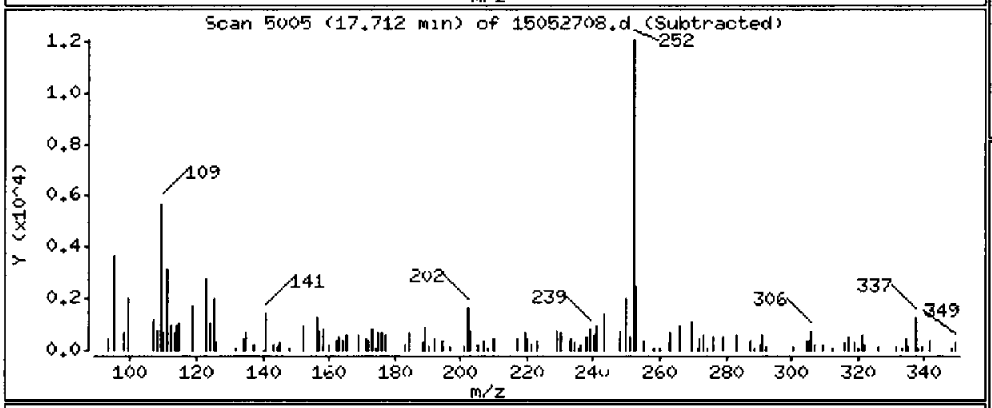
Column diameter: 0.25

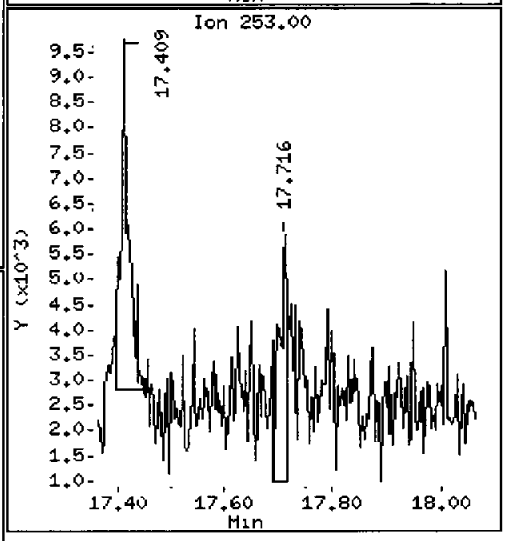
57 Perylene

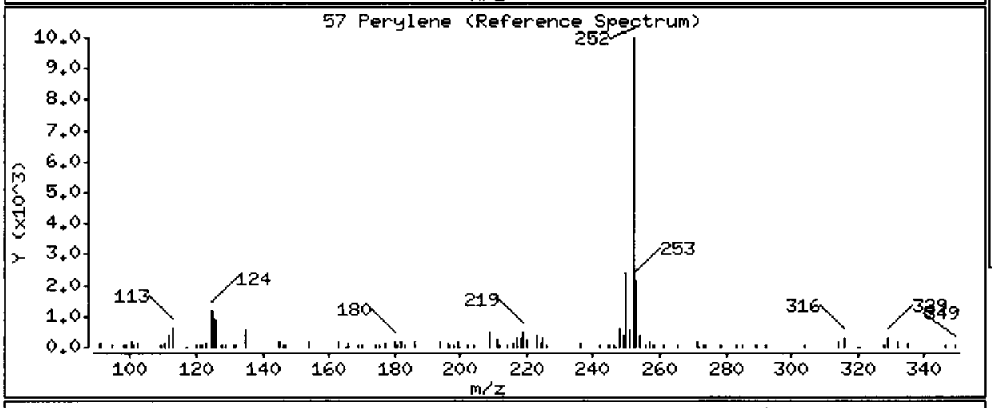
Concentration: 3.717 ug/kg

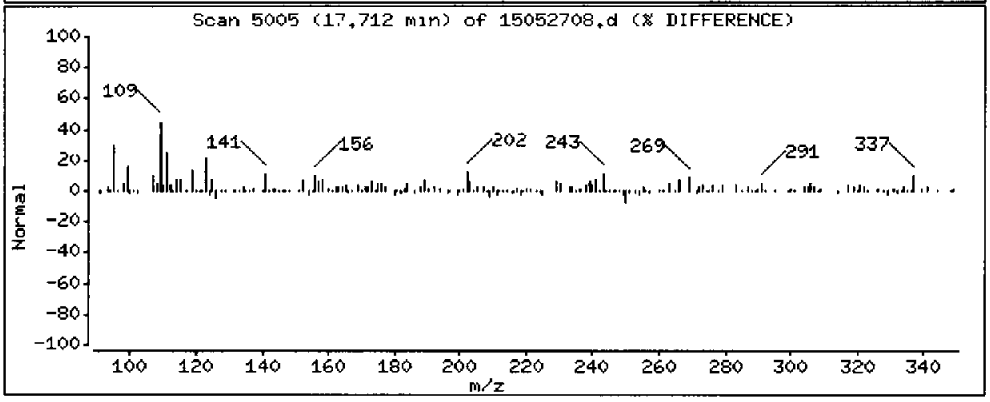












CO-ELUTION SUMMARY FOR FILE - 15052708.d

Lab ID: AGA8D, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052709.d
Lab Smp Id: AGA8E Client Smp ID: SDP-08(12.0-13.5)
Inj Date : 27-MAY-2015 18:59
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8E
Misc Info : 15-9293
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	13.06000	Weight of sample extracted (g)
M	19.60000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.742	4.745	(1.000)	403717	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.472	5.469	(1 154)	179384	1.45506	69.29
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	253414	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.026	9.027	(1.000)	434695	2.00000	
	30 Phenanthrene	178	9.061	9.061	(1.004)	10719	0.05172	2.463
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10.737	10.737	(1.190)	444579	2.07921	99.01
	39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.814	13.811	(1.000)	487049	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.640	17.640	(1.000)	493365	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.932	19.939	(1.130)	408237	2.17269	103.5
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052709.d
Lab Smp Id: AGA8E
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9293

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-08(12.0-13.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	403717	17.67
22 Acenaphthene-d10	230598	115299	461196	253414	9.89
28 Phenanthrene-d10	373928	186964	747856	434695	16.25
47 Chrysene-d12	381262	190631	762524	487049	27.75
56 Perylene-d12	380825	190412	761650	493365	29.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.02
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

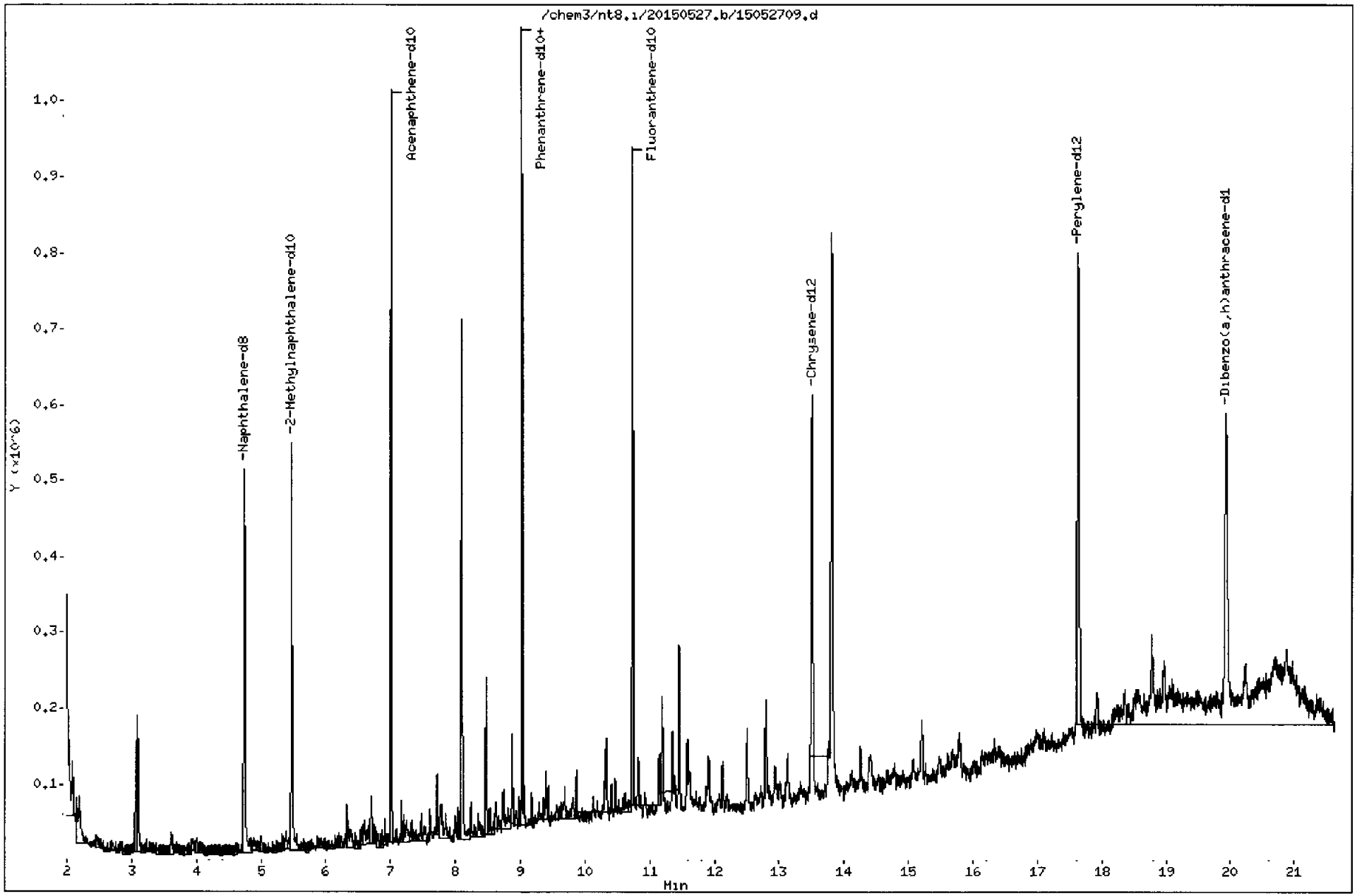
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8E
Client Smp ID: SDP-08(12.0-13.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9293

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	142.9	69.29	48.50	32-120
$ 253 Fluoranthene-d10	142.9	99.01	69.31	36-134
$ 60 Dibenzo(a,h)anthra	142.9	103.5	72.42	21-133

Data File: /chem3/nt8.1/20150527.b/15052709.d
Date : 27-MAY-2015 18:59
Client ID: SDP-08(12.0-13.5)
Sample Info: AGA8E
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052709.d

Date : 27-MAY-2015 18:59

Client ID: SDP-08(12.0-13.5)

Instrument: nt8.1

Sample Info: AGA8E

Volume Injected (uL): 1.0

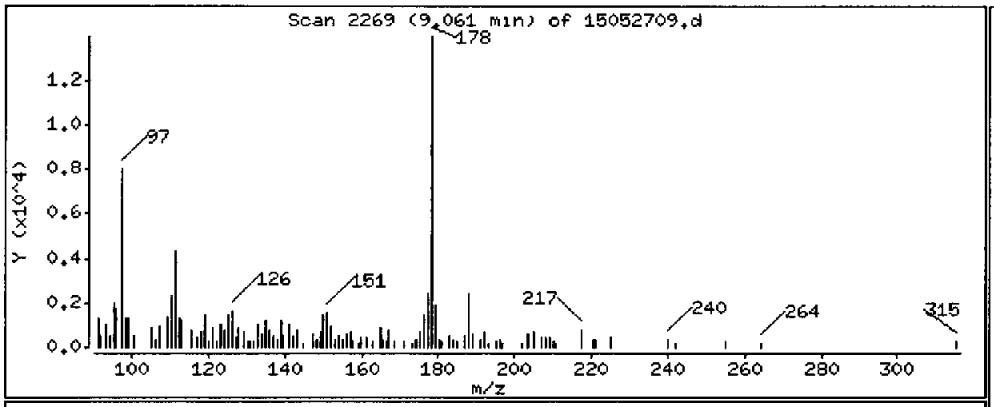
Operator: JZ

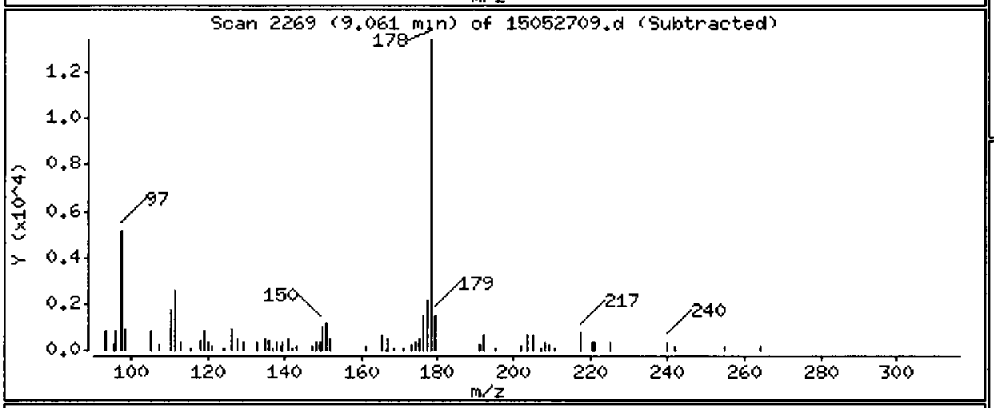
Column phase: ZB-35

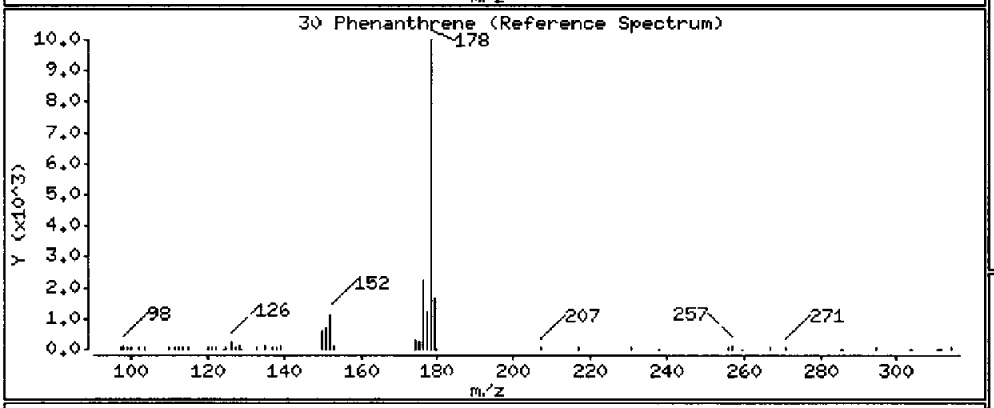
Column diameter: 0.25

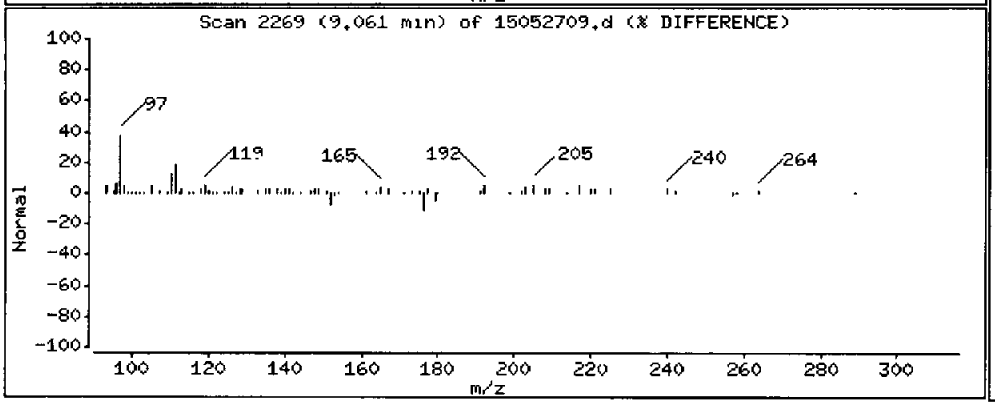
30 Phenanthrene

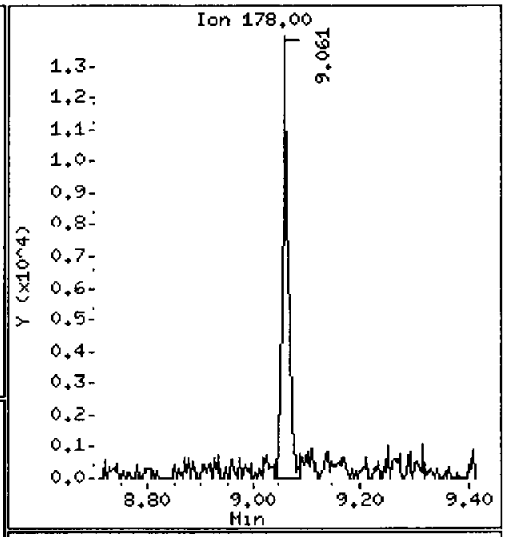
Concentration: 2,463 ug/kg

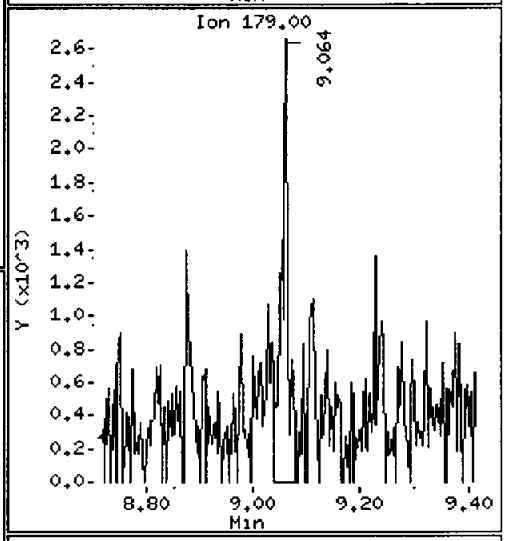


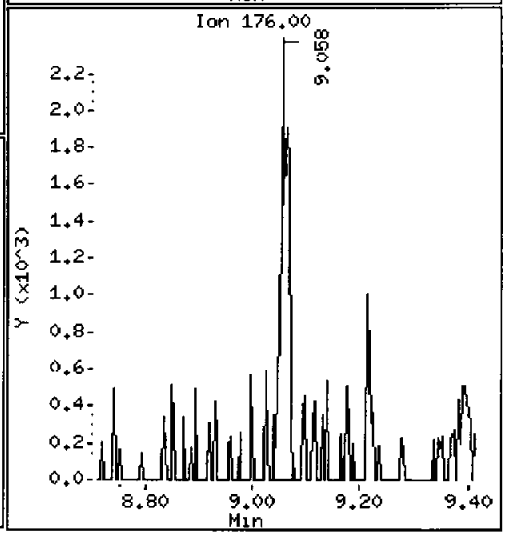












CO-ELUTION SUMMARY FOR FILE - 15052709.d

Lab ID: AGA8E, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052710.d
Lab Smp Id: AGA8F Client Smp ID: SDP-07(1.5-3.0)
Inj Date : 27-MAY-2015 19:24
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8F
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

AE 05/28/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.00000	Weight of sample extracted (g)
M	13.50000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.742	4.745	(1.000)	382842	2.00000	
	7 Naphthalene	128	4.770	4.774	(1.006)	82860	0.44929	21.64
$	12 2-Methylnaphthalene-d10	152	5.472	5.469	(1.154)	198962	1.70187	81.98
	14 2-Methylnaphthalene	141	5.517	5.520	(1.163)	70019	0.63672	30.67
	15 1-methylnaphthalene	141	5.713	5 713	(1.205)	34339	0.32133	15.48
	21 Acenaphthylene	152	6.902	6.899	(0.985)	13816	0.07731	3.724
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	244729	2 00000	
	23 Acenaphthene	153	7.060	7 057	(1.007)	12067	0 10147	4.888(H)
	11 Dibenzofuran	168	7.212	7 208	(1.029)	92848	0.56453	27.19
	25 Fluorene	166	7.680	7 680	(1 096)	13328	0.10034	4.833
*	28 Phenanthrene-d10	188	9.030	9.027	(1.000)	437670	2.00000	
	30 Phenanthrene	178	9.068	9.061	(1.004)	878866	4.21179	202.9
	31 Anthracene	178	9.106	9.102	(1.008)	175414	0.93374	44.98
	36 Fluoranthene	202	10.788	10.775	(1.195)	3090037	12.6611	609.9 E
$	253 Fluoranthene-d10	212	10.747	10.737	(1.190)	526961	2.44774	117.9

AGA 00088

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.284	11.268	(0.816)	2968299	9.96913	480.2
	46 Benzo(a)anthracene	228	13.703	13.691	(0.991)	1580255	5.89826	284.1
*	47 Chrysene-d12	240	13.826	13.811	(1.000)	534120	2.00000	
	48 Chrysene	228	13.902	13.883	(1.005)	2249763	8.37494	403.4
	51 Benzo(b)fluoranthene	252	16.400	16.375	(0.929)	1715097	5.96275	287.2
	52 Benzo(k)fluoranthene	252	16.457	16.438	(0.932)	963383	3.35211	161.5
	251 Benzo(j)fluoranthene	252	16.533	16.511	(0.936)	864336	3.08212	148.5
	54 Benzo(a)pyrene	252	17.434	17.412	(0 987)	1335990	5.20931	250.9
*	56 Perylene-d12	264	17.656	17 640	(1 000)	547717	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.078	20.052	(1.137)	1145271	3.71796	179.1
$	60 Dibenzo(a,h)anthracene-d14	292	19.964	19.939	(1.131)	501441	2.40390	115.8
	62 Dibenzo(a,h)anthracene	278	20.059	20.037	(1.136)	313808	1.25078	60.25
	61 Benzo(g,h,i)perylene	276	21.061	21.020	(1.193)	1135710	4.19146	201.9
	57 Perylene	252	17.728	17.713	(1.004)	380008	1.42734	68.75

QC Flag Legend

H - Operator selected an alternate compound hit.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052710.d
Lab Smp Id: AGA8F
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	382842	11.59
22 Acenaphthene-d10	230598	115299	461196	244729	6.13
28 Phenanthrene-d10	373928	186964	747856	437670	17.05
47 Chrysene-d12	381262	190631	762524	534120	40.09
56 Perylene-d12	380825	190412	761650	547717	43.82

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.03
47 Chrysene-d12	13.81	13.31	14.31	13.83	0.11
56 Perylene-d12	17.64	17.14	18.14	17.66	0.09

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

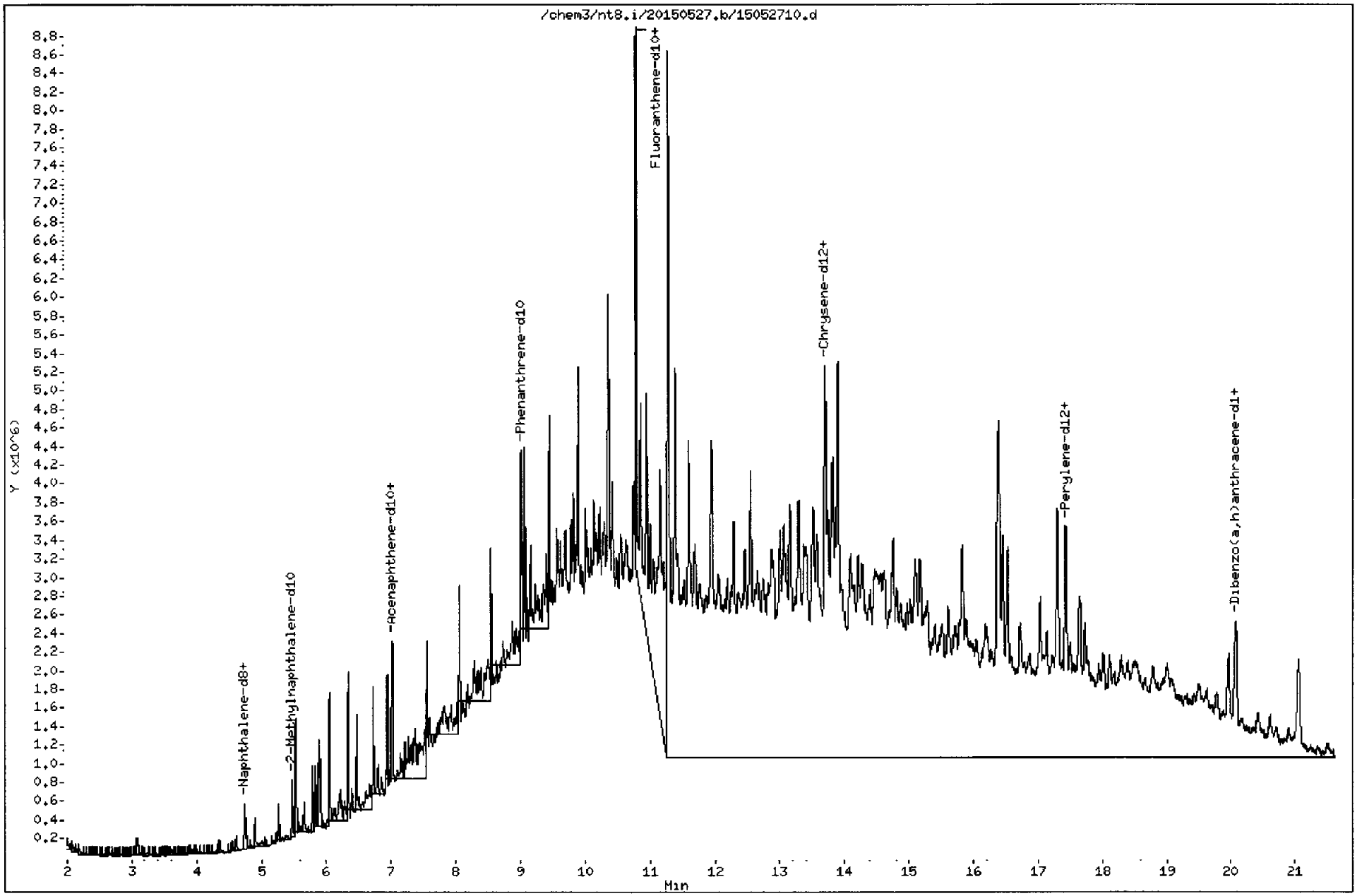
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8F
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.5	81.98	56.73	32-120
$ 253 Fluoranthene-d10	144.5	117.9	81.59	36-134
$ 60 Dibenzo(a,h)anthra	144.5	115.8	80.13	21-133

Data File: /chem3/nt8.i/20150527.b/15052710.d
Date : 27-MAY-2015 19:24
Client ID: SDP-07(1.5-3.0)
Sample Info: AGA8F
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

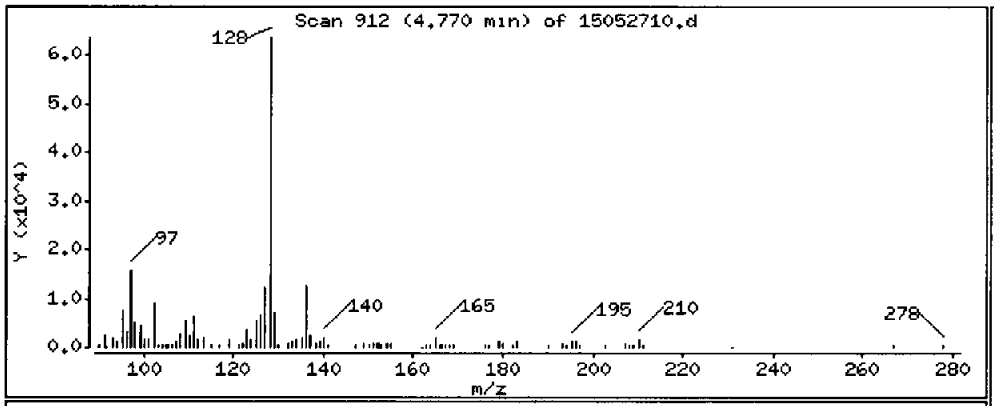
Operator: JZ

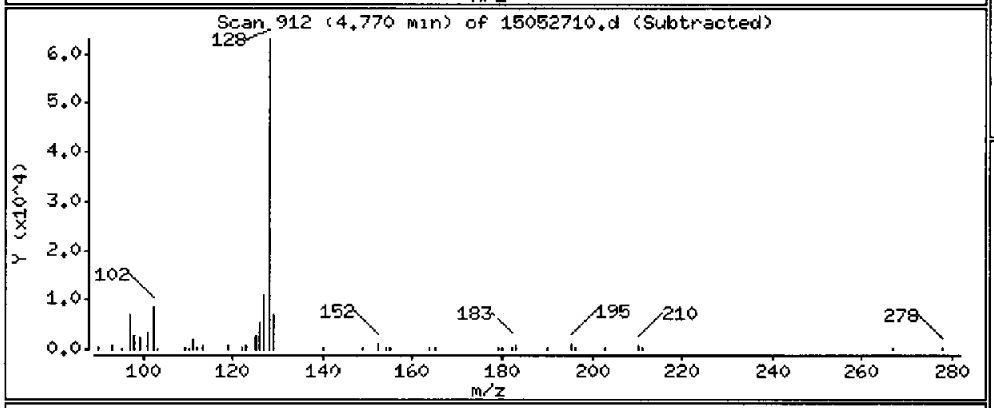
Column phase: ZB-35

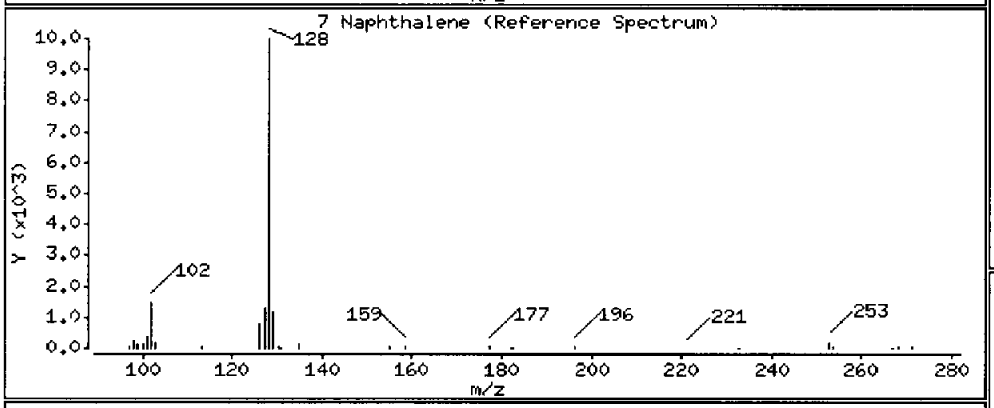
Column diameter: 0.25

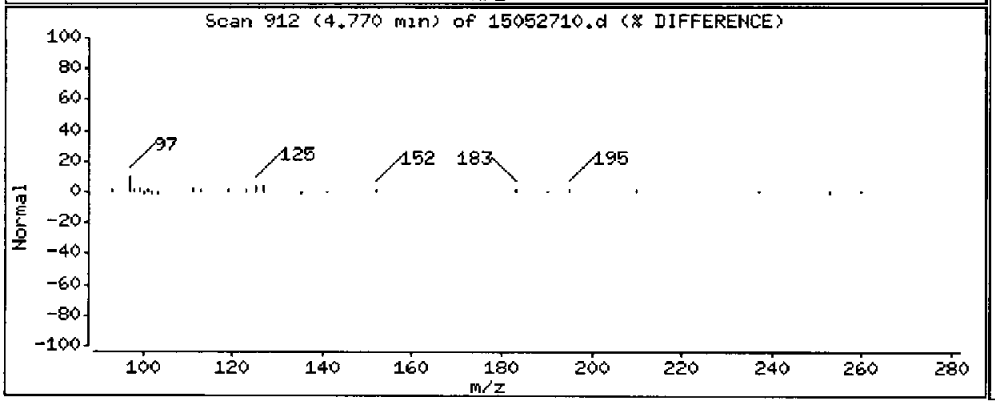
7 Naphthalene

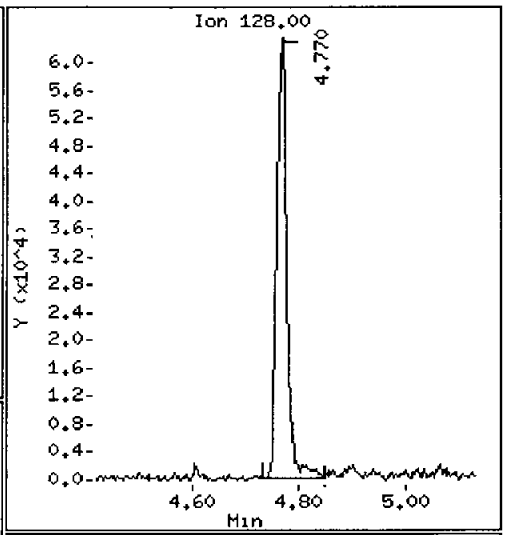
Concentration: 21.64 ug/kg

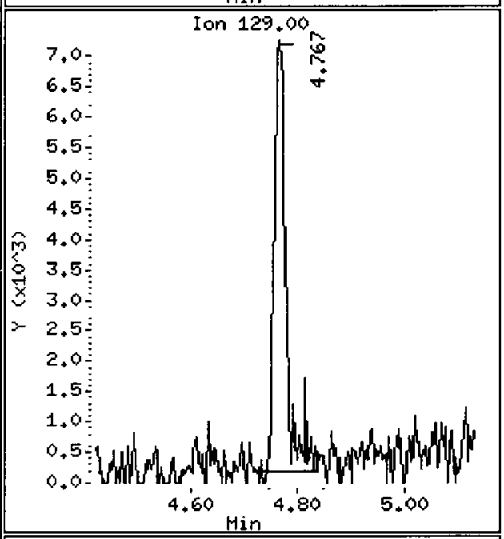


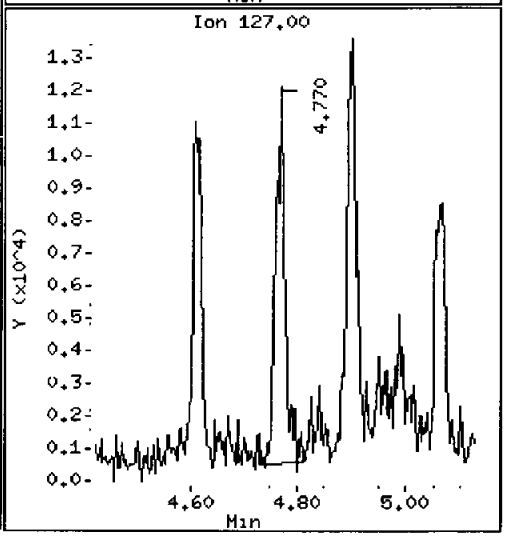












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

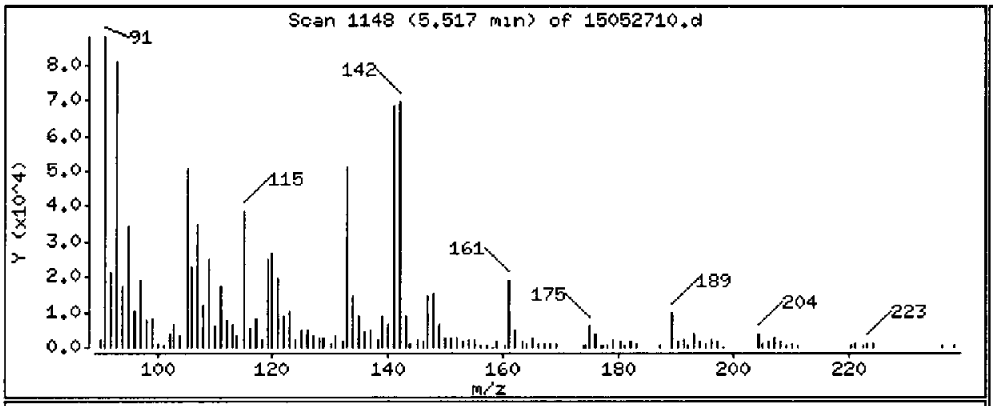
Operator: JZ

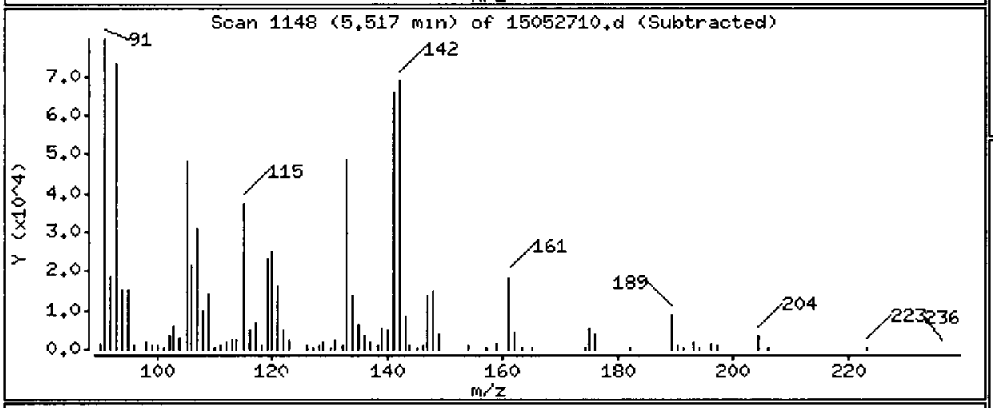
Column phase: ZB-35

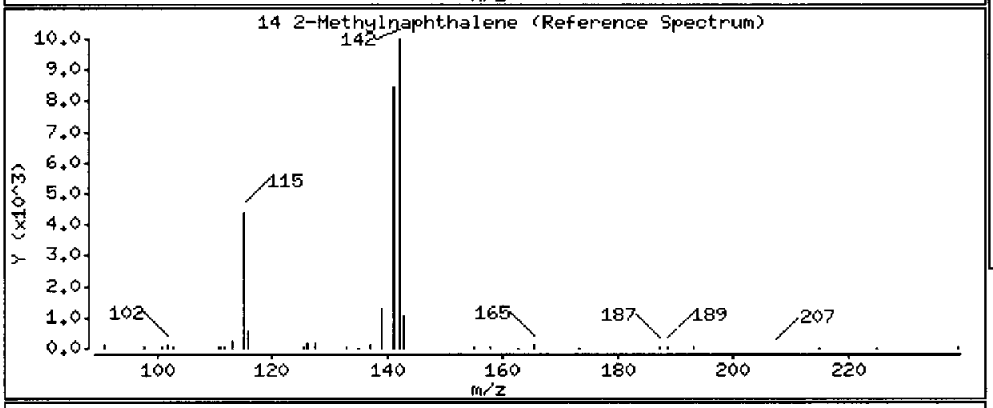
Column diameter: 0.25

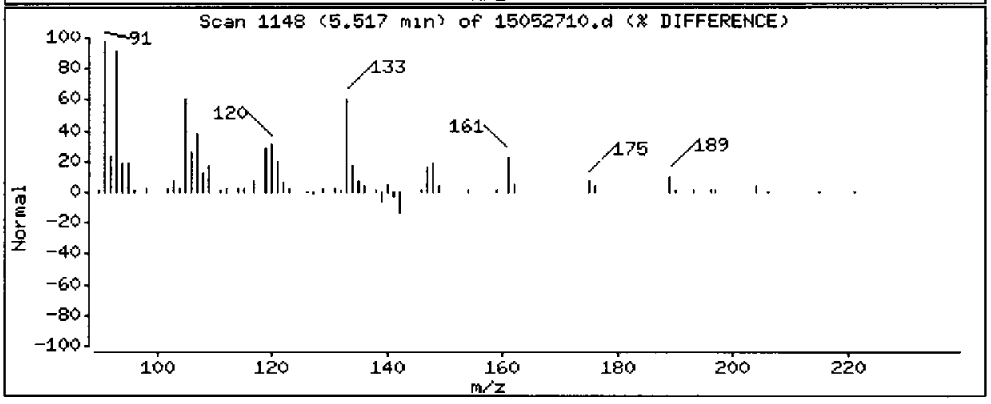
14 2-Methylnaphthalene

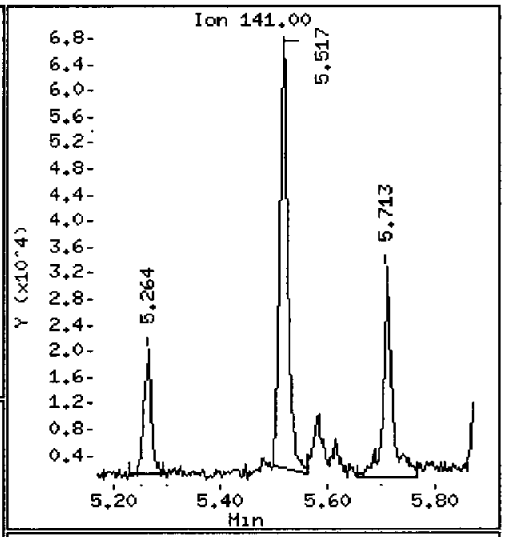
Concentration: 30.67 ug/kg

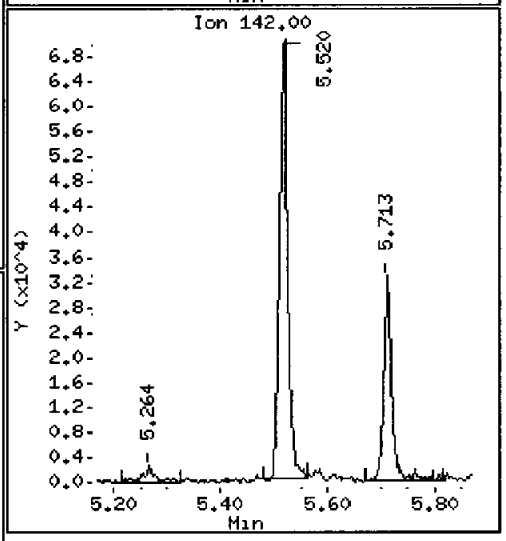












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

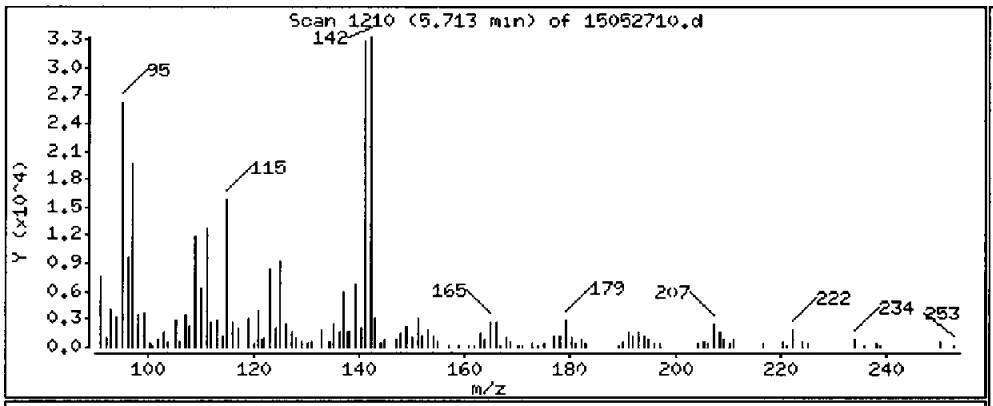
Operator: JZ

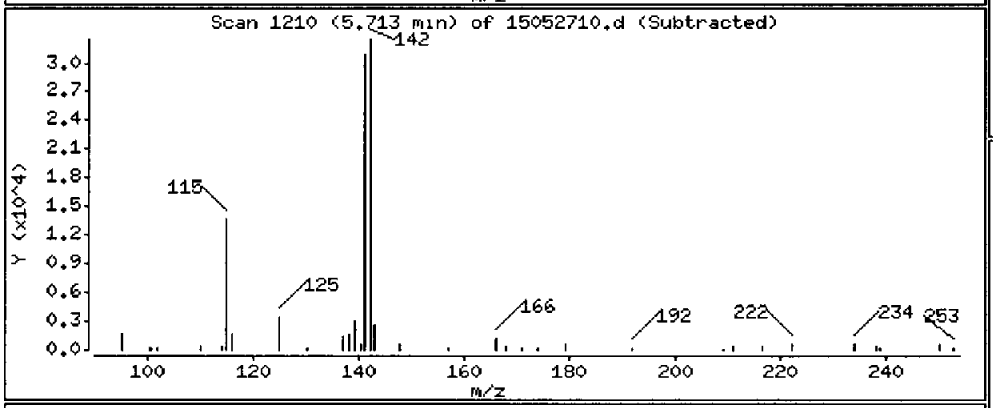
Column phase: ZB-35

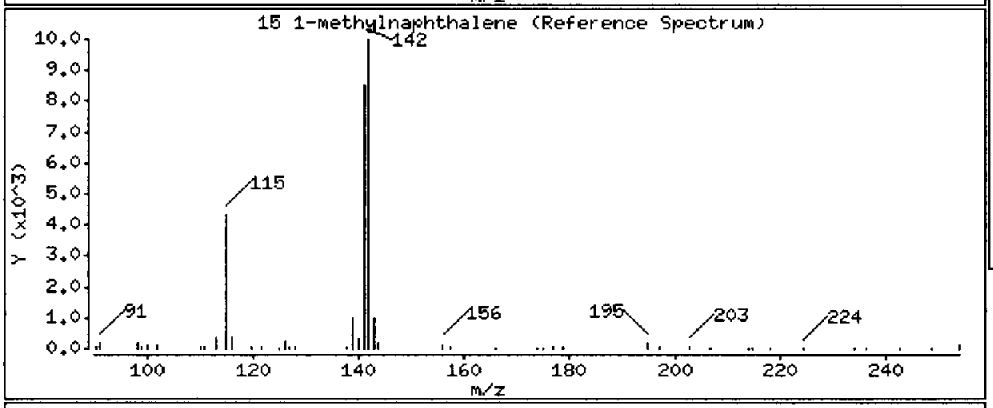
Column diameter: 0.25

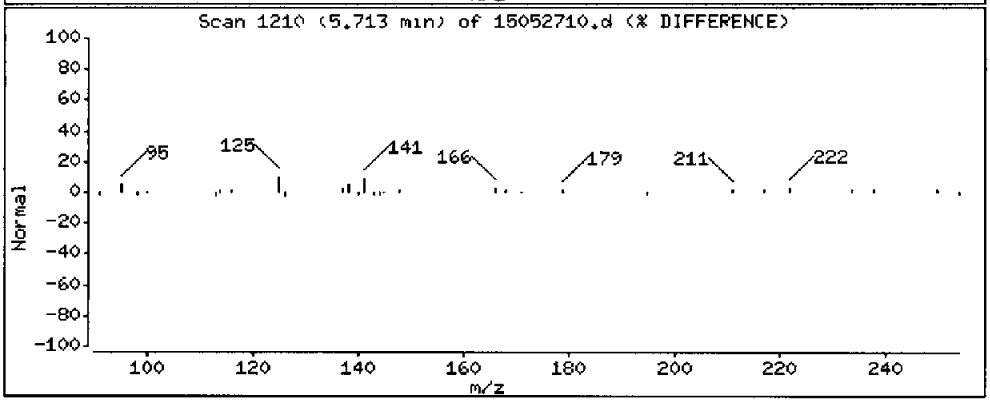
15 1-methylnaphthalene

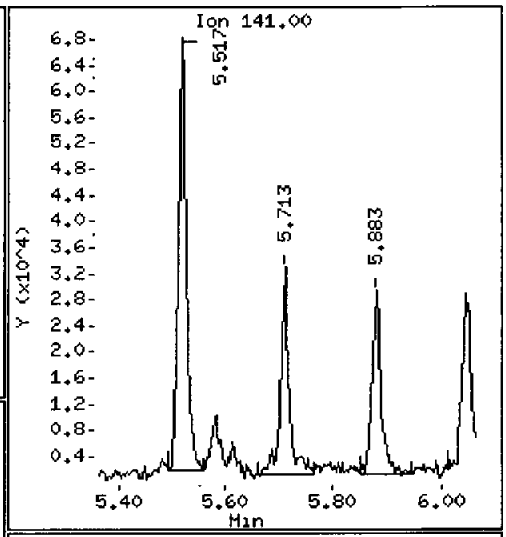
Concentration: 15.48 ug/kg

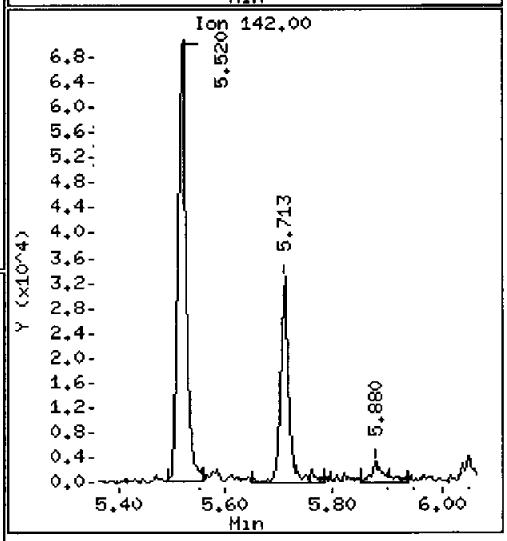












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

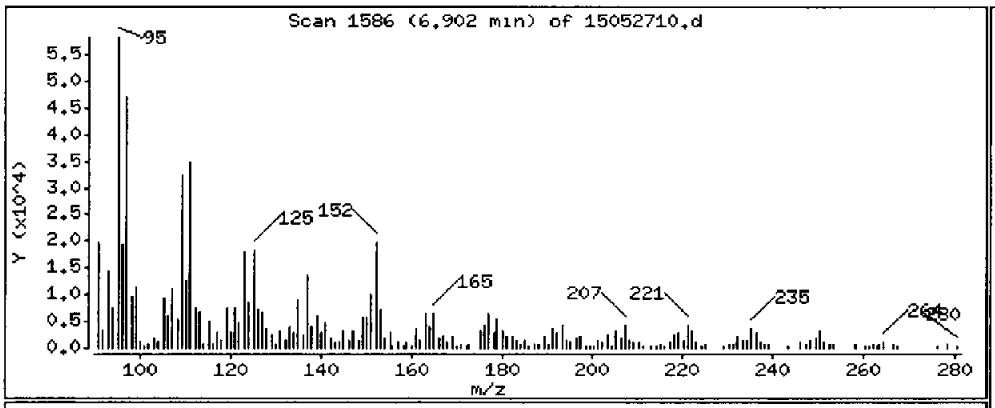
Operator: JZ

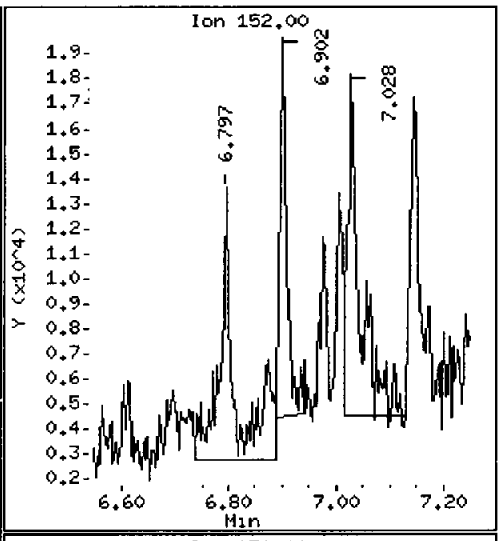
Column phase: ZB-35

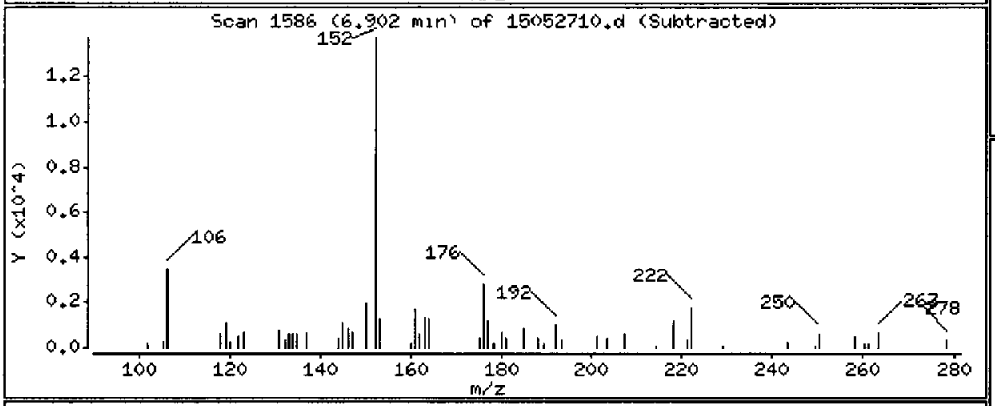
Column diameter: 0.25

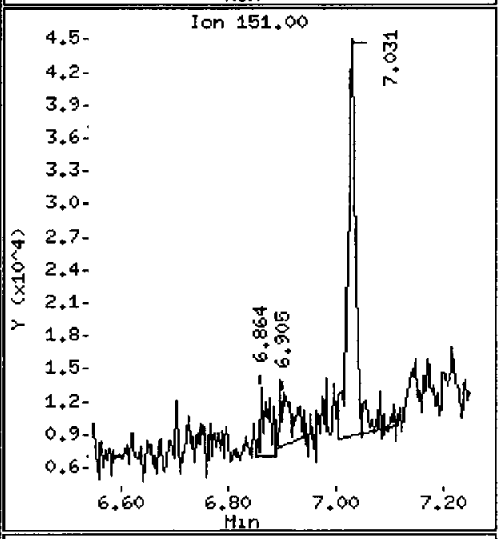
21 Acenaphthylene

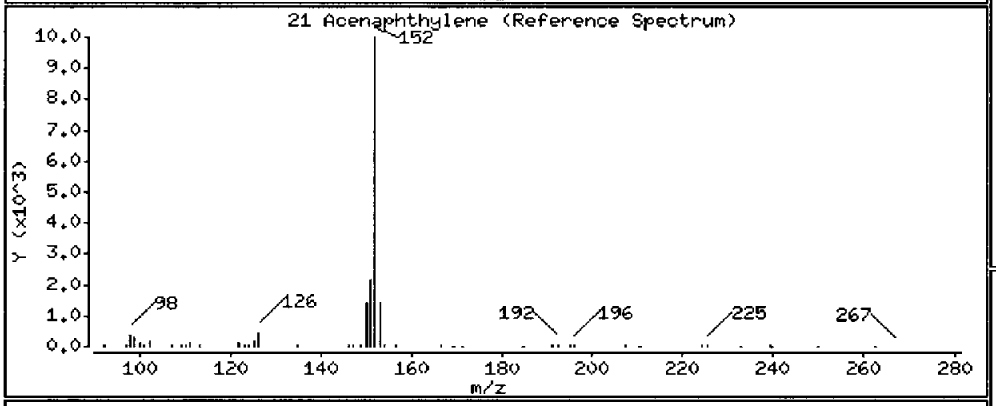
Concentration: 3.724 ug/kg

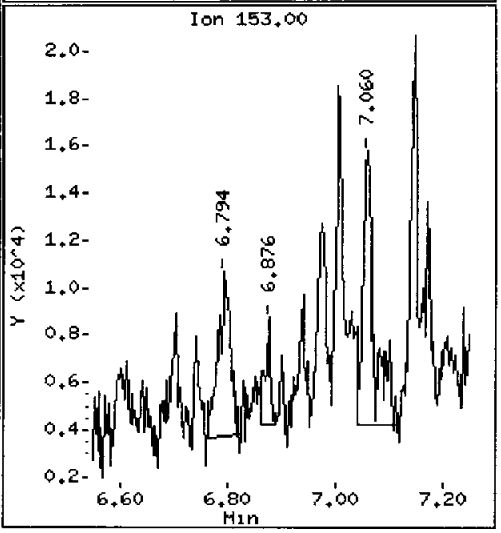


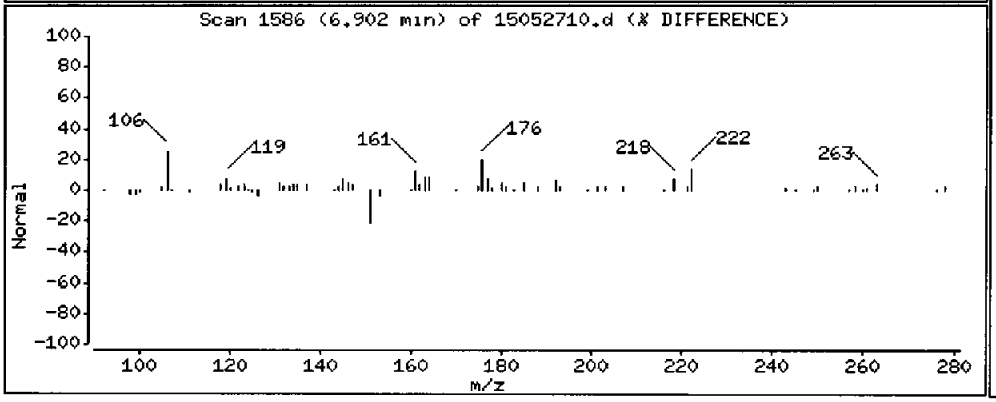












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

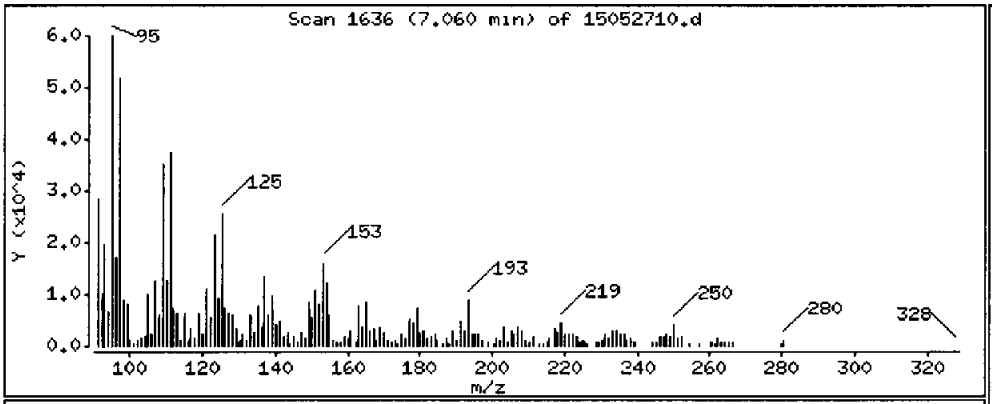
Operator: JZ

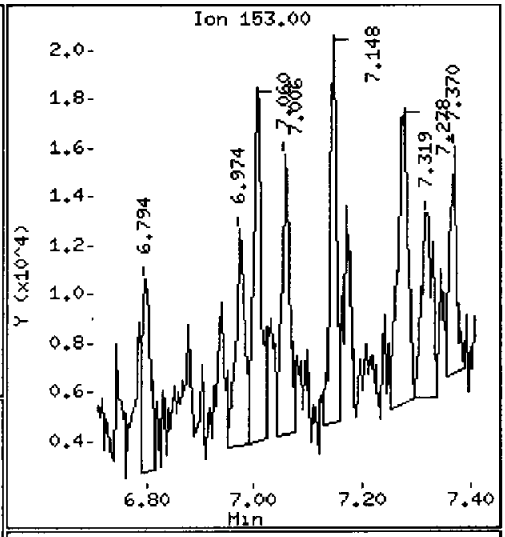
Column phase: ZB-35

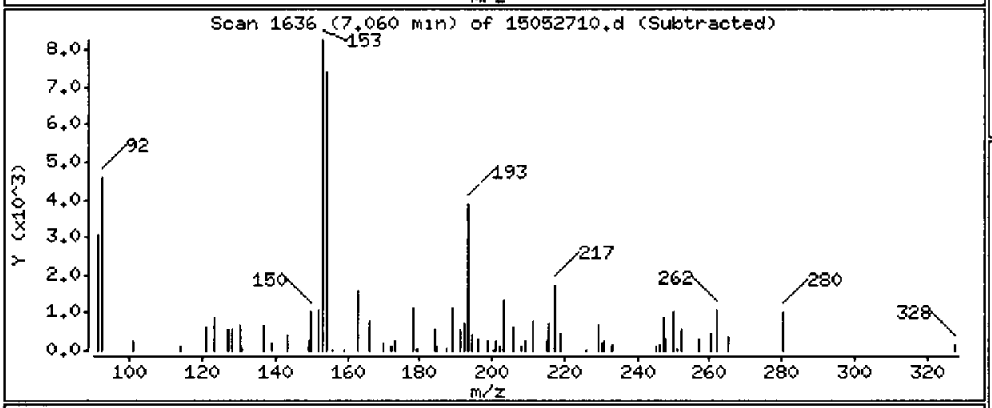
Column diameter: 0.25

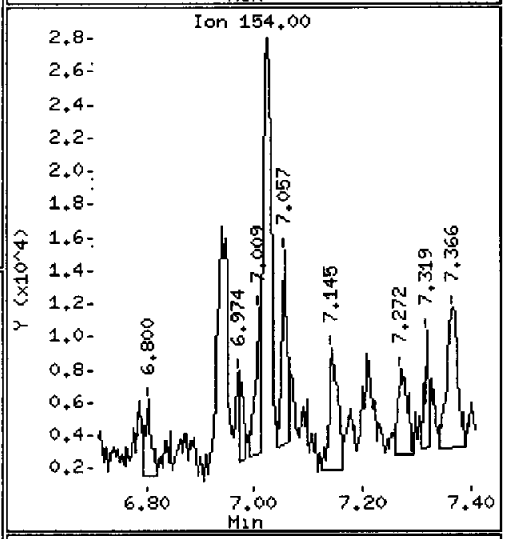
23 Acenaphthene

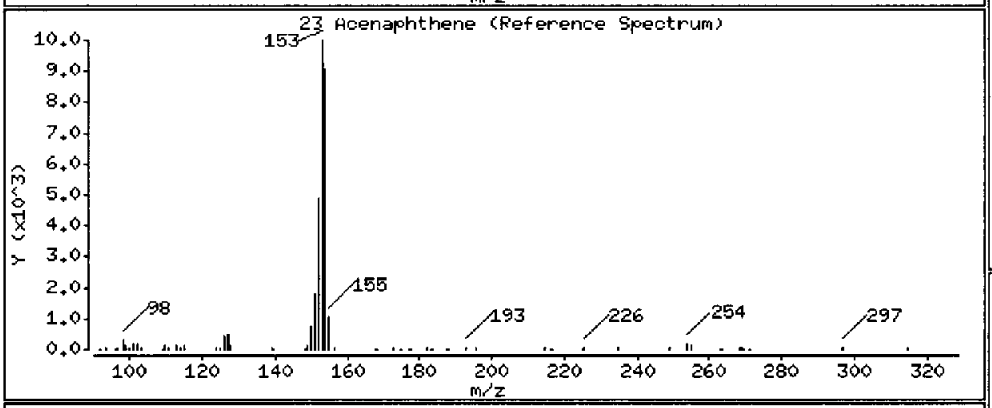
Concentration: 4.888 ug/kg

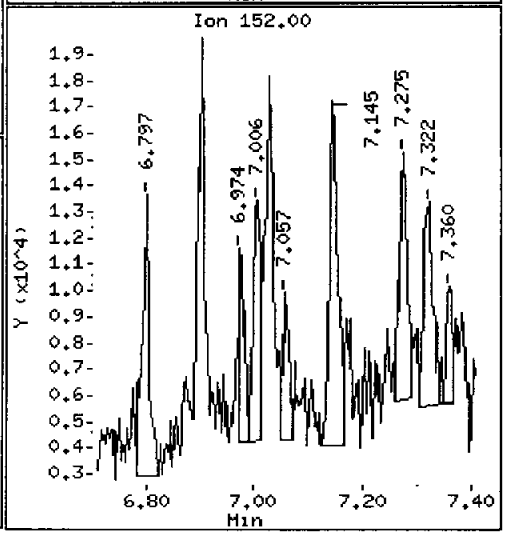


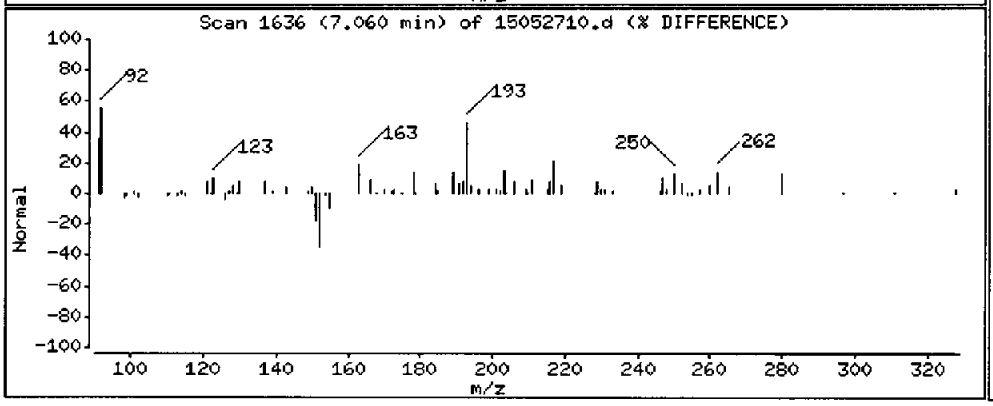












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

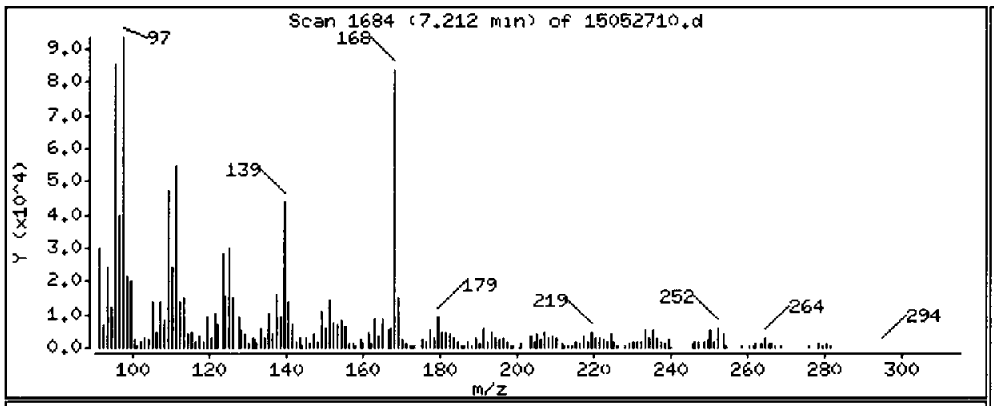
Operator: JZ

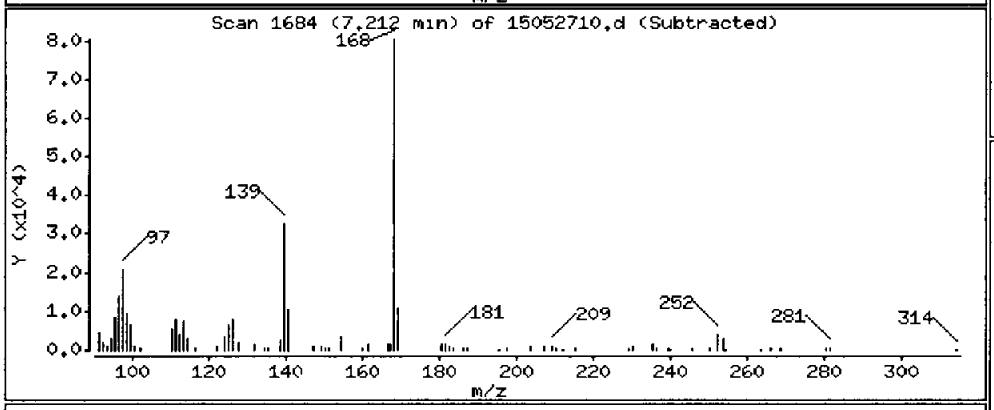
Column phase: ZB-35

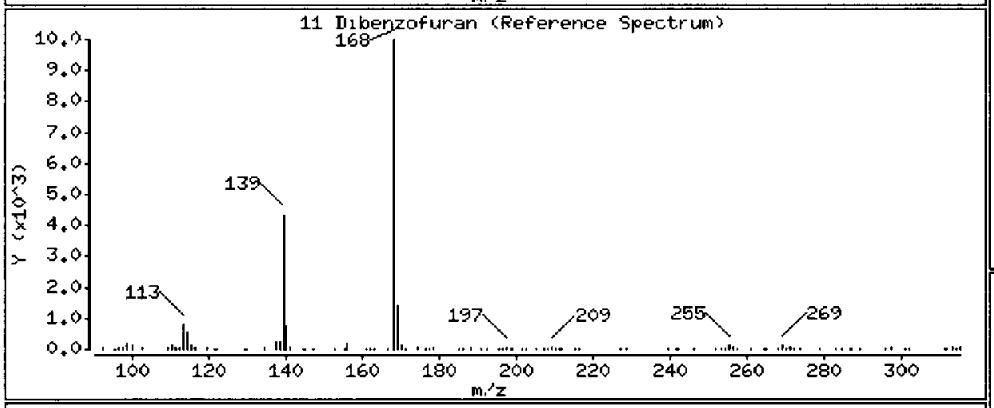
Column diameter: 0.25

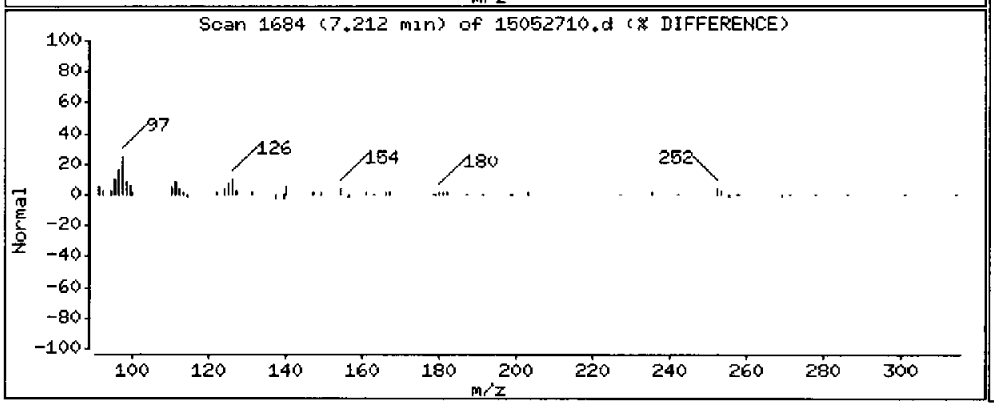
11 Dibenzofuran

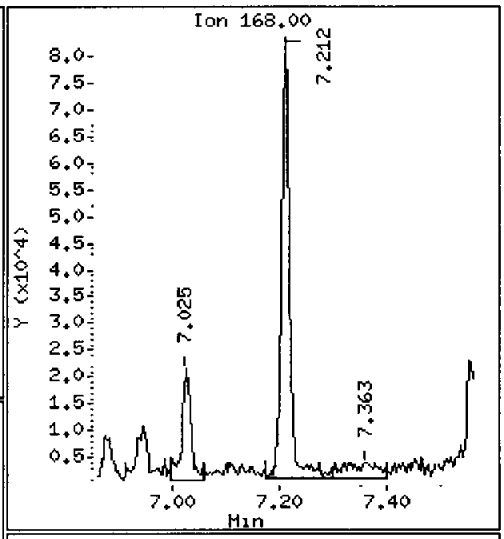
Concentration: 27.19 ug/kg

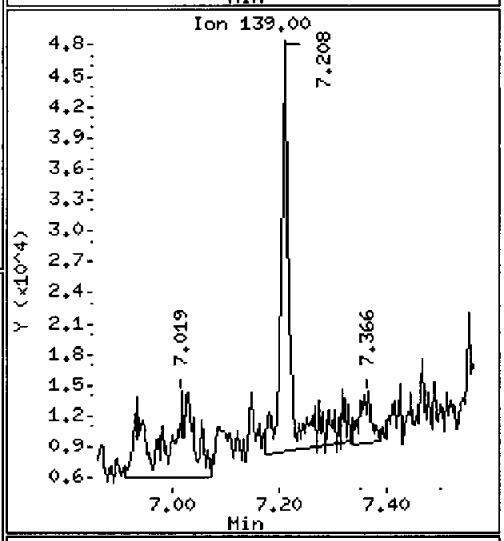


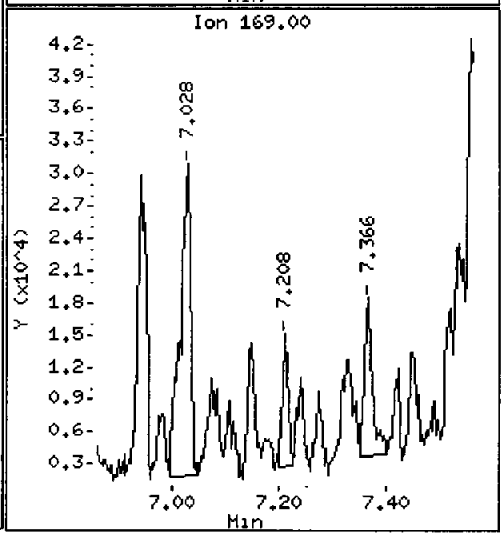












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

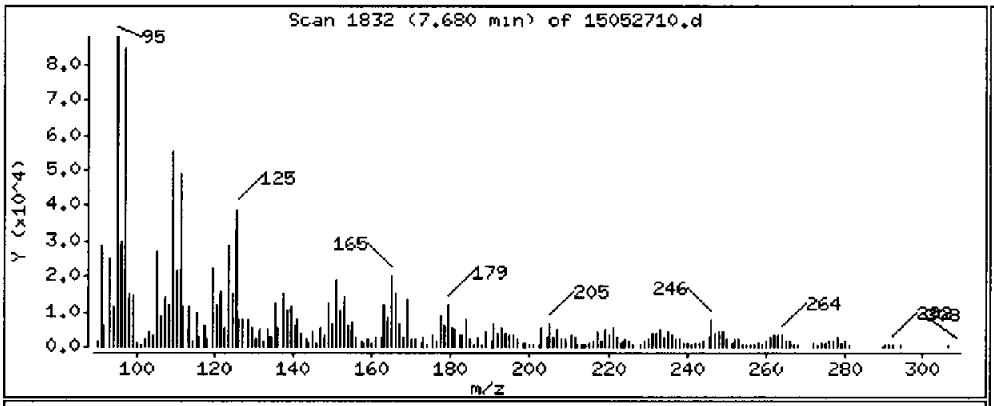
Operator: JZ

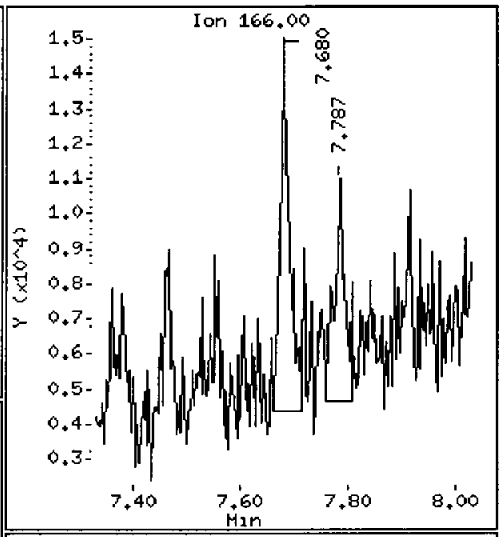
Column phase: ZB-35

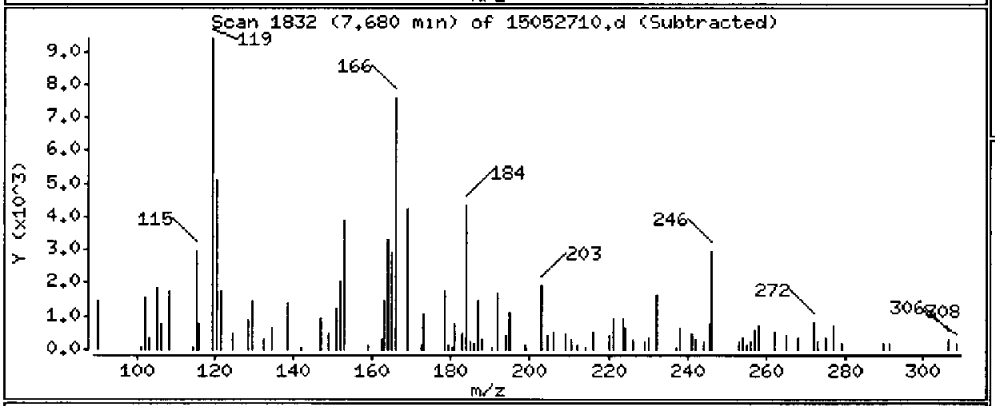
Column diameter: 0.25

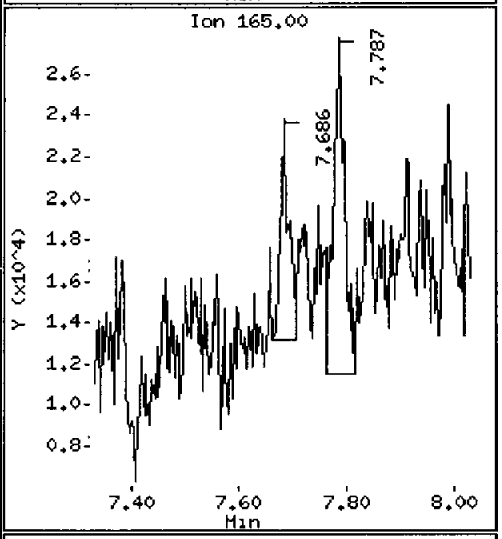
25 Fluorene

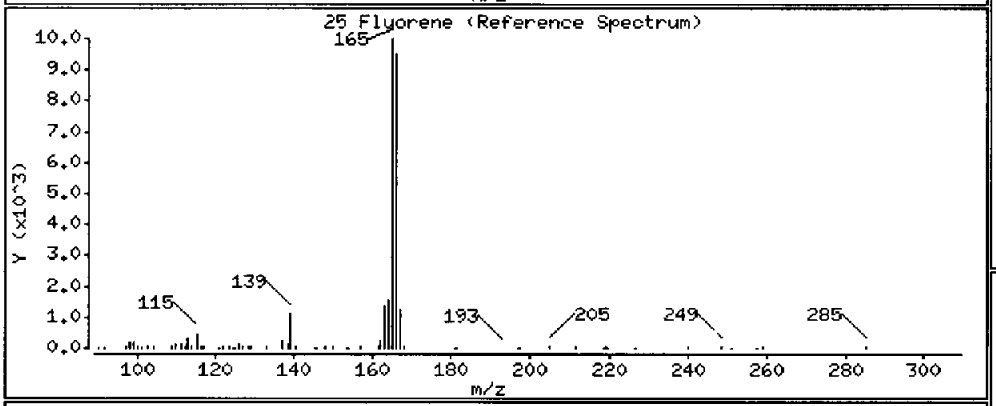
Concentration: 4.833 ug/kg

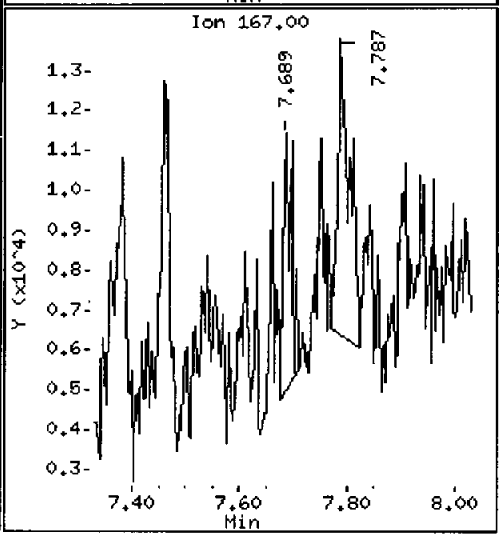


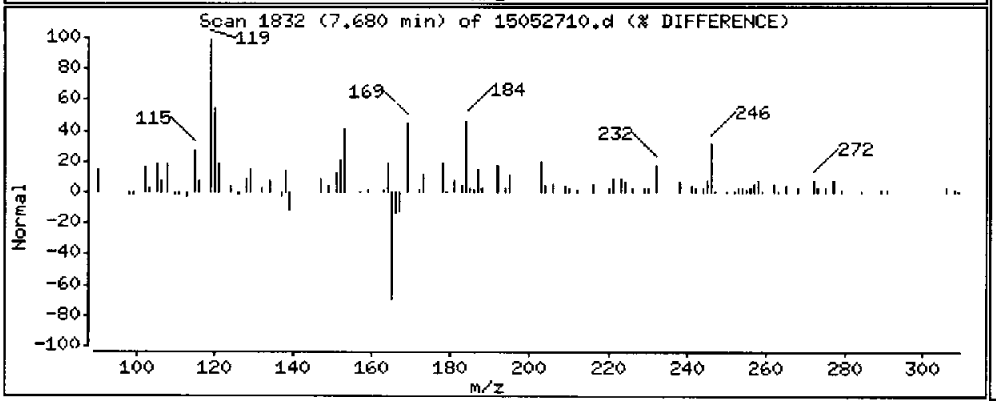












Data File: /chem3/nt8.1/2015052?.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

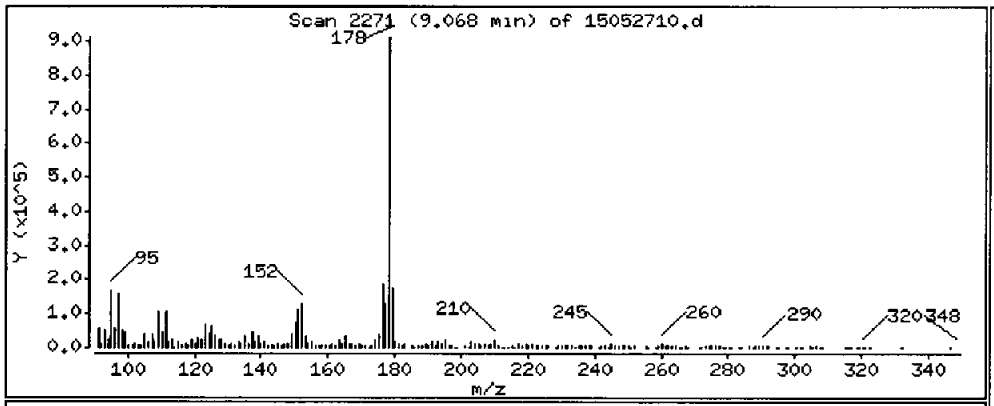
Operator: JZ

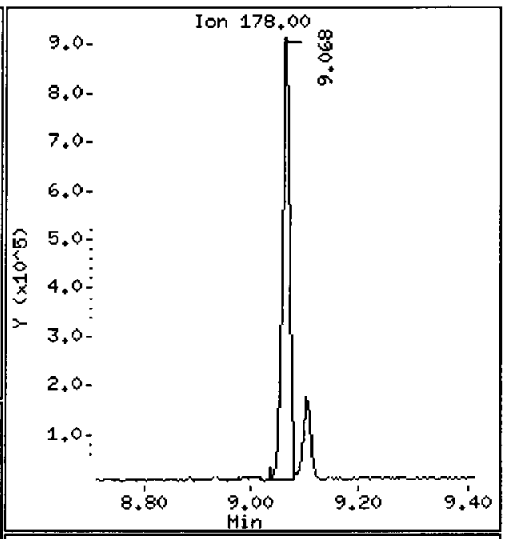
Column phase: ZB-35

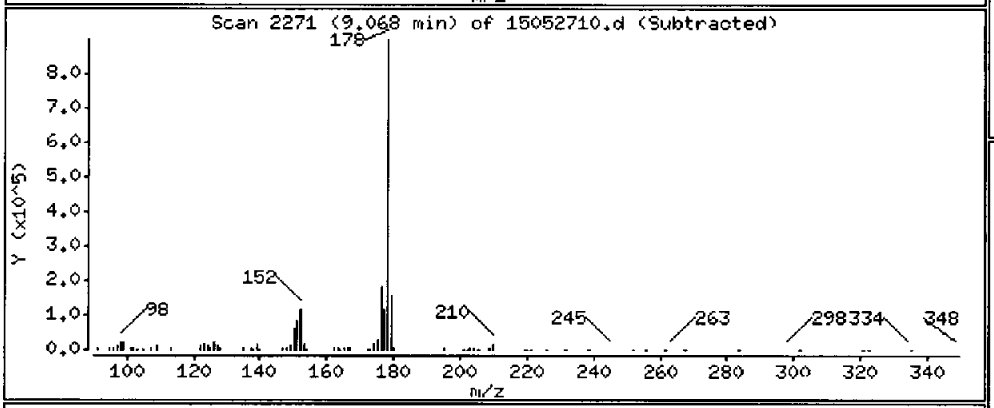
Column diameter: 0.25

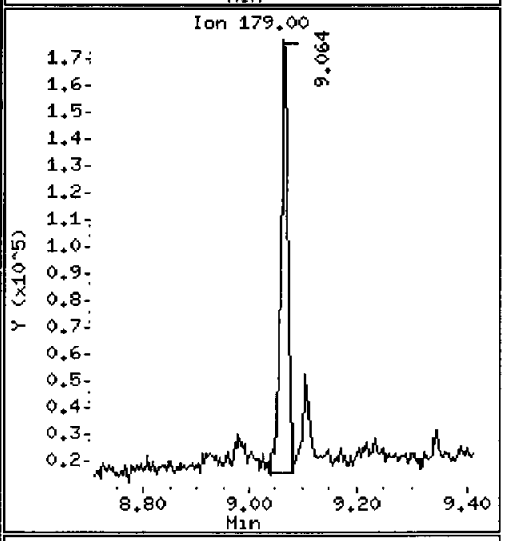
30 Phenanthrene

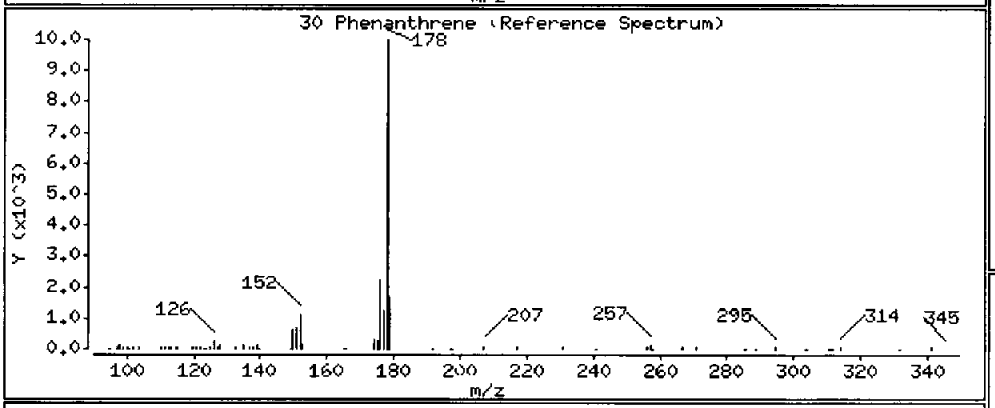
Concentration: 202.9 ug/kg

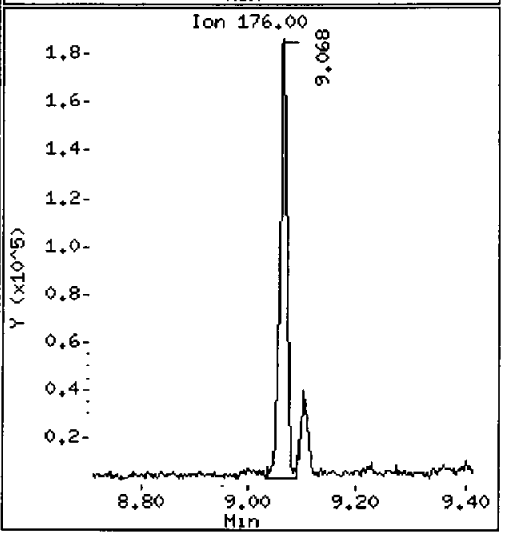


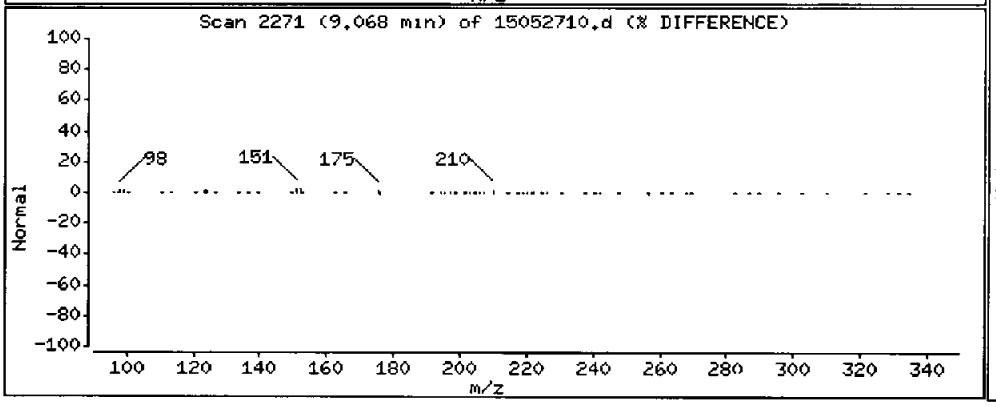












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

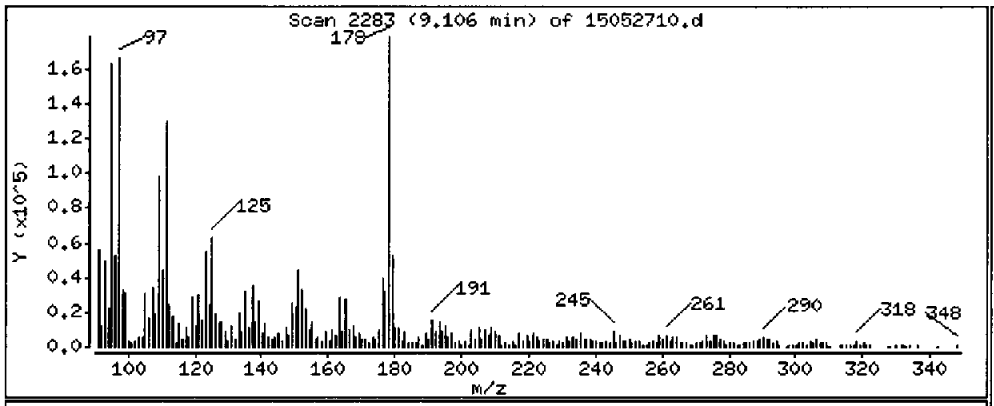
Operator: JZ

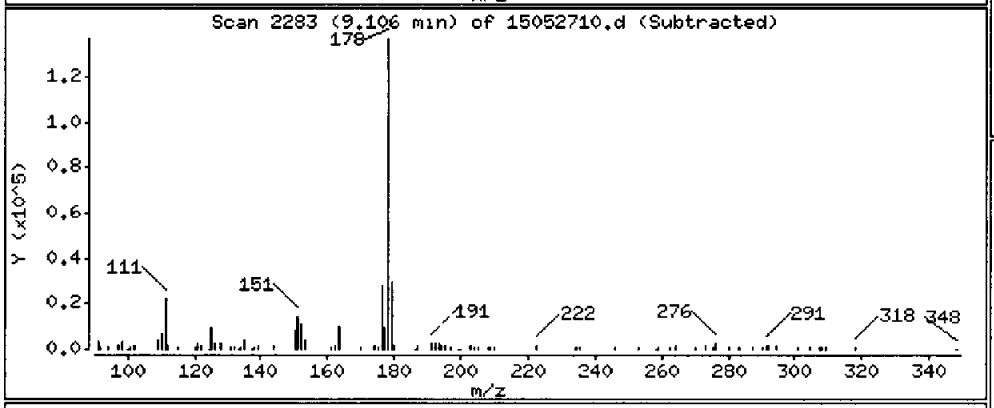
Column phase: ZB-35

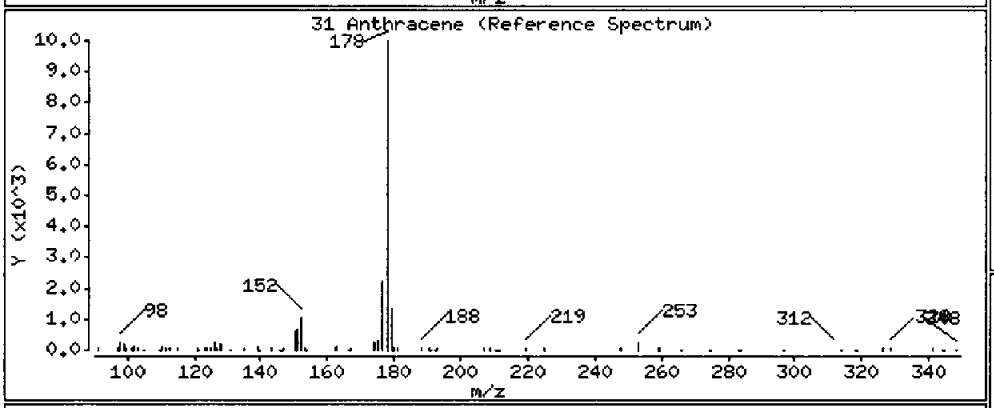
Column diameter: 0.25

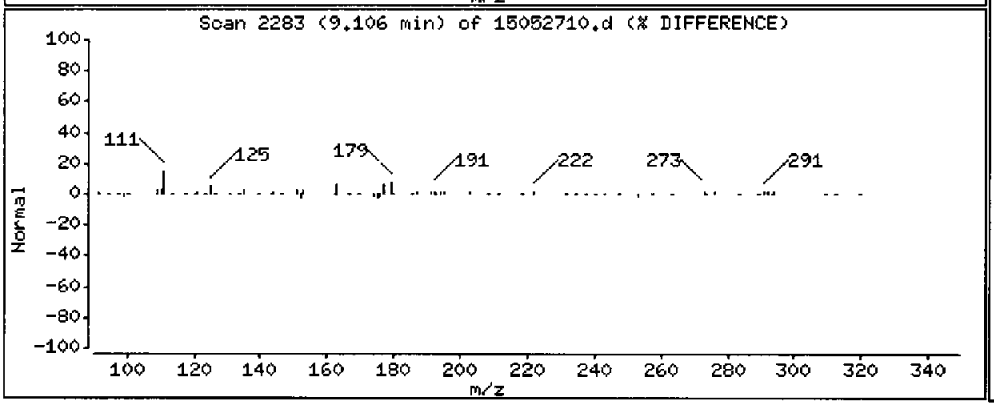
31 Anthracene

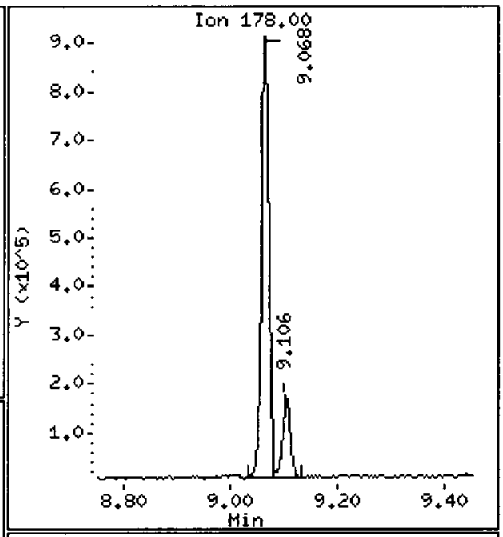
Concentration: 44.98 ug/kg

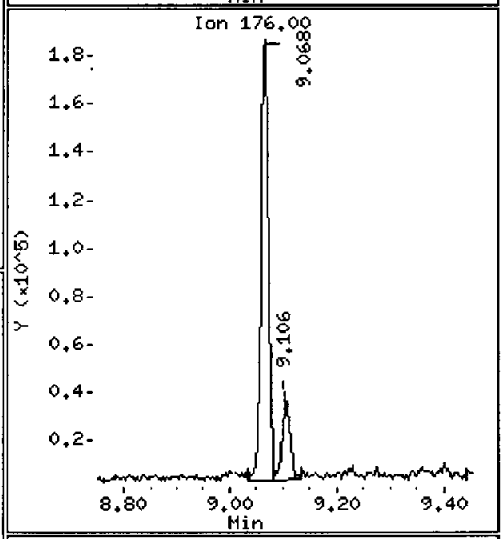


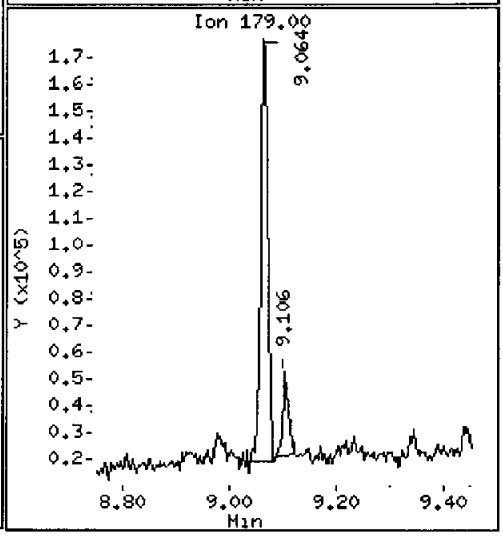












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

Operator: JZ

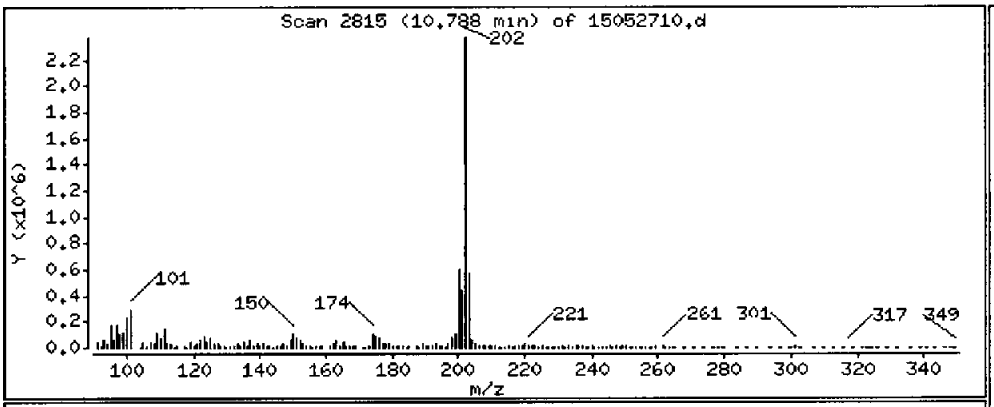
Column phase: ZB-35

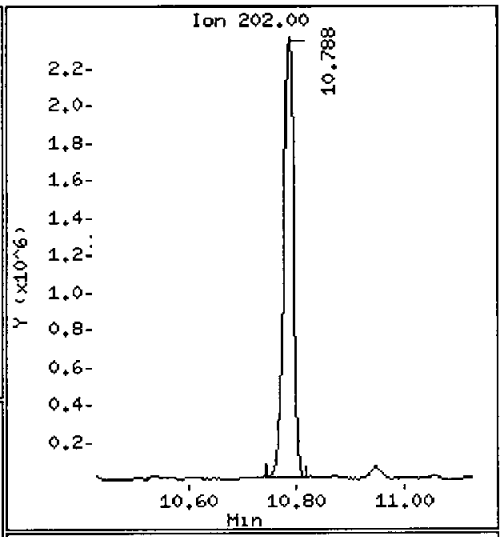
Column diameter: 0.25

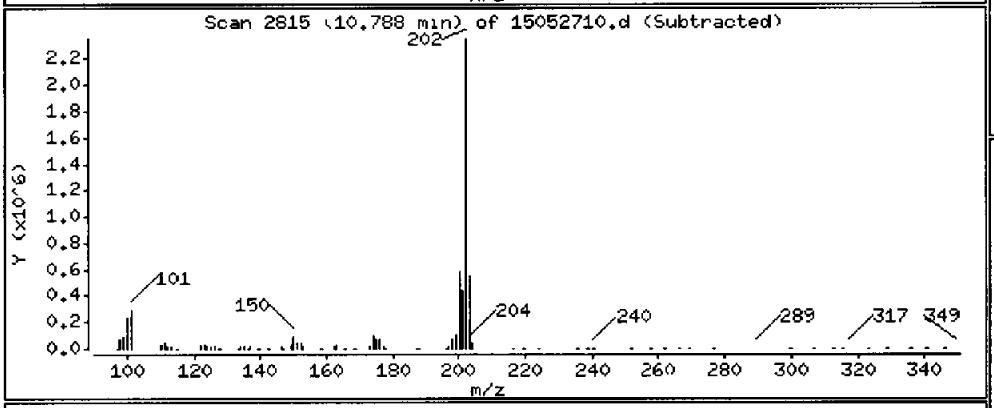
36 Fluoranthene

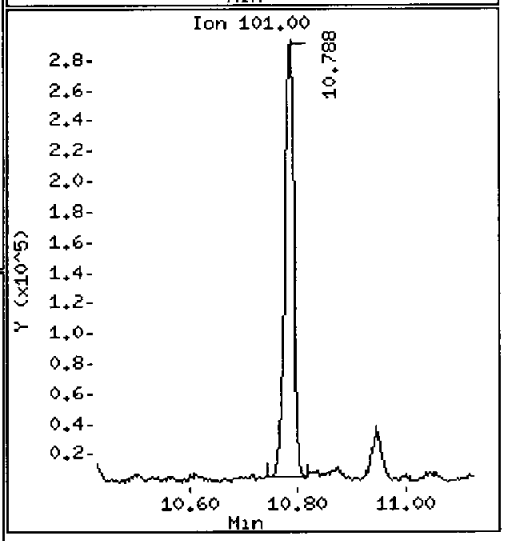
Concentration: 609.9 ug/kg

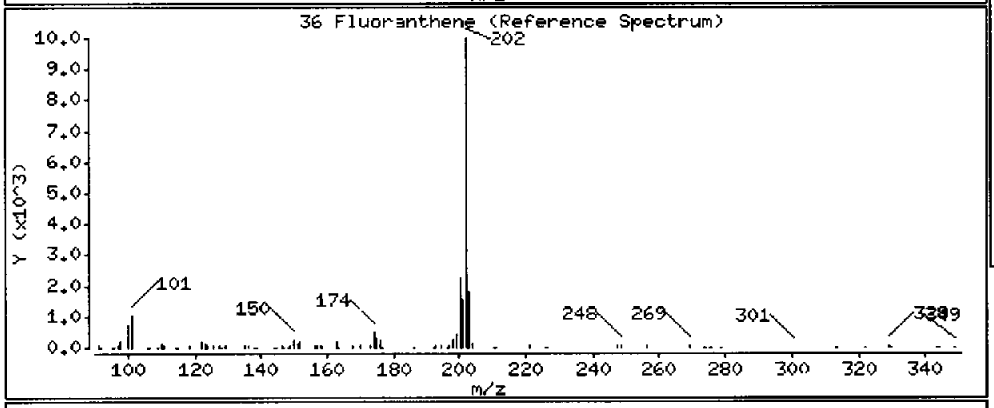
E

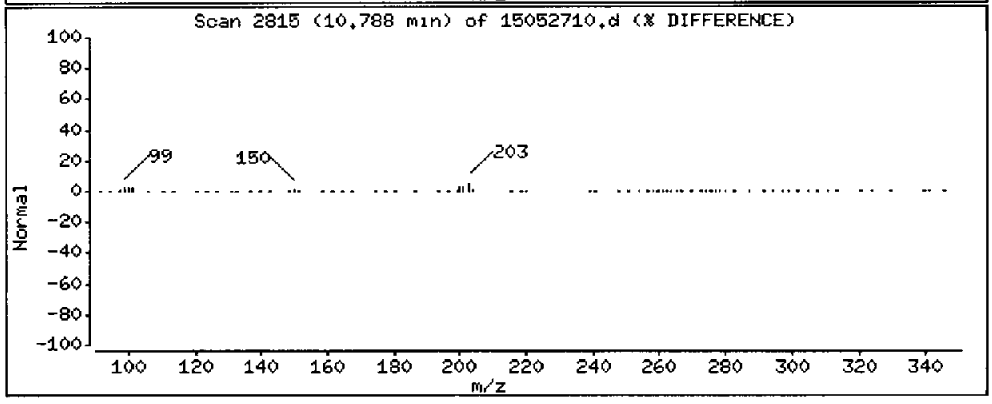












AGA8 8012

Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

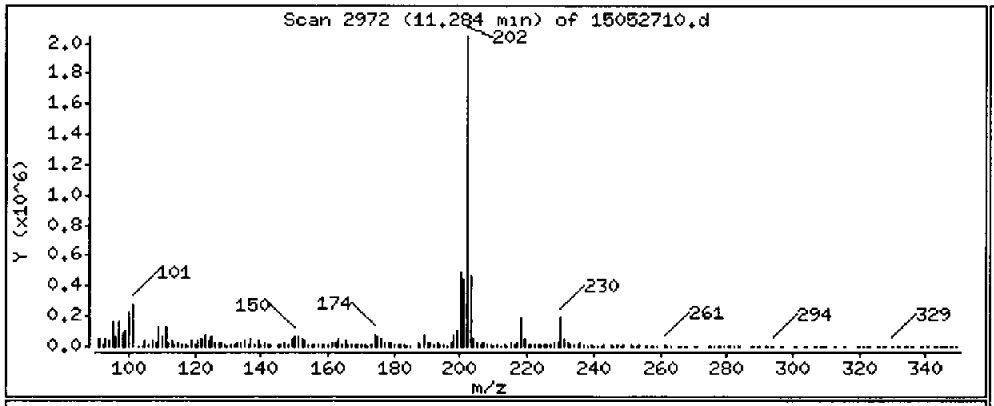
Operator: JZ

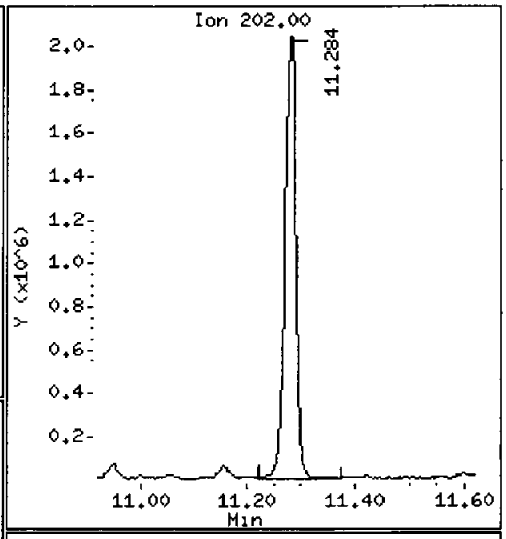
Column phase: ZB-35

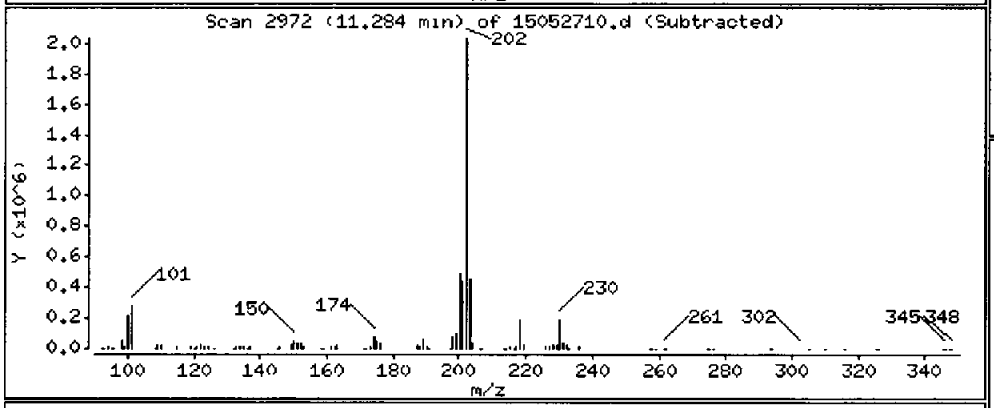
Column diameter: 0.25

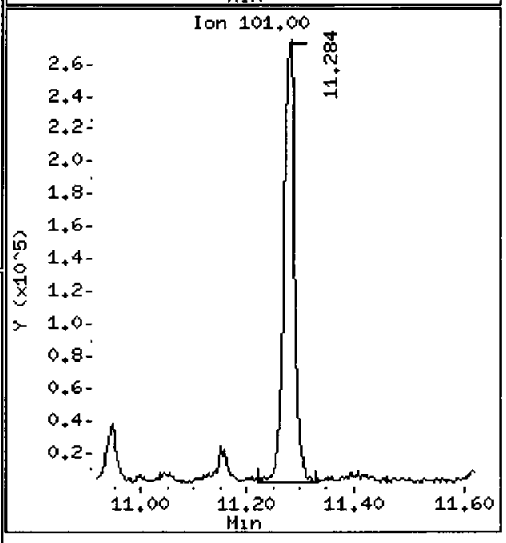
39 Pyrene

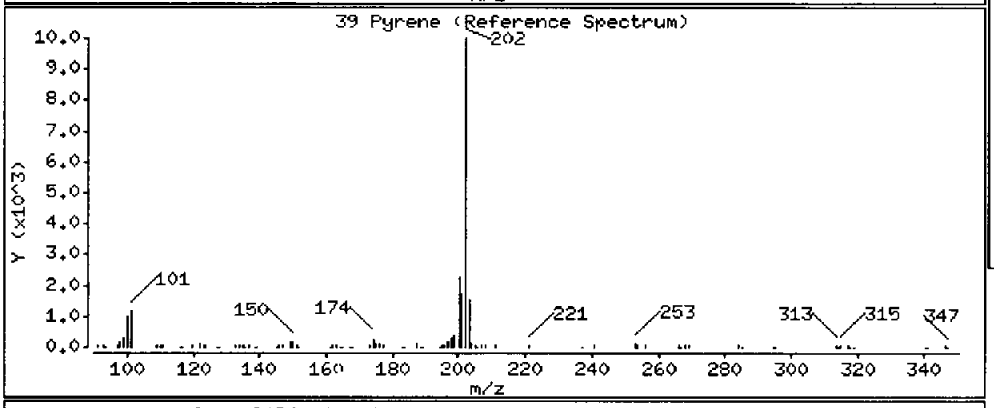
Concentration: 480.2 ug/kg

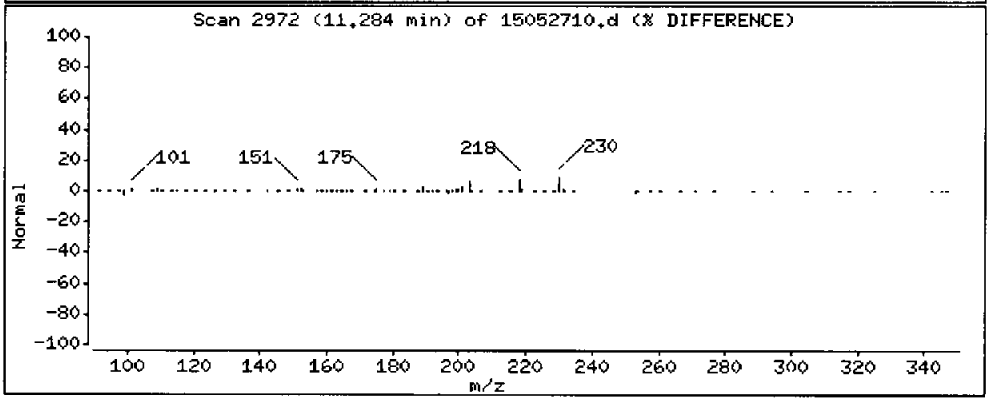












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

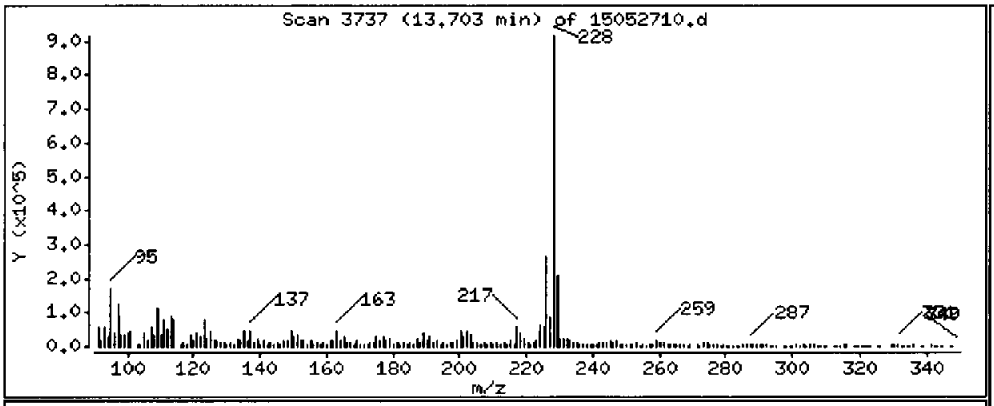
Operator: JZ

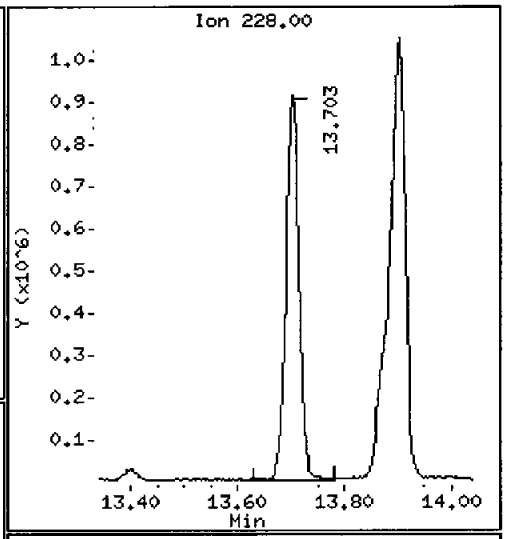
Column phase: ZB-35

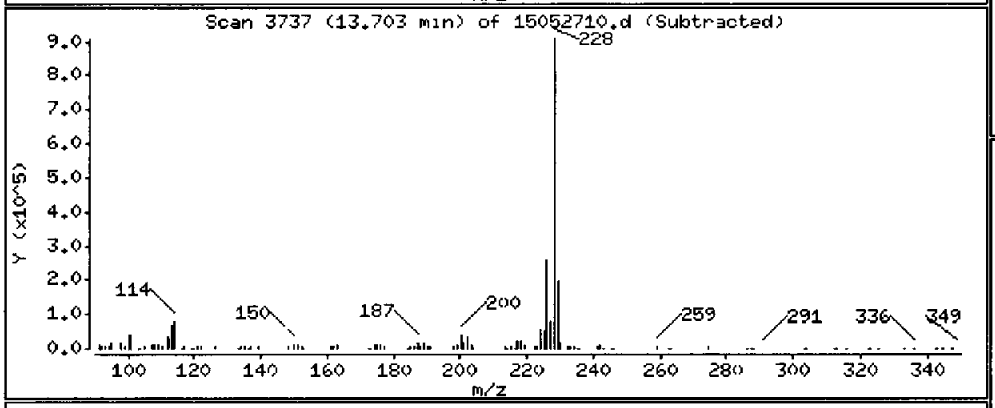
Column diameter: 0.25

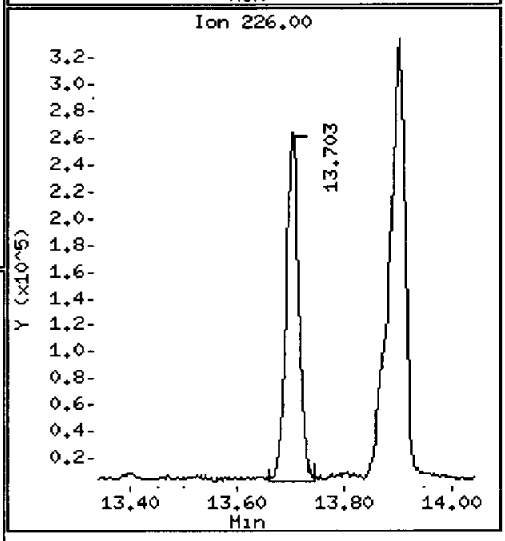
46 Benzo(a)anthracene

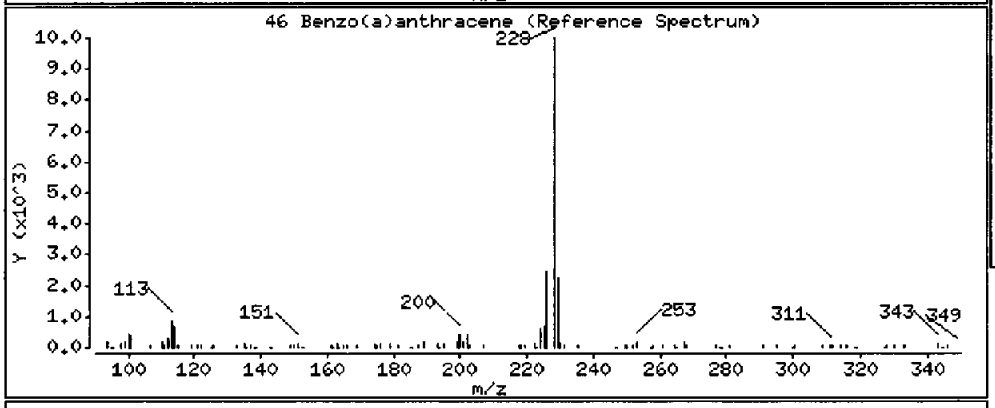
Concentration: 284.1 ug/kg

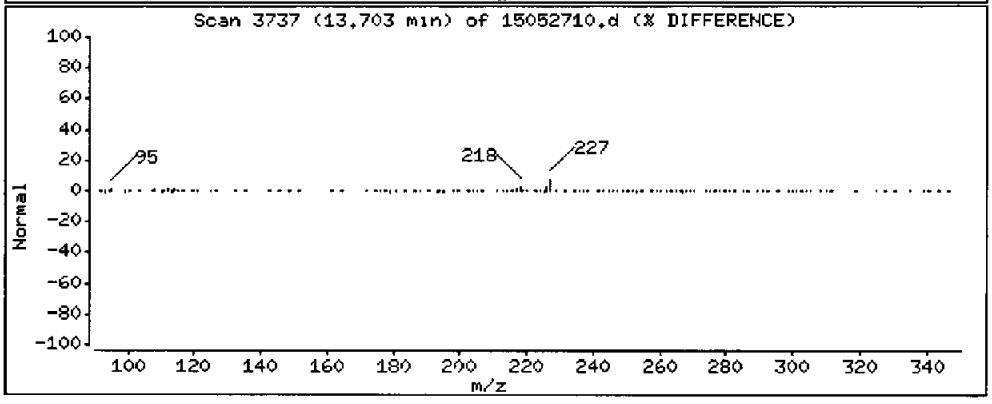












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

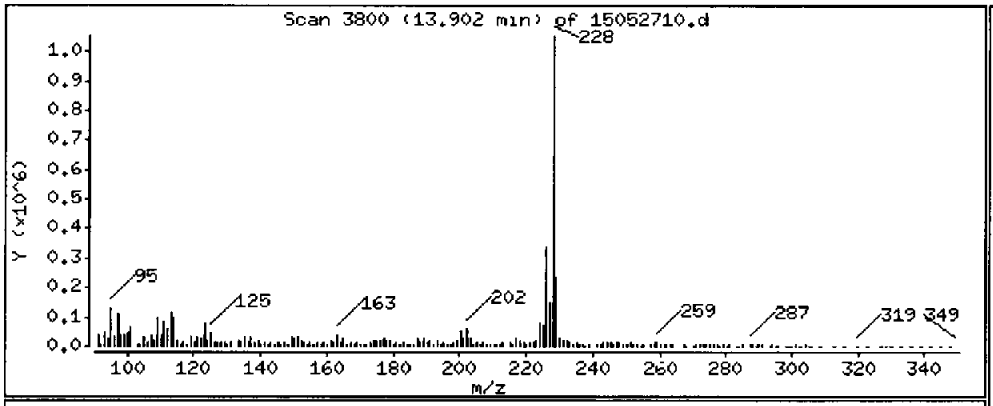
Operator: JZ

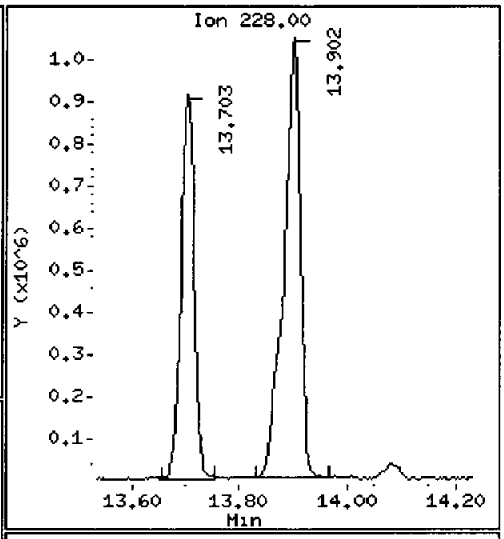
Column phase: ZB-35

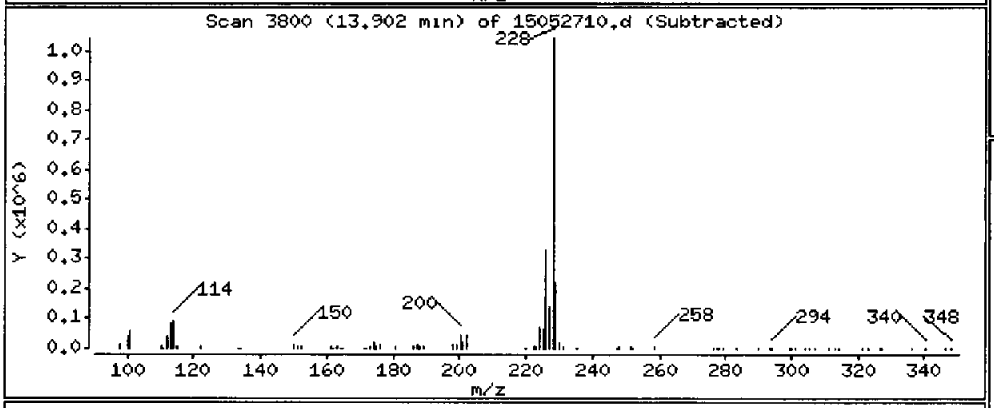
Column diameter: 0.25

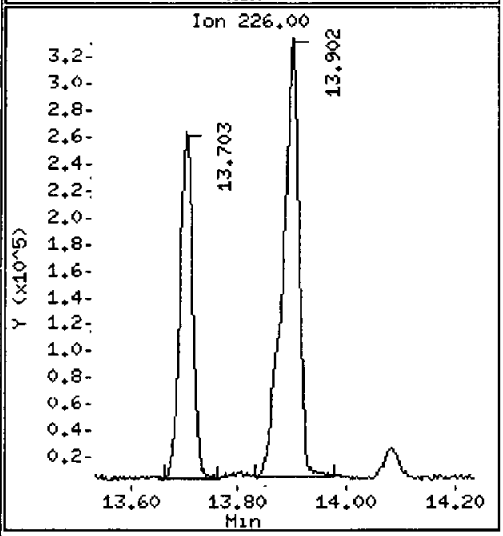
48 Chrysene

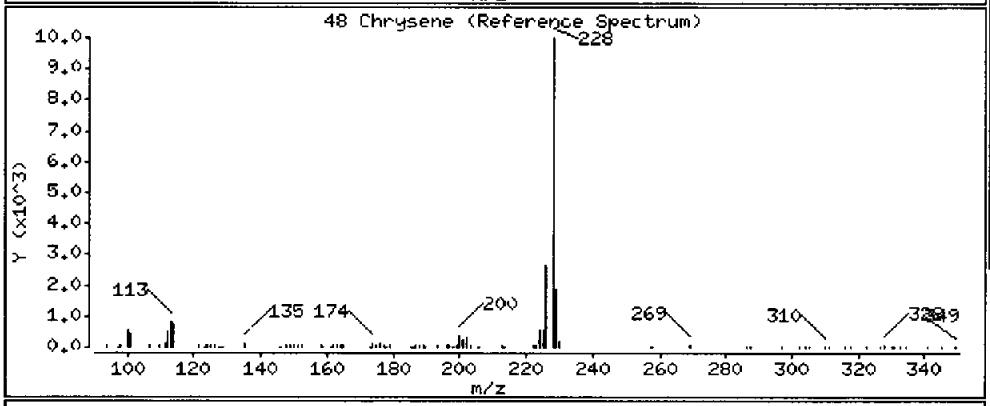
Concentration: 403.4 ug/kg

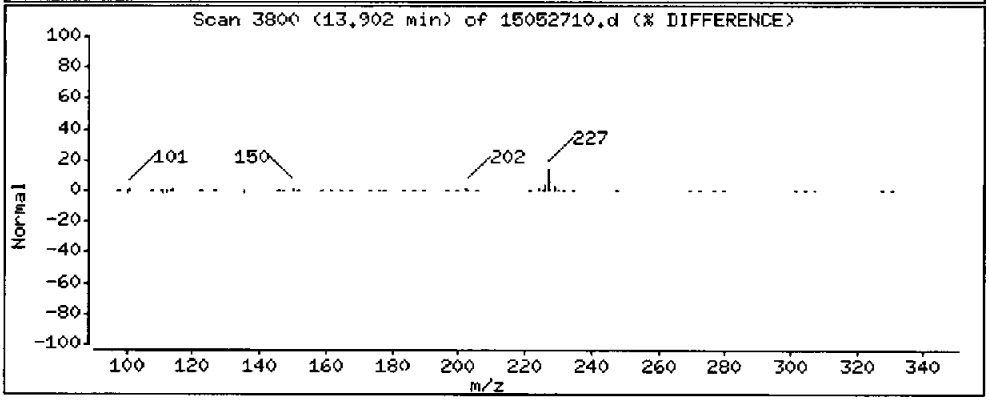












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

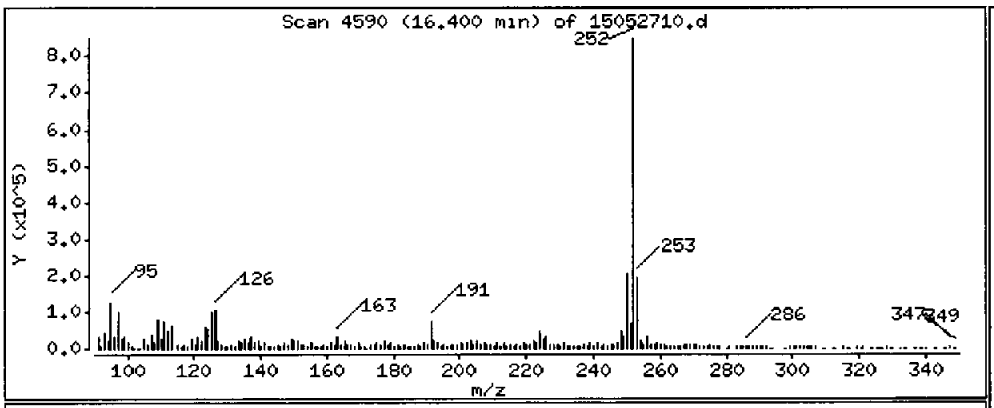
Operator: JZ

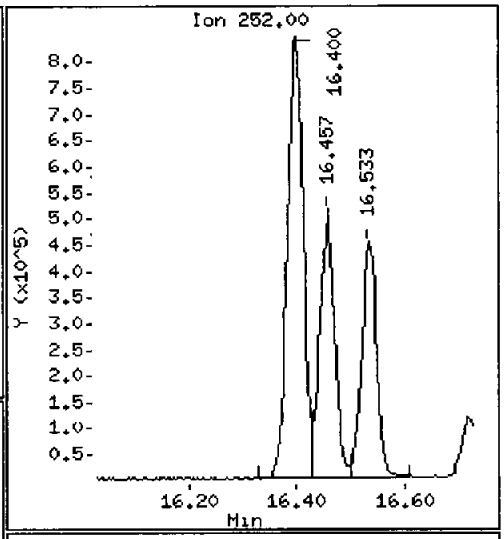
Column phase: ZB-35

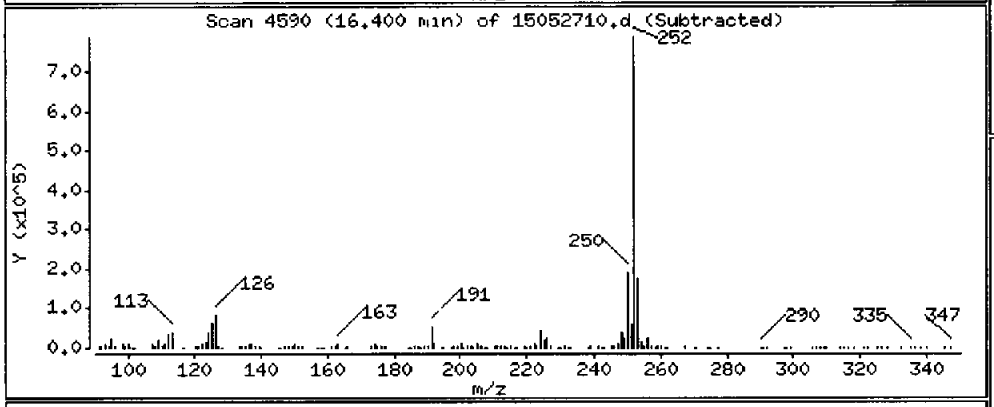
Column diameter: 0.25

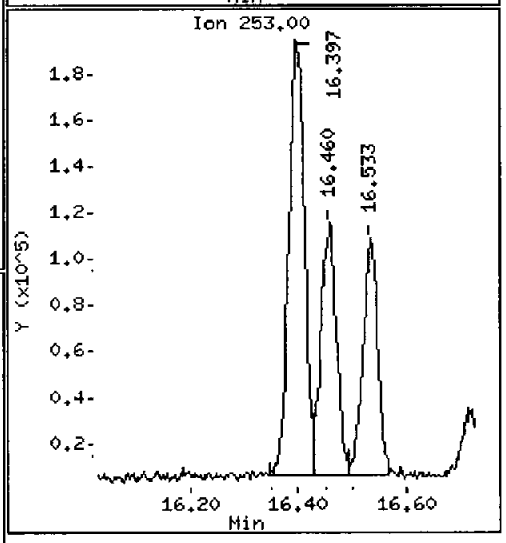
51 Benzo(b)fluoranthene

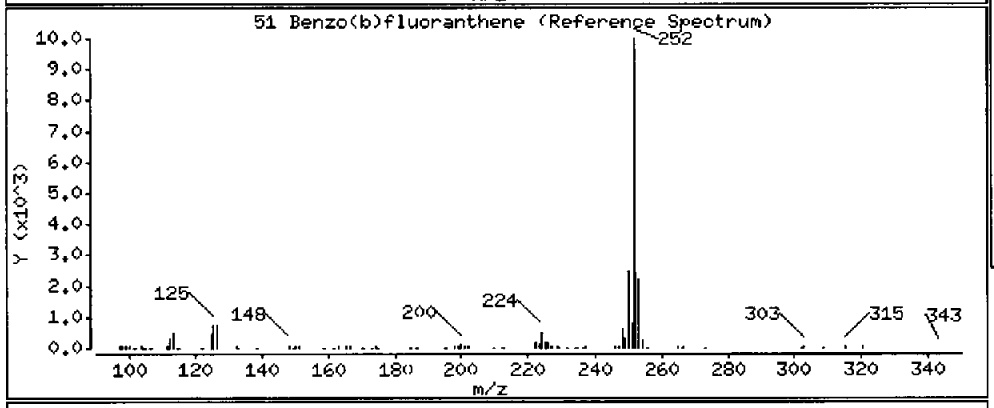
Concentration: 287.2 ug/kg

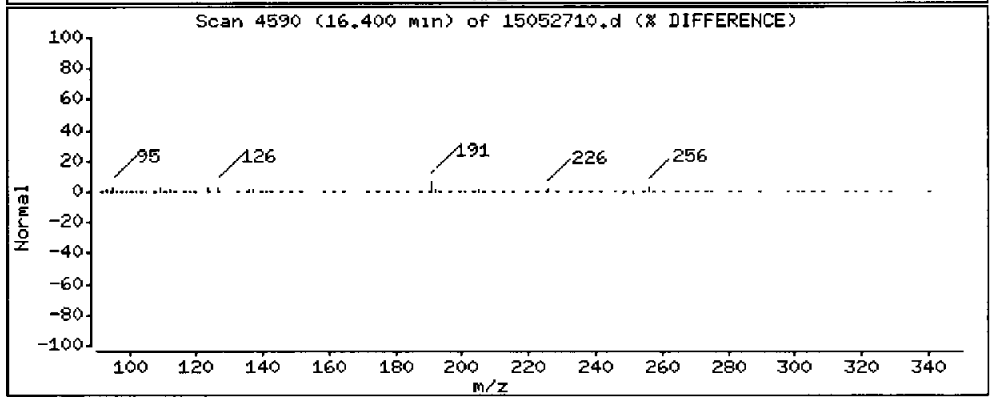












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

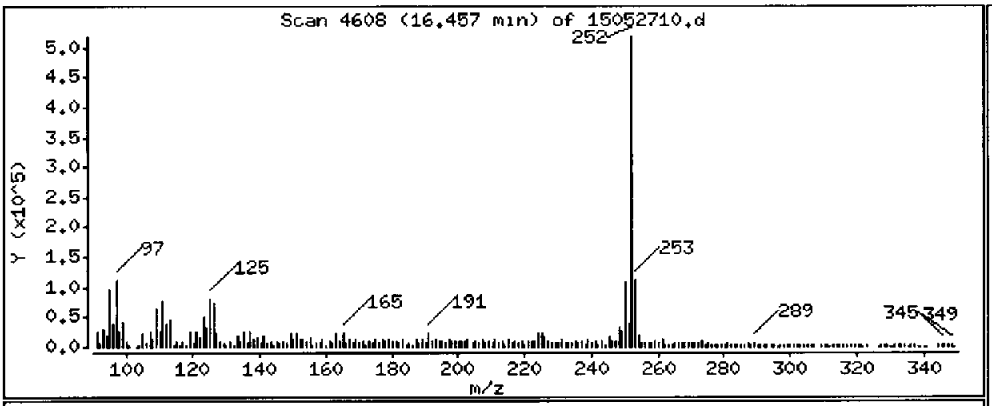
Operator: JZ

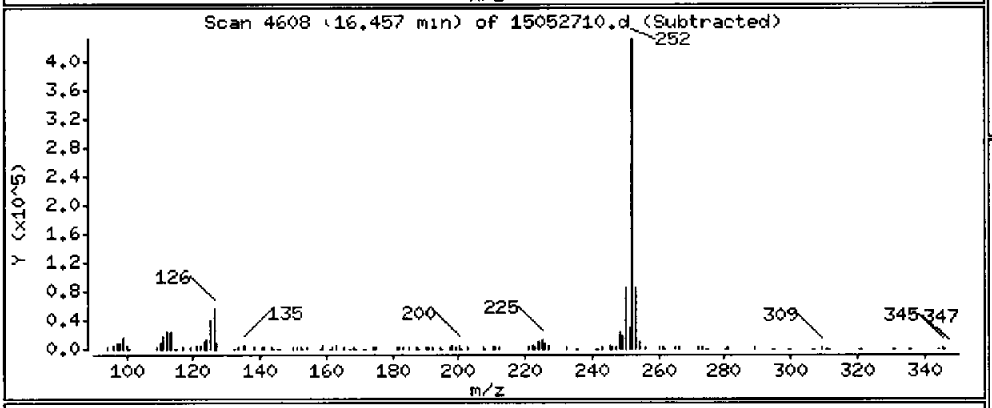
Column phase: ZB-35

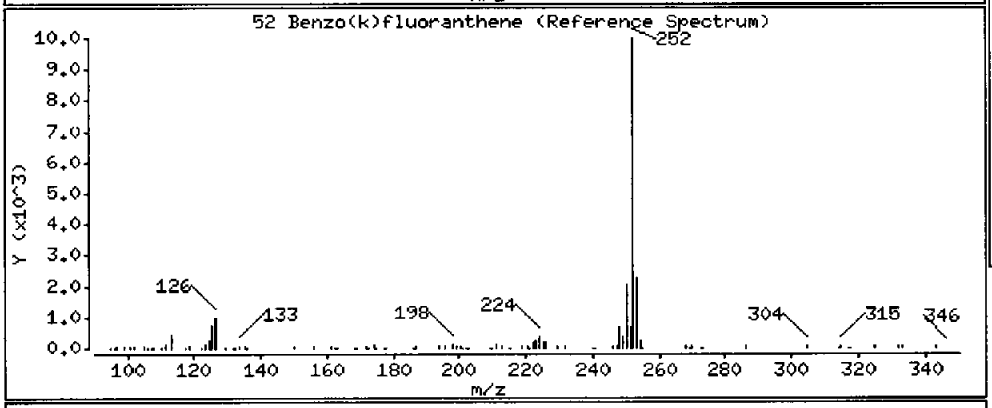
Column diameter: 0.25

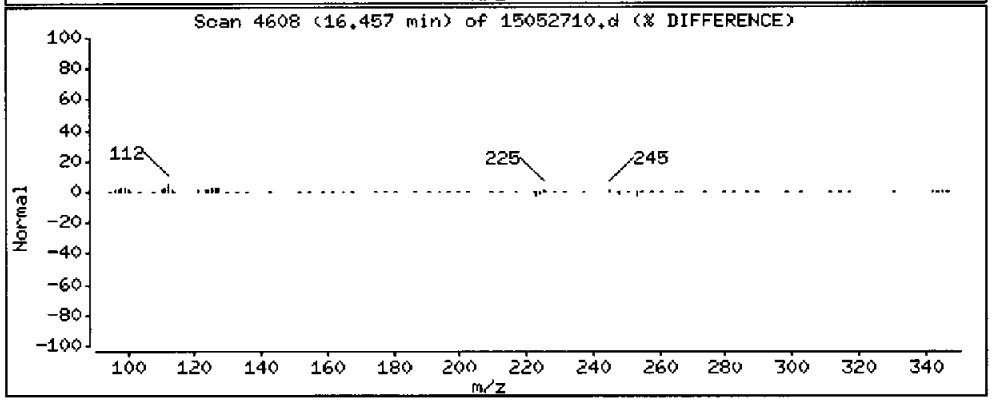
52 Benzo(k)fluoranthene

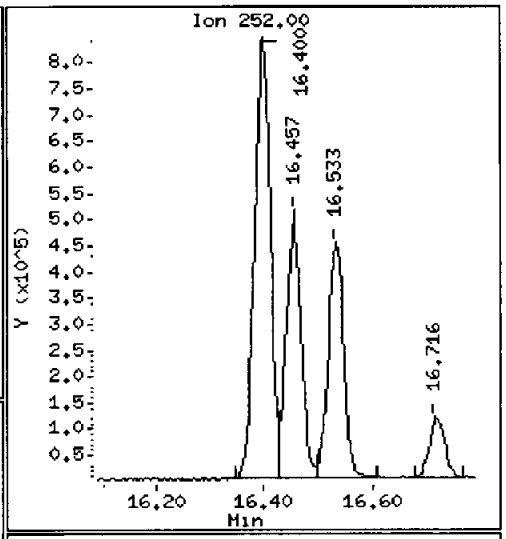
Concentration: 161.5 ug/kg

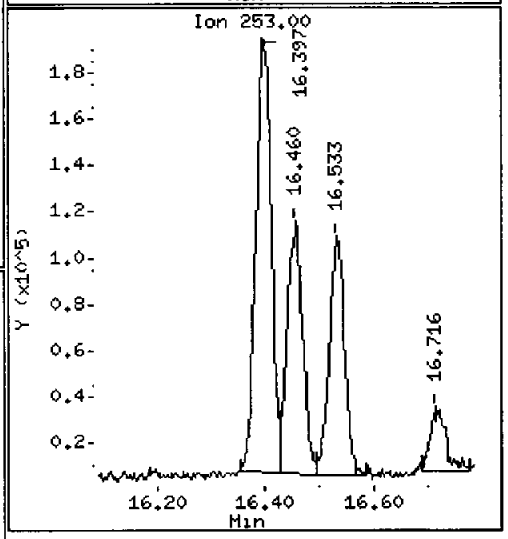












MEA 8017

Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

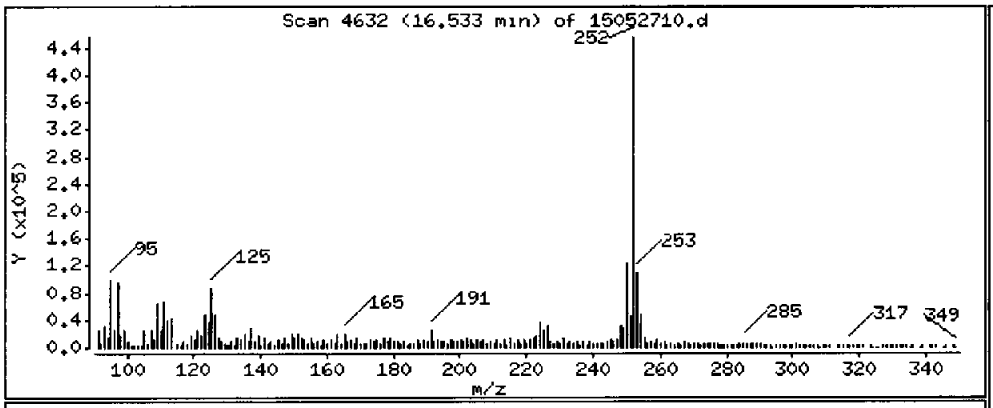
Operator: JZ

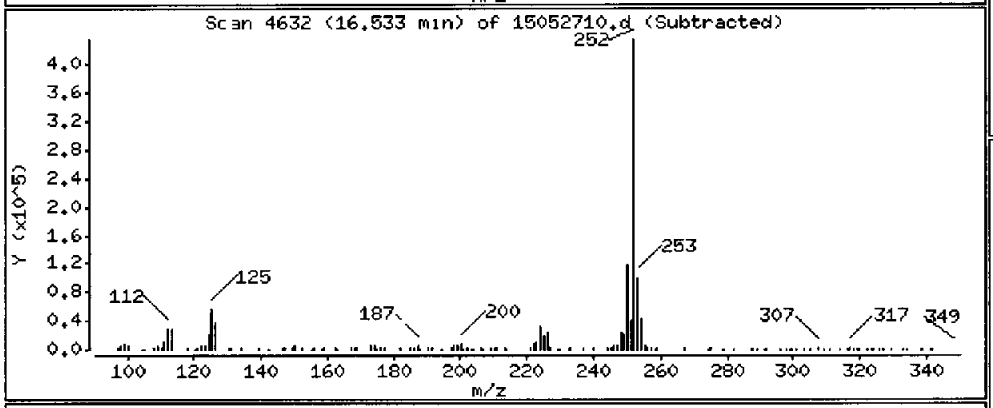
Column phase: ZB-35

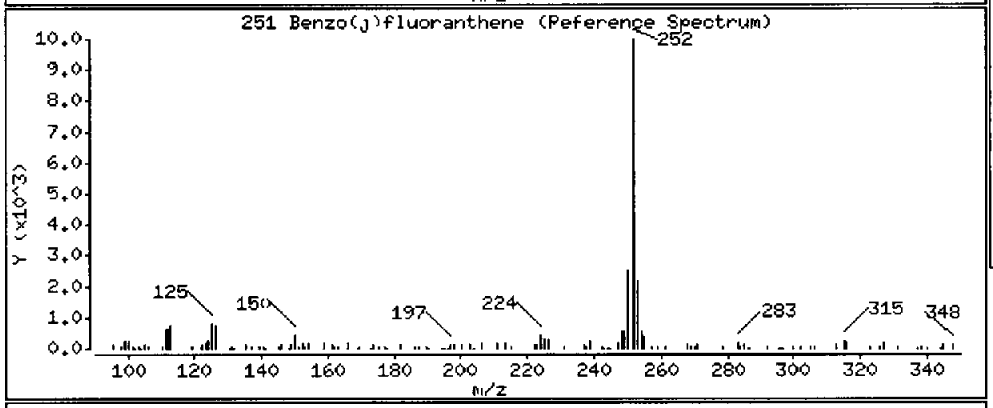
Column diameter: 0.25

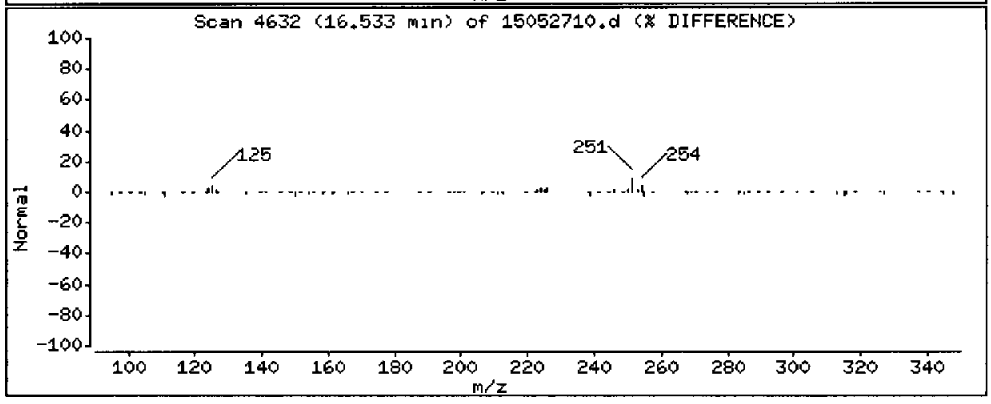
251 Benzo(j)fluoranthene

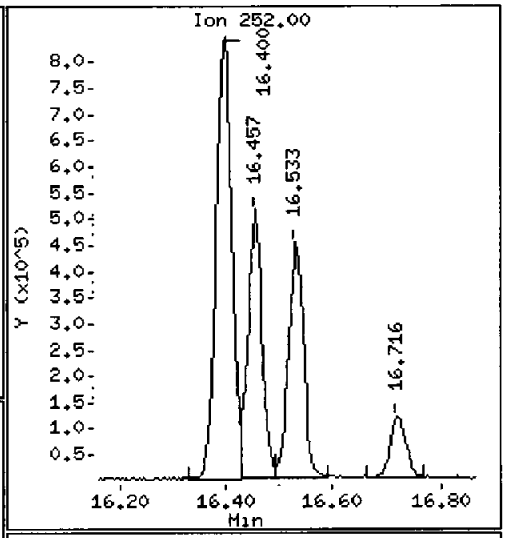
Concentration: 148.5 ug/kg

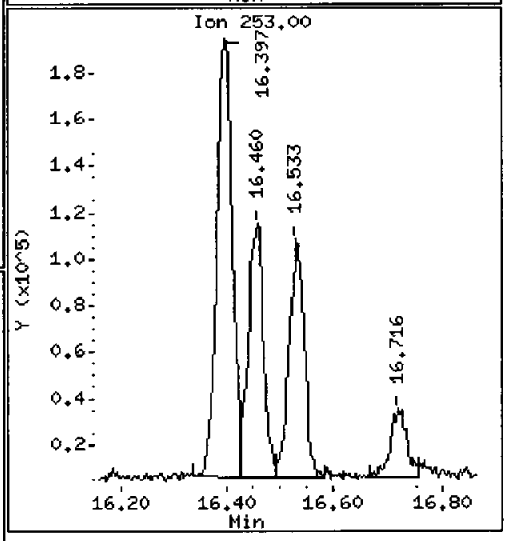












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

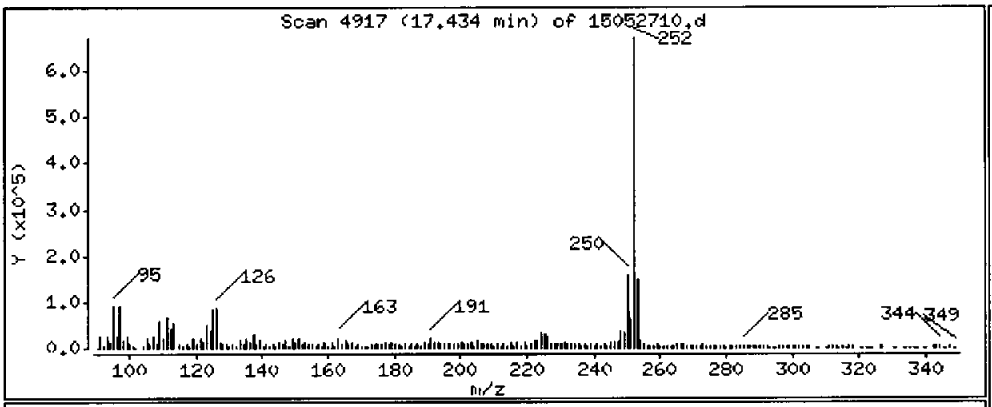
Operator: JZ

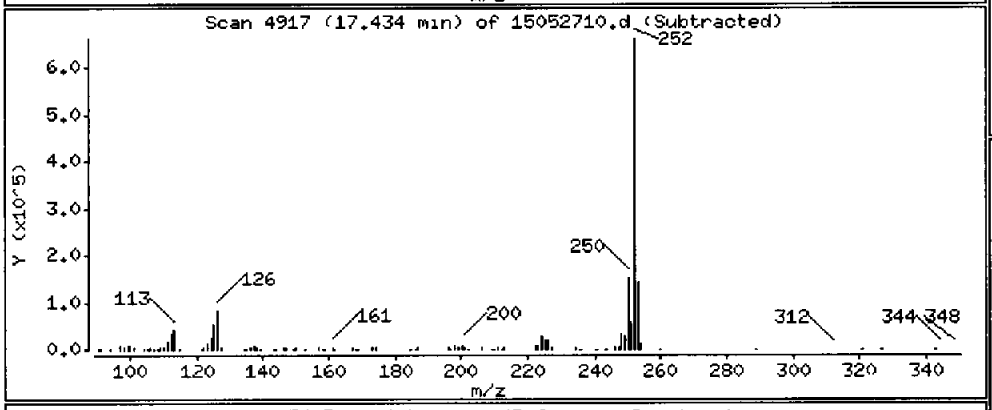
Column phase: ZB-35

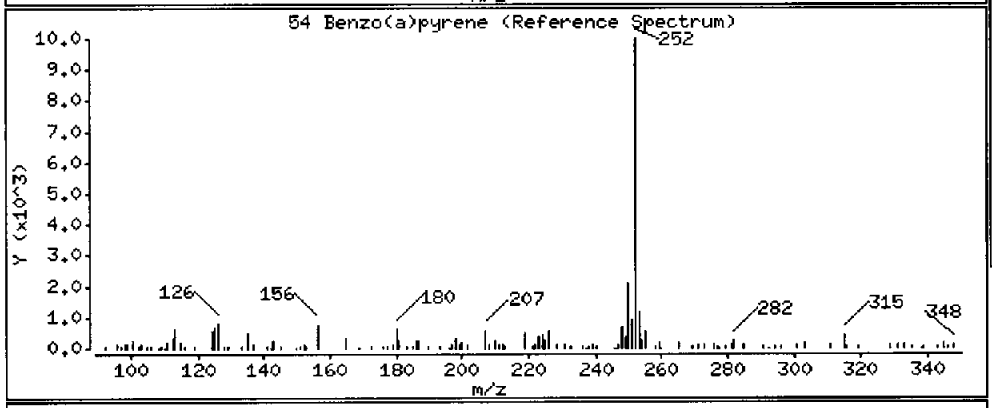
Column diameter: 0.25

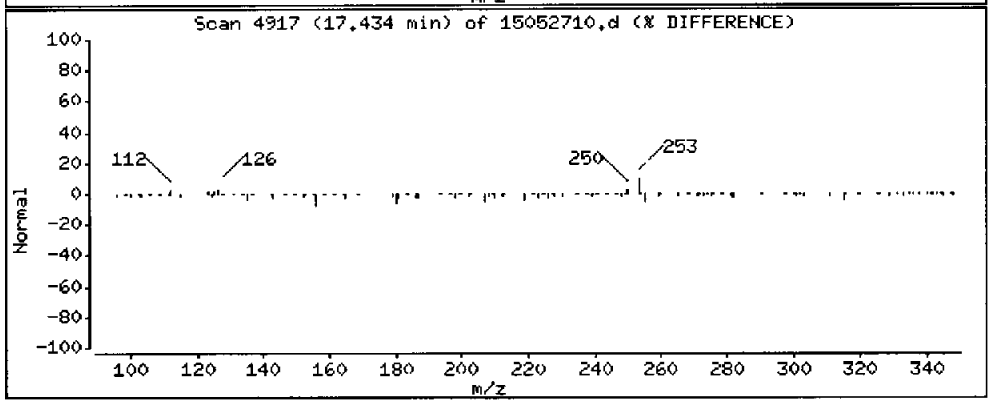
54 Benzo(a)pyrene

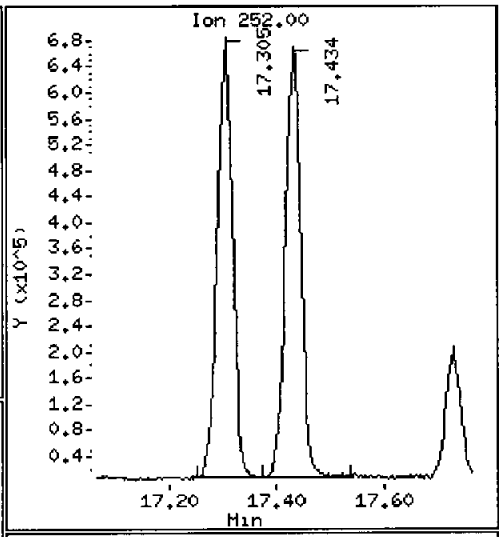
Concentration: 250.9 ug/kg

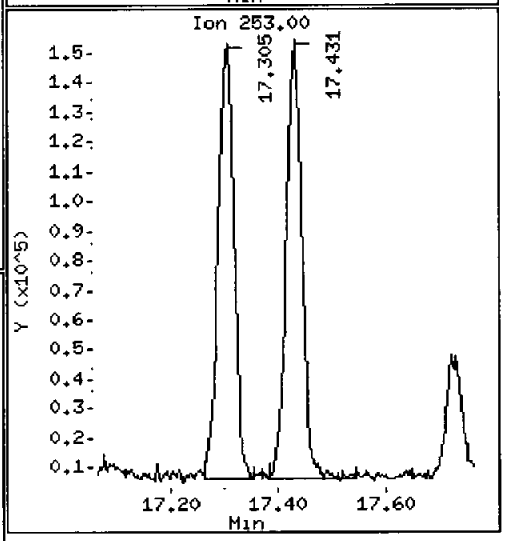












Data File: /chem3/nt8.i/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F

Volume Injected (uL): 1.0

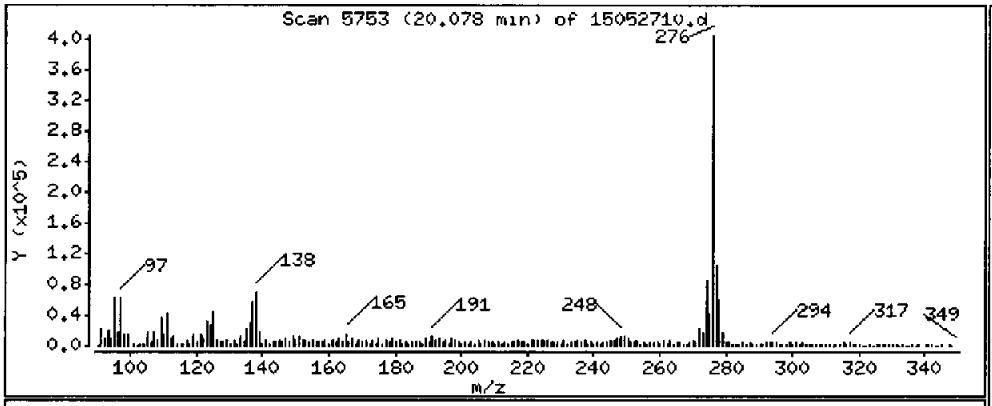
Operator: JZ

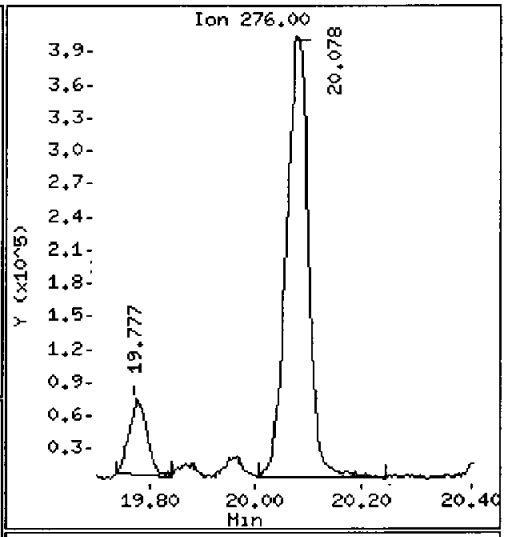
Column phase: ZB-35

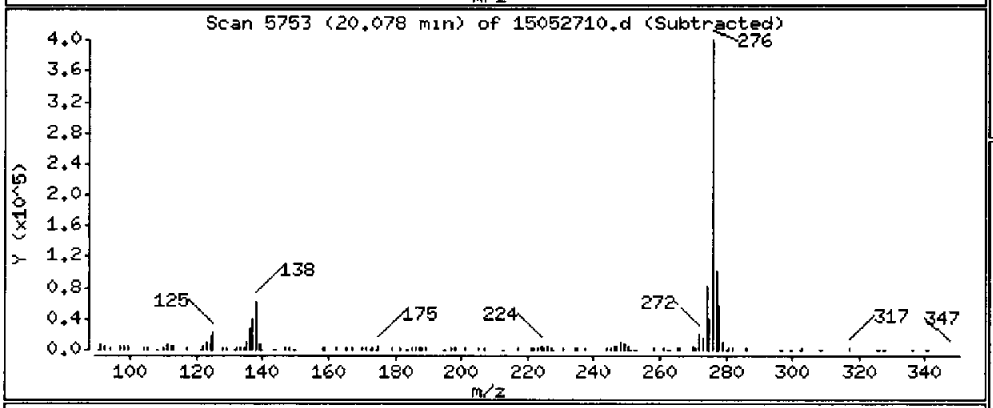
Column diameter: 0.25

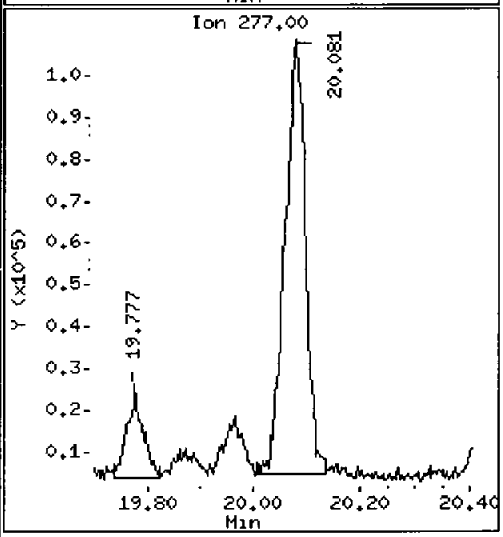
63 Indeno(1,2,3-cd)pyrene

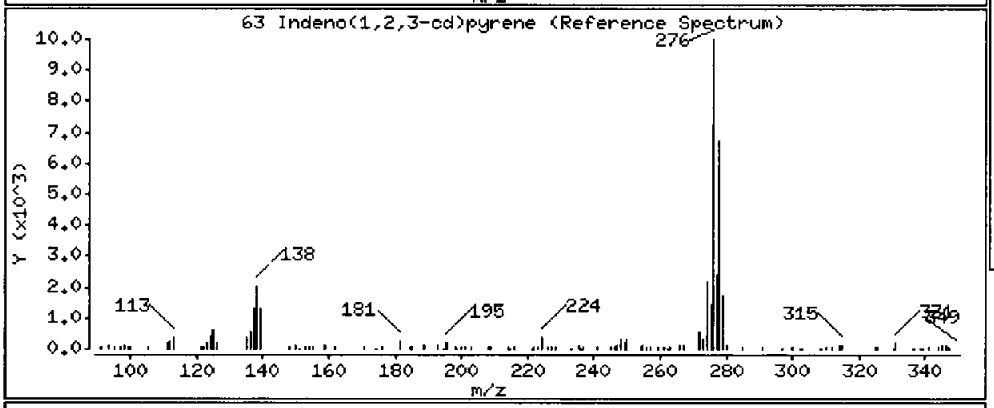
Concentration: 179.1 ug/kg

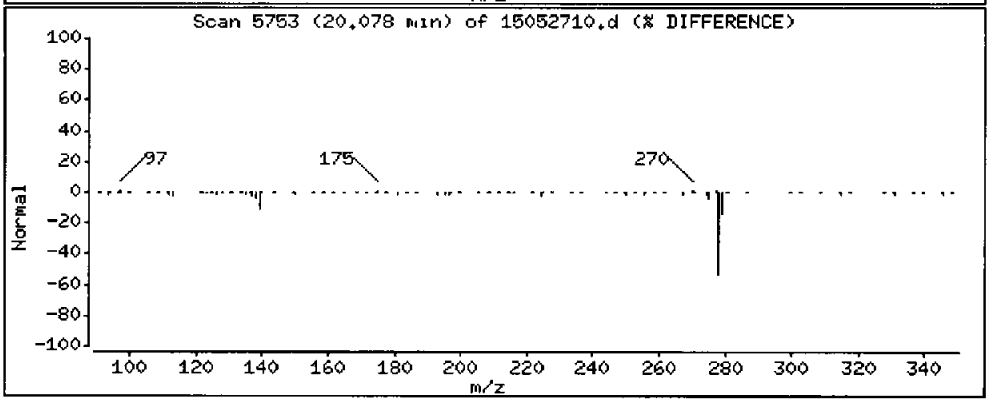












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

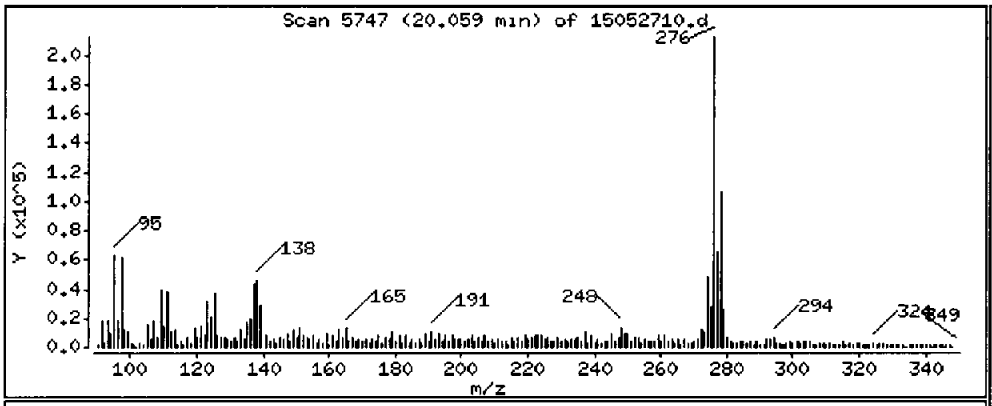
Operator: JZ

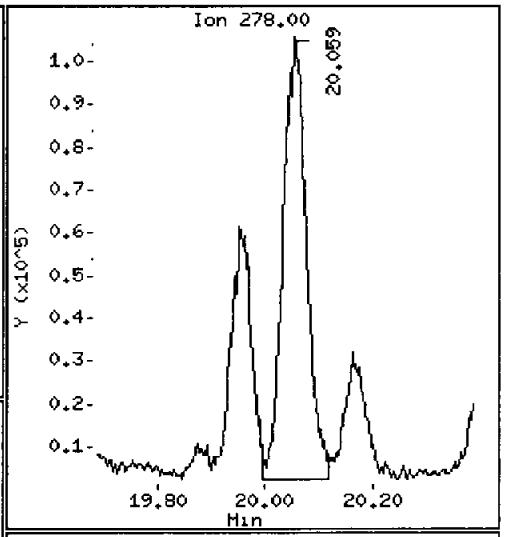
Column phase: ZB-35

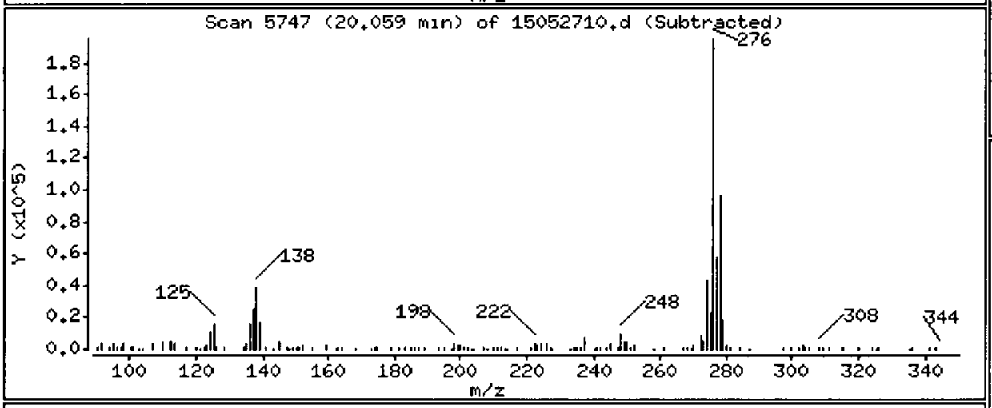
Column diameter: 0.25

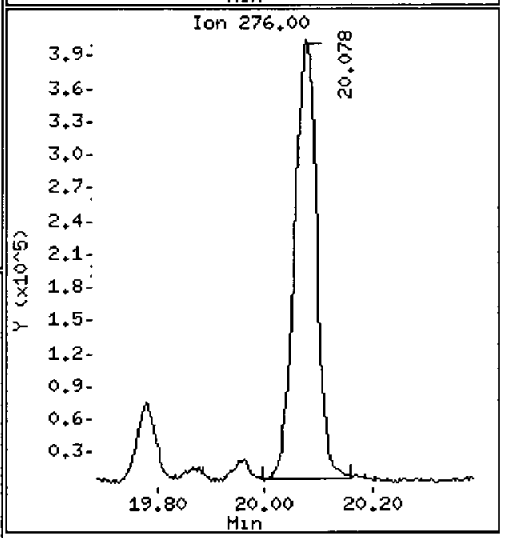
62 Dibenzo(a,h)anthracene

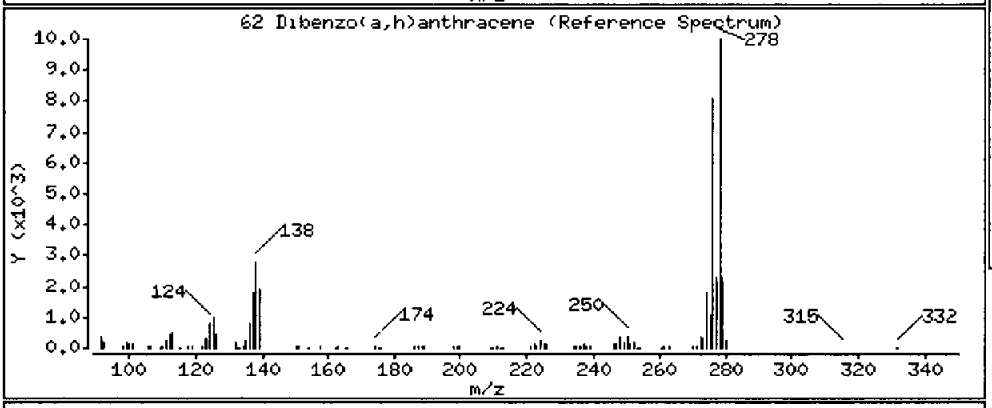
Concentration: 60.25 ug/kg

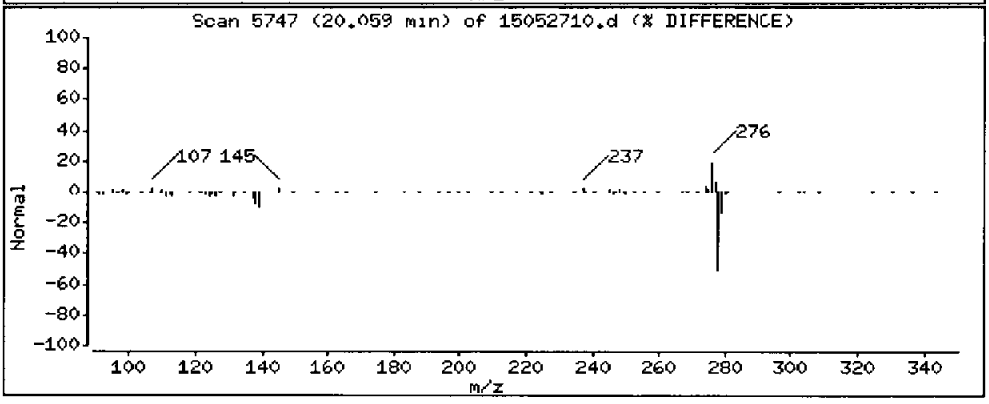












Data File: /chem3/nt8.1/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F

Volume Injected (uL): 1.0

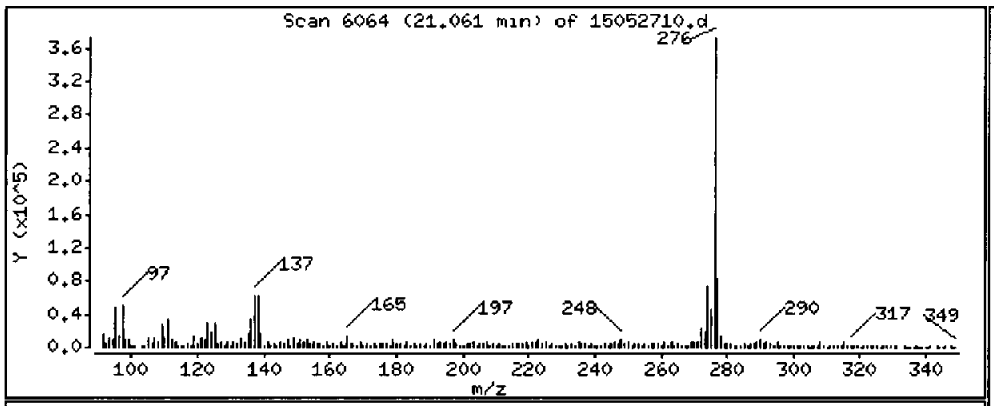
Operator: JZ

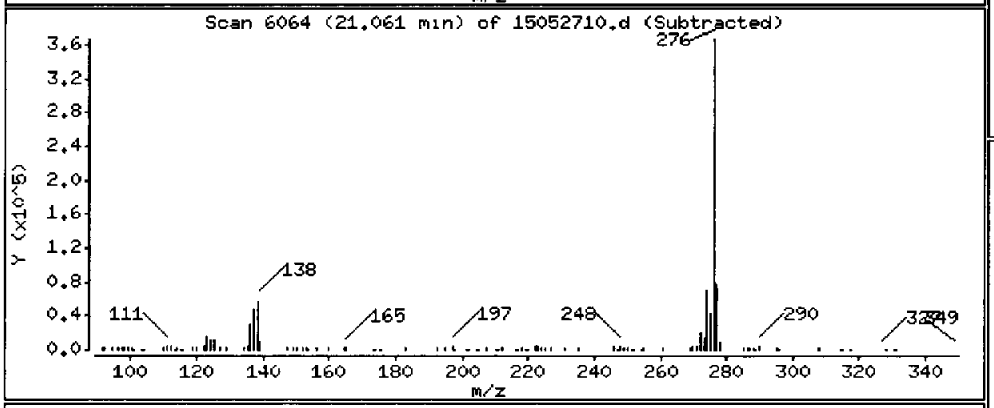
Column phase: ZB-35

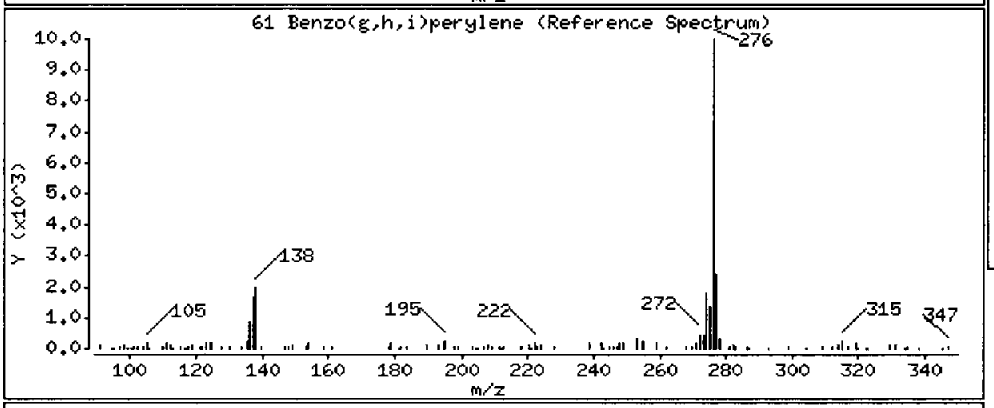
Column diameter: 0.25

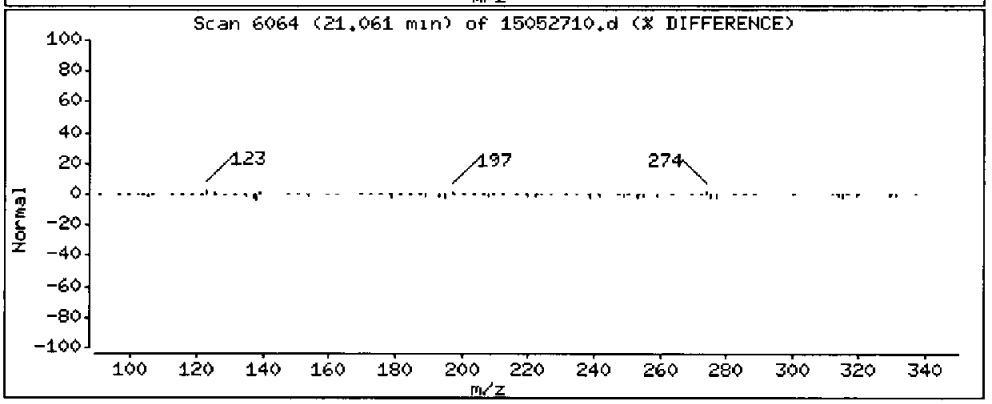
61 Benzo(g,h,i)perylene

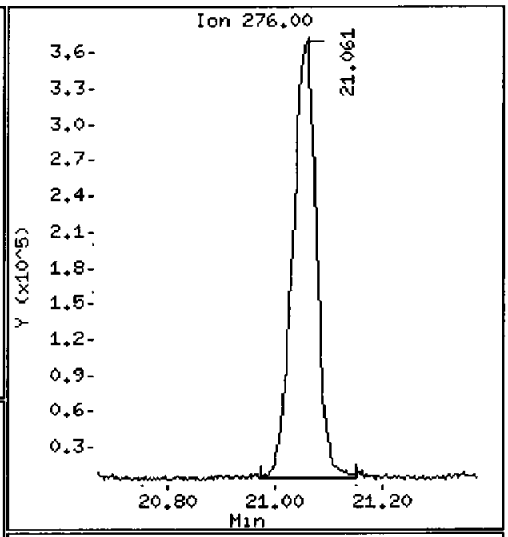
Concentration: 201.9 ug/kg

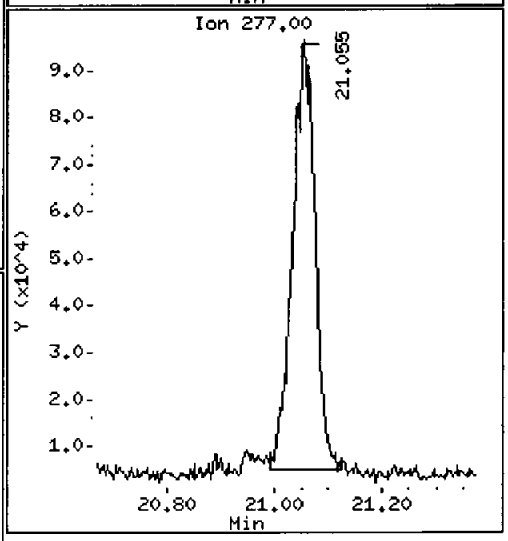












Data File: /chem3/nt8.i/20150527.b/15052710.d

Date : 27-MAY-2015 19:24

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F

Volume Injected (uL): 1.0

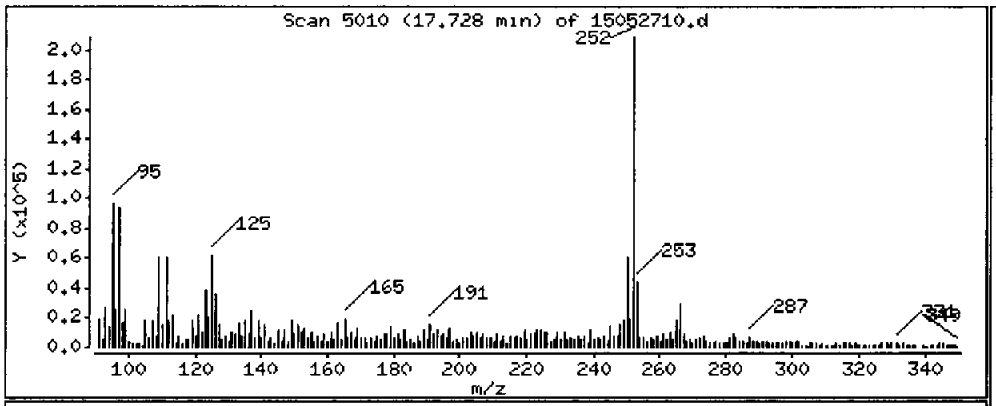
Operator: JZ

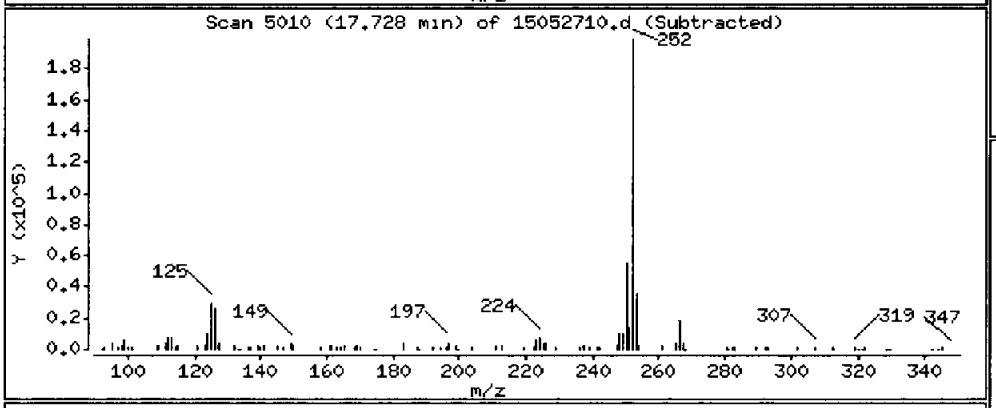
Column phase: ZB-35

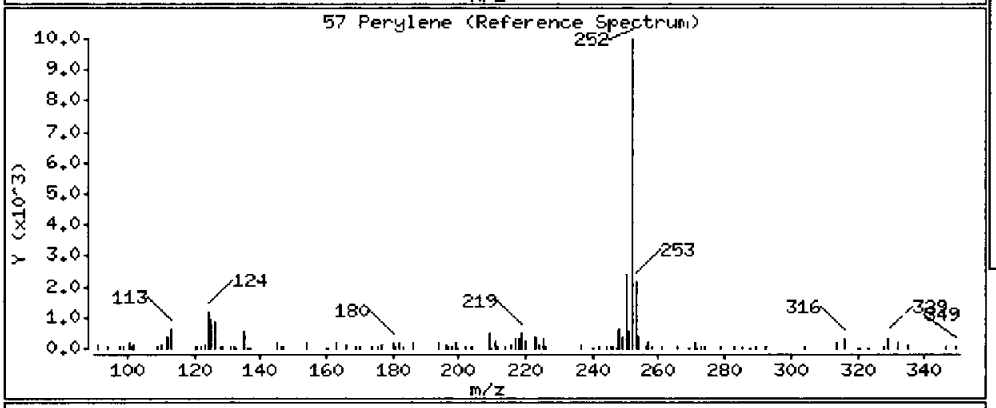
Column diameter: 0.25

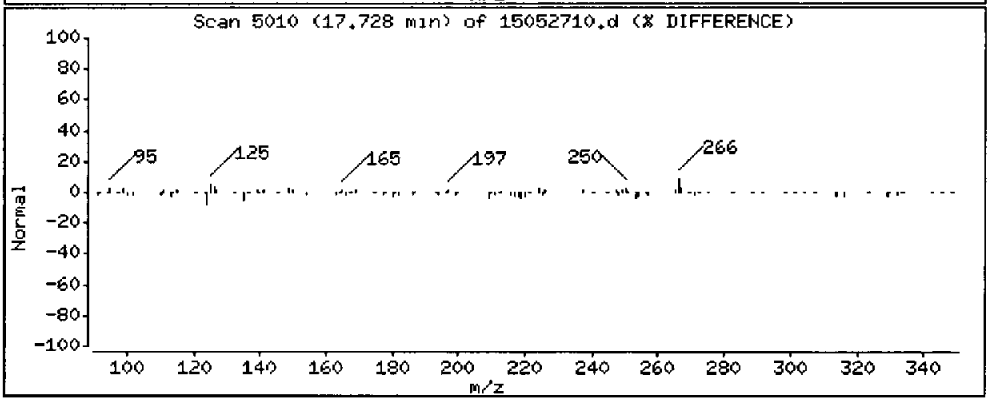
57 Perylene

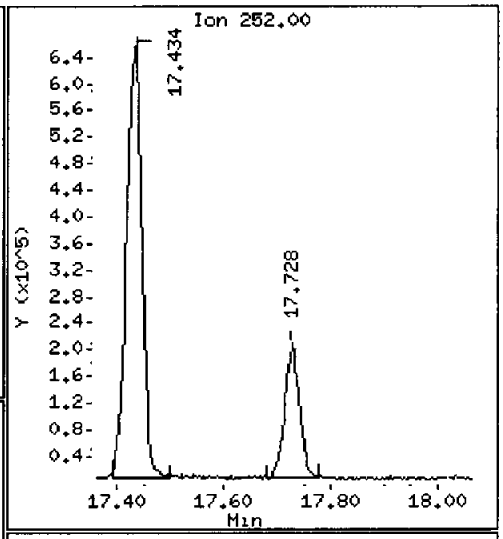
Concentration: 68.75 ug/kg

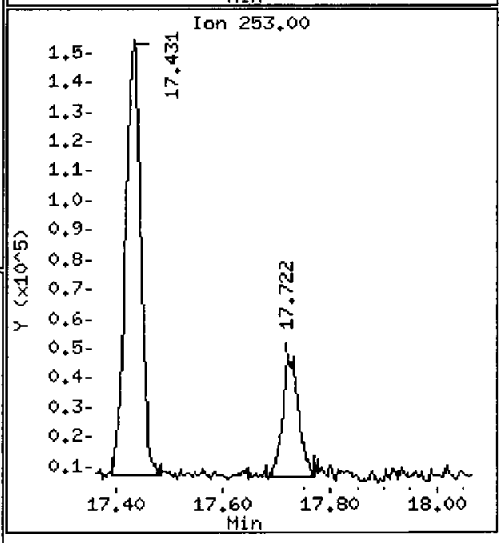












CO-ELUTION SUMMARY FOR FILE - 15052710.d

Lab ID: AGA8F, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052711.d
Lab Smp Id: AGA8FMS Client Smp ID: SDP-07(1.5-3.0) MS
Inj Date : 27-MAY-2015 19:50
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8FMS
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:21 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 11 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.00000	Weight of sample extracted (g)
M	13.50000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6 Naphthalene-d8	136	4 742	4.745	(1.000)	401289	2.00000	
7 Naphthalene	128	4 770	4.774	(1 006)	408897	2.11522	101.9
$ 12 2-Methylnaphthalene-d10	152	5 472	5.469	(1 154)	211935	1.72950	83.31
14 2-Methylnaphthalene	141	5.520	5.520	(1.164)	278644	2.41737	116.4
15 1-methylnaphthalene	141	5.713	5.713	(1.205)	229871	2.05211	98.85
21 Acenaphthylene	152	6.902	6.899	(0.984)	404356	2.09007	100.7
* 22 Acenaphthene-d10	164	7.012	7.009	(1.000)	264907	2.00000	
23 Acenaphthene	153	7.060	7.057	(1.007)	268172	2.08326	100.3
11 Dibenzofuran	168	7.212	7.208	(1.028)	457080	2.56742	123.7
25 Fluorene	166	7.686	7.680	(1.096)	328179	2.28251	109.9
* 28 Phenanthrene-d10	188	9.033	9.027	(1.000)	470490	2.00000	
30 Phenanthrene	178	9.068	9 061	(1.004)	1356863	6.04889	291.4(R)
31 Anthracene	178	9.109	9.102	(1.008)	652848	3.23272	155.7
36 Fluoranthene	202	10.791	10.775	(1.195)	3457315	13.1778	634.8(R) E
$ 253 Fluoranthene-d10	212	10.750	10.737	(1.190)	539456	2.33098	112.3

AGA8-8015

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)	
	39 Pyrene	202	11 287	11.268	(0.816)	3388149	10.1190	487.4(R)	E
	46 Benzo(a)anthracene	228	13.713	13.691	(0.991)	1996786	6.62753	319.2(R)	
*	47 Chrysene-d12	240	13.836	13.811	(1.000)	600641	2.00000		
	48 Chrysene	228	13.909	13.883	(1.005)	2785858	9.22205	444.2(R)	
	51 Benzo(b)fluoranthene	252	16.410	16.375	(0.929)	2426838	7.88811	380.0(R)	
	52 Benzo(k)fluoranthene	252	16.470	16.438	(0.932)	1561589	5.07996	244.7(R)	
	251 Benzo(j)fluoranthene	252	16.546	16.511	(0.936)	1366270	4.55489	219.4(R)	
	54 Benzo(a)pyrene	252	17.440	17.412	(0.987)	1834259	6.68670	322.1(R)	
*	56 Perylene-d12	264	17.668	17.640	(1.000)	585844	2.00000		
	63 Indeno(1,2,3-cd)pyrene	276	20.097	20.052	(1.137)	1864964	5.66033	272.7(R)	
$	60 Dibenzo(a,h)anthracene-d14	292	19.973	19.939	(1.130)	483221	2.16579	104.3	
	62 Dibenzo(a,h)anthracene	278	20.074	20.037	(1.136)	893647	3.33009	160.4	
	61 Benzo(g,h,i)perylene	276	21.074	21.020	(1.193)	1738715	5.99930	289.0(R)	
	57 Perylene	252	17.741	17.713	(1.004)	982183	3.44908	166.1	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052711.d
Lab Smp Id: AGA8FMS
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	401289	16.96
22 Acenaphthene-d10	230598	115299	461196	264907	14.88
28 Phenanthrene-d10	373928	186964	747856	470490	25.82
47 Chrysene-d12	381262	190631	762524	600641	57.54
56 Perylene-d12	380825	190412	761650	585844	53.84

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.04
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.84	0.18
56 Perylene-d12	17.64	17.14	18.14	17.67	0.16

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

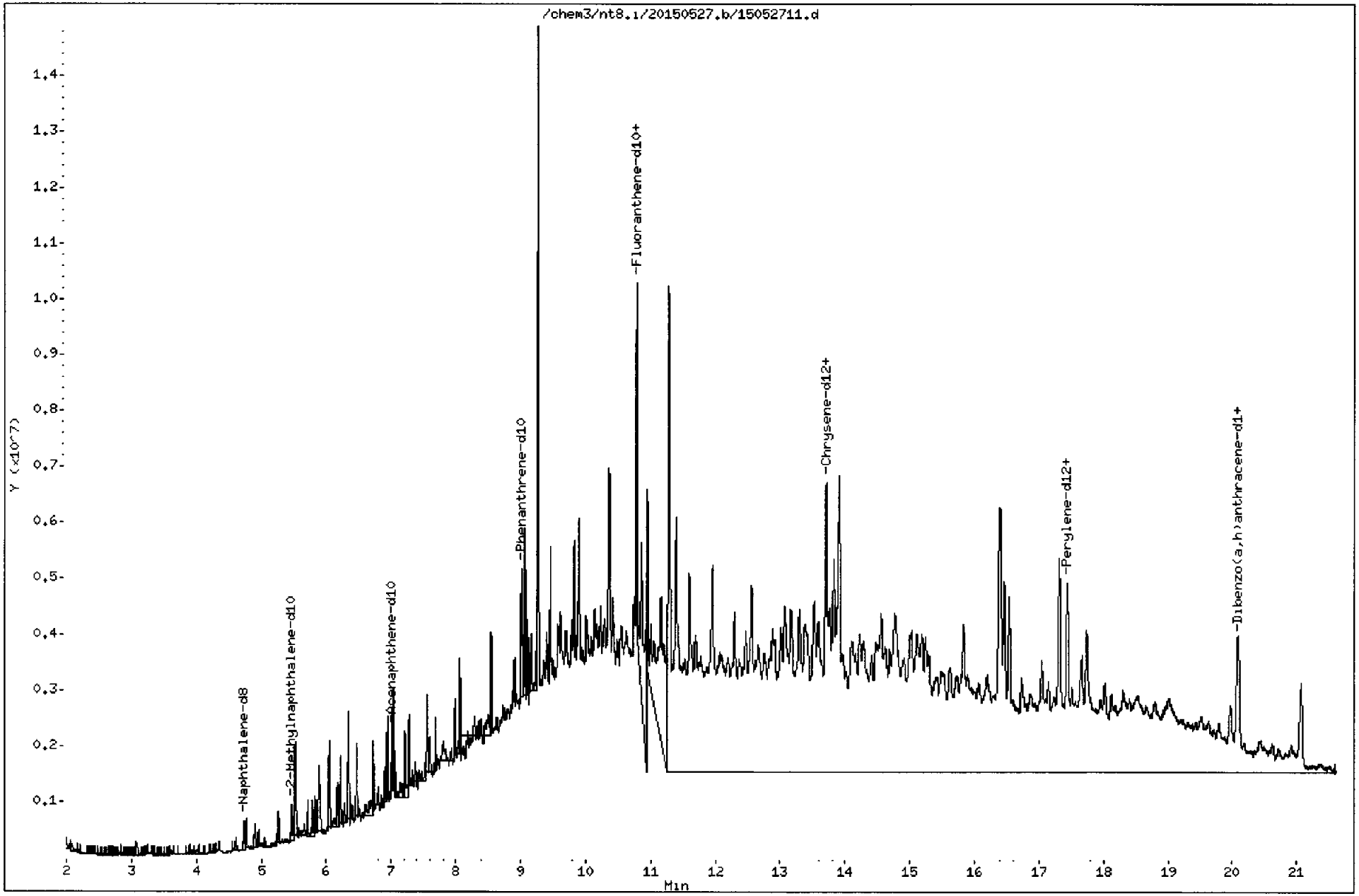
Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8FMS
Client Smp ID: SDP-07(1.5-3.0) MS
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: MS
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7 Naphthalene	144.5	101.9	70.51	36-120
14 2-Methylnaphthalen	144.5	116.4	80.58	35-120
15 1-methylnaphthalen	144.5	98.85	68.40	39-120
21 Acenaphthylene	144.5	100.7	69.67	35-120
23 Acenaphthene	144.5	100.3	69.44	39-120
11 Dibenzofuran	144.5	123.7	85.58	38-120
25 Fluorene	144.5	109.9	76.08	41-120
30 Phenanthrene	144.5	291.4	201.63*	46-120
31 Anthracene	144.5	155.7	107.76	36-120
36 Fluoranthene	144.5	634.8	439.26*	46-120
39 Pyrene	144.5	487.4	337.30*	49-120
46 Benzo(a)anthracene	144.5	319.2	220.92*	42-120
48 Chrysene	144.5	444.2	307.40*	48-120
51 Benzo(b)fluoranthe	144.5	380.0	262.94*	35-127
52 Benzo(k)fluoranthe	144.5	244.7	169.33*	37-129
251 Benzo(j)fluoranthe	144.5	219.4	151.83*	40-120
54 Benzo(a)pyrene	144.5	322.1	222.89*	36-120
63 Indeno(1,2,3-cd)py	144.5	272.7	188.68*	40-120
62 Dibenzo(a,h)anthra	144.5	160.4	111.00	38-120
61 Benzo(g,h,i)peryle	144.5	289.0	199.98*	38-120
57 Perylene	144.5	166.1	114.97	44-120

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.5	83.31	57.65	32-120
$ 253 Fluoranthene-d10	144.5	112.3	77.70	36-134
$ 60 Dibenzo(a,h)anthra	144.5	104.3	72.19	21-133

Data File: /chem3/nt8.i/20150527.b/15052711.d
Date : 27-MAY-2015 19:50
Client ID: SDP-07(1.5-3.0) MS
Sample Info: AGA8FMS
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052711.d

Lab ID: AGA8FMS, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-201

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052712.d
Lab Smp Id: AGA8FMSD Client Smp ID: SDP-07(1.5-3.0) MSD
Inj Date : 27-MAY-2015 20:16
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8FMSD
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:21 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.03000	Weight of sample extracted (g)
M	13.50000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.742	4.745	(1.000)	410175	2.00000	
7 Naphthalene	128	4 771	4.774	(1.006)	385488	1.95093	93.74
$ 12 2-Methylnaphthalene-d10	152	5.473	5.469	(1.154)	208682	1.66606	80.05
14 2-Methylnaphthalene	141	5.520	5.520	(1.164)	273505	2.32138	111.5
15 1-methylnaphthalene	141	5.713	5.713	(1.205)	237400	2.07341	99.63
21 Acenaphthylene	152	6.902	6.899	(0.984)	420222	2 08354	100 1
* 22 Acenaphthene-d10	164	7.012	7.009	(1.000)	276164	2 00000	
23 Acenaphthene	153	7.060	7.057	(1.007)	273482	2.03791	97.92
11 Dibenzofuran	168	7.212	7.208	(1.028)	453526	2.44362	117 4
25 Fluorene	166	7.686	7.680	(1.096)	337392	2.25094	108 2
* 28 Phenanthrene-d10	188	9.033	9.027	(1.000)	484508	2.00000	
30 Phenanthrene	178	9.068	9.061	(1.004)	1313267	5.68515	273.2(R)
31 Anthracene	178	9.109	9.102	(1.008)	656352	3.15604	151.6
36 Fluoranthene	202	10.791	10.775	(1.195)	3315434	12.2714	589.6(R)
$ 253 Fluoranthene-d10	212	10.750	10.737	(1.190)	536199	2.24988	108.1

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.287	11.268	(0.816)	3175671	9.29075	446.4(R)
	46 Benzo(a)anthracene	228	13.713	13.691	(0.991)	1958445	6.36757	306.0(R)
*	47 Chrysene-d12	240	13.836	13.811	(1.000)	613159	2.00000	
	48 Chrysene	228	13.912	13.883	(1.005)	2646497	8.58187	412.4(R)
	51 Benzo(b)fluoranthene	252	16.413	16.375	(0.929)	2353976	7.24933	348.3(R)
	52 Benzo(k)fluoranthene	252	16.470	16.438	(0.932)	1561482	4.81276	231.3(R)
	251 Benzo(j)fluoranthene	252	16.546	16.511	(0.936)	1304073	4.11914	197.9(R)
	54 Benzo(a)pyrene	252	17.444	17.412	(0.987)	1824008	6.30002	302.7(R)
*	56 Perylene-d12	264	17.668	17.640	(1.000)	618327	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.097	20.052	(1.137)	1852167	5.32617	255.9(R)
$	60 Dibenzo(a,h)anthracene-d14	292	19.980	19.939	(1.131)	489407	2.07828	99.86
	62 Dibenzo(a,h)anthracene	278	20.081	20.037	(1.137)	896991	3.16695	152.2
	61 Benzo(g,h,i)perylene	276	21.080	21.020	(1.193)	1724802	5.63865	270.9(R)
	57 Perylene	252	17.744	17.713	(1.004)	976835	3.25009	156.2

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052712.d
Lab Smp Id: AGA8FMSD
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	410175	19.55
22 Acenaphthene-d10	230598	115299	461196	276164	19.76
28 Phenanthrene-d10	373928	186964	747856	484508	29.57
47 Chrysene-d12	381262	190631	762524	613159	60.82
56 Perylene-d12	380825	190412	761650	618327	62.37

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.05
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.84	0.18
56 Perylene-d12	17.64	17.14	18.14	17.67	0.16

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

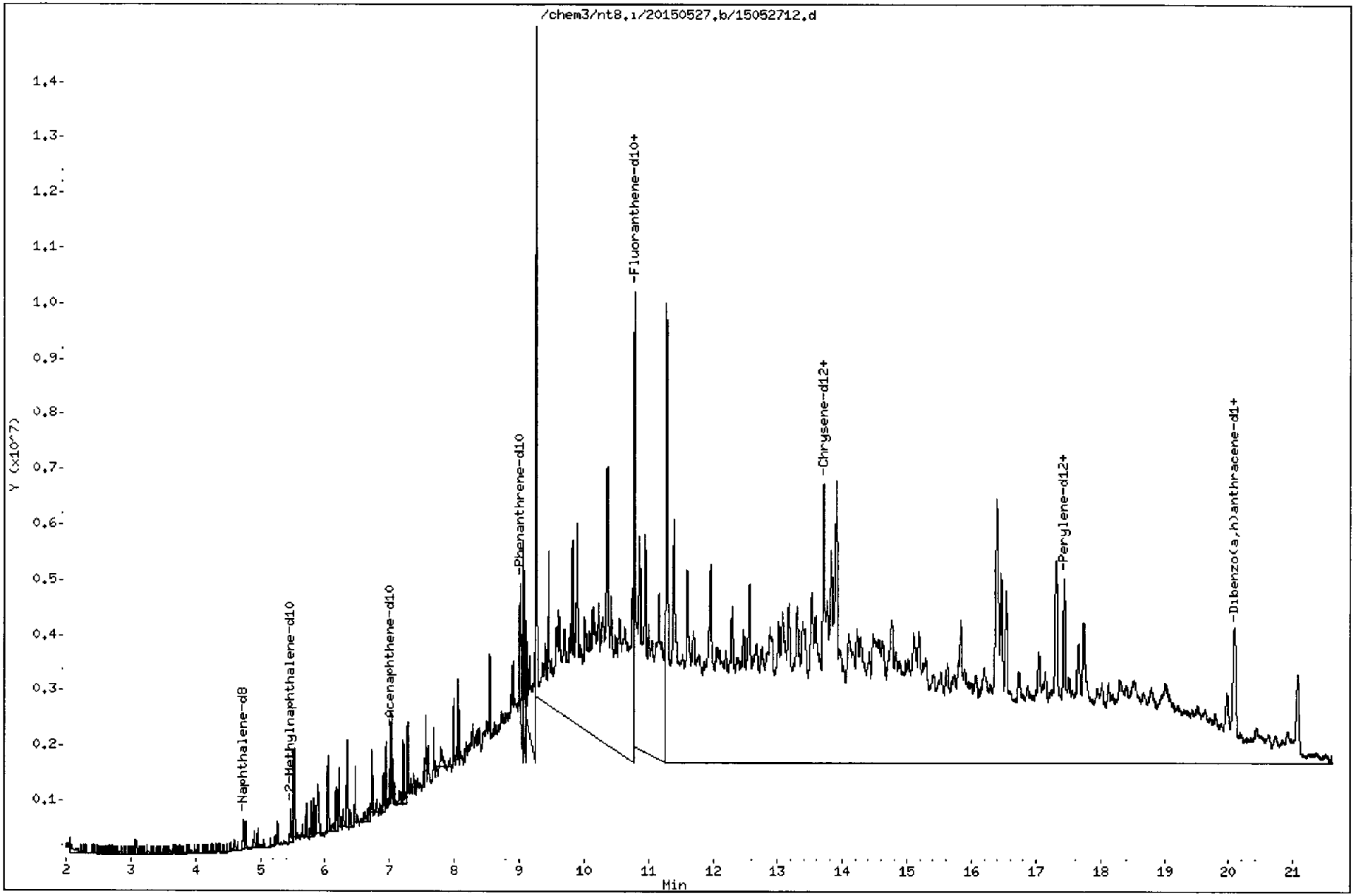
Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8FMSD
Client Smp ID: SDP-07(1.5-3.0) MSD
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: MS
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9294

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7 Naphthalene	144.1	93.74	65.03	36-120
14 2-Methylnaphthalen	144.1	111.5	77.38	35-120
15 1-methylnaphthalen	144.1	99.63	69.11	39-120
21 Acenaphthylene	144.1	100.1	69.45	35-120
23 Acenaphthene	144.1	97.92	67.93	39-120
11 Dibenzofuran	144.1	117.4	81.45	38-120
25 Fluorene	144.1	108.2	75.03	41-120
30 Phenanthrene	144.1	273.2	189.51*	46-120
31 Anthracene	144.1	151.6	105.20	36-120
36 Fluoranthene	144.1	589.6	409.05*	46-120
39 Pyrene	144.1	446.4	309.69*	49-120
46 Benzo(a)anthracene	144.1	306.0	212.25*	42-120
48 Chrysene	144.1	412.4	286.06*	48-120
51 Benzo(b)fluoranthe	144.1	348.3	241.64*	35-127
52 Benzo(k)fluoranthe	144.1	231.3	160.43*	37-129
251 Benzo(j)fluoranthe	144.1	197.9	137.30*	40-120
54 Benzo(a)pyrene	144.1	302.7	210.00*	36-120
63 Indeno(1,2,3-cd)py	144.1	255.9	177.54*	40-120
62 Dibenzo(a,h)anthra	144.1	152.2	105.57	38-120
61 Benzo(g,h,i)peryle	144.1	270.9	187.95*	38-120
57 Perylene	144.1	156.2	108.34	44-120

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.1	80.05	55.54	32-120
$ 253 Fluoranthene-d10	144.1	108.1	75.00	36-134
$ 60 Dibenzo(a,h)anthra	144.1	99.86	69.28	21-133

Data File: /chem3/nt8.1/20150527.b/15052712.d
Date : 27-MAY-2015 20:16
Client ID: SDP-07(1.5-3.0) MSD
Sample Info: AGA8FMSD
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052712.d

Lab ID: AGA8FMSD, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGA8-SD130

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052713.d
Lab Smp Id: AGA8G Client Smp ID: SDP-07(8.5-9.5)
Inj Date : 27-MAY-2015 20:41
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8G
Misc Info : 15-9295
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.01000	Weight of sample extracted (g)
M	27.60000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.742	4.745	(1.000)	395405	2.00000	
7 Naphthalene	128	Compound Not Detected.					
$ 12 2-Methylnaphthalene-d10	152	5.472	5.469	(1.154)	158754	1.31479	64.81
14 2-Methylnaphthalene	141	Compound Not Detected					
15 1-methylnaphthalene	141	Compound Not Detected					
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	254094	2.00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	Compound Not Detected.					
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9.030	9.027	(1.000)	438676	2.00000	
30 Phenanthrene	178	9.064	9.061	(1.004)	23696	0.11330	5.585
31 Anthracene	178	Compound Not Detected.					
36 Fluoranthene	202	10.775	10.775	(1.193)	17374	0.07103	3.501
$ 253 Fluoranthene-d10	212	10.740	10.737	(1.189)	437030	2.02535	99.84

AGA8 8GH57

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.268	11.268	(0.816)	16402	0 06161	3.037
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13 817	13.811	(1.000)	477545	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	16.378	16.375	(0.928)	11795	0 04340	2.140(M)
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected					
*	56 Perylene-d12	264	17.643	17.640	(1.000)	517480	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19 942	19.939	(1.130)	412959	2.09539	103.3
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	17.709	17.713	(1.004)	36925	0.14680	7.236

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052713.d
Lab Smp Id: AGA8G
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9295

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-07(8.5-9.5)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	395405	15.25
22 Acenaphthene-d10	230598	115299	461196	254094	10.19
28 Phenanthrene-d10	373928	186964	747856	438676	17.32
47 Chrysene-d12	381262	190631	762524	477545	25.25
56 Perylene-d12	380825	190412	761650	517480	35.88

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.07
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.03
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.04
56 Perylene-d12	17.64	17.14	18.14	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

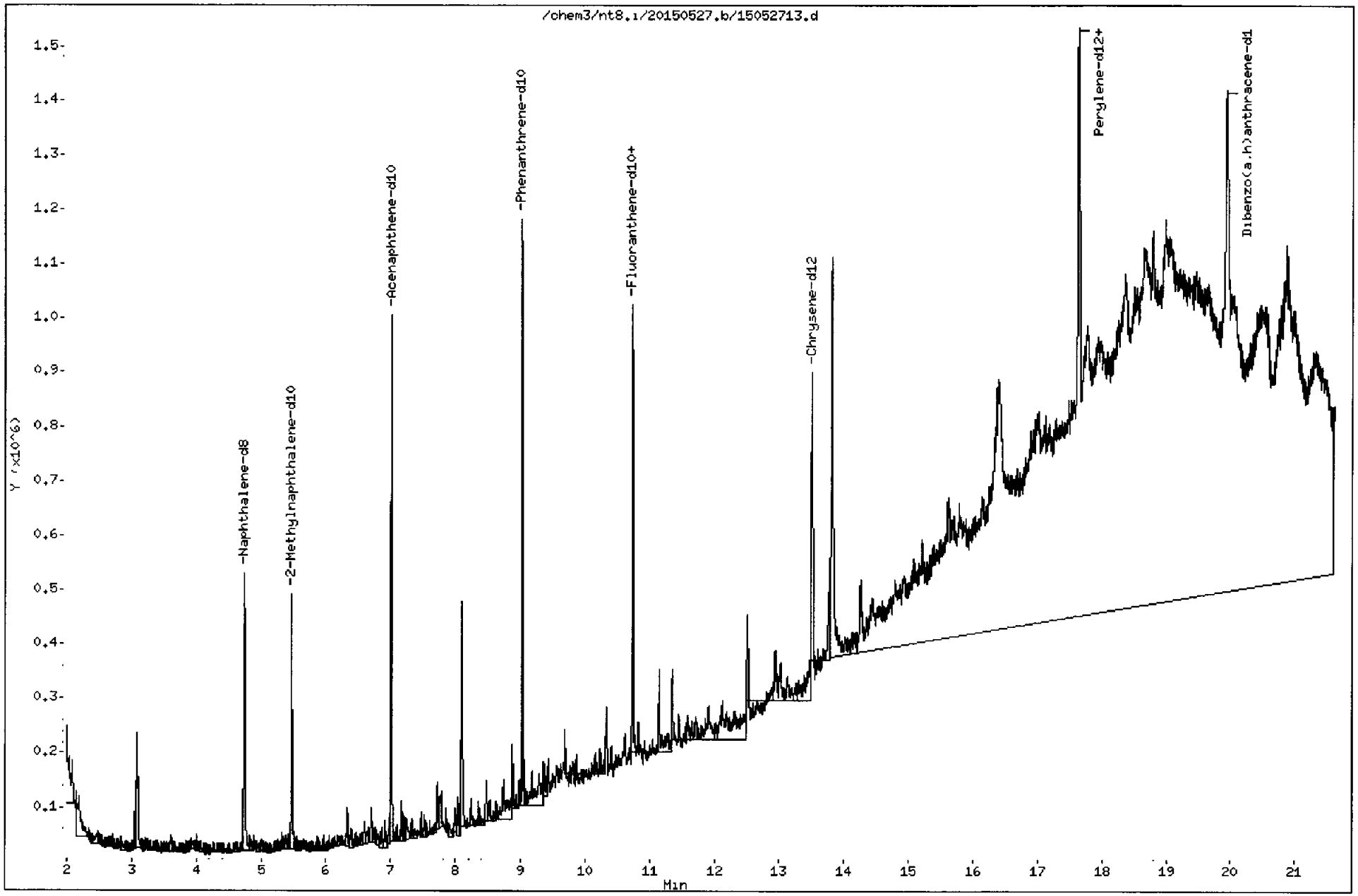
Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8G
Client Smp ID: SDP-07(8.5-9.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9295

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	147.9	64.81	43.83	32-120
$ 253 Fluoranthene-d10	147.9	99.84	67.51	36-134
$ 60 Dibenzo(a,h)anthra	147.9	103.3	69.85	21-133

AGA8 : 8015

Data File: /chem3/nt8.i/20150527.b/15052713.d
Date : 27-MAY-2015 20:41
Client ID: SDP-07(8.5-9.5)
Sample Info: AGA8G
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052713.d

Date : 27-MAY-2015 20:41

Client ID: SDP-07(8.5-9.5)

Instrument: nt8.1

Sample Info: AGA8G

Volume Injected (uL): 1.0

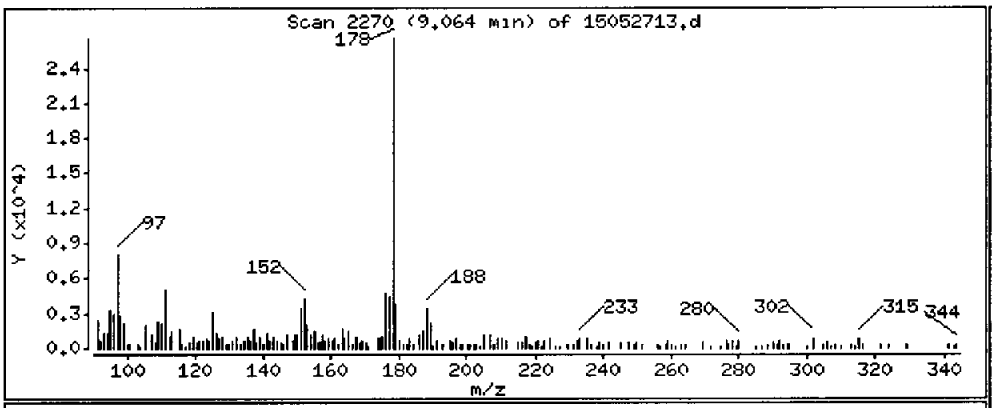
Operator: JZ

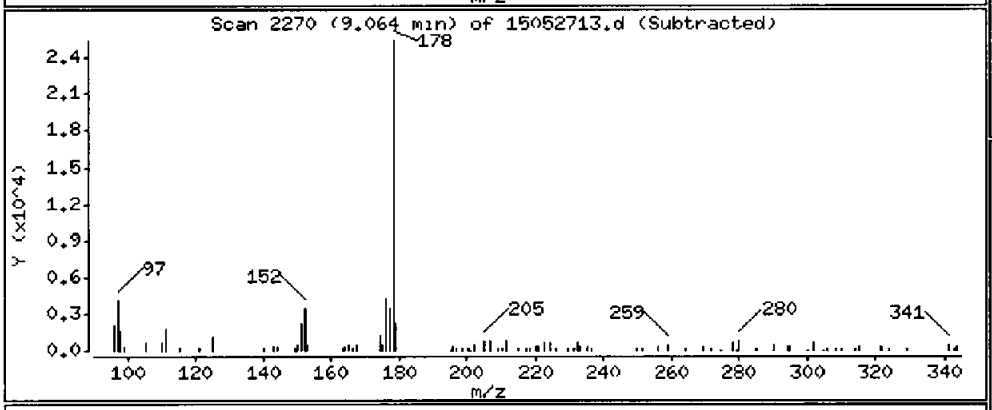
Column phase: ZB-35

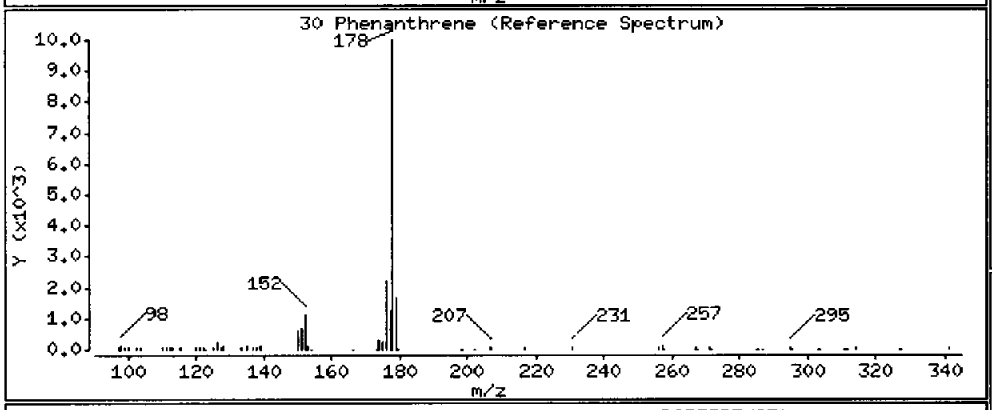
Column diameter: 0.25

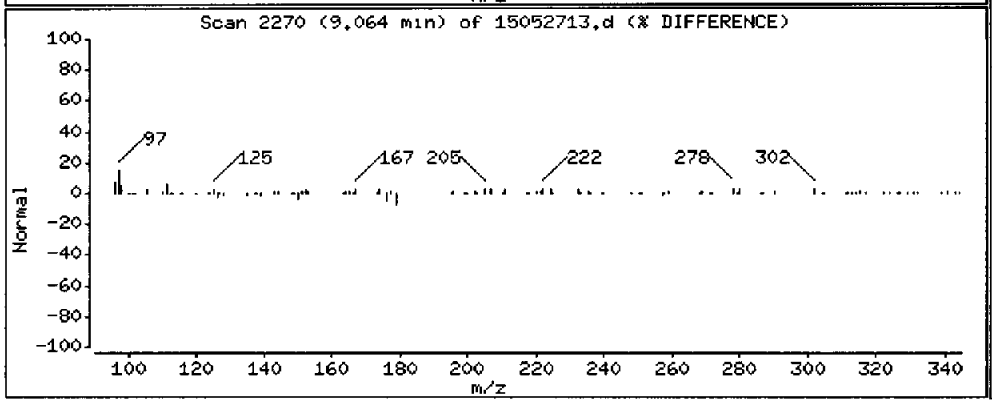
30 Phenanthrene

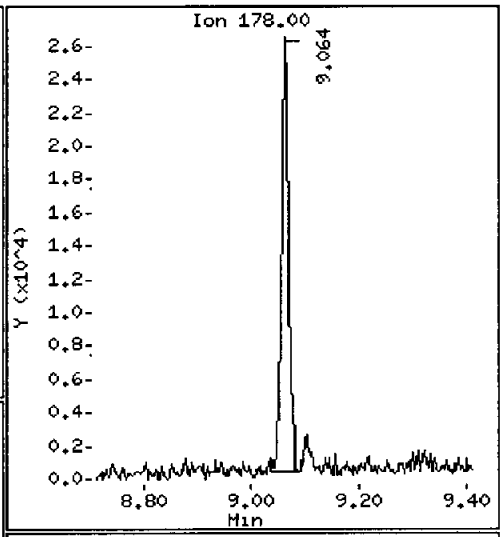
Concentration: 5.585 ug/kg

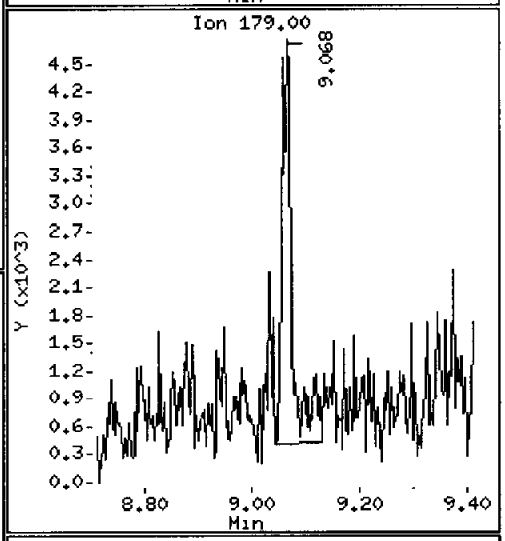


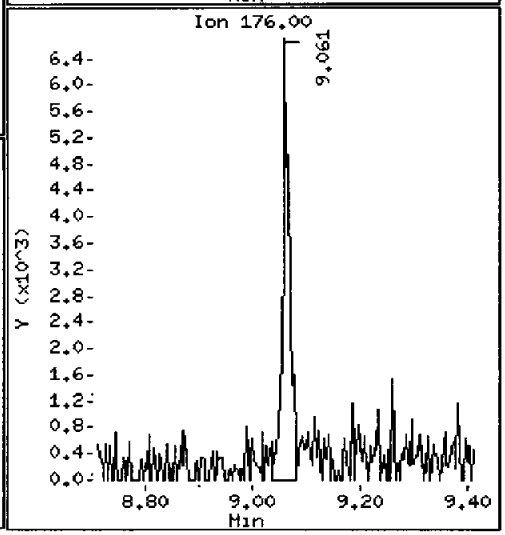












Data File: /chem3/nt8.1/20150527.b/15052713.d

Date : 27-MAY-2015 20:41

Client ID: SDP-07(8.5-9.5)

Instrument: nt8.1

Sample Info: AGA8G

Volume Injected (uL): 1.0

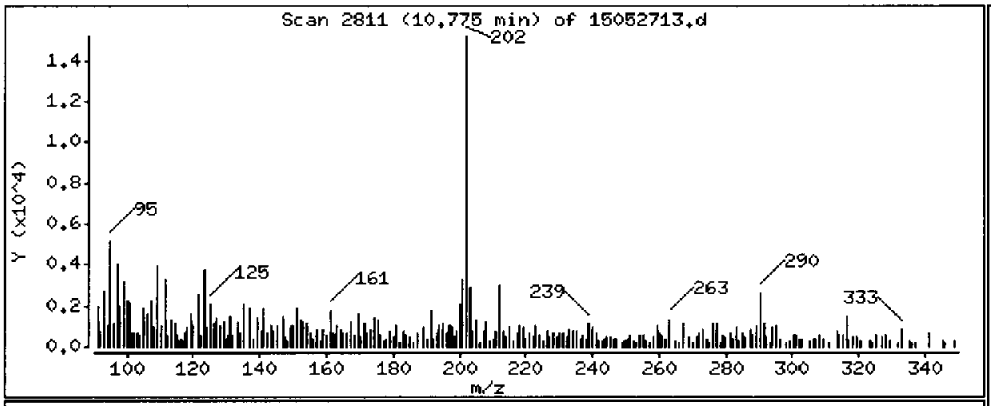
Operator: JZ

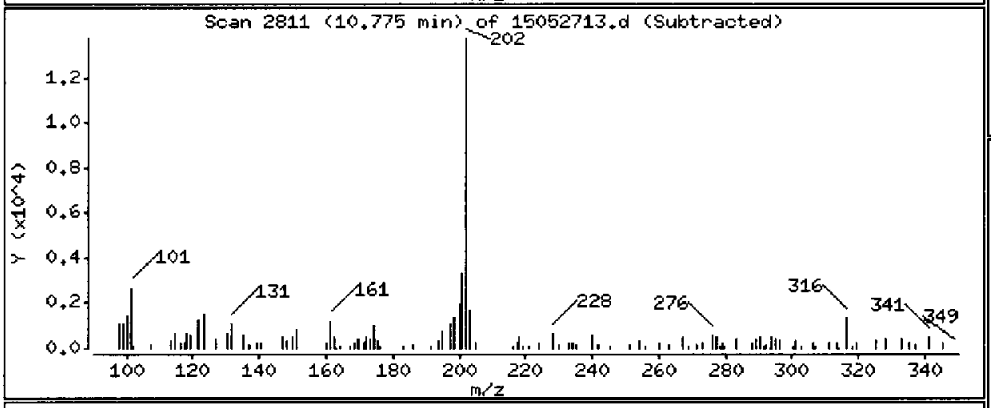
Column phase: ZB-35

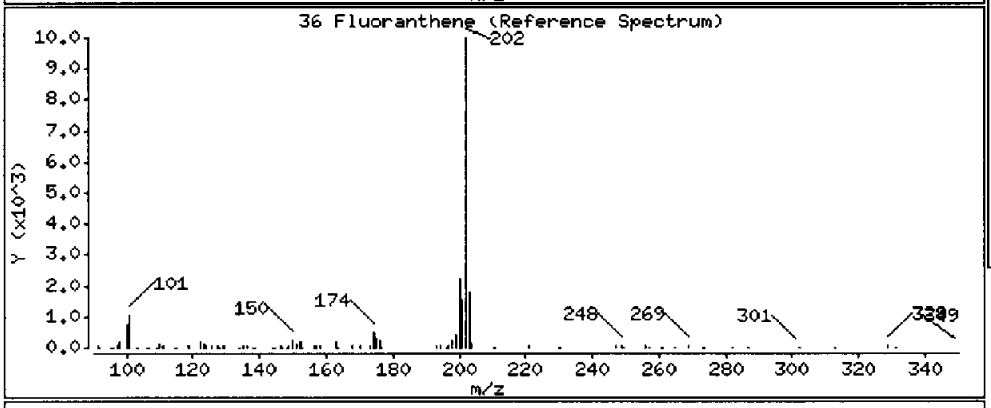
Column diameter: 0.25

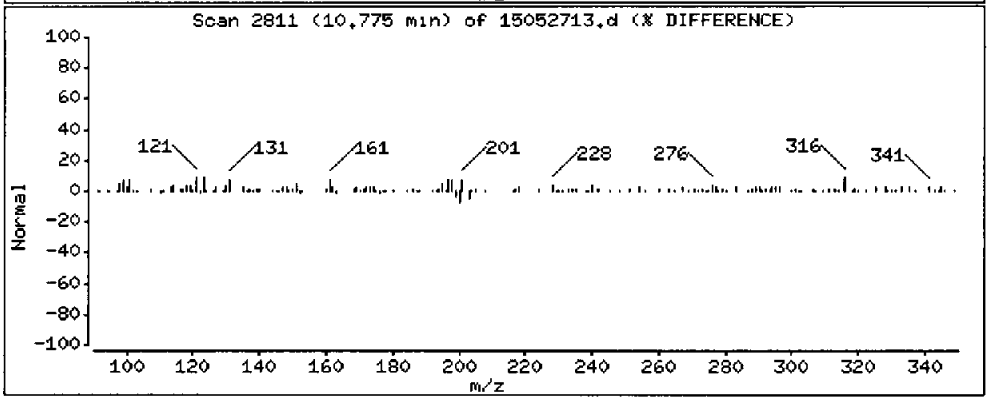
36 Fluoranthene

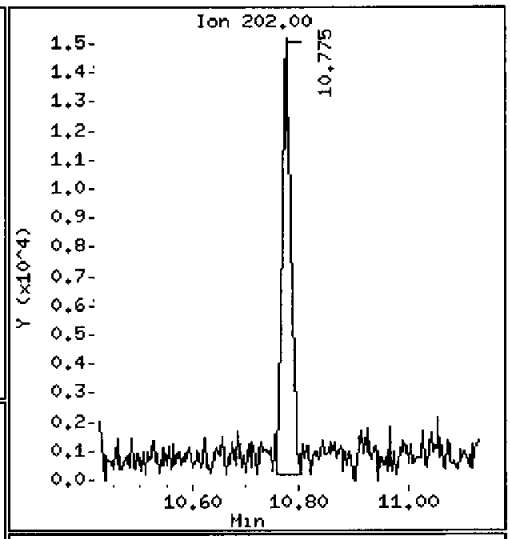
Concentration: 3.501 ug/kg

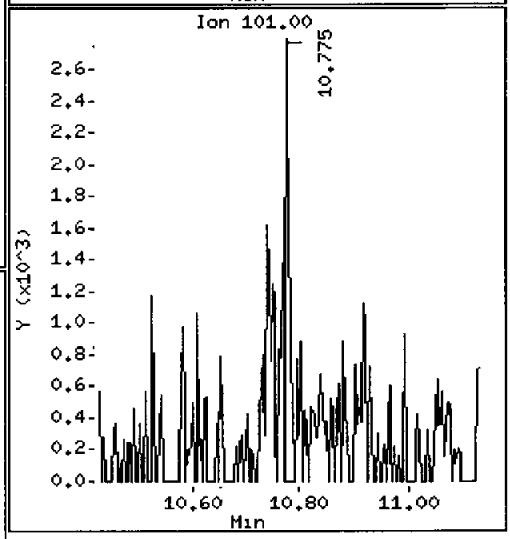












Data File: /chem3/nt8.1/20150527.b/15052713.d

Date : 27-MAY-2015 20:41

Client ID: SDP-07(8.5-9.5)

Instrument: nt8.1

Sample Info: AGA8G

Volume Injected (uL): 1.0

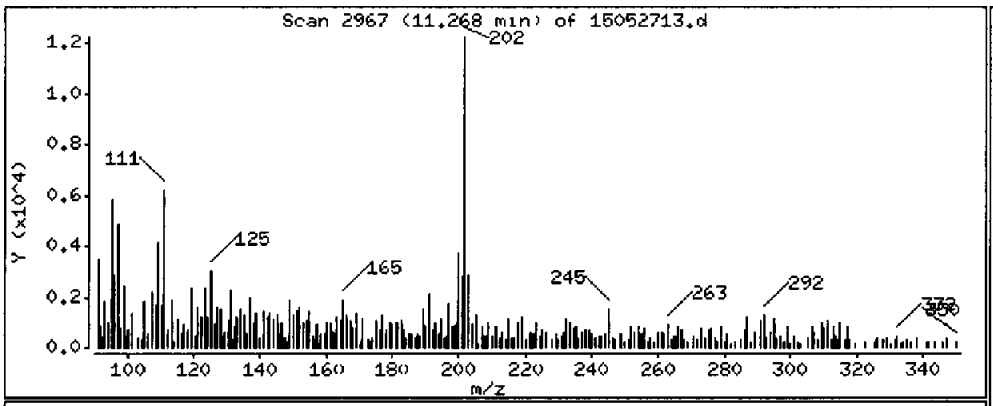
Operator: JZ

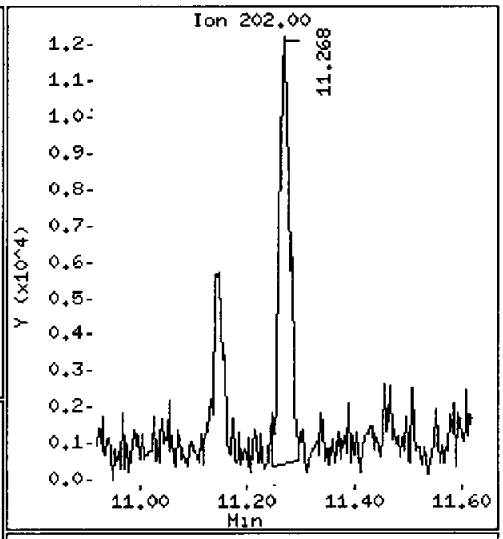
Column phase: ZB-35

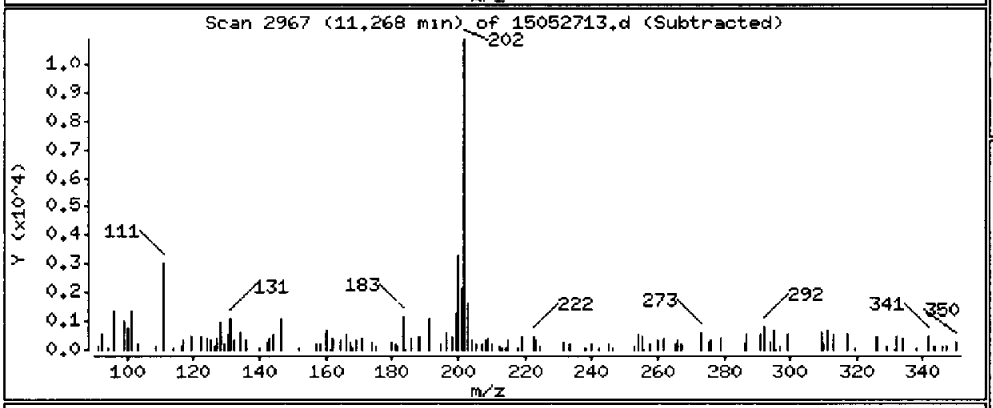
Column diameter: 0.25

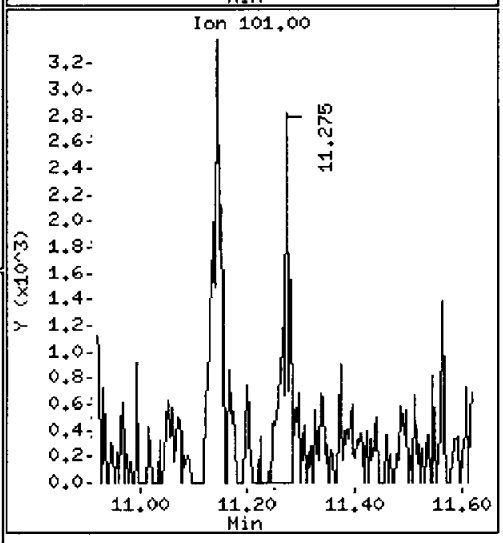
39 Pyrene

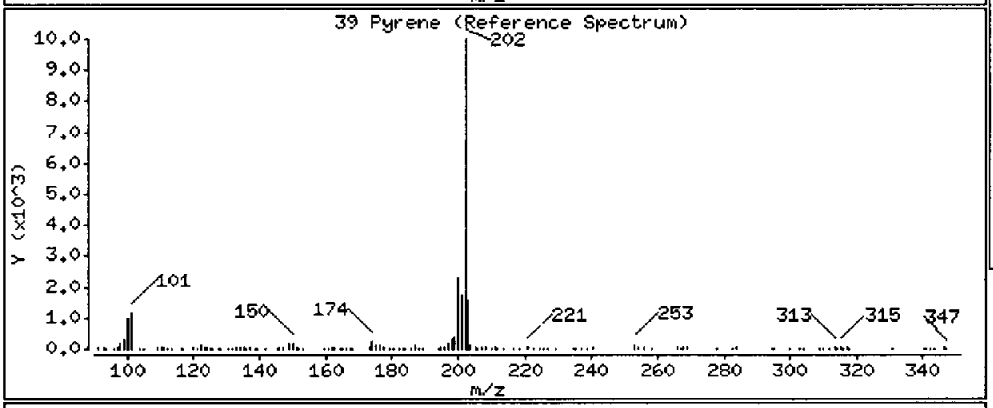
Concentration: 3.037 ug/kg

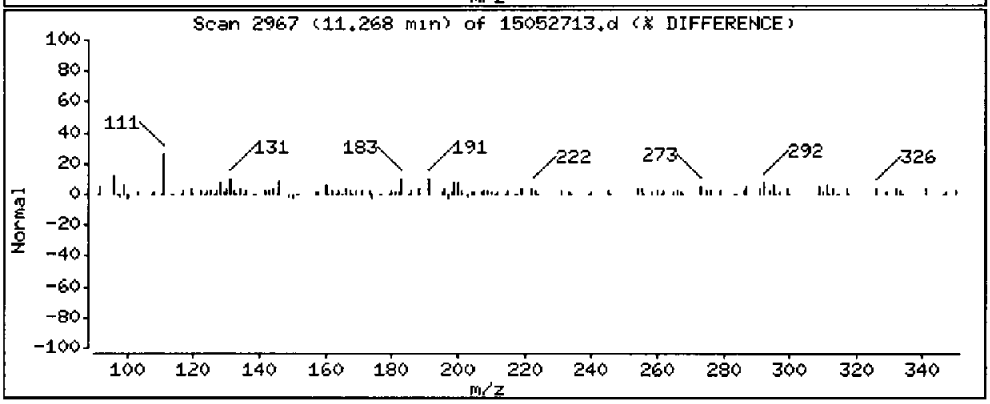






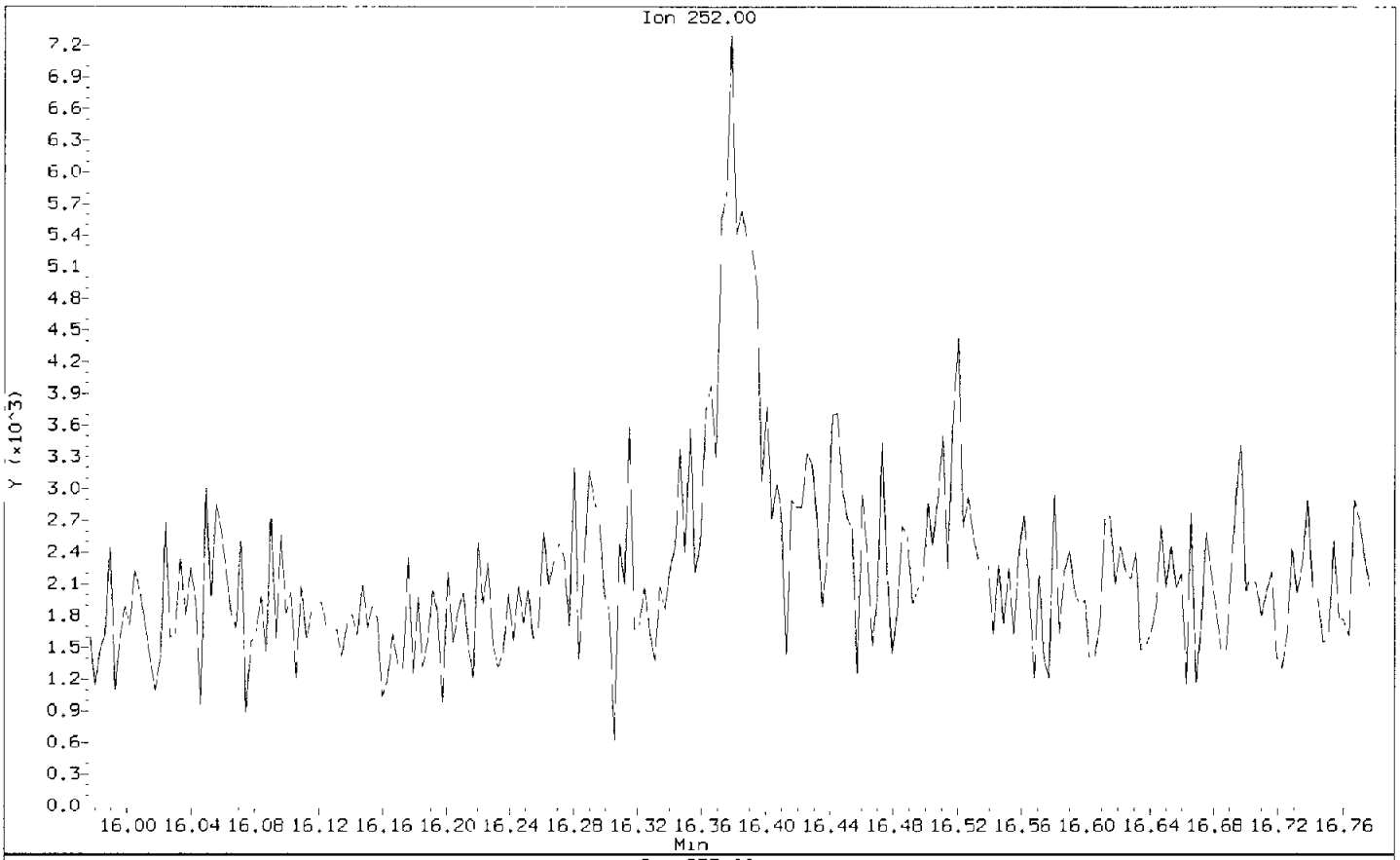


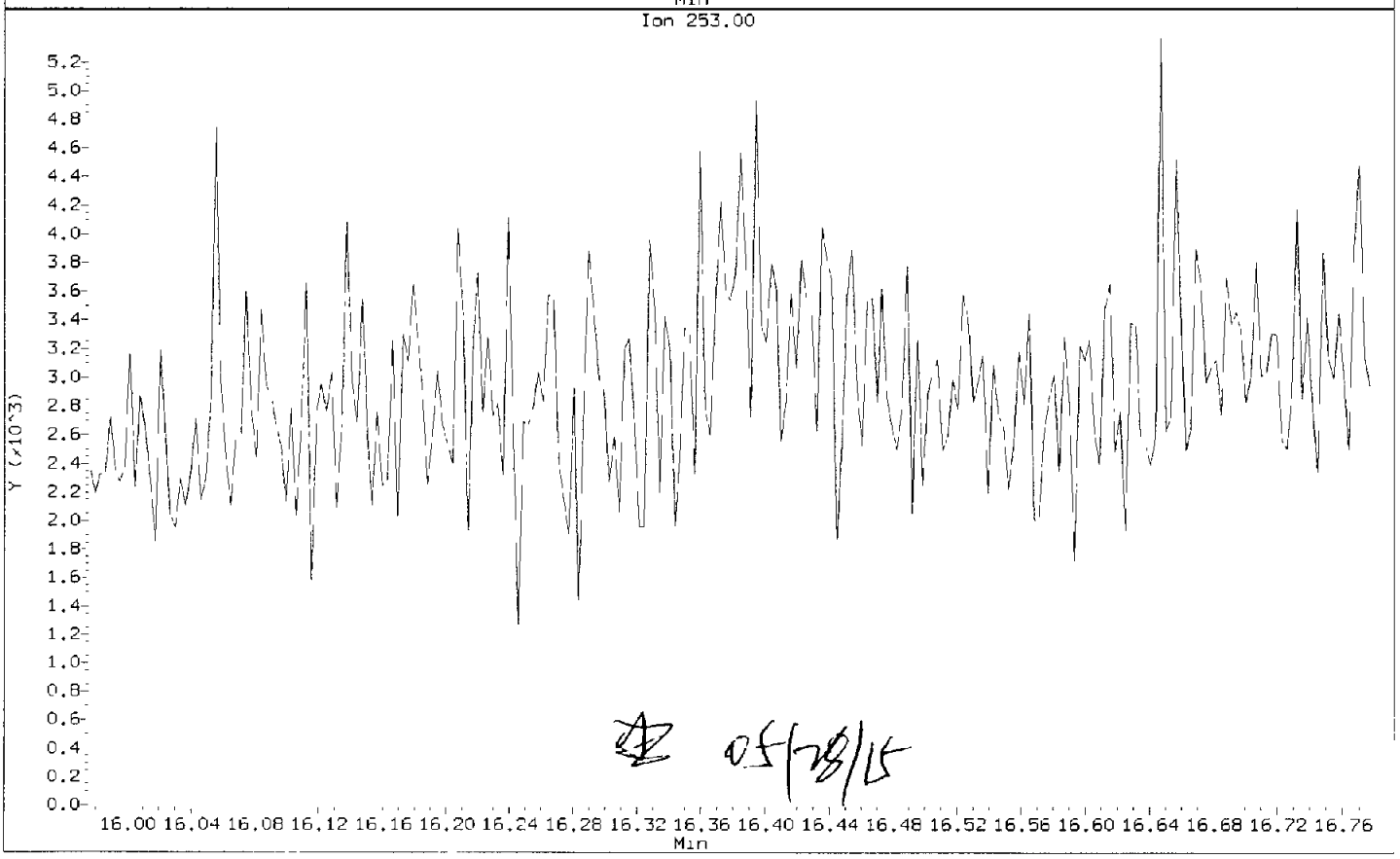




Data File: /chem3/nt8.1/20150527.b/15052713.d
Injection Date: 27-MAY-2015 20:41
Instrument: nt8.1
Client Sample ID: SDP-07(8.5-9.5)

Compound: Benzo(b)fluoranthene
CAS Number: 205-99-2

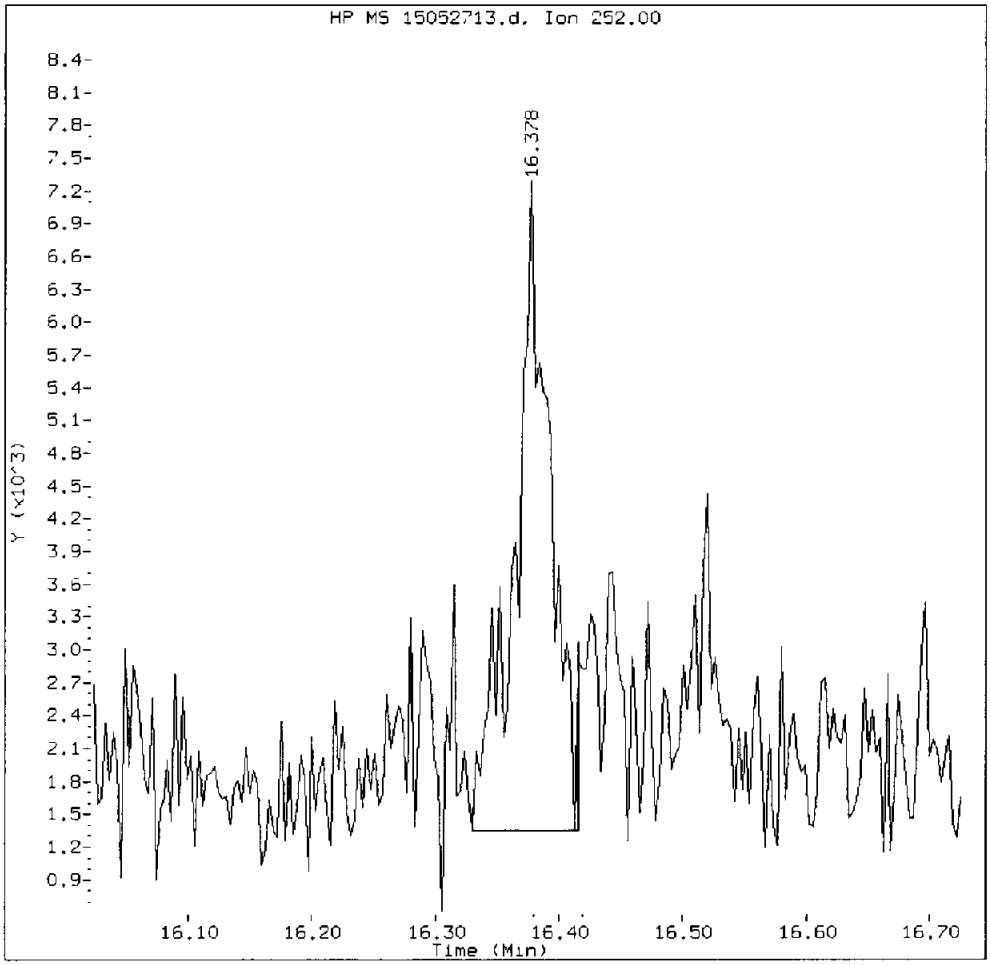




06/28/15

AGA8G, /chem3/nt8.i/20150527.b/15052713.d

Benzo(b)fluoranthene Amount: 0.04 Area: 11795



MANUAL INTEGRATION for Benzo(b)fluoranthene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 05/28/15

Data File: /chem3/nt8.1/20150527.b/15052713.d

Date : 27-MAY-2015 20:41

Client ID: SDP-07(8.5-9.5)

Instrument: nt8.1

Sample Info: ACASC

Volume Injected (uL): 1.0

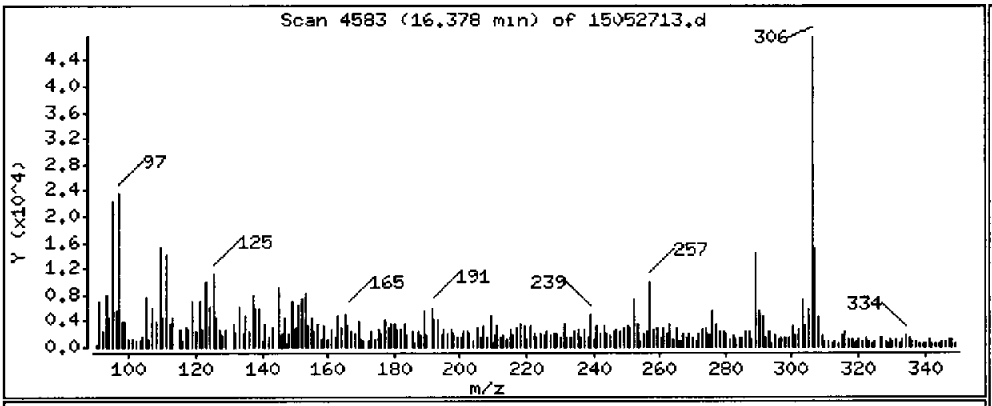
Operator: JZ

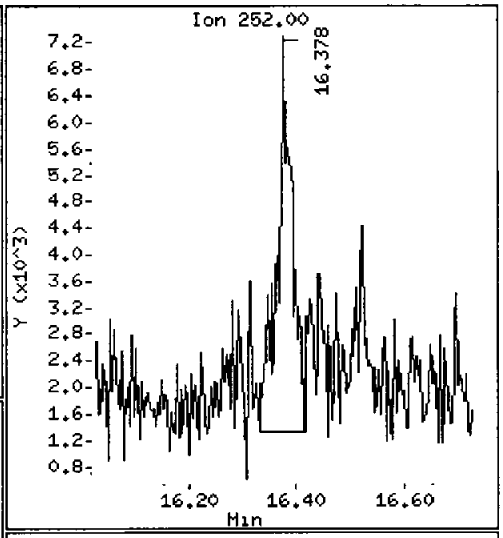
Column phase: ZB-35

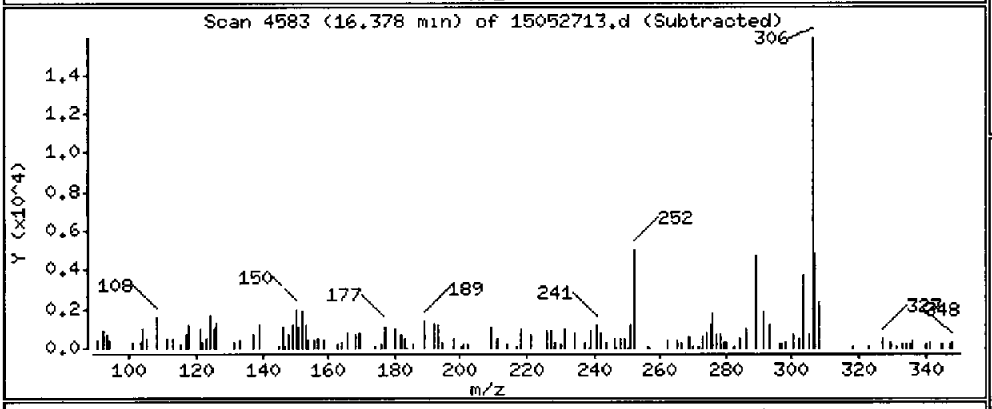
Column diameter: 0.25

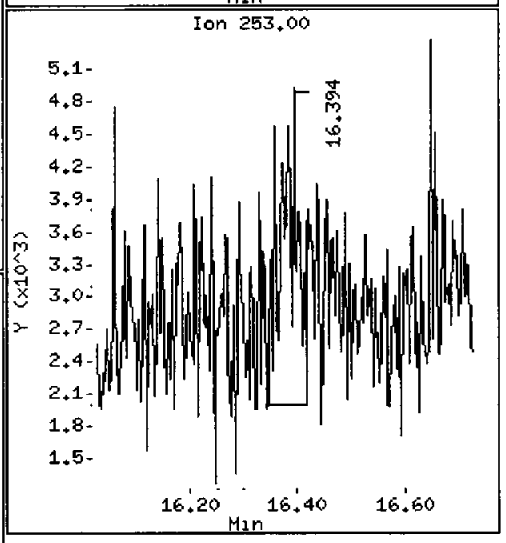
51 Benzo(b)fluoranthene

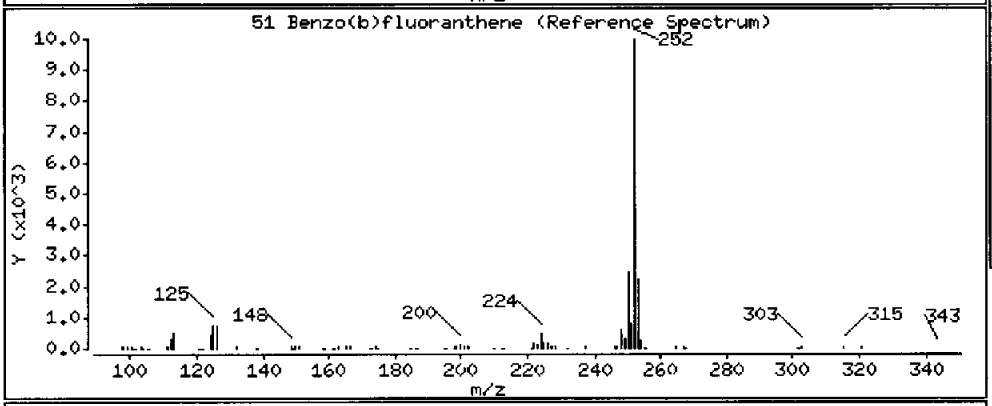
Concentration: 2.140 ug/kg

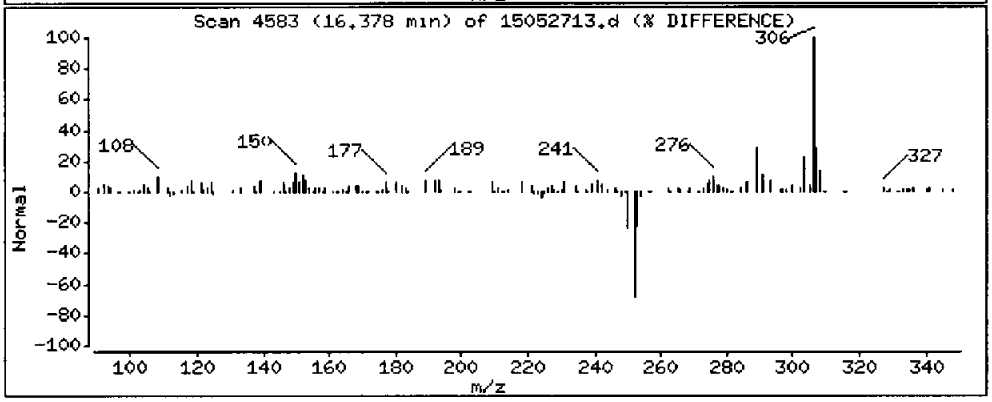












Data File: /chem3/nt8.1/20150527.b/15052713.d

Date : 27-MAY-2015 20:41

Client ID: SDP-07(8.5-9.5)

Instrument: nt8.1

Sample Info: AGA8G

Volume Injected (uL): 1.0

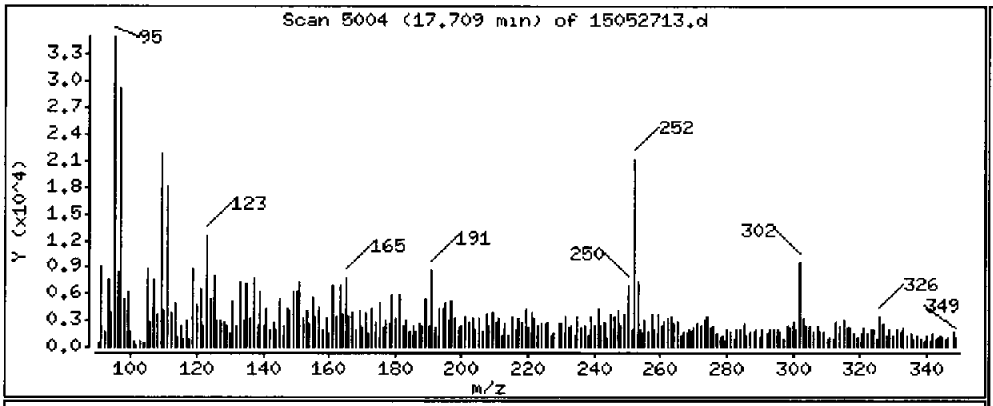
Operator: JZ

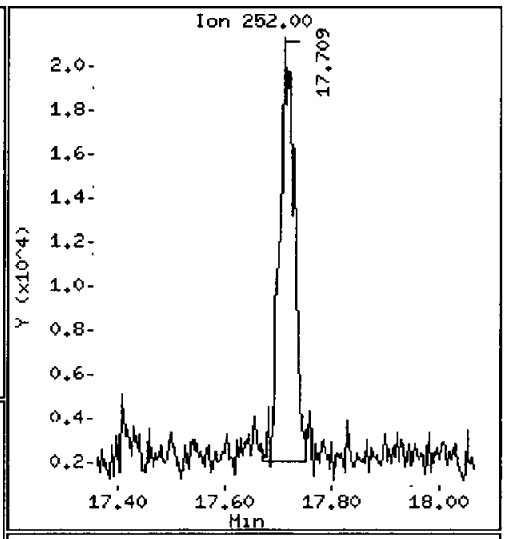
Column phase: ZB-35

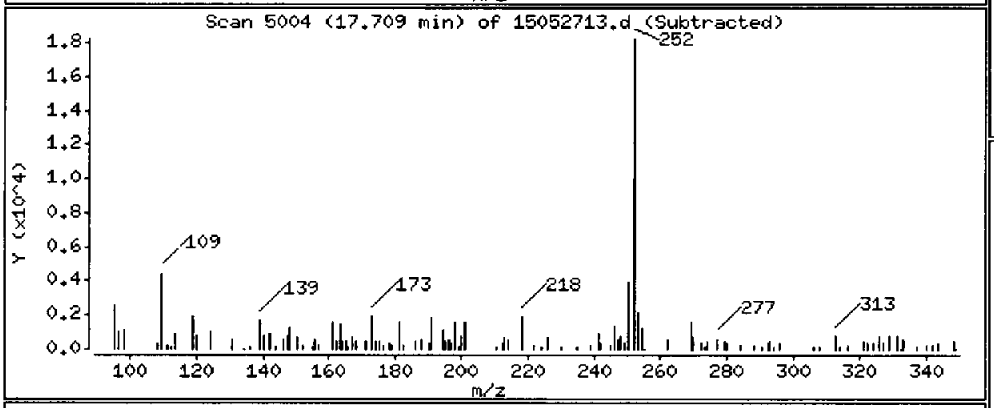
Column diameter: 0.25

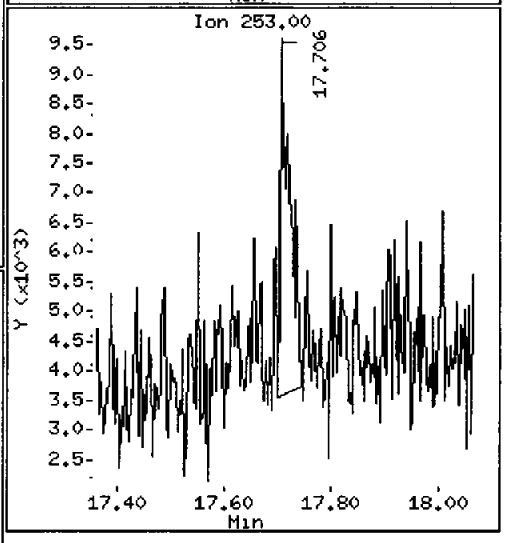
57 Perylene

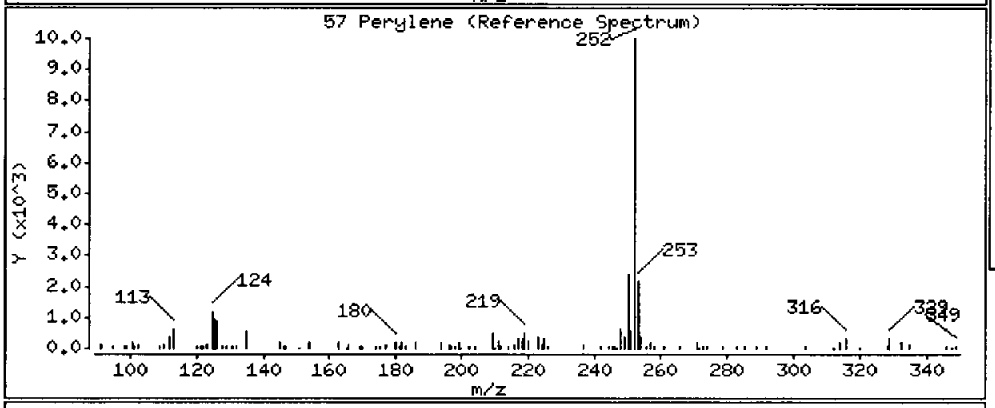
Concentration: 7.236 ug/kg

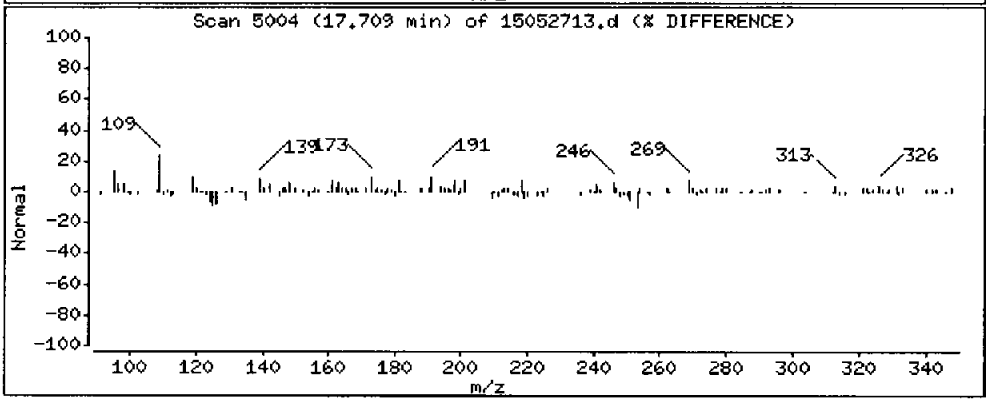












CO-ELUTION SUMMARY FOR FILE - 15052713.d

Lab ID: AGA8G, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGA8 : 8GHS

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052714.d
Lab Smp Id: AGA8H Client Smp ID: SDP-06(12.5-13.5)
Inj Date : 27-MAY-2015 21:07
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8H
Misc Info : 15-9296
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/28/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.05000	Weight of sample extracted (g)
M	26.40000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6	Naphthalene-d8	136	4.739	4 745	(1.000)	412336	2.00000	
7	Naphthalene	128	Compound Not Detected.					
$ 12	2-Methylnaphthalene-d10	152	5.473	5 469	(1.155)	185303	1.47166	71.16
14	2-Methylnaphthalene	141	Compound Not Detected.					
15	1-methylnaphthalene	141	Compound Not Detected.					
21	Acenaphthylene	152	Compound Not Detected.					
* 22	Acenaphthene-d10	164	7.009	7.009	(1.000)	262925	2.00000	
23	Acenaphthene	153	Compound Not Detected					
11	Dibenzofuran	168	Compound Not Detected					
25	Fluorene	166	Compound Not Detected.					
* 28	Phenanthrene-d10	188	9.030	9.027	(1.000)	448619	2.00000	
30	Phenanthrene	178	9.061	9.061	(1.004)	14006	0.06548	3.166
31	Anthracene	178	Compound Not Detected.					
36	Fluoranthene	202	Compound Not Detected.					
$ 253	Fluoranthene-d10	212	10.737	10.737	(1.189)	463858	2.10204	101.6
39	Pyrene	202	Compound Not Detected.					

AGAB 8015B

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.817	13.811	(1.000)	510938	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.649	17.640	(1 000)	543333	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19 948	19.939	(1.130)	439912	2.12595	102 8
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	17.747	17.713	(1.006)	6442594	24.3942	1180

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052714.d
Lab Smp Id: AGA8H
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9296

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-06(12.5-13.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	412336	20.18
22 Acenaphthene-d10	230598	115299	461196	262925	14.02
28 Phenanthrene-d10	373928	186964	747856	448619	19.97
47 Chrysene-d12	381262	190631	762524	510938	34.01
56 Perylene-d12	380825	190412	761650	543333	42.67

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.05
56 Perylene-d12	17.64	17.14	18.14	17.65	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

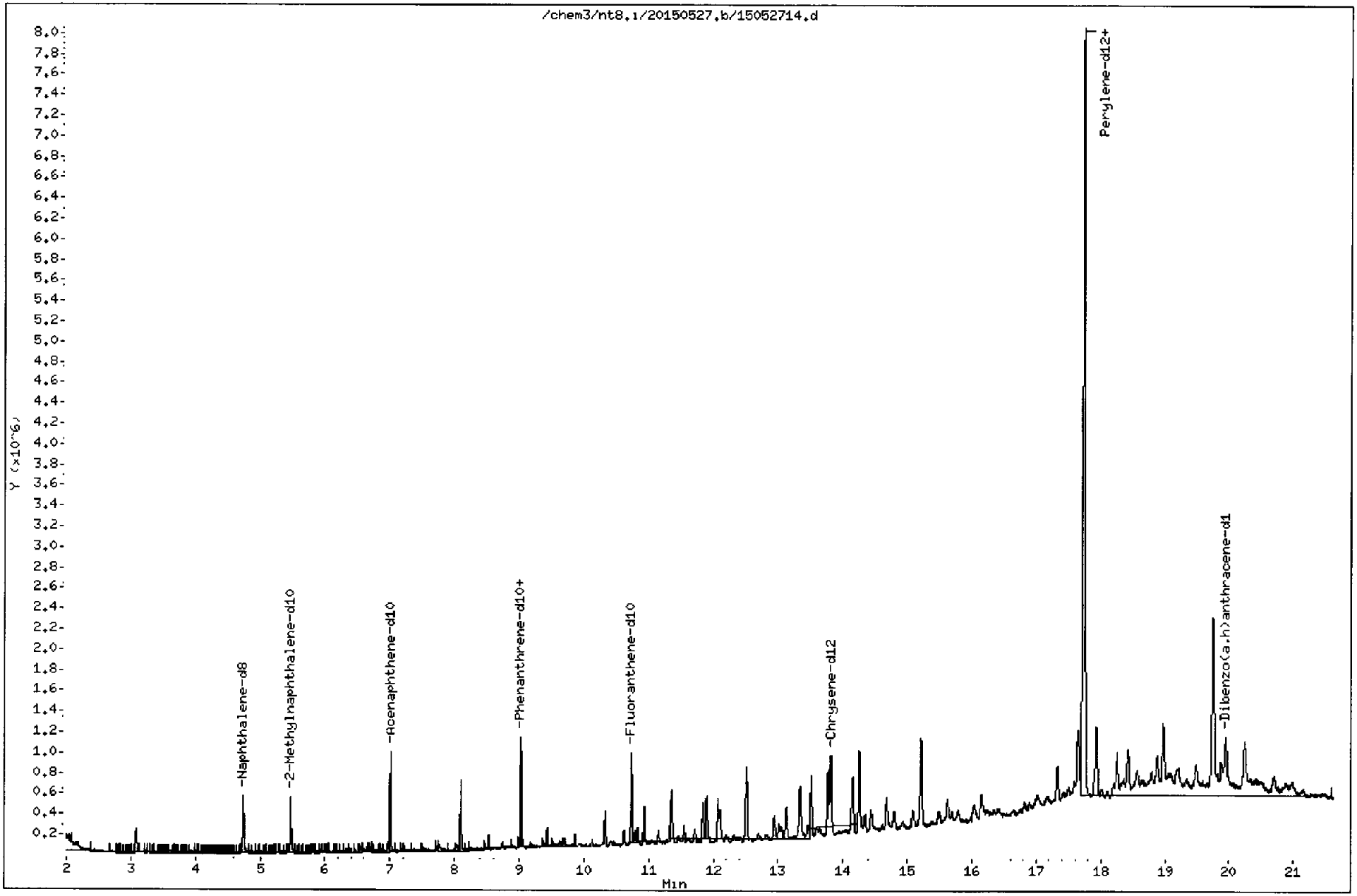
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8H
Client Smp ID: SDP-06(12.5-13.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9296

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	145.1	71.16	49.06	32-120
$ 253 Fluoranthene-d10	145.1	101.6	70.07	36-134
$ 60 Dibenzo(a,h)anthra	145.1	102.8	70.86	21-133

Data File: /chem3/nt8.i/20150527.b/15052714.d
Date : 27-MAY-2015 21:07
Client ID: SDP-06(12.5-13.5)
Sample Info: ACA8H
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052714.d

Date : 27-MAY-2015 21:07

Client ID: SDP-06(12.5-13.5)

Instrument: nt8.1

Sample Info: AGA8H

Volume Injected (uL): 1.0

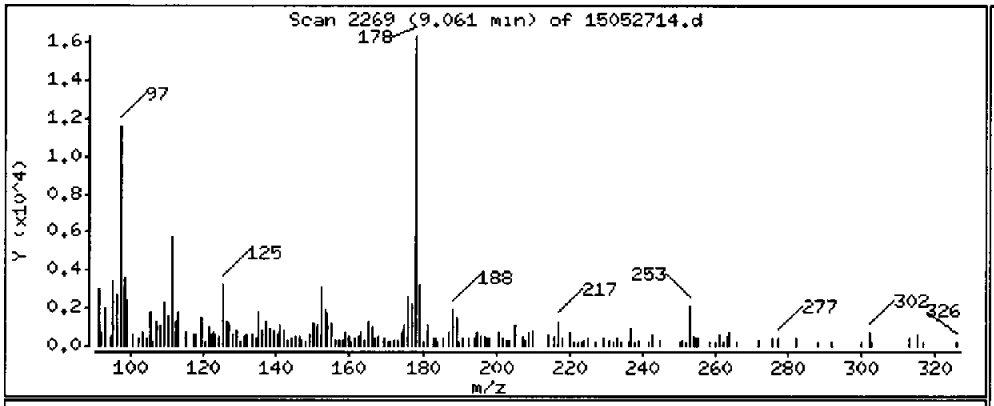
Operator: JZ

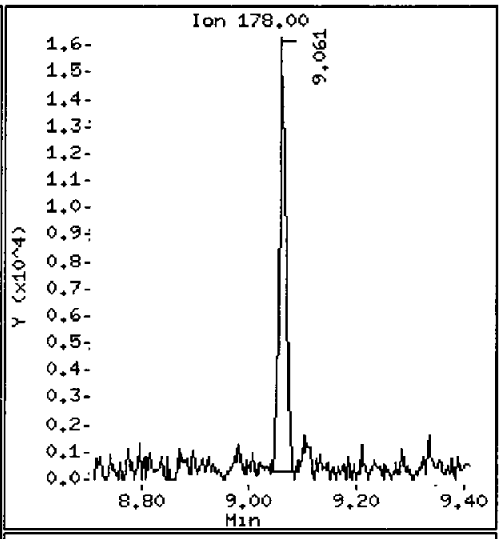
Column phase: ZB-35

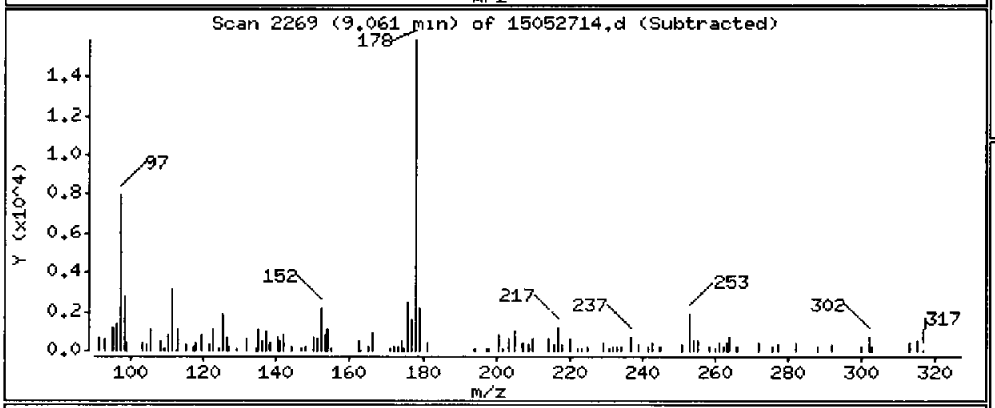
Column diameter: 0.25

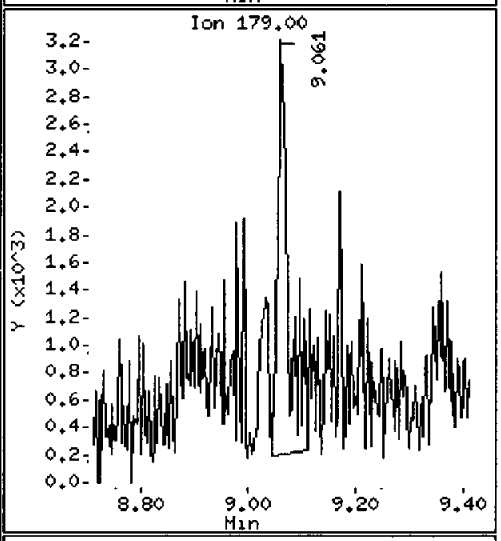
30 Phenanthrene

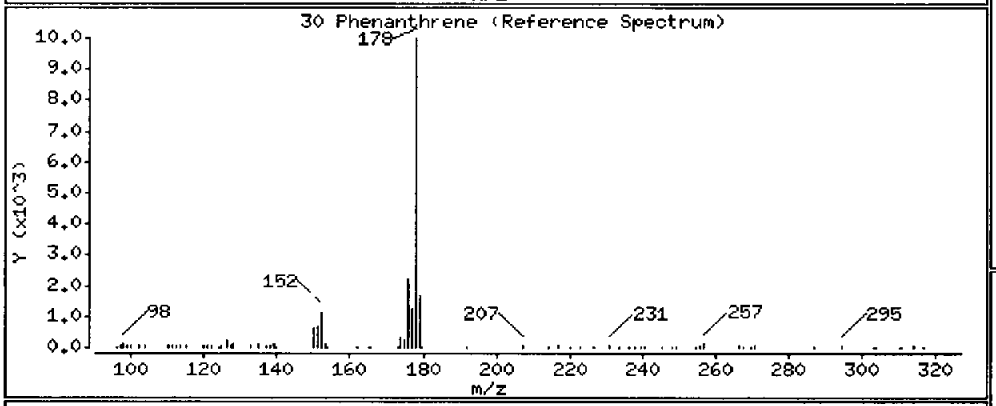
Concentration: 3.166 ug/kg

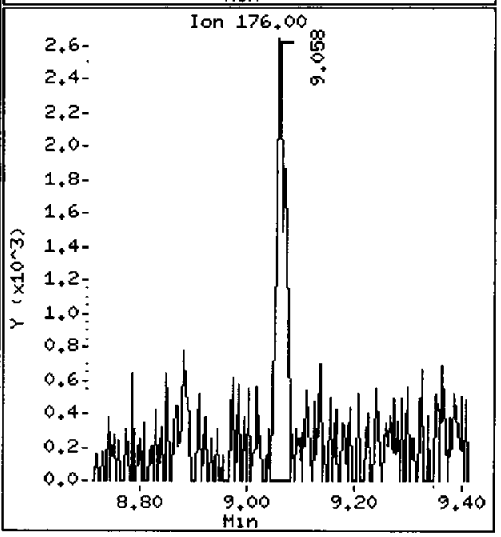


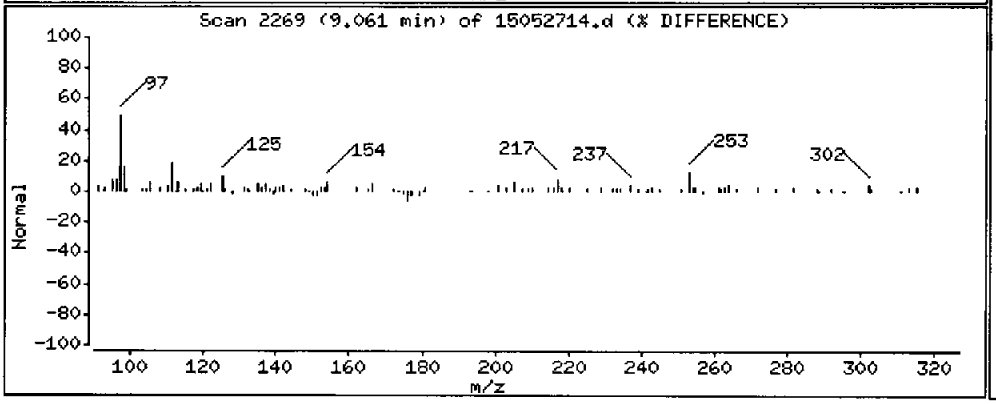












AGA8_0845

Data File: /chem3/nt8.1/20150527.b/15052714.d

Date : 27-MAY-2015 21:07

Client ID: SDP-06(12.5-13.5)

Instrument: nt8.1

Sample Info: AGA8H

Volume Injected (uL): 1.0

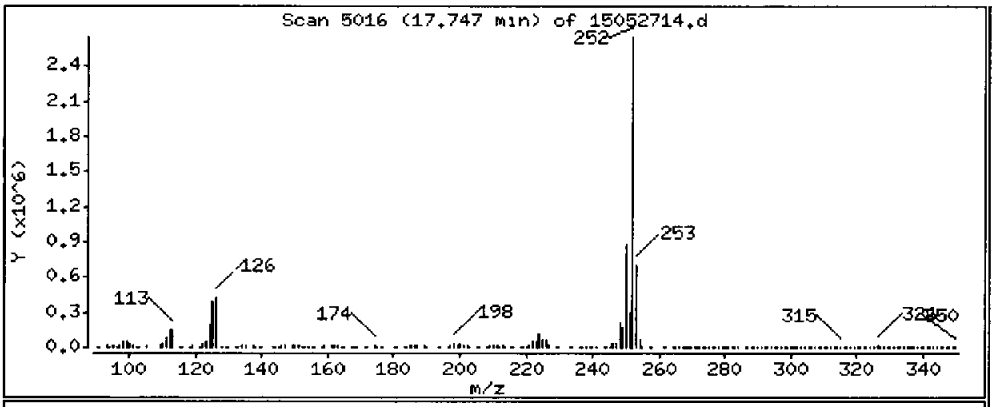
Operator: JZ

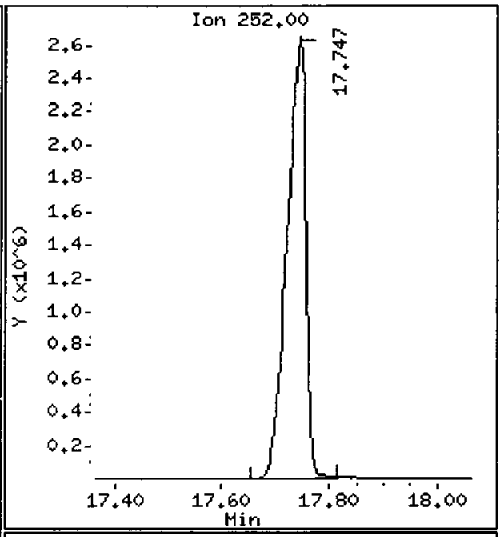
Column phase: ZB-35

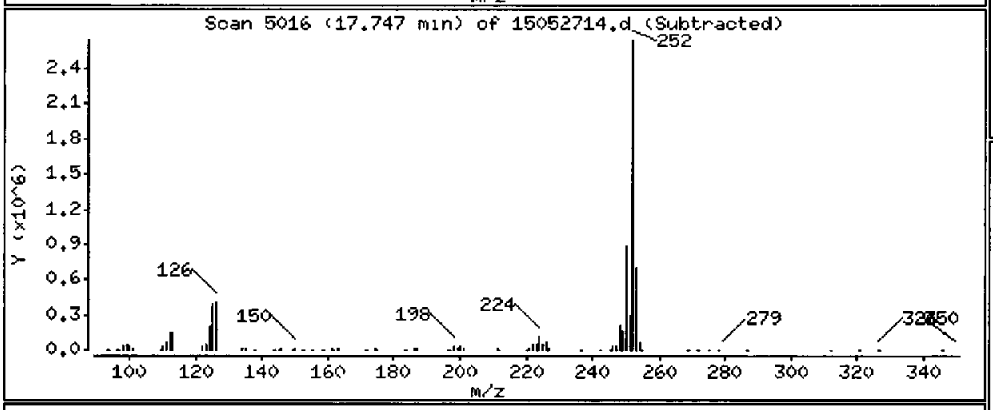
Column diameter: 0.25

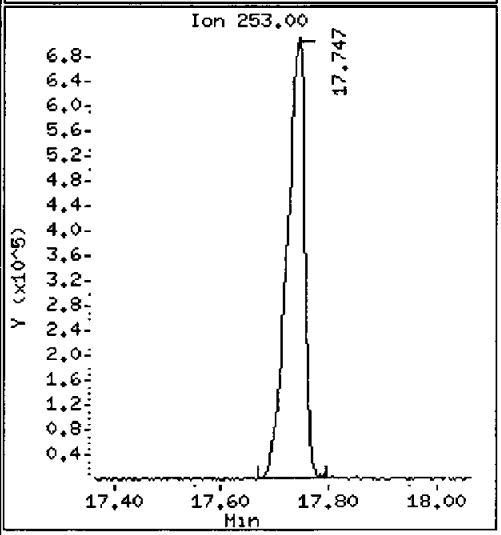
57 Perylene

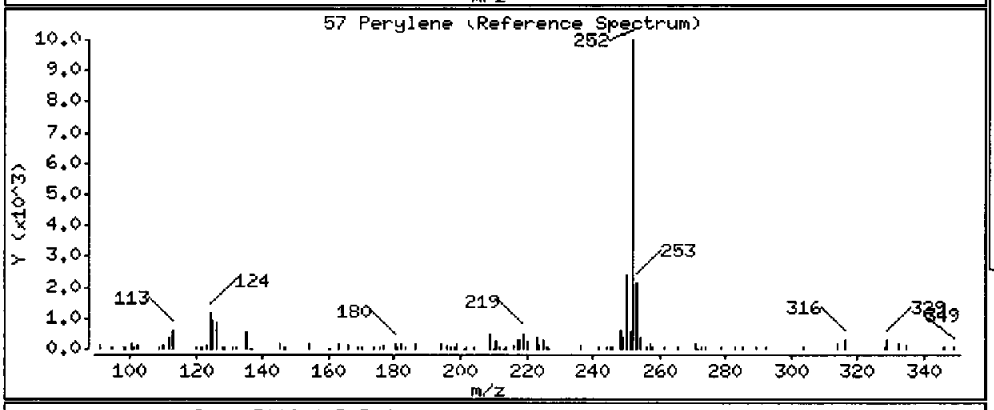
Concentration: 1180 ug/kg

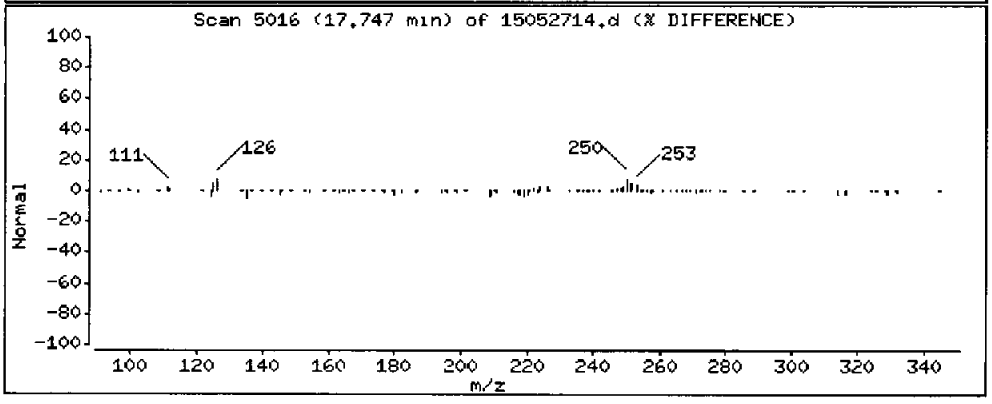












CO-ELUTION SUMMARY FOR FILE - 15052714.d

Lab ID: AGA8H, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150527.b/15052715.d
Lab Smp Id: AGA8I Client Smp ID: SDP-06(10.0-11.0)
Inj Date : 27-MAY-2015 21:33
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8I
Misc Info : 15-9297
Comment : 1ul Injection
Method : /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Meth Date : 28-May-2015 11:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/28/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.06000	Weight of sample extracted (g)
M	27.90000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6	Naphthalene-d8	136	4.745	4.745	(1.000)	414841	2.00000	
7	Naphthalene	128	Compound Not Detected.					
$ 12	2-Methylnaphthalene-d10	152	5.473	5.469	(1.153)	160321	1.26557	62.42
14	2-Methylnaphthalene	141	Compound Not Detected.					
15	1-methylnaphthalene	141	Compound Not Detected.					
21	Acenaphthylene	152	Compound Not Detected.					
* 22	Acenaphthene-d10	164	7.009	7.009	(1.000)	273091	2.00000	
23	Acenaphthene	153	Compound Not Detected.					
11	Dibenzofuran	168	Compound Not Detected.					
25	Fluorene	166	Compound Not Detected.					
* 28	Phenanthrene-d10	188	9.027	9.027	(1.000)	467739	2.00000	
30	Phenanthrene	178	9.061	9.061	(1.004)	19824	0.08890	4.385
31	Anthracene	178	Compound Not Detected.					
36	Fluoranthene	202	10.772	10.775	(1.193)	13064	0.05009	2.471
$ 253	Fluoranthene-d10	212	10.737	10.737	(1.190)	440756	1.91571	94.49
39	Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.817	13.811	(1.000)	521253	2.00000	
	48 Chrysene	228	13.887	13.883	(1.005)	13750	0.05245	2.587
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17 643	17.640	(1.000)	756546	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.942	19.939	(1.130)	621753	2.15792	106.4
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected					
	57 Perylene	252	17 713	17.713	(1.004)	48230	0.13115	6.469

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052715.d
Lab Smp Id: AGA8I
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9297

Calibration Date: 27-MAY-2015
Calibration Time: 15:56
Client Smp ID: SDP-06(10.0-11.0
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	414841	20.91
22 Acenaphthene-d10	230598	115299	461196	273091	18.43
28 Phenanthrene-d10	373928	186964	747856	467739	25.09
47 Chrysene-d12	381262	190631	762524	521253	36.72
56 Perylene-d12	380825	190412	761650	756546	98.66

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.05
56 Perylene-d12	17.64	17.14	18.14	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

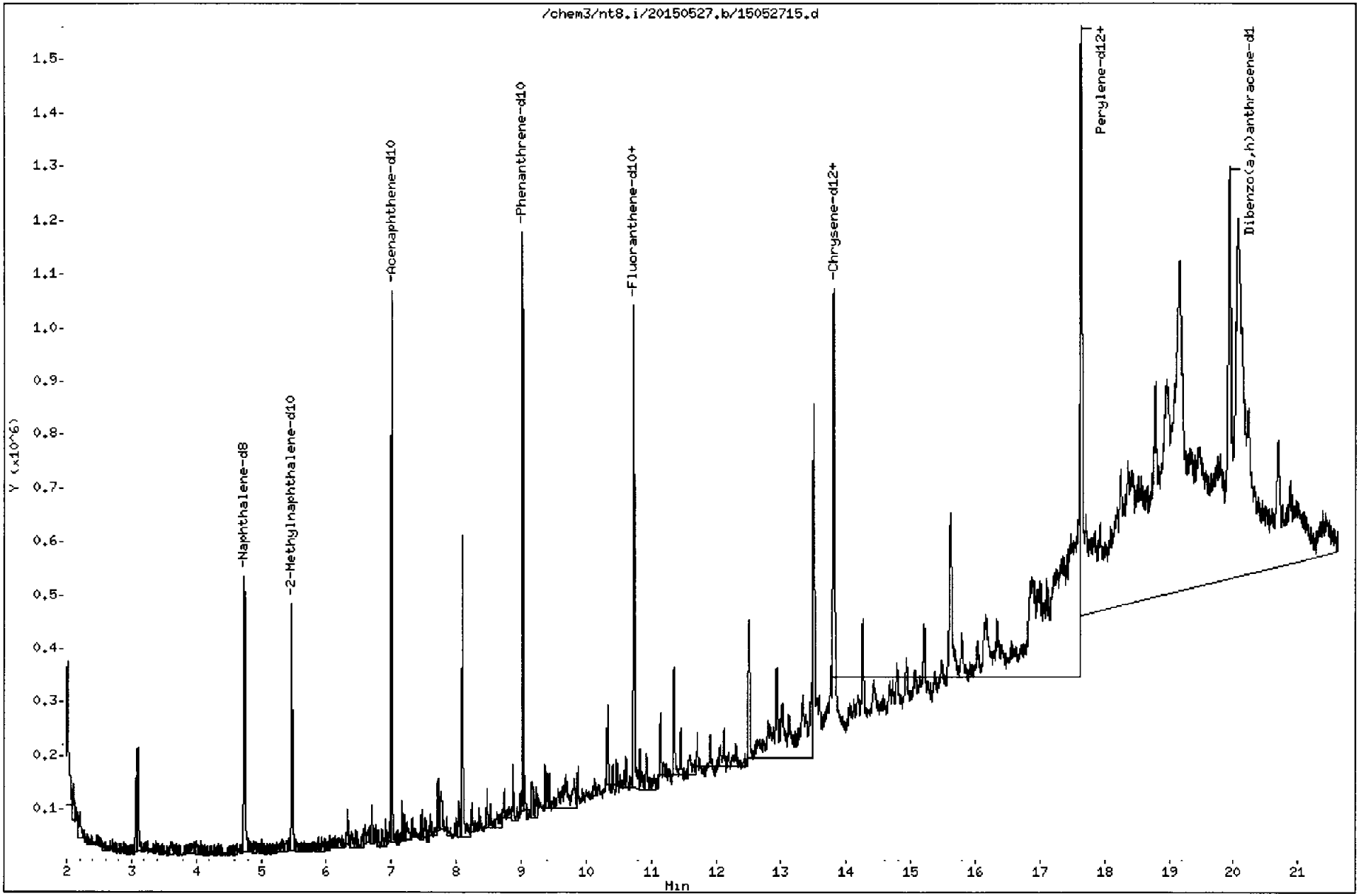
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8I
Client Smp ID: SDP-06(10.0-11.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150527.b/FSIMPNA150413.m
Misc Info: 15-9297

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	148.0	62.42	42.19	32-120
$ 253 Fluoranthene-d10	148.0	94.49	63.86	36-134
$ 60 Dibenzo(a,h)anthra	148.0	106.4	71.93	21-133

Data File: /chem3/nt8.i/20150527.b/15052715.d
Date : 27-MAY-2015 21:33
Client ID: SDP-06(10.0-11.0)
Sample Info: ACA8I
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150527.b/15052715.d

Date : 27-MAY-2015 21:33

Client ID: SDP-06(10.0-11.0)

Instrument: nt8.1

Sample Info: AGA8I

Volume Injected (uL): 1.0

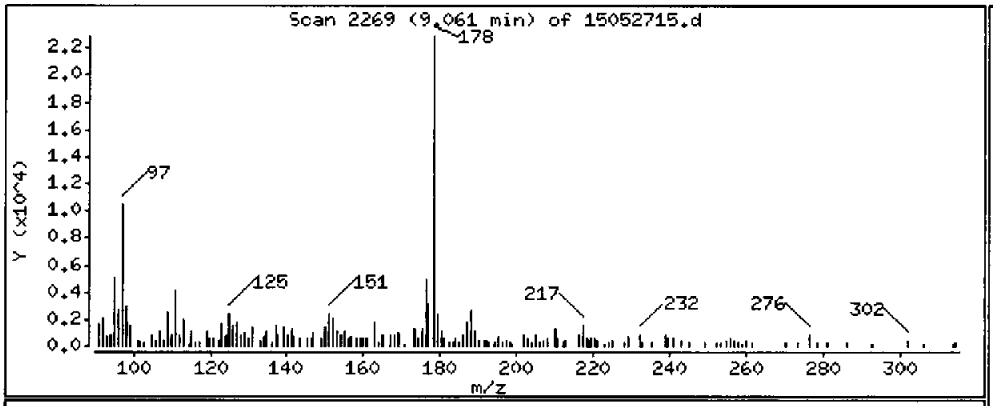
Operator: JZ

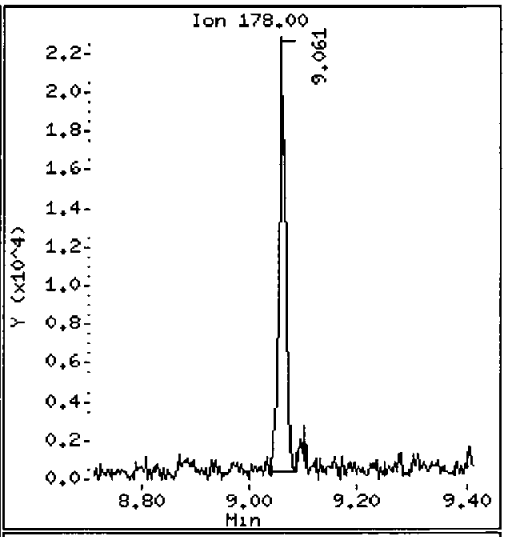
Column phase: ZB-35

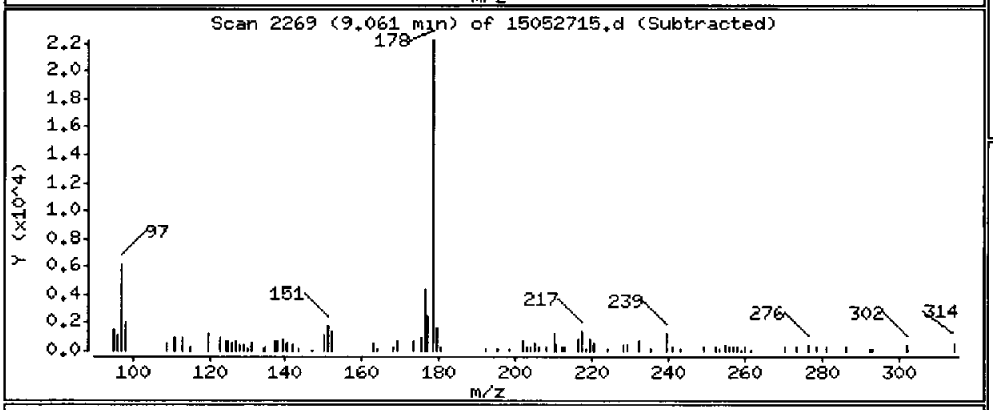
Column diameter: 0.25

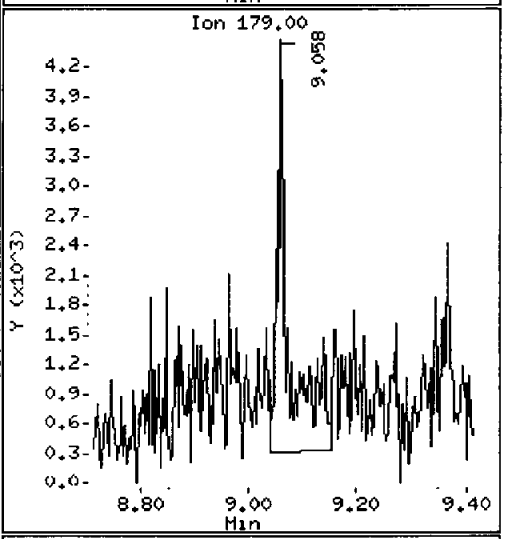
30 Phenanthrene

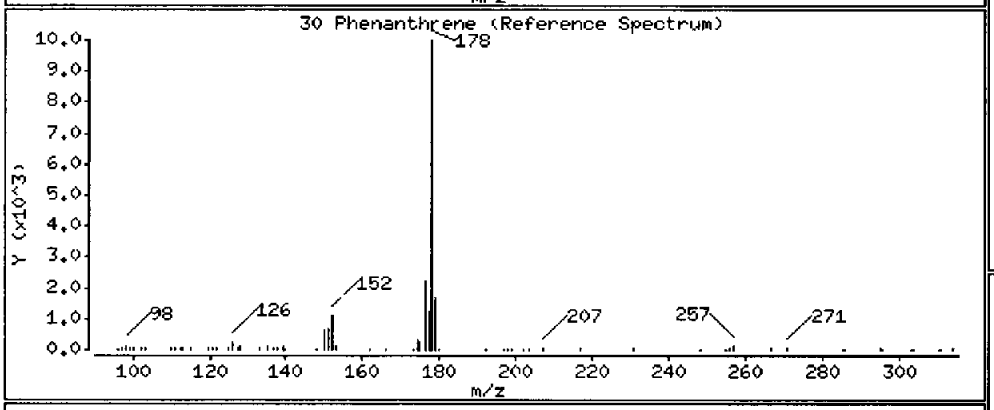
Concentration: 4.385 ug/kg

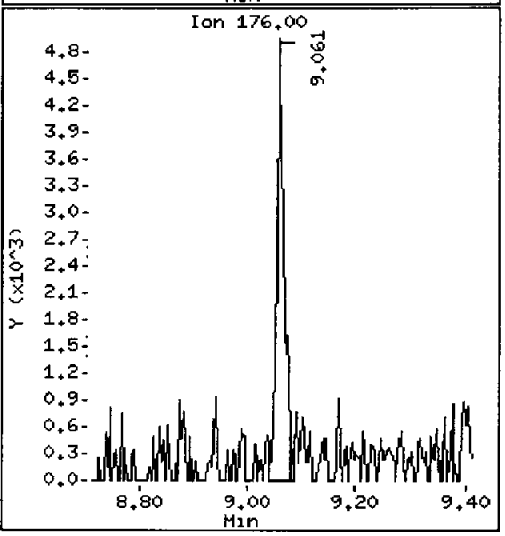


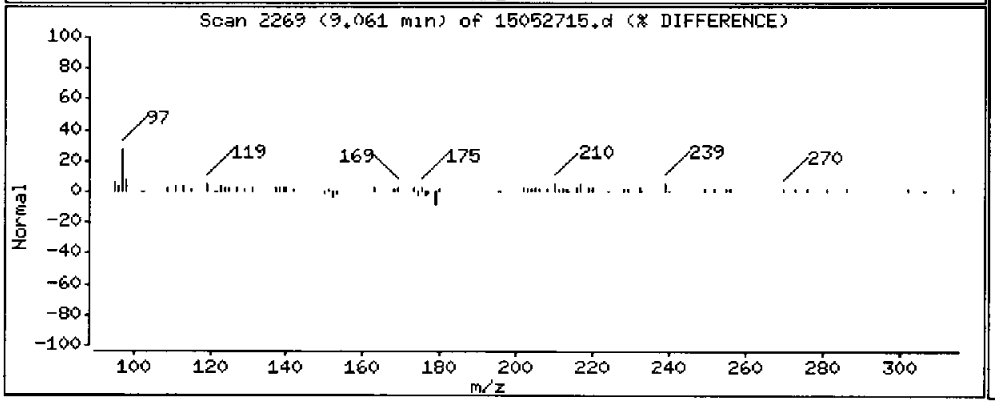












Data File: /chem3/nt8.1/20150527.b/15052715.d

Date : 27-MAY-2015 21:33

Client ID: SDP-06(10.0-11.0)

Instrument: nt8.1

Sample Info: AGA8I

Volume Injected (uL): 1.0

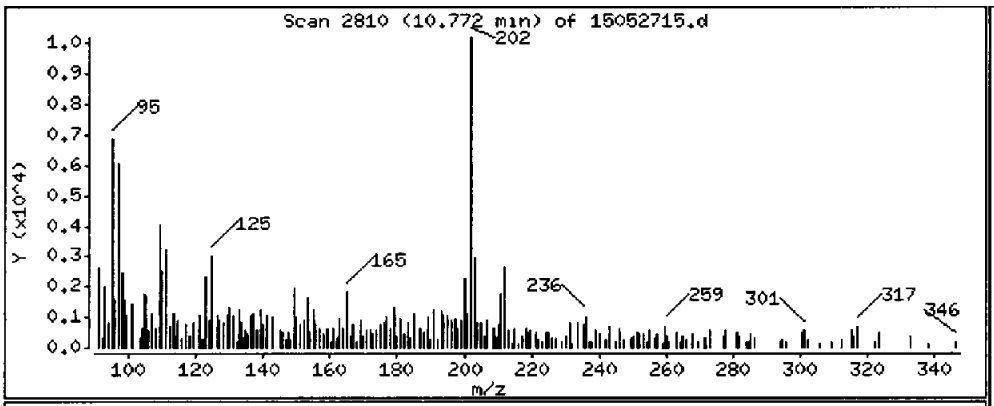
Operator: JZ

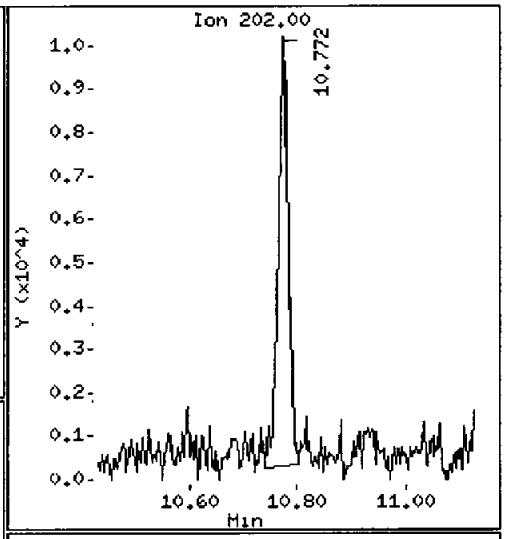
Column phase: ZB-35

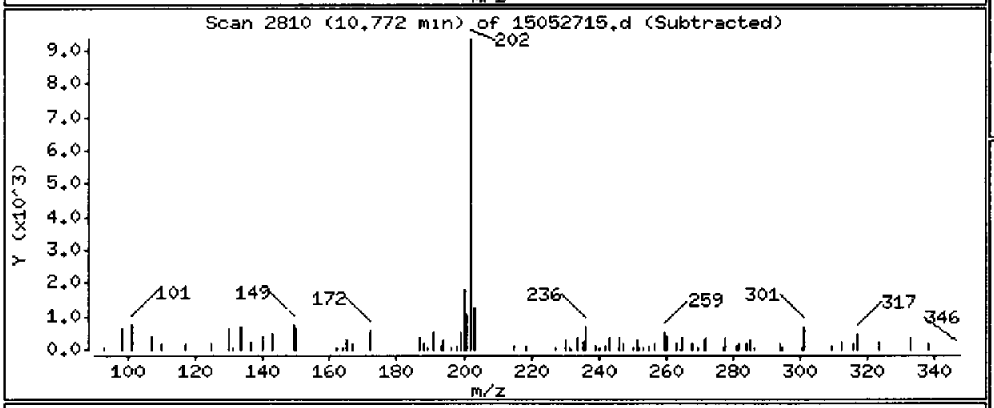
Column diameter: 0.25

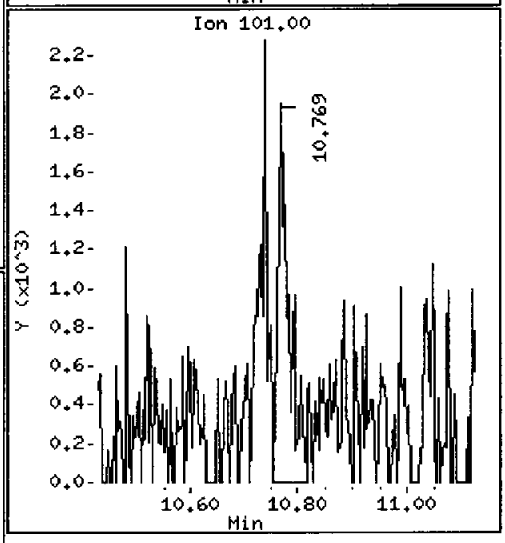
36 Fluoranthene

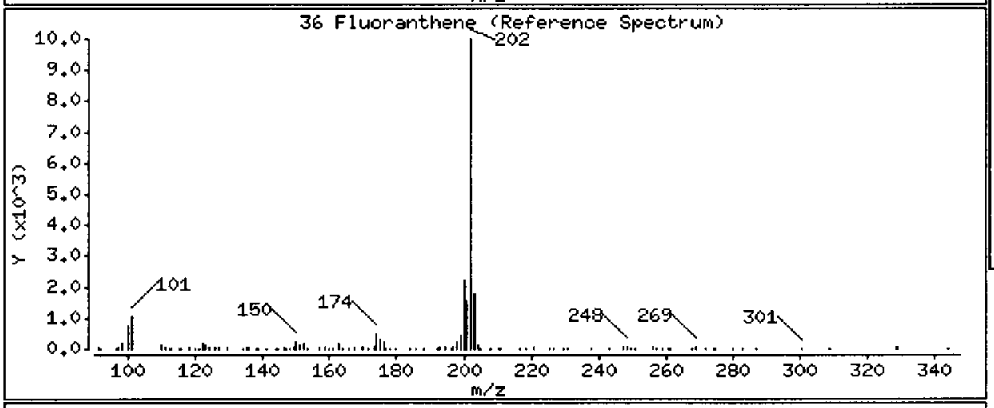
Concentration: 2.471 ug/kg

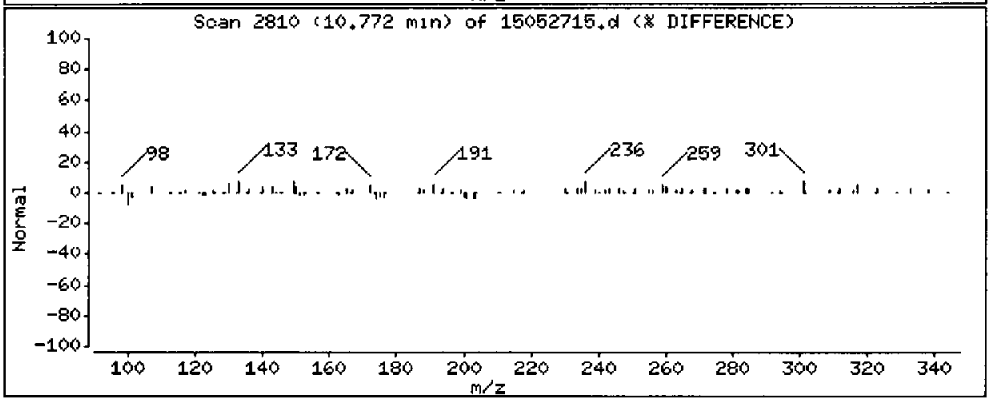












Data File: /chem3/nt8.1/20150527.b/15052715.d

Date : 27-MAY-2015 21:33

Client ID: SDP-06(10.0-11.0)

Instrument: nt8.1

Sample Info: AGA8I

Volume Injected (uL): 1.0

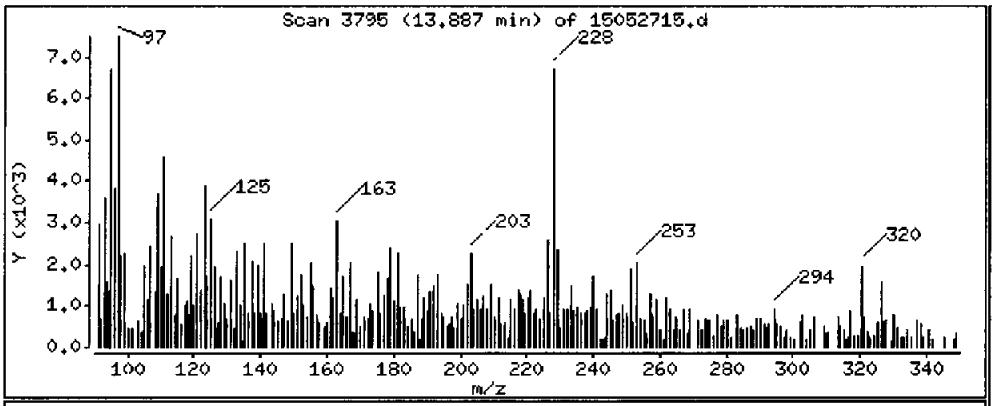
Operator: JZ

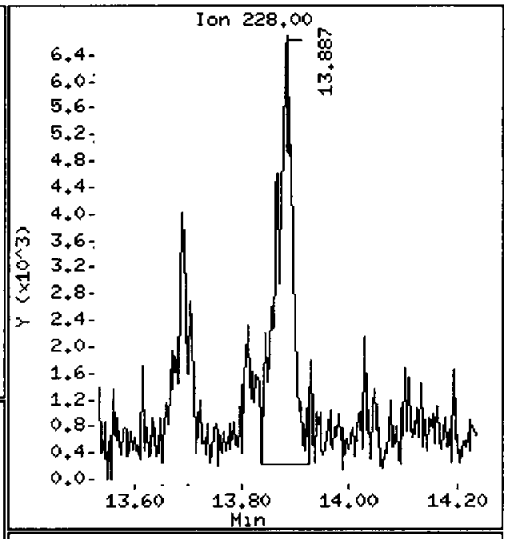
Column phase: ZB-35

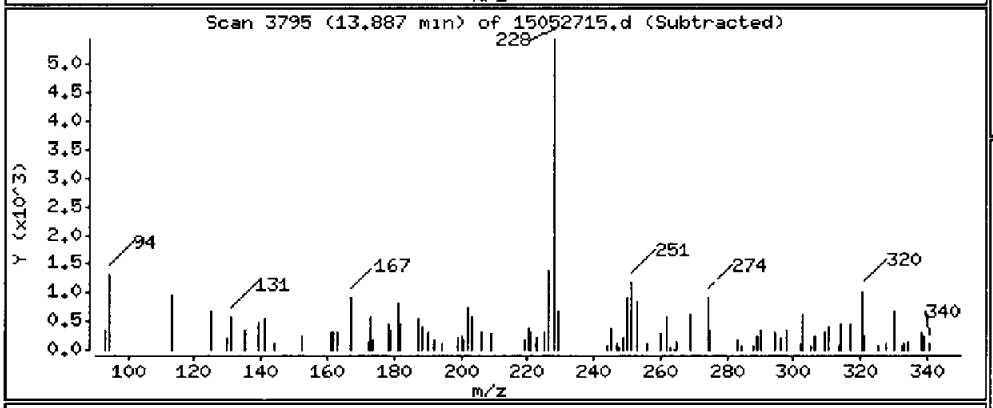
Column diameter: 0.25

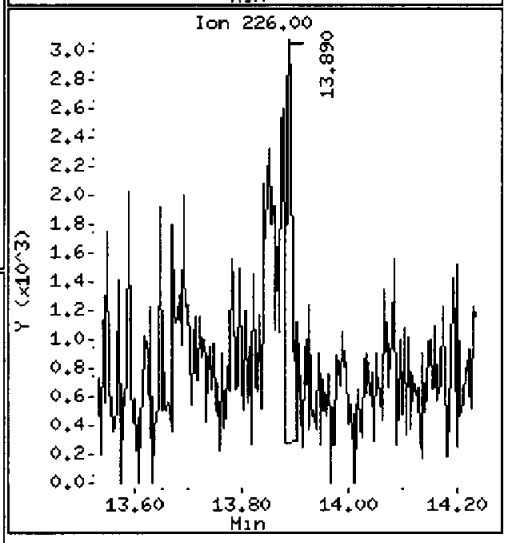
48 Chrysene

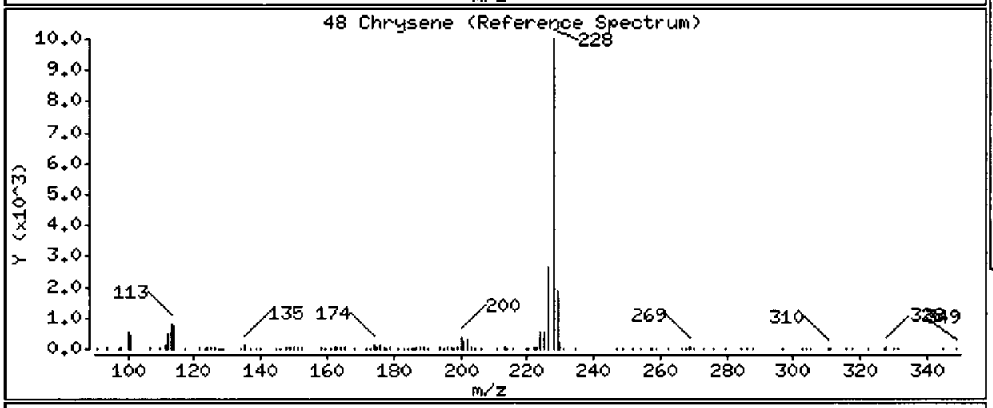
Concentration: 2.587 ug/kg

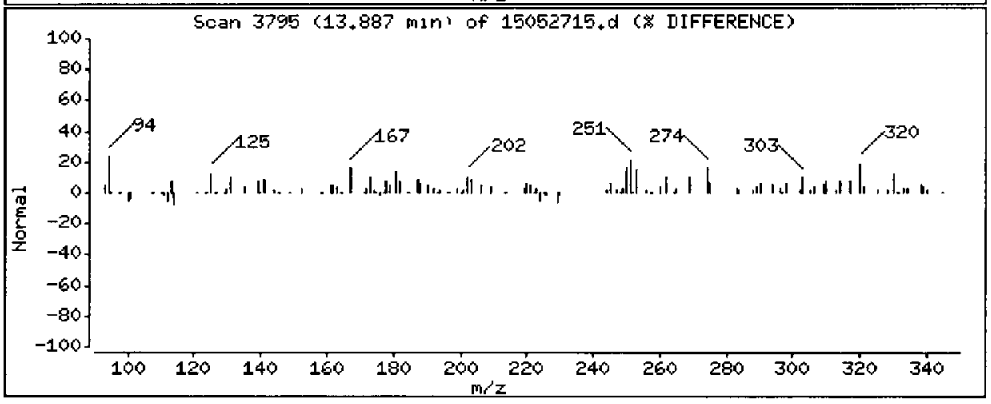












Data File: /chem3/nt8.1/20150527.b/15052715.d

Date : 27-MAY-2015 21:33

Client ID: SDP-06(10.0-11.0)

Instrument: nt8.1

Sample Info: ACA8I

Volume Injected (uL): 1.0

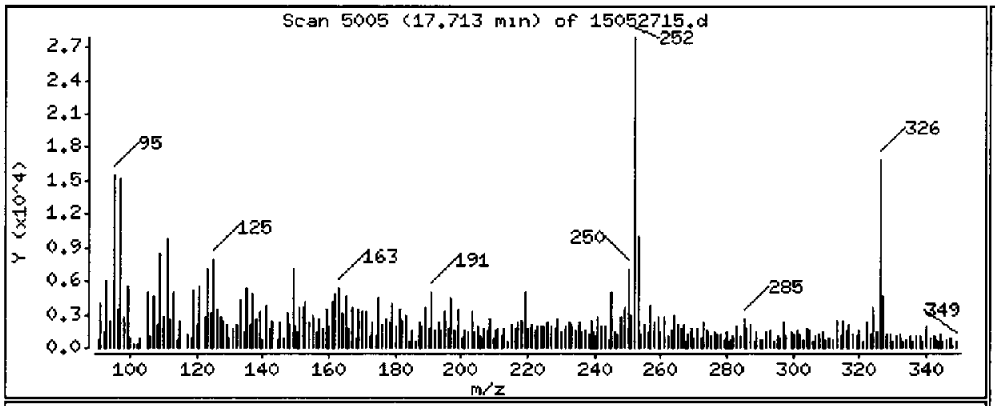
Operator: JZ

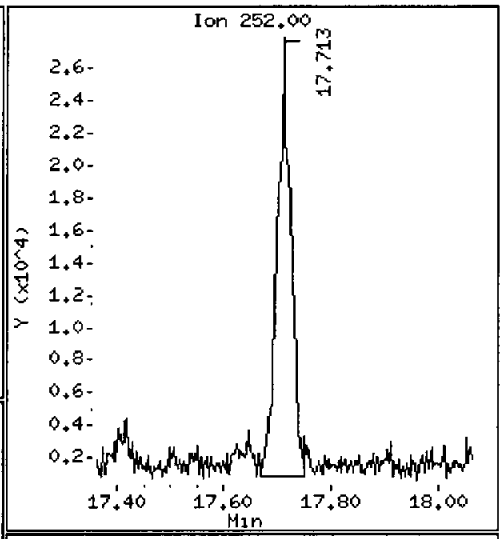
Column phase: ZB-35

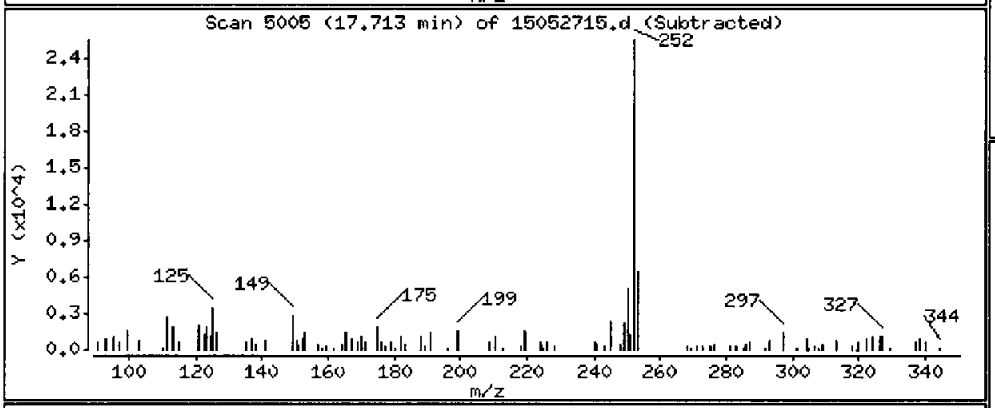
Column diameter: 0.25

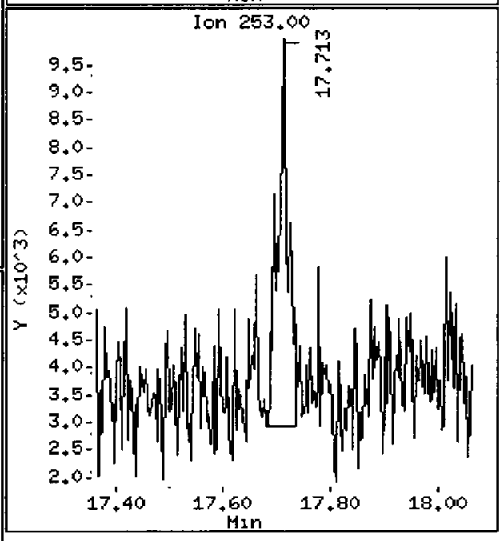
57 Perylene

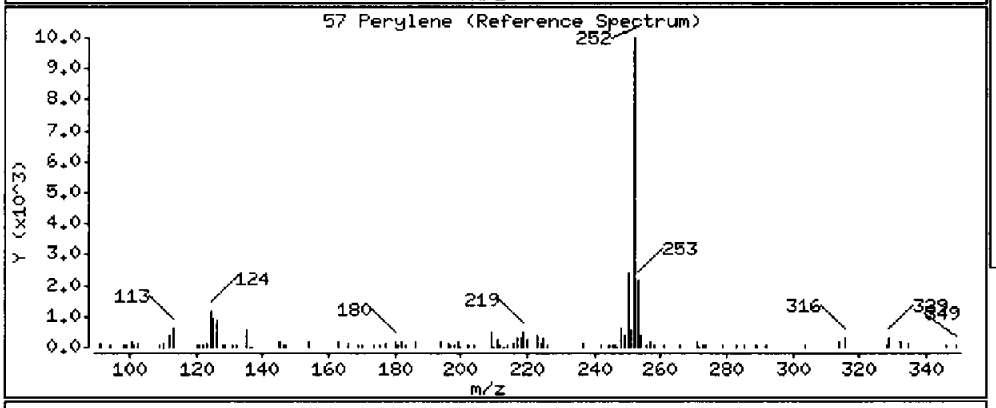
Concentration: 6.469 ug/kg

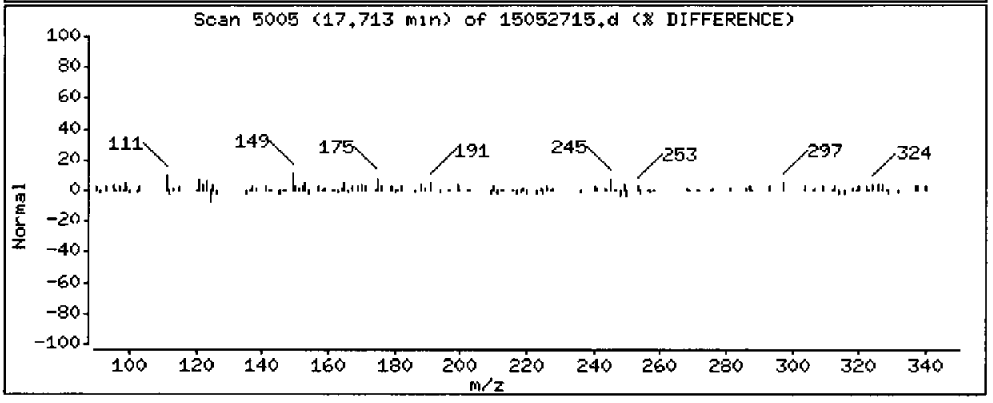












CO-ELUTION SUMMARY FOR FILE - 15052715.d

Lab ID: AGA8I, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 27-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGAB_00107

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 5/29/15 Analysis: SimDis Analyst: RB

GC Program: SimDis Column No: 174228 Column Type: RXi-17Sil MS

Instrument Tune (.U or .CT.): LE0413 EM Voltage: 1765

Calibration File: 150529.02 Curve Date: 4/13/15 Injection Vol.: 1 µL

IS/SS	Ical/Ccal	LCS/ICV
D007072	D007310	

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150529.b

	Time	Filename	LabID	ClientId	DF								
1	1211	15052901.d	DFTPP150529	DFTPP150529	1	NO ISTDS FOUND							
2	1223	15052902.d	SDE0070-ICV1	ICV150529	1	4.74	303467	7.00	204822	9.02	351993	13.81	390947	17.63	395873
3	1249	15052903.d	15E0011-06RE1	SDP-07(1.5-3	3	4.74	423465	7.00	277001	9.02	474018	13.81	550685	17.64	574380
4	1315	15052904.d	SDE0070-CCV1	CCV150529	1	4.74	311165	7.00	197643	9.02	355748	13.80	389224	17.63	396831

5/29/15

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150529.b

ARI Job No.: SDE0 Method: FSIMPNA150413.m Instrument: nt8.i Date: 29-MAY-2015

NB 05/29/15

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1223	15052902 d	SDE0070-ICV1	ICV150529	1	NO MANUAL INTEGRATION
1249	15052903.d	15E0011-06RE1	SDP-07(1 5	3	NO MANUAL INTEGRATION
1315	15052904 d	SDE0070-CCV1	CCV150529	1	NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt8.i/20150529.b

Instrument: nt8.i Date: 29-MAY-2015 Method: FSIMPNA150413.m

INITIAL CAL: 13-APR-2015

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 29-MAY-2015

Compound	%D
NO Q-FLAGS	

05/29/15

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 29-MAY-2015 12:23
Lab File ID: 15052902.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: ICV150529 Quant Type: ISTD
Method: /chem3/nt8.i/20150529.b/FSIMPNA150413.m

R 05/29/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.97178	0.100	0.86460	20.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.66612	0.100	9.06774	20.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.64947	0.100	13.05255	20.00000	Averaged
15 1-methylnaphthalene	0.55829	0.57434	0.100	2.87541	20.00000	Averaged
21 Acenaphthylene	1 46062	1 52294	0 100	4.26664	20.00000	Averaged
23 Acenaphthene	0.97186	1.03764	0 100	6.76792	20.00000	Averaged
11 Dibenzofuran	1 34410	1 41129	0.100	4.99913	20.00000	Averaged
25 Fluorene	1 08551	1 11382	0.100	2.60776	20.00000	Averaged
30 Phenanthrene	0.95354	0 94502	0.100	-0.89387	20.00000	Averaged
31 Anthracene	0.85847	0 87291	0 100	1.68256	20.00000	Averaged
36 Fluoranthene	1.11525	1.09715	0.100	-1.62288	20.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.00260	0.100	1.91337	20.00000	Averaged
39 Pyrene	1.11491	1.02325	0.100	-8.22135	20.00000	Averaged
46 Benzo(a)anthracene	1.00322	0.98343	0.100	-1.97225	20.00000	Averaged
48 Chrysene	1.00588	0.95247	0.100	-5.31008	20.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	0.99580	0.100	-5.18921	20.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	1.01026	0.100	-3.73214	20.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0.96260	0.100	-5.99786	20.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.88984	0.100	-4.98030	20.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.14276	0.100	1.59632	20.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.78537	0.010	3.10893	20.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.93113	0.100	1.63712	20.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.95324	0.100	-3.65571	20.00000	Averaged
57 Perylene	0.97216	0.94164	0.100	-3.13946	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150529.b/15052902.d
Lab Smp Id: ICV150529 Client Smp ID: ICV150529
Inj Date : 29-MAY-2015 12:23
Operator : JZ Inst ID: nt8.i
Smp Info : ICV150529
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150529.b/FSIMPNA150413.m
Meth Date : 29-May-2015 13:05 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 05/29/15

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.739	4.739	(1.000)	303467	2.00000	
7 Naphthalene	128	4.770	4.770	(1.007)	368631	2.50000	2.522
$ 12 2-Methylnaphthalene-d10	152	5.466	5.466	(1 153)	252681	2.50000	2.727
14 2-Methylnaphthalene	141	5.510	5.510	(1.163)	246367	2.50000	2.826
15 1-methylnaphthalene	141	5.703	5.703	(1.204)	217866	2.50000	2.572
21 Acenaphthylene	152	6.892	6.892	(0.985)	389916	2.50000	2.607
* 22 Acenaphthene-d10	164	7.000	7.000	(1.000)	204822	2.00000	
23 Acenaphthene	153	7.050	7.050	(1.007)	265664	2.50000	2.669
11 Dibenzofuran	168	7.202	7.202	(1.029)	361330	2.50000	2.625
25 Fluorene	166	7.676	7.676	(1 097)	285169	2.50000	2.565
* 28 Phenanthrene-d10	188	9.020	9.020	(1.000)	351993	2.00000	
30 Phenanthrene	178	9.058	9.058	(1 004)	415799	2.50000	2.478
31 Anthracene	178	9.099	9.099	(1.009)	384072	2.50000	2.542
36 Fluoranthene	202	10.769	10.769	(1.194)	482738	2.50000	2.459
$ 253 Fluoranthene-d10	212	10.734	10.734	(1.190)	441134	2.50000	2.548
39 Pyrene	202	11.265	11.265	(0.816)	500048	2.50000	2.294
46 Benzo(a)anthracene	228	13.684	13.684	(0.991)	480587	2.50000	2.451
* 47 Chrysene-d12	240	13.807	13.807	(1.000)	390947	2.00000	
48 Chrysene	228	13.880	13.880	(1.005)	465456	2.50000	2.367
51 Benzo(b)fluoranthene	252	16.372	16.372	(0.928)	492764	2.50000	2.370
52 Benzo(k)fluoranthene	252	16.432	16.432	(0.932)	499921	2.50000	2.407
251 Benzo(j)fluoranthene	252	16.508	16.508	(0.936)	476332	2 50000	2.350
54 Benzo(a)pyrene	252	17.406	17.406	(0.987)	440327	2 50000	2.375
* 56 Perylene-d12	264	17.633	17.633	(1.000)	395873	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.046	20.046	(1.137)	565484	2.50000	2.540
$ 60 Dibenzo(a,h)anthracene-d14	292	19.938	19.938	(1.131)	388632	2 50000	2.578
62 Dibenzo(a,h)anthracene	278	20.043	20.043	(1.137)	460761	2.50000	2.541

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.026	21.026	(1.192)	471701	2.50000	2.409
57 Perylene	252	17.709	17.709	(1.004)	465961	2.50000	2.422

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052902.d
Lab Smp Id: ICV150529
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150529.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 29-MAY-2015
Calibration Time: 11:17
Client Smp ID: ICV150529
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	303467	-11.55
22 Acenaphthene-d10	230598	115299	461196	204822	-11.18
28 Phenanthrene-d10	373928	186964	747856	351993	-5.87
47 Chrysene-d12	381262	190631	762524	390947	2.54
56 Perylene-d12	380825	190412	761650	395873	3.95

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.63	0.00

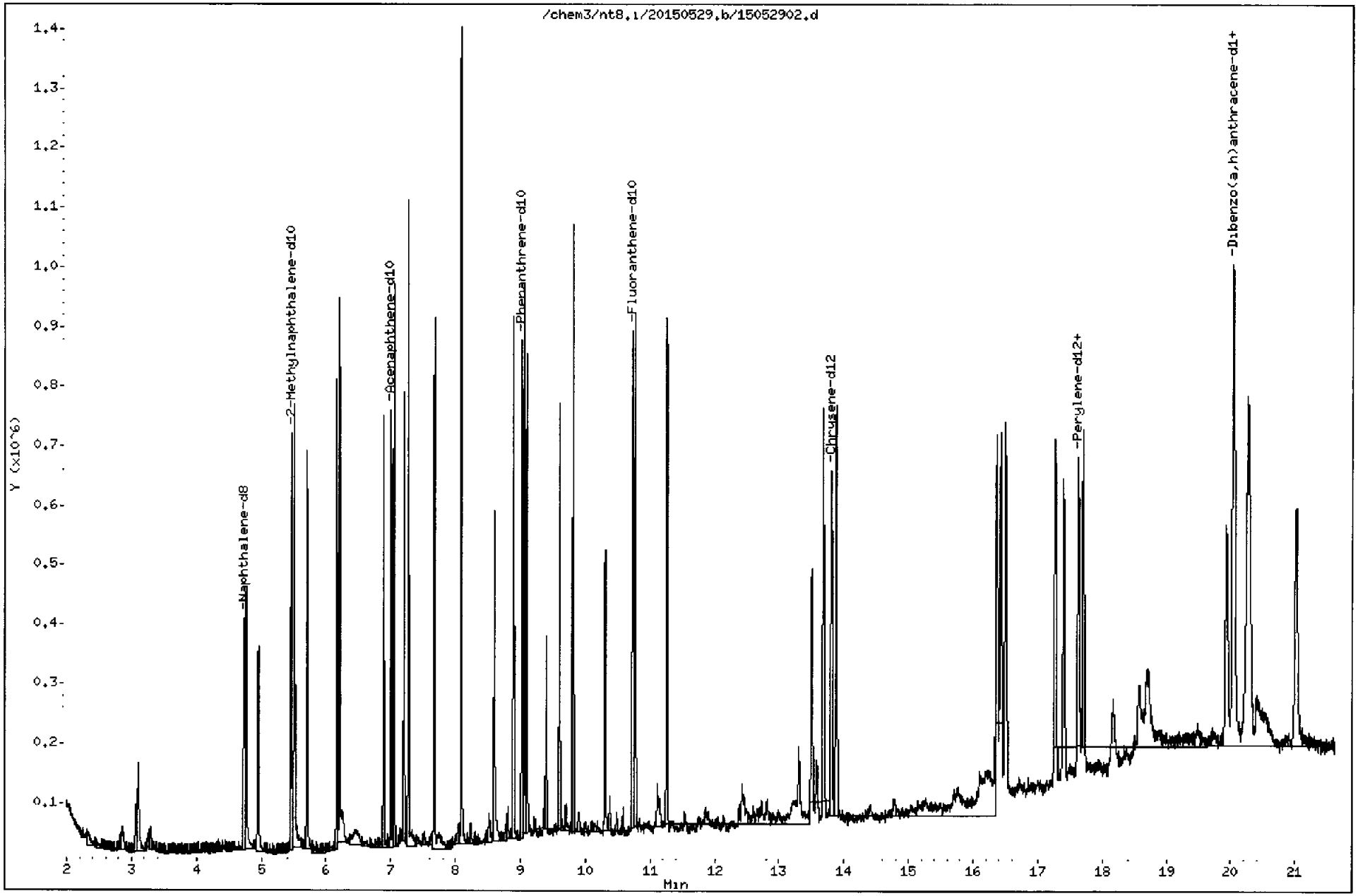
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150529.b/15052902.d
Date : 29-MAY-2015 12:23
Client ID: ICV150529
Sample Info: ICV150529

Instrument: nt8.1

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052902.d

Lab ID: ICV150529, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 29-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem3/nt8.1/20150529.b/tune.b/15052901.d

Date : 29-MAY-2015 12:11

Client ID: DFTPP150529

Instrument: nt8.1

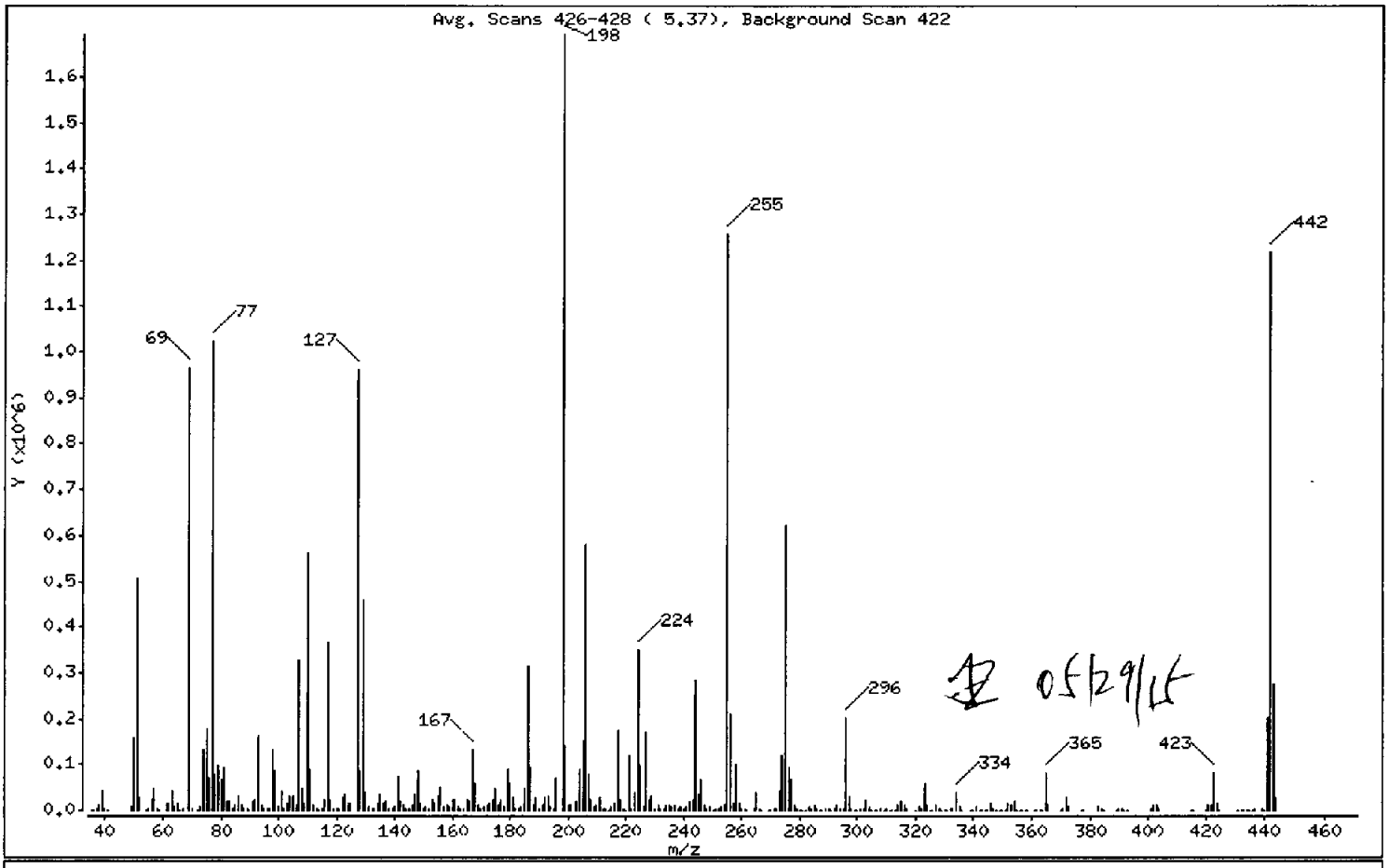
Sample Info: DFTPP150529

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	29.91
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	56.97
70	Less than 2.00% of mass 69	0.30 (0.53)
127	10.00 - 80.00% of mass 198	56.71
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	8.38
275	10.00 - 60.00% of mass 198	36.82
365	Greater than 1.00% of mass 198	4.94
441	0.01 - 24.00% of mass 442	12.07 (16.75)
442	50.00 - 200.00% of mass 198	72.02
443	15.00 - 24.00% of mass 442	16.26 (22.57)

Data File: /chem3/nt8.1/20150529.b/tune.b/15052901.d

Date : 29-MAY-2015 12:11

Client ID: DFTPP150529 Instrument: nt8.1

Sample Info: DFTPP150529

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052901.d
Spectrum: Avg. Scans 426-428 (5.37), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	218	135.00	36392	231.00	13451	326.00	1196
36.00	695	136.00	16928	232.00	2038	327.00	11276
37.00	4422	137.00	18144	233.00	2711	328.00	5153
38.00	10561	138.00	4071	234.00	10256	329.00	1488
39.00	42520	139.00	3128	235.00	11786	330.00	317
40.00	2415	140.00	7004	236.00	8206	331.00	93
41.00	1858	141.00	72264	237.00	11860	332.00	4555
43.00	598	142.00	19872	238.00	2593	333.00	5566
45.00	281	143.00	13427	239.00	7026	334.00	39608
46.00	216	144.00	3644	240.00	5581	335.00	9665
48.00	534	145.00	1964	241.00	9152	336.00	1278
49.00	8154	146.00	12645	242.00	19472	339.00	647
50.00	160896	147.00	33104	243.00	21704	340.00	844
51.00	506304	148.00	86624	244.00	282432	341.00	6032
52.00	28312	149.00	16231	245.00	35104	342.00	1764
53.00	1335	150.00	2243	246.00	65664	343.00	105
54.00	8	151.00	7527	247.00	13263	344.00	119
55.00	4457	152.00	5706	248.00	2850	345.00	345
56.00	21864	153.00	21872	249.00	9504	346.00	13730
57.00	47968	154.00	14739	250.00	1793	347.00	2057
58.00	2259	155.00	30696	251.00	2664	348.00	261
59.00	134	156.00	49872	252.00	2682	349.00	94
60.00	817	157.00	8162	253.00	7035	350.00	727
61.00	14067	158.00	12219	254.00	10528	351.00	1077
62.00	16286	159.00	8362	255.00	1255424	352.00	15196
63.00	41576	160.00	22680	256.00	210112	353.00	11362
64.00	6483	161.00	24104	257.00	15379	354.00	17672
65.00	17160	162.00	7521	258.00	99640	355.00	938
66.00	1482	163.00	2243	259.00	16968	356.00	438
67.00	2897	164.00	3916	260.00	2447	357.00	290
69.00	964288	165.00	22800	261.00	2730	358.00	442
70.00	5156	166.00	18352	262.00	999	359.00	1777
72.00	602	167.00	133312	263.00	929	360.00	420
73.00	7849	168.00	57632	264.00	3203	361.00	330
74.00	133568	169.00	9923	265.00	40576	362.00	112

Date : 29-MAY-2015 12:11

Client ID: DFTPP150529 Instrument: nt8.i

Sample Info: DFTPP150529

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052901.d
Spectrum: Avg. Scans 426-428 (5.37), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
75.00	178240	170.00	4770	266.00	5037	363.00	640
76.00	68968	171.00	6176	267.00	1207	364.00	1438
77.00	1024832	172.00	12057	268.00	372	365.00	83608
78.00	79344	173.00	14273	269.00	575	366.00	11050
79.00	95480	174.00	24000	270.00	1298	367.00	937
80.00	67776	175.00	45064	271.00	3330	370.00	1479
81.00	93872	176.00	13028	272.00	4398	371.00	4216
82.00	21256	177.00	25112	273.00	42512	372.00	25416
83.00	19096	178.00	7516	274.00	121544	373.00	7366
84.00	1991	179.00	90272	275.00	623168	374.00	1066
85.00	12386	180.00	58656	276.00	94072	377.00	578
86.00	29256	181.00	28736	277.00	66648	378.00	393
87.00	10626	182.00	4548	278.00	10750	379.00	119
88.00	3856	183.00	2681	279.00	2291	383.00	5928
89.00	2590	184.00	8908	280.00	449	384.00	2217
90.00	288	185.00	47224	281.00	885	385.00	847
91.00	21248	186.00	313728	282.00	589	389.00	147
92.00	24680	187.00	94352	283.00	5991	390.00	3023
93.00	162944	188.00	10139	284.00	4490	391.00	2075
94.00	9921	189.00	26120	285.00	10536	392.00	1692
95.00	2136	190.00	5149	286.00	2440	393.00	356
96.00	5402	191.00	10528	287.00	664	395.00	197
97.00	2146	192.00	27848	288.00	1159	397.00	335
98.00	133120	193.00	31440	289.00	2701	401.00	2107
99.00	83960	194.00	6488	290.00	2140	402.00	9977
100.00	7262	195.00	3656	291.00	1888	403.00	12838
101.00	43664	196.00	70680	292.00	2790	404.00	5211
102.00	2001	198.00	1692672	293.00	12128	405.00	989
103.00	15973	199.00	141888	294.00	2734	410.00	544
104.00	32048	200.00	13248	295.00	5206	415.00	615
105.00	30144	201.00	10717	296.00	203200	416.00	120
106.00	11729	203.00	19032	297.00	30424	419.00	140
107.00	327616	204.00	88936	298.00	2294	420.00	532
108.00	48536	205.00	153408	299.00	638	421.00	11521
109.00	13796	206.00	581376	300.00	408	422.00	10772

Date : 29-MAY-2015 12:11

Client ID: DFTPP150529 Instrument: nt8.1

Sample Info: DFTPP150529

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052901.d
Spectrum: Avg. Scans 426-428 (5.37), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
110.00	558720	207.00	76688	301.00	2438	423.00	82576
111.00	90528	208.00	23248	302.00	4015	424.00	16252
112.00	11371	209.00	7857	303.00	23272	425.00	1408
113.00	3577	210.00	10098	304.00	7257	427.00	113
114.00	1290	211.00	25296	305.00	883	430.00	154
115.00	2422	212.00	2915	306.00	384	431.00	204
116.00	23336	213.00	2037	307.00	523	432.00	314
117.00	364992	214.00	1114	308.00	2761	433.00	254
118.00	25240	215.00	8659	309.00	1754	434.00	427
119.00	2274	216.00	16030	310.00	2277	435.00	848
120.00	4296	217.00	173824	311.00	1100	436.00	1297
121.00	2001	218.00	25144	312.00	711	437.00	2622
122.00	27016	219.00	2570	313.00	1537	438.00	1736
123.00	36352	220.00	1282	314.00	10469	439.00	4135
124.00	17408	221.00	121872	315.00	21152	440.00	1744
125.00	15384	222.00	5199	316.00	11257	441.00	204224
127.00	959872	223.00	37280	317.00	2219	442.00	1219072
128.00	85544	224.00	351360	319.00	343	443.00	275200
129.00	457536	225.00	95888	320.00	861	444.00	28400
130.00	40520	226.00	9316	321.00	6323	445.00	1419
131.00	9230	227.00	169728	322.00	3243	446.00	146
132.00	3281	228.00	22928	323.00	59928	461.00	86
133.00	2613	229.00	32736	324.00	9902	470.00	102
134.00	16640	230.00	3945	325.00	1334		

Data File: /chem3/nt8.i/20150529.b/tune.b/15052901.d

Date : 29-MAY-2015 12:11

Client ID: DFTPP150529

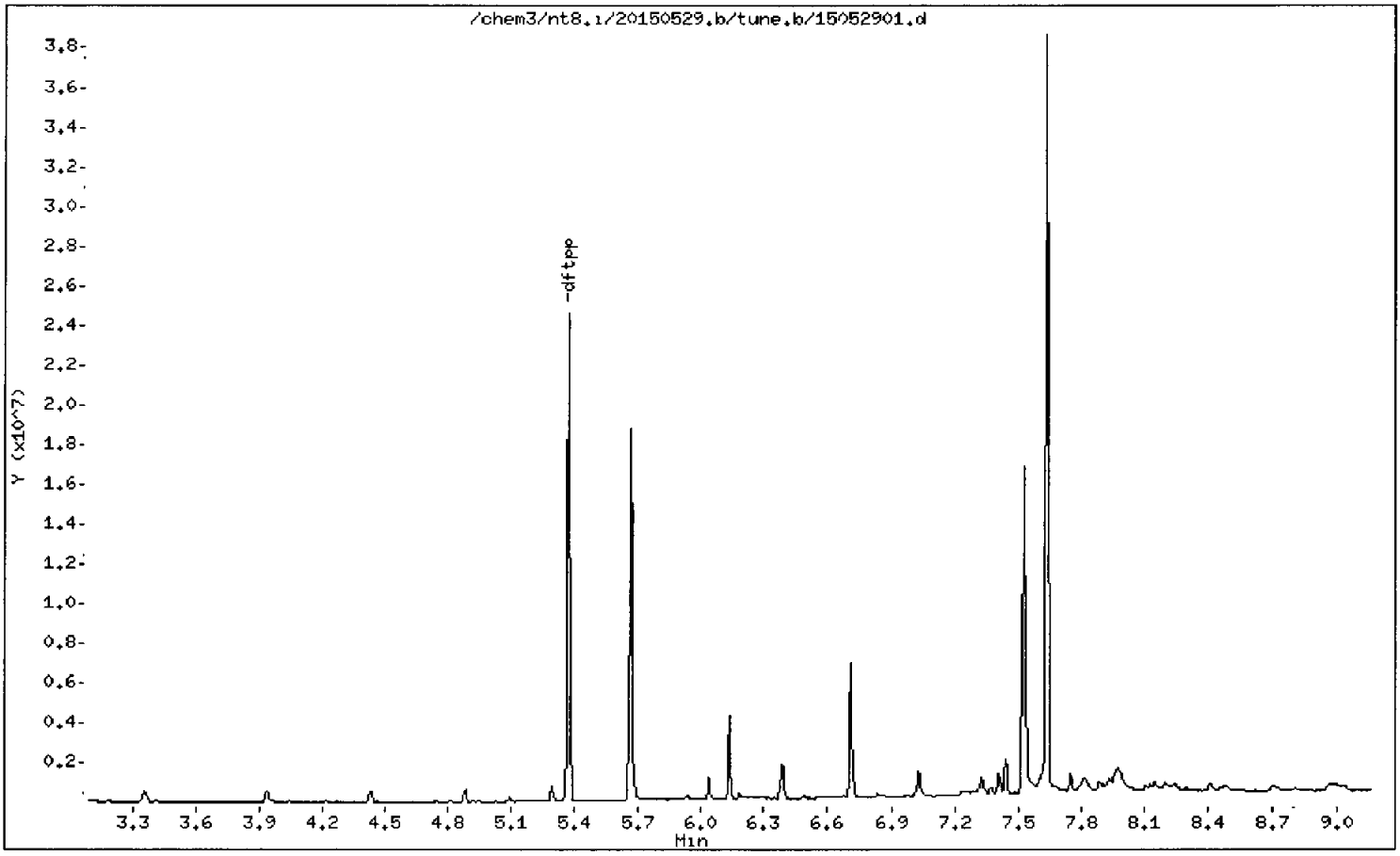
Instrument: nt8.1

Sample Info: DFTPP150529

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150529.b/ddt.b/15052901.d ARI ID: DDT150529
Method: /chem3/nt8.i/20150529.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 29-MAY-2015 12:11 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.665	1605147
Benzidine	7.532	3931106
4,4'-DDE	7.034	41671
4,4'-DDD	7.441	251226
4,4'-DDT	7.638	3766566

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

$$\text{DDT Percent Breakdown} = \frac{(41671 + 251226) * 100}{(41671 + 251226 + 3766566)}$$

DDT Percent Breakdown = 7.2 %

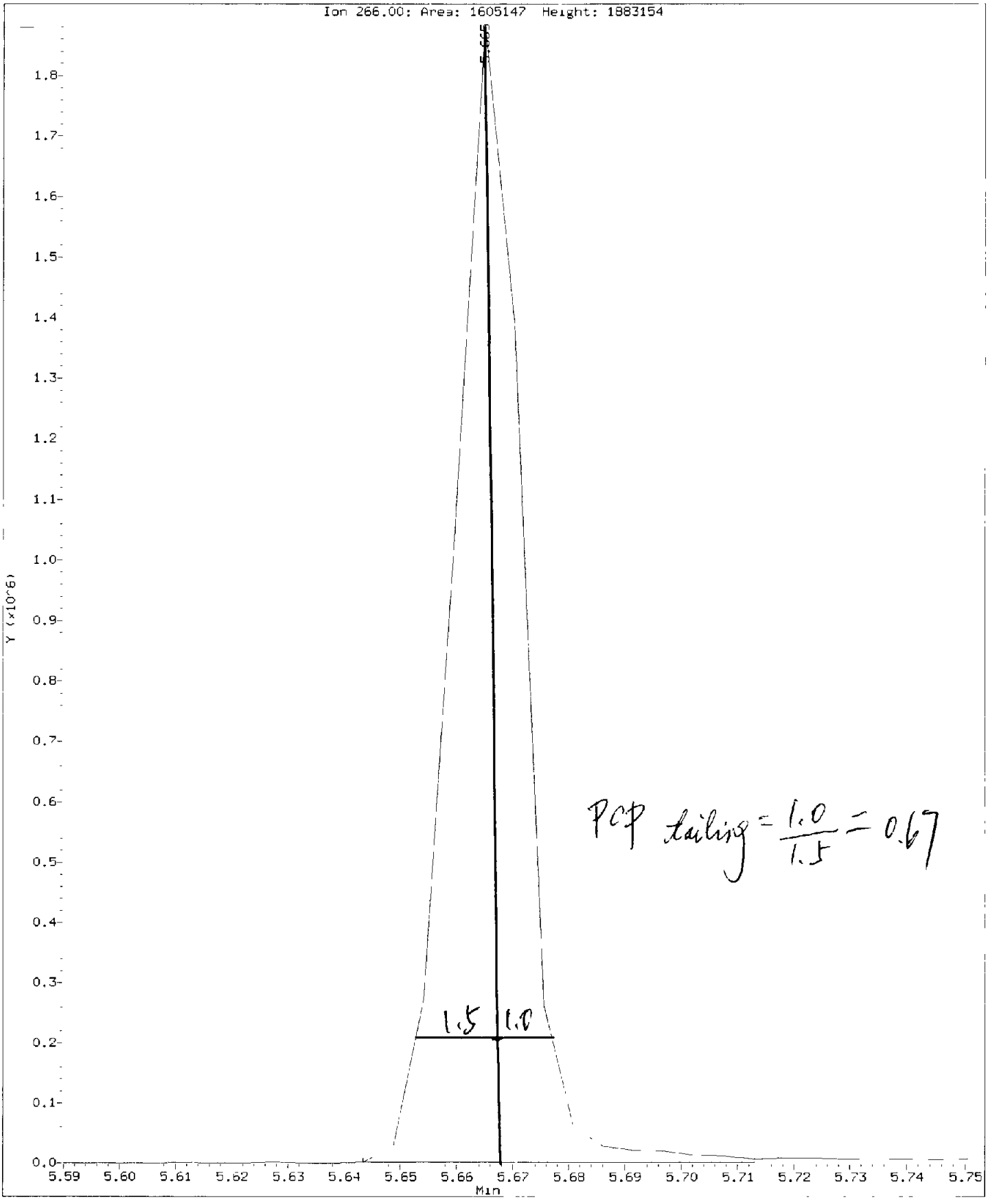
Ok2

5/29/15

AGAS 08462

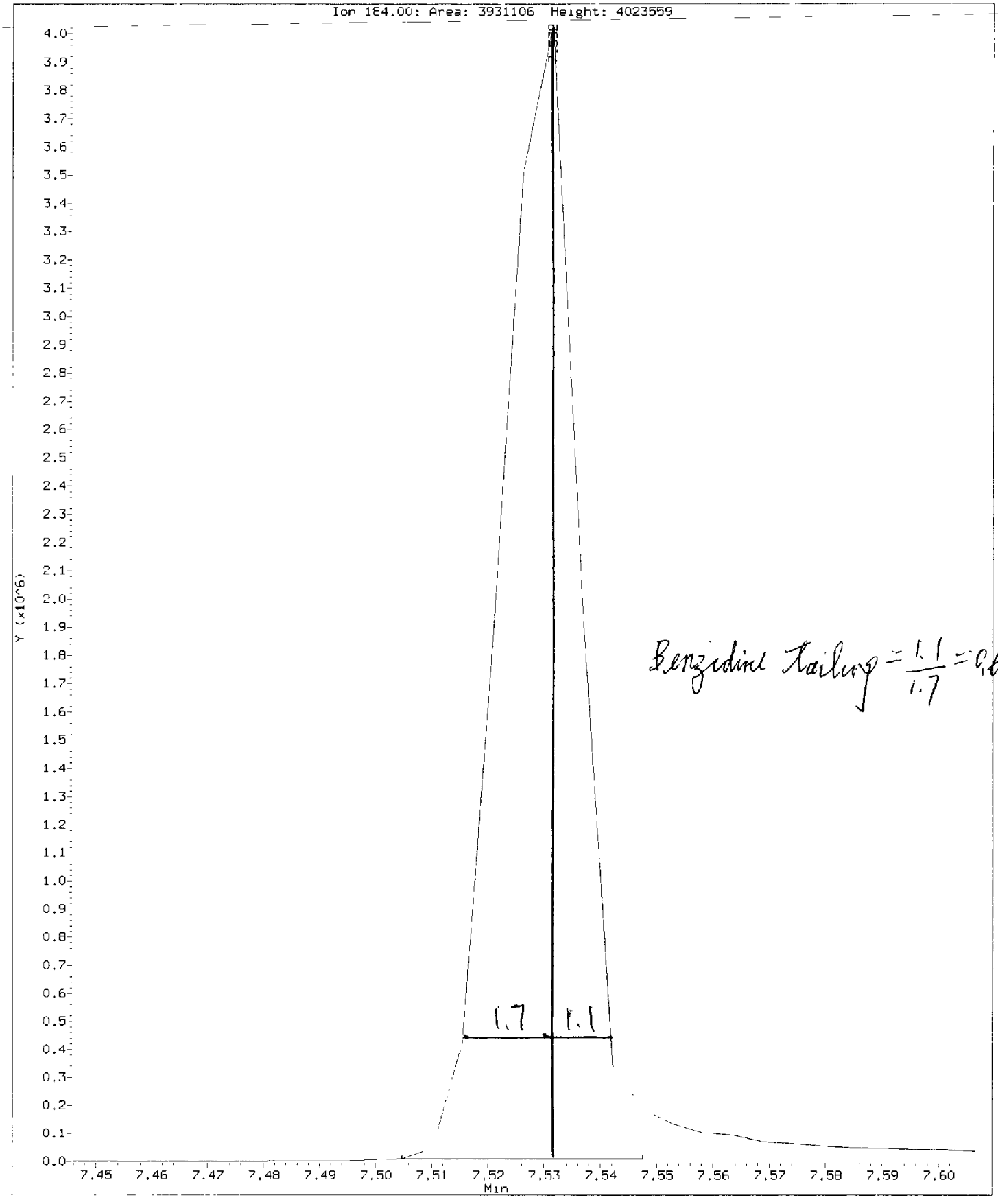
Data File: /chem3/nt8.1/20150529.b/ddt.b/15052901.d
Injection Date: 29-MAY-2015 12:11
Instrument: nt8.1
Client Sample ID: DDT150529

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.i/20150529.b/ddt.b/15052901.d
Injection Date: 29-MAY-2015 12:11
Instrument: nt8.i
Client Sample ID: DDT150529

Compound: Benzidine
CAS Number:



Benzidine Tailing = $\frac{1.1}{1.7} = 0.65$

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150529.b/ccv.b/15052904.d
Lab Smp Id: SDE0070-CCV1 Client Smp ID: CCV150529
Inj Date : 29-MAY-2015 13:15
Operator : JZ Inst ID: nt8.i
Smp Info : CCV150529
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150529.b/ccv.b/FSIMPNA150413C.m
Meth Date : 29-May-2015 15:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.742	4.742	(1.000)	311165	2.00000	
7 Naphthalene	128	4.770	4.770	(1.006)	370562	2.50000	2.472
$ 12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.152)	223330	2.50000	2.350
14 2-Methylnaphthalene	141	5.513	5.513	(1.163)	216256	2.50000	2.420
15 1-methylnaphthalene	141	5.706	5.706	(1.203)	211523	2.50000	2.435
21 Acenaphthylene	152	6.892	6.892	(0.985)	389493	2.50000	2.698
* 22 Acenaphthene-d10	164	7.000	7 000	(1.000)	197643	2.00000	
23 Acenaphthene	153	7.050	7.050	(1.007)	245637	2.50000	2.558
11 Dibenzofuran	168	7.202	7.202	(1.029)	356129	2.50000	2.681
25 Fluorene	166	7.673	7.673	(1.096)	287055	2.50000	2.676
* 28 Phenanthrene-d10	188	9.020	9.020	(1.000)	355748	2.00000	
30 Phenanthrene	178	9.055	9.055	(1.004)	415146	2.50000	2.448
31 Anthracene	178	9.096	9.096	(1.008)	397612	2.50000	2.604
36 Fluoranthene	202	10.769	10.769	(1.194)	497524	2 50000	2.508
$ 253 Fluoranthene-d10	212	10.734	10.734	(1.190)	445631	2.50000	2.547
39 Pyrene	202	11.262	11.262	(0.816)	509729	2.50000	2.349
46 Benzo(a)anthracene	228	13.681	13.681	(0.991)	478569	2.50000	2 451
* 47 Chrysene-d12	240	13.804	13.804	(1.000)	389224	2.00000	
48 Chrysene	228	13.877	13.877	(1.005)	458408	2.50000	2 342
51 Benzo(b)fluoranthene	252	16.369	16.369	(0.928)	498250	2.50000	2 391
52 Benzo(k)fluoranthene	252	16.429	16.429	(0.932)	496341	2.50000	2.384
251 Benzo(j)fluoranthene	252	16.508	16 508	(0 936)	476337	2 50000	2.344
54 Benzo(a)pyrene	252	17 406	17.406	(0.987)	439871	2 50000	2.367
* 56 Perylene-d12	264	17 633	17.633	(1.000)	396831	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20 043	20.043	(1.137)	555497	2.50000	2.489
$ 60 Dibenzo(a,h)anthracene-d14	292	19.929	19.929	(1.130)	386098	2.50000	2.555
62 Dibenzo(a,h)anthracene	278	20.036	20.036	(1.136)	466284	2.50000	2.565

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.020	21.020	(1.192)	476873	2.50000	2.429
57 Perylene	252	17.703	17.703	(1 004)	454829	2.50000	2.358

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052904.d
Lab Smp Id: SDE0070-CCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150529.b/ccv.b/FSIMPNA150413C.m
Misc Info: 15-

Calibration Date: 29-MAY-2015
Calibration Time: 13:15
Client Smp ID: CCV150529
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	311165	-9.31
22 Acenaphthene-d10	230598	115299	461196	197643	-14.29
28 Phenanthrene-d10	373928	186964	747856	355748	-4.86
47 Chrysene-d12	381262	190631	762524	389224	2.09
56 Perylene-d12	380825	190412	761650	396831	4.20

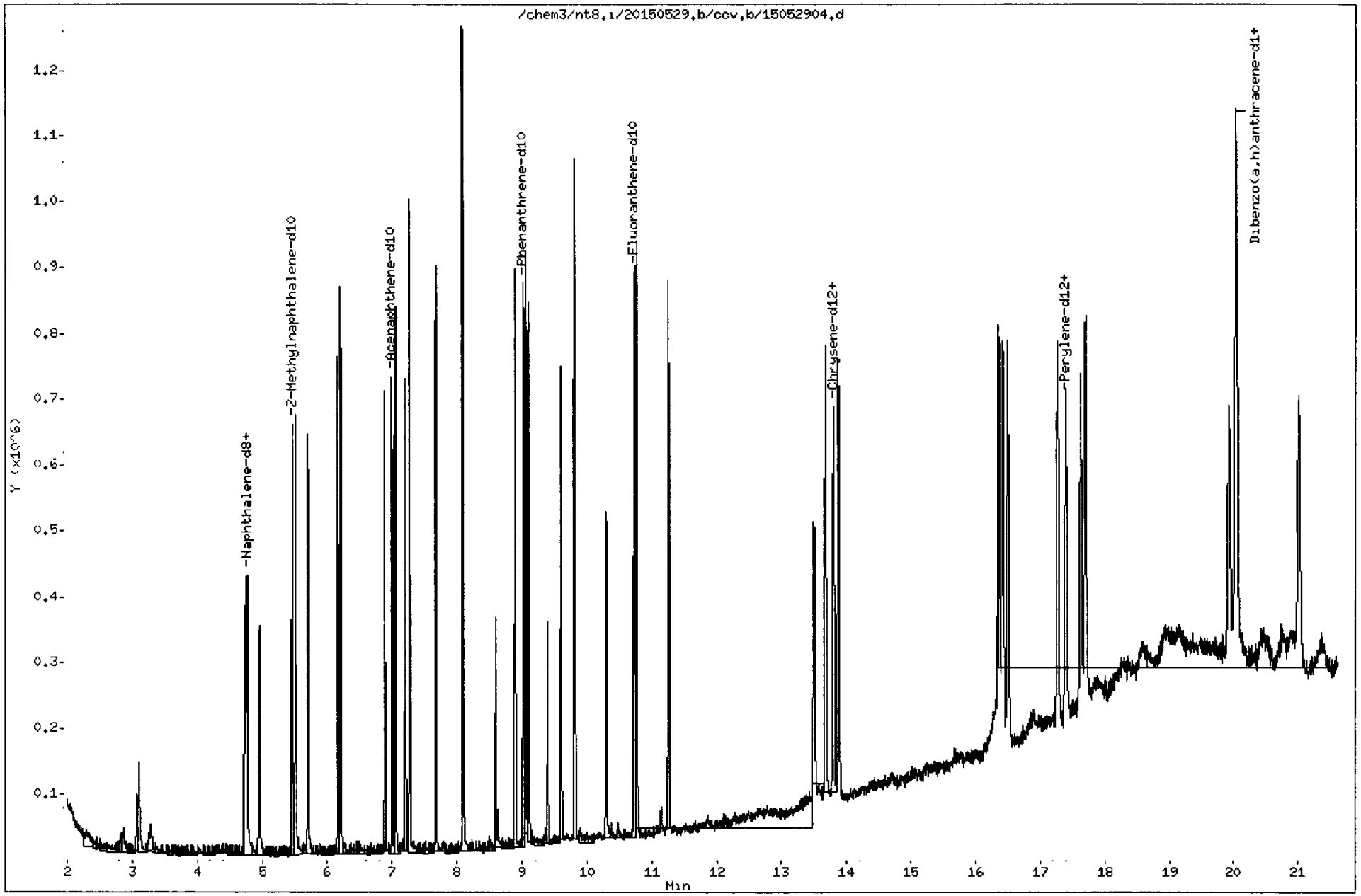
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.80	13.30	14.30	13.80	0.00
56 Perylene-d12	17.63	17.13	18.13	17.63	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150529.b/ccv.b/15052904.d
Date : 29-MAY-2015 13:15
Client ID: CCV150529
Sample Info: CCV150529

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052904.d

Lab ID: SDE0070-CCV1, Method: ccv.b/FSIMPNA150413C.m, Instrument: nt8.i, Date

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 29-MAY-2015 13:15
Lab File ID: 15052904.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: SDE0070-CCV1 Quant Type: ISTD
Method: /chem3/nt8.i/20150529.b/ccv.b/FSIMPNA150413C.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.95271	0.100	-1.11556	50.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.57418	0.100	-5.98640	50.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.55599	0.100	-3.21956	50 00000	Averaged
15 1-methylnaphthalene	0.55829	0.54382	0.100	-2.59086	50.00000	Averaged
21 Acenaphthylene	1.46062	1.57655	0.100	7.93643	50.00000	Averaged
23 Acenaphthene	0 97186	0.99426	0.100	2.30453	50.00000	Averaged
11 Dibenzofuran	1 34410	1 44150	0.100	7.24657	50.00000	Averaged
25 Fluorene	1.08551	1.16191	0.100	7.03788	50.00000	Averaged
30 Phenanthrene	0.95354	0.93357	0.100	-2.09426	50.00000	Averaged
31 Anthracene	0.85847	0.89414	0.100	4.15571	50.00000	Averaged
36 Fluoranthene	1.11525	1.11882	0.100	0.31996	50.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.00213	0.100	1.86537	50.00000	Averaged
39 Pyrene	1.11491	1.04768	0.100	-6.03011	50.00000	Averaged
46 Benzo(a)anthracene	1.00322	0 98364	0.100	-1.95149	50 00000	Averaged
48 Chrysene	1.00588	0 94220	0.100	-6.33081	50.00000	Averaged
51 Benzo(b)fluoranthene	1 05030	1 00446	0.100	-4.36525	50.00000	Averaged
52 Benzo(k)fluoranthene	1 04943	1 00061	0.100	-4.65226	50.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0 96028	0.100	-6.22386	50.00000	Averaged
54 Benzo(a)pyrene	0 93648	0.88677	0.100	-5.30812	50.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1 12480	1.11987	0.100	-0.43900	50.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.77836	0.010	2.18905	50.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.94001	0.100	2.60683	50.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.96136	0.100	-2.83475	50.00000	Averaged
57 Perylene	0.97216	0.91692	0.100	-5.68191	50.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150529.b/15052903.d
Lab Smp Id: AGA8F Client Smp ID: SDP-07(1.5-3.0)
Inj Date : 29-MAY-2015 12:49
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8F,3,
Misc Info : 15-9294
Comment : 1ul Injection
Method : /chem3/nt8.i/20150529.b/FSIMPNA150413.m
Meth Date : 29-May-2015 13:18 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 3
Dil Factor: 3.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	3.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.00000	Weight of sample extracted (g)
M	13.50000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.739	4 739	(1.000)	423465	2.00000	
7 Naphthalene	128	4 767	4.770	(1.006)	33375	0.16361	23.64
$ 12 2-Methylnaphthalene-d10	152	5.463	5.466	(1.153)	83530	0.64595	93.35
14 2-Methylnaphthalene	141	5 510	5 510	(1.163)	26491	0.21779	31.47
15 1-methylnaphthalene	141	5.706	5 703	(1.204)	11850	0.10025	14.49
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.000	7.000	(1.000)	277001	2 00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	7 202	7 202	(1.029)	36972	0.19860	28.70
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9.023	9.020	(1.000)	474018	2.00000	
30 Phenanthrene	178	9.058	9.058	(1.004)	354493	1.56857	226.7
31 Anthracene	178	9.096	9.099	(1.008)	66963	0.32912	47.56
36 Fluoranthene	202	10.772	10.769	(1.194)	1319386	4.99152	721.3
$ 253 Fluoranthene-d10	212	10.734	10.734	(1 190)	206514	0.88570	128.0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.268	11.265	(0.816)	1219704	3.97319	574.2
	46 Benzo(a)anthracene	228	13.684	13.684	(0 991)	600671	2.17455	314.2
*	47 Chrysene-d12	240	13.814	13 807	(1.000)	550685	2.00000	
	48 Chrysene	228	13.880	13 880	(1.005)	861334	3.10994	449.4
	51 Benzo(b)fluoranthene	252	16.375	16.372	(0.928)	651676	2 16046	312.2
	52 Benzo(k)fluoranthene	252	16.435	16 432	(0.932)	349324	1 15906	167.5
	251 Benzo(j)fluoranthene	252	16.511	16.508	(0.936)	327802	1.11464	161.1
	54 Benzo(a)pyrene	252	17.406	17.406	(0.987)	524288	1.94941	281.7
*	56 Perylene-d12	264	17.640	17.633	(1.000)	574380	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.055	20.046	(1.137)	438769	1.35828	196.3
$	60 Dibenzo(a,h)anthracene-d14	292	19.945	19.938	(1.131)	184915	0.84533	122.2
	62 Dibenzo(a,h)anthracene	278	20.036	20.043	(1.136)	119702	0.45496	65.75
	61 Benzo(g,h,i)perylene	276	21.029	21.026	(1 192)	432823	1.52323	220.1
	57 Perylene	252	17.712	17.709	(1.004)	148145	0.53062	76.68

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052903.d
Lab Smp Id: AGA8F
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150529.b/FSIMPNA150413.m
Misc Info: 15-9294

Calibration Date: 29-MAY-2015
Calibration Time: 12:23
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	423465	23.43
22 Acenaphthene-d10	230598	115299	461196	277001	20.12
28 Phenanthrene-d10	373928	186964	747856	474018	26.77
47 Chrysene-d12	381262	190631	762524	550685	44.44
56 Perylene-d12	380825	190412	761650	574380	50.83

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.05
56 Perylene-d12	17.63	17.13	18.13	17.64	0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

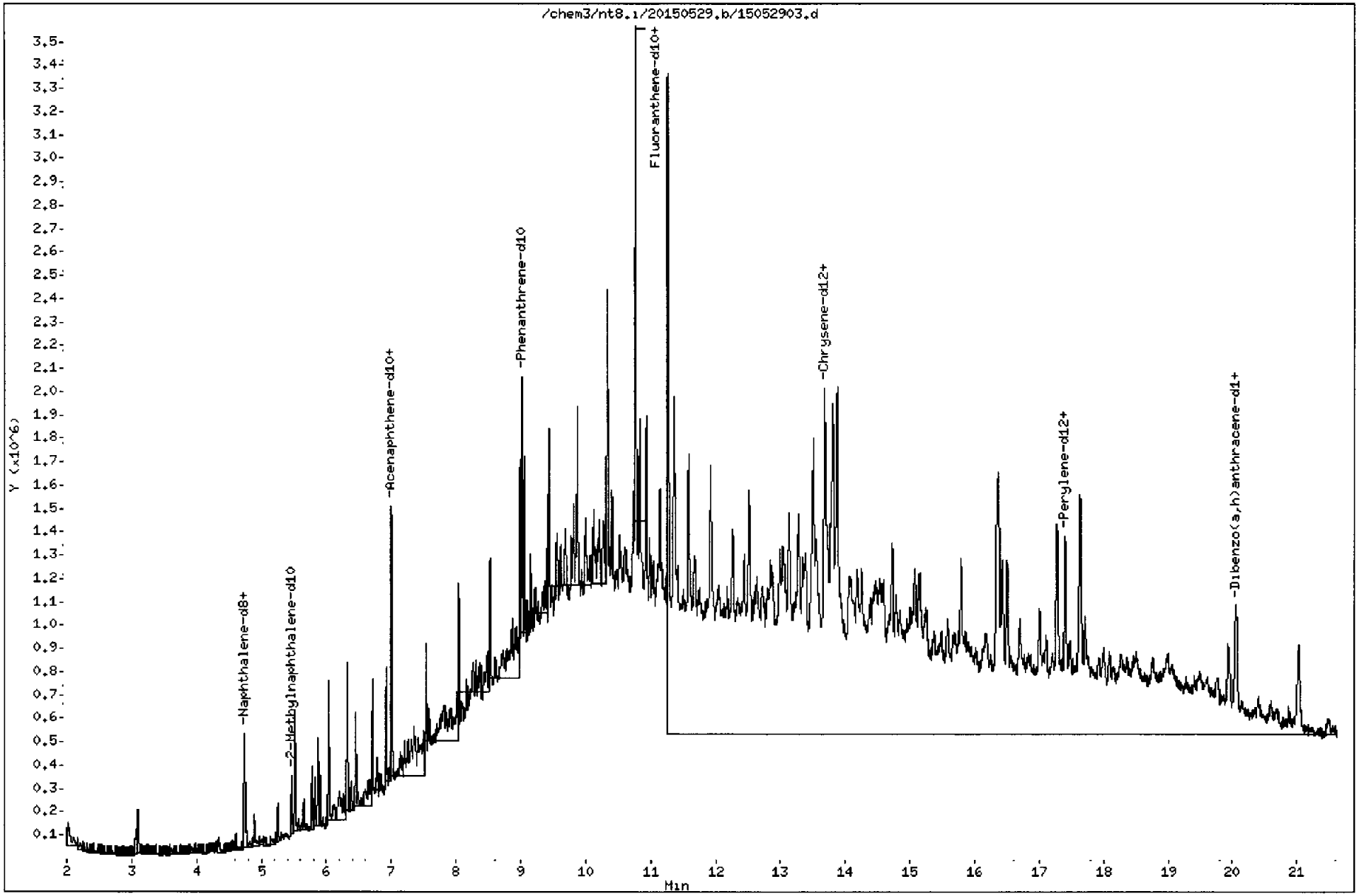
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGA8F
Client Smp ID: SDP-07(1.5-3.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150529.b/FSIMPNA150413.m
Misc Info: 15-9294

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.5	93.35	64.60	32-120
$ 253 Fluoranthene-d10	144.5	128.0	88.57	36-134
$ 60 Dibenzo(a,h)anthra	144.5	122.2	84.53	21-133

Data File: /chem3/nt8.i/20150529.b/15052903.d
Date : 29-MAY-2015 12:49
Client ID: SDP-07(1.5-3.0)
Sample Info: AGA8F,3,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F.3,

Volume Injected (uL): 1.0

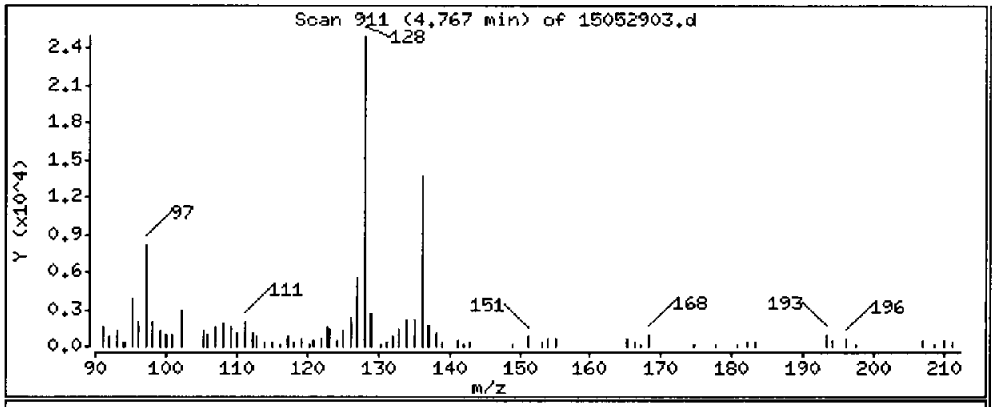
Operator: JZ

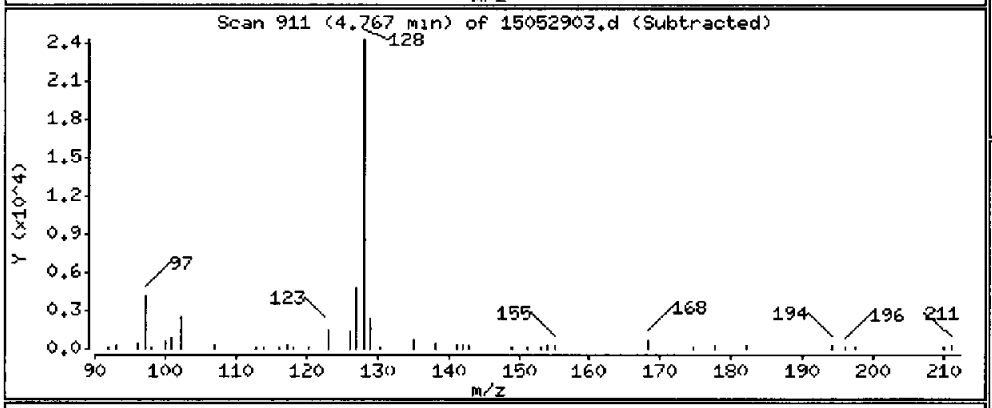
Column phase: ZB-35

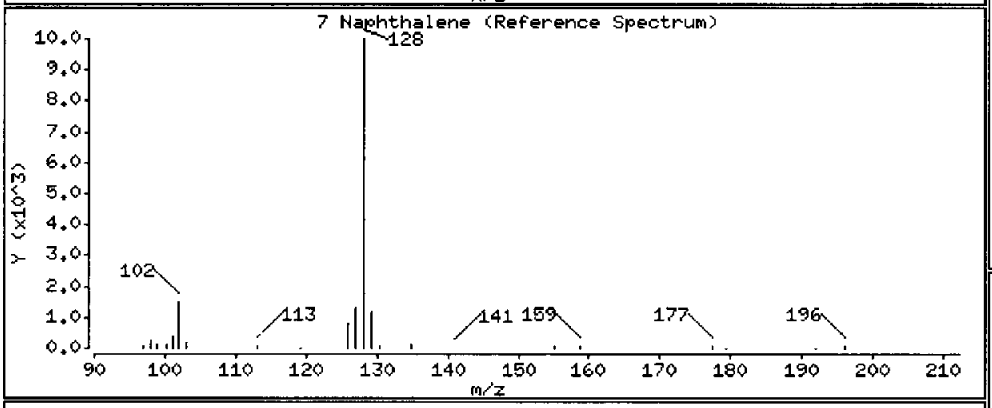
Column diameter: 0.25

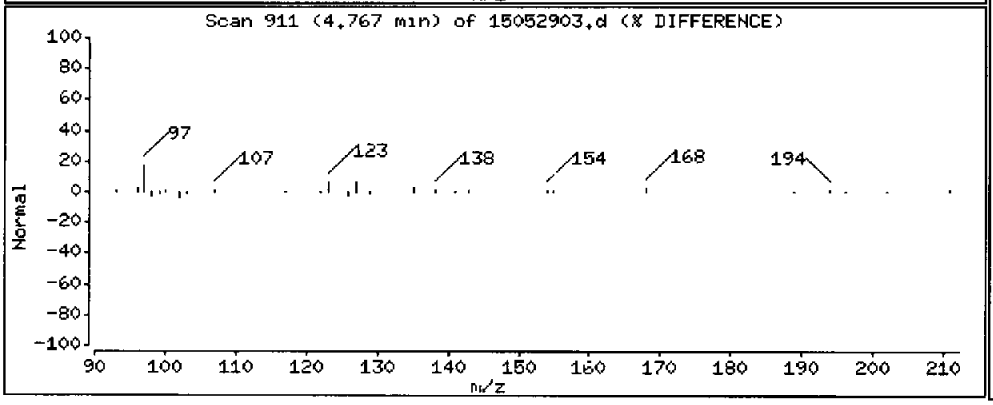
7 Naphthalene

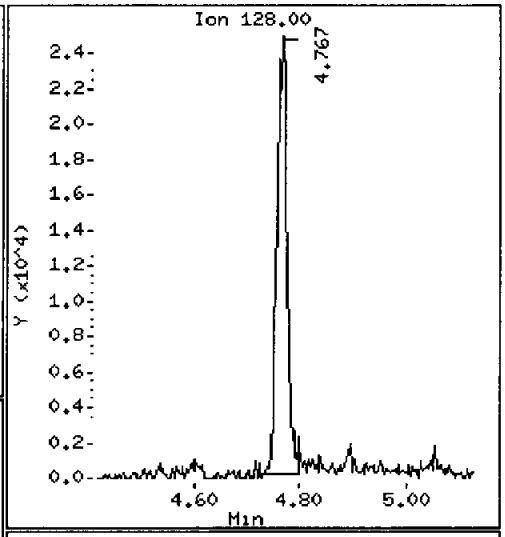
Concentration: 23.64 ug/kg

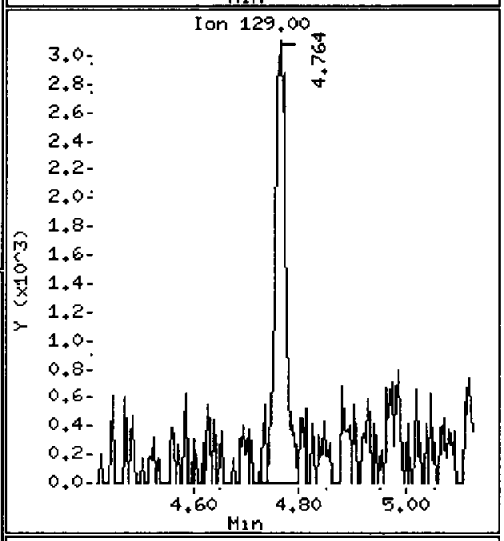


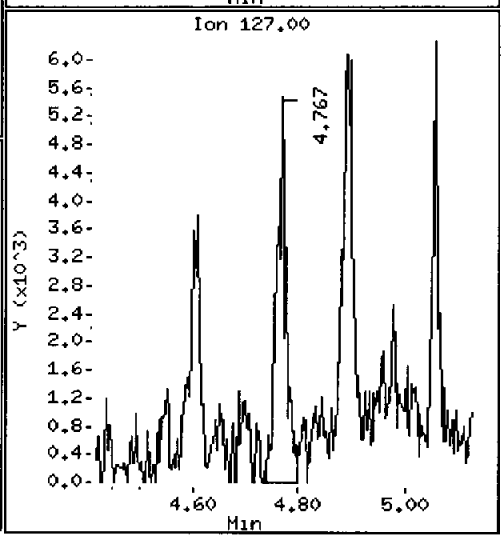












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

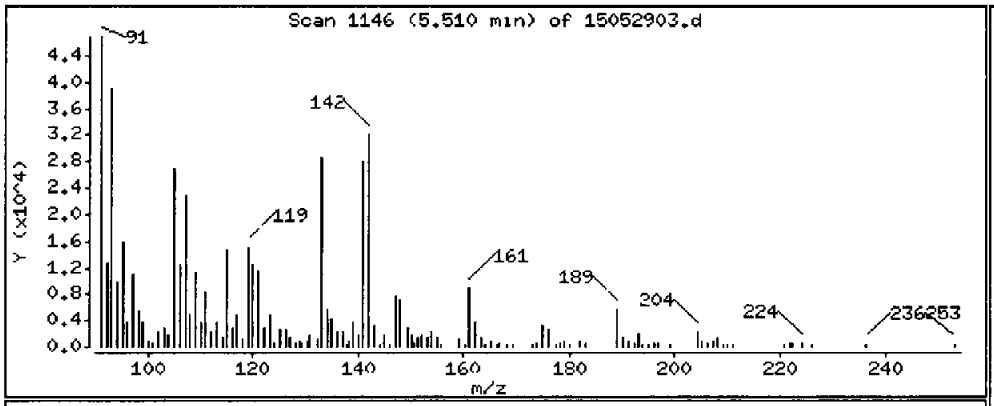
Operator: JZ

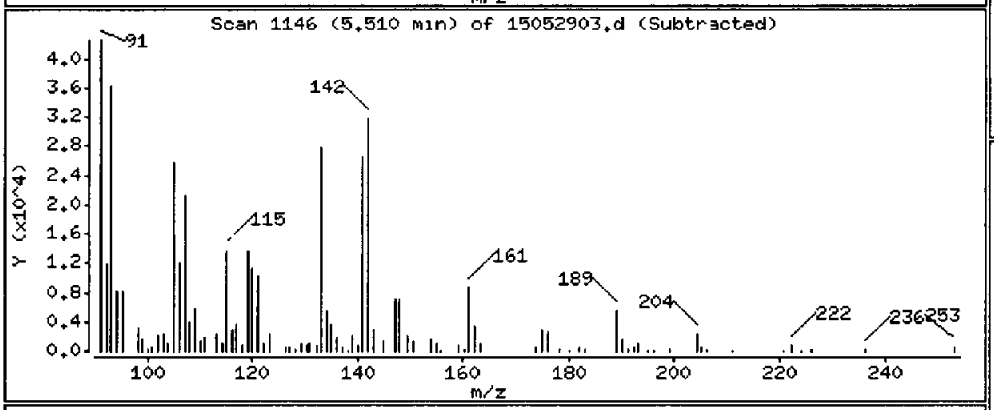
Column phase: ZB-35

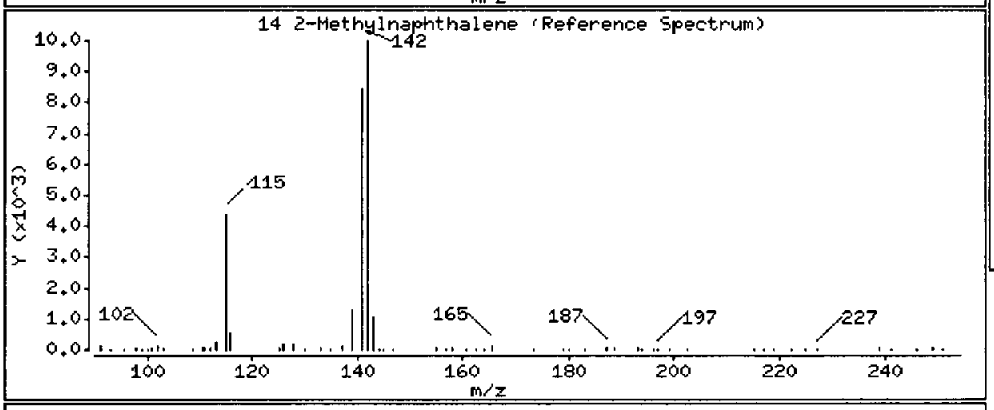
Column diameter: 0.25

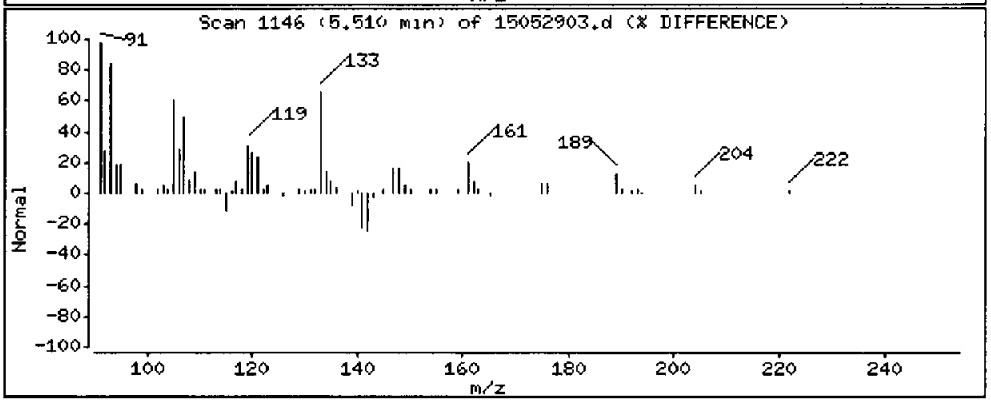
14 2-Methylnaphthalene

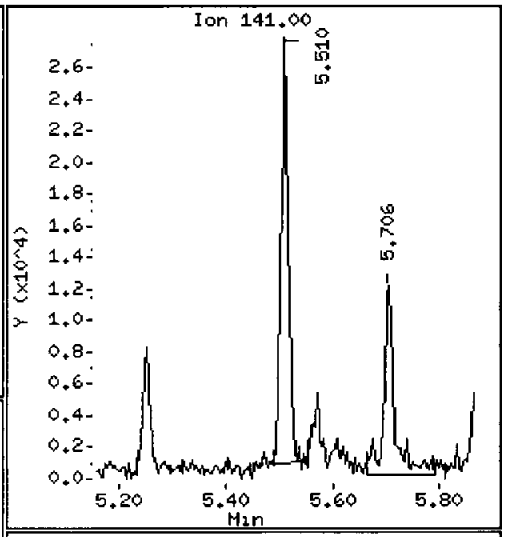
Concentration: 31.47 ug/kg

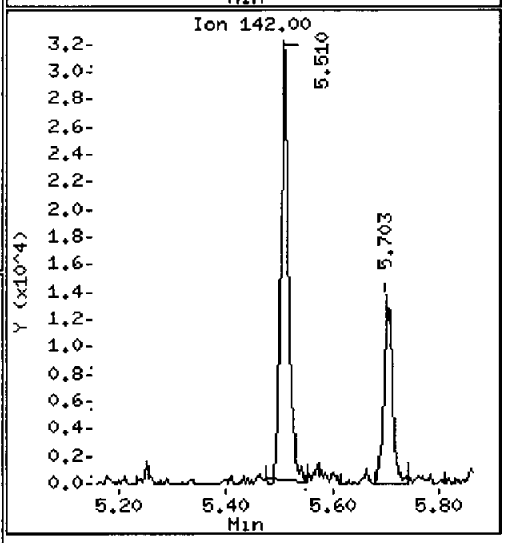












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

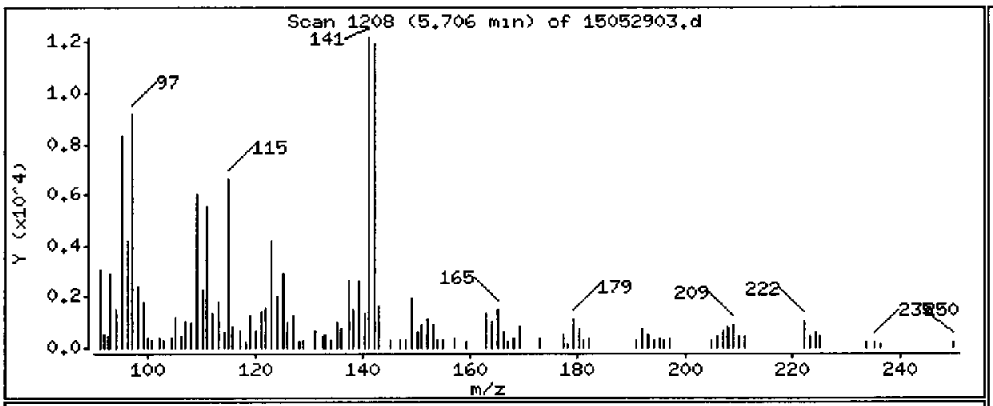
Operator: JZ

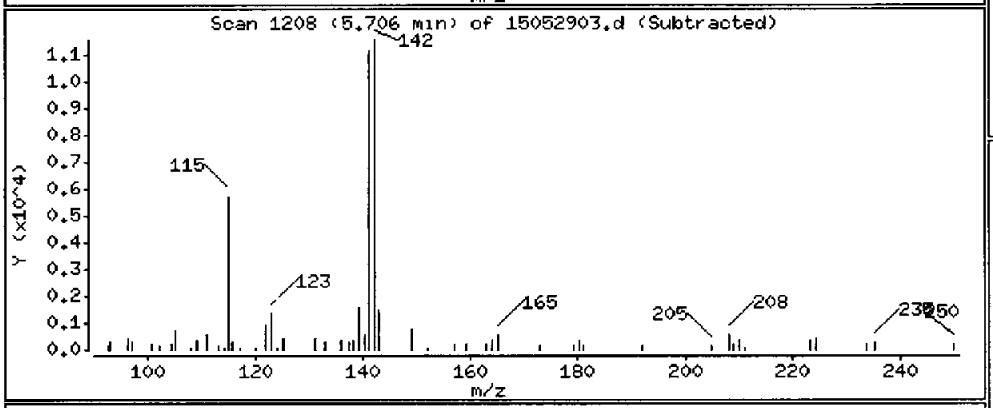
Column phase: ZB-35

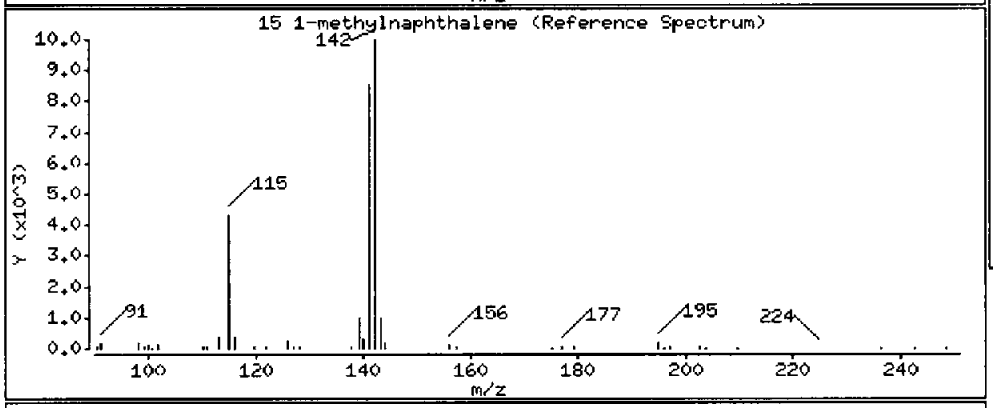
Column diameter: 0.25

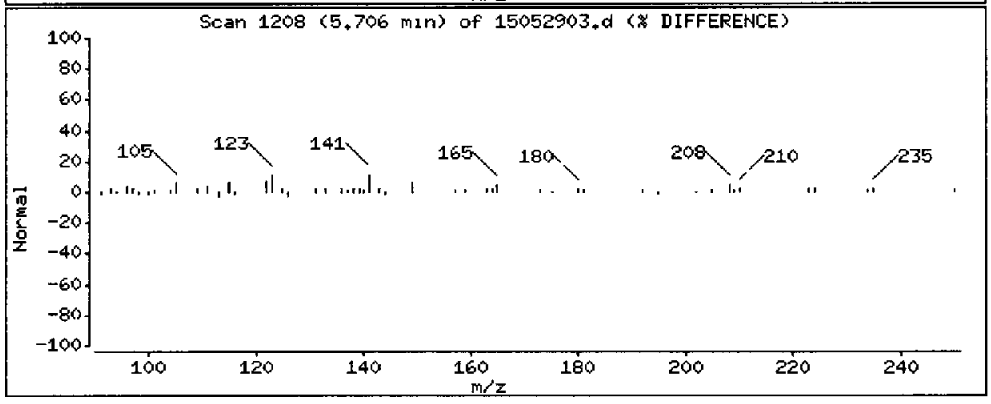
15 1-methylnaphthalene

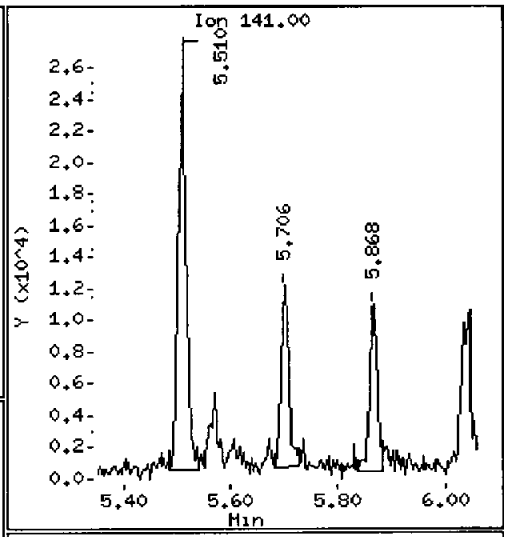
Concentration: 14.49 ug/kg

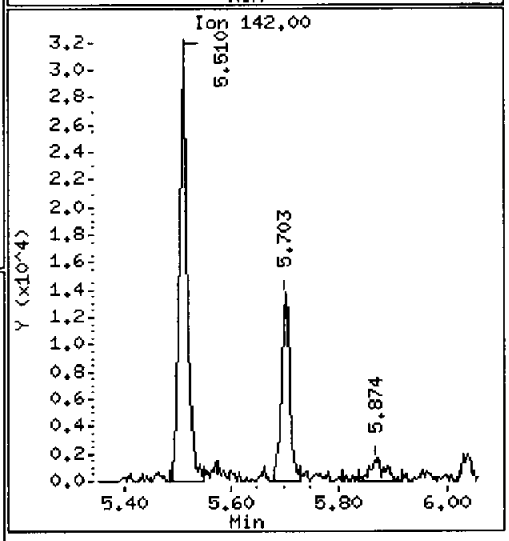












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F.3,

Volume Injected (uL): 1.0

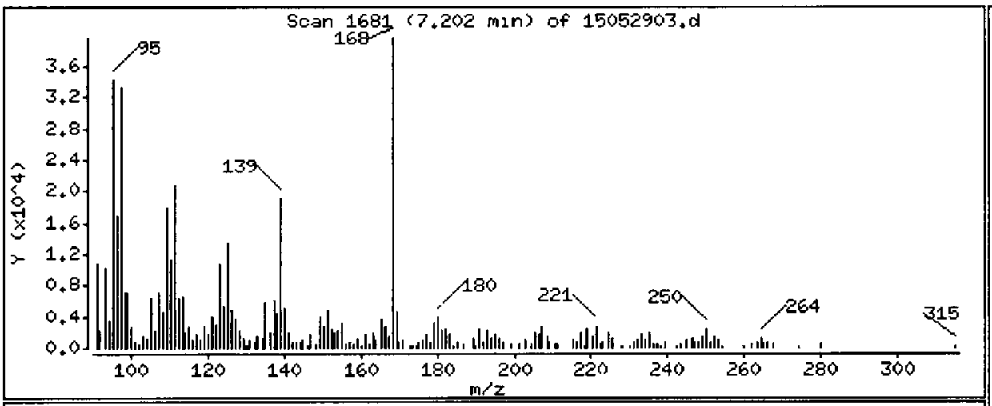
Operator: JZ

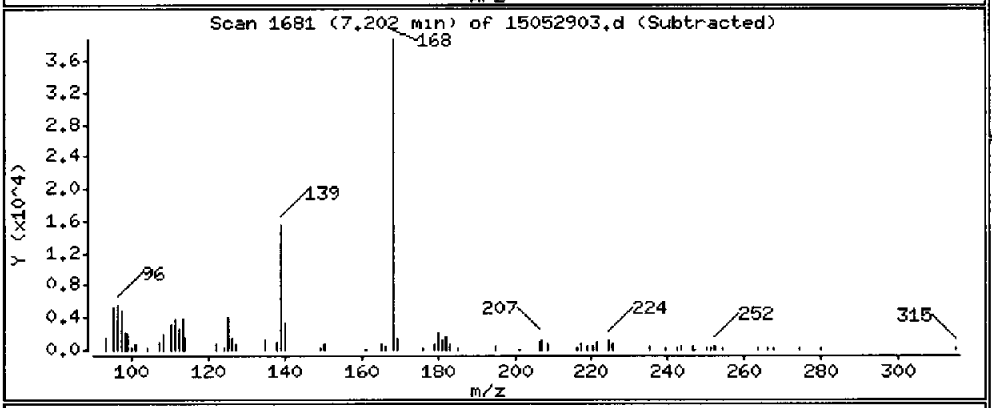
Column phase: ZB-35

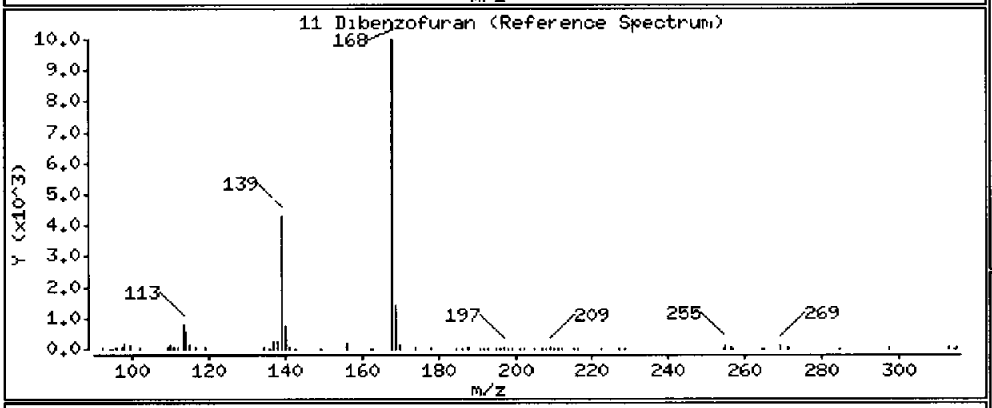
Column diameter: 0.25

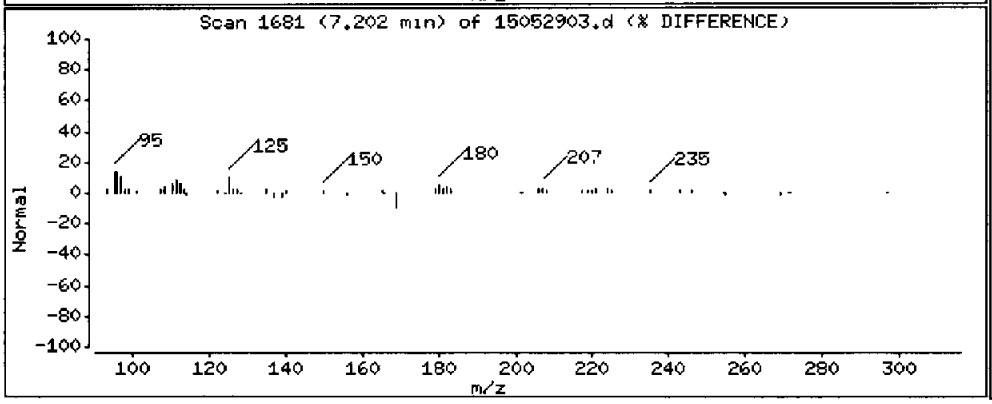
11 Dibenzofuran

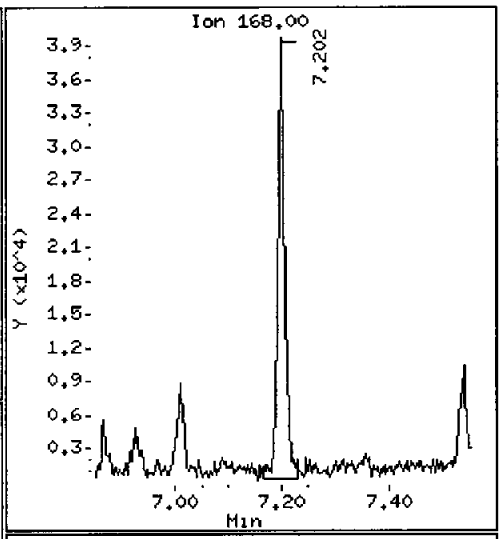
Concentration: 28.70 ug/kg

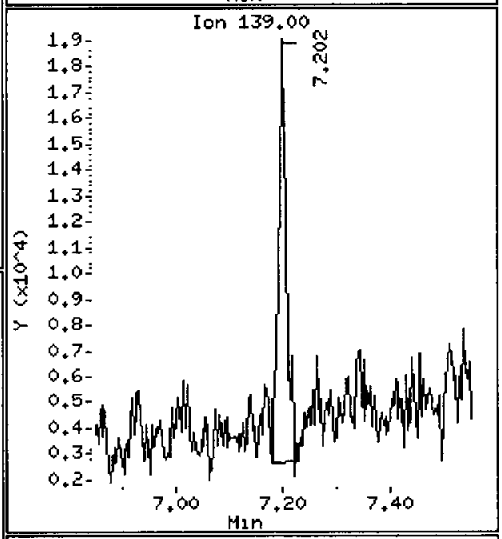


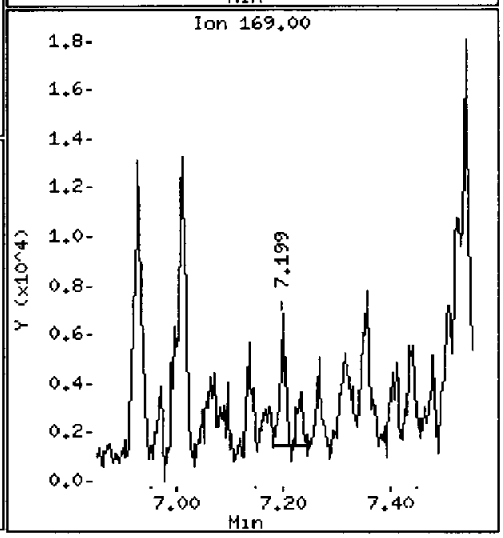












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

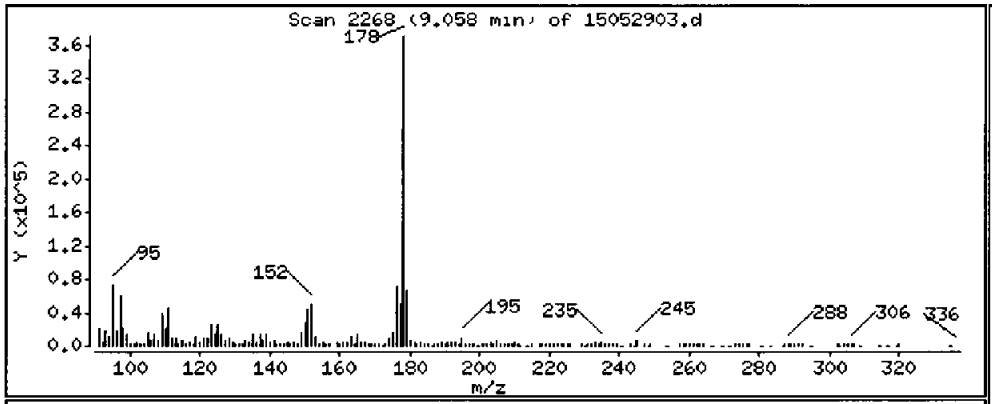
Operator: JZ

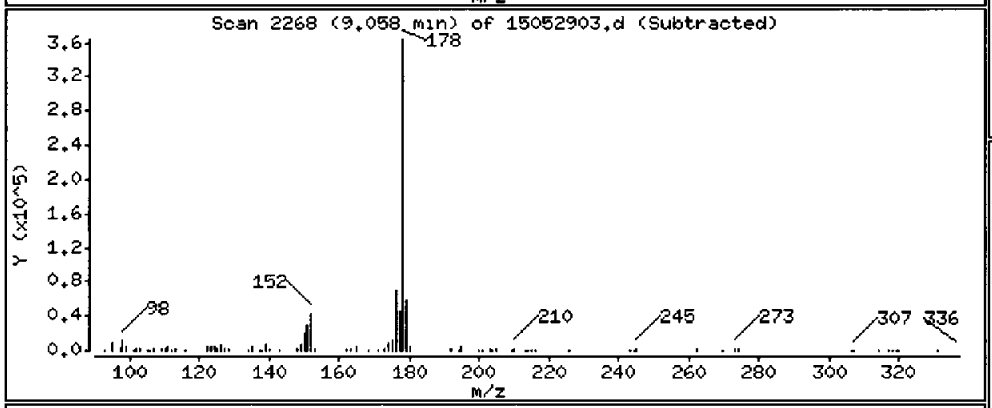
Column phase: ZB-35

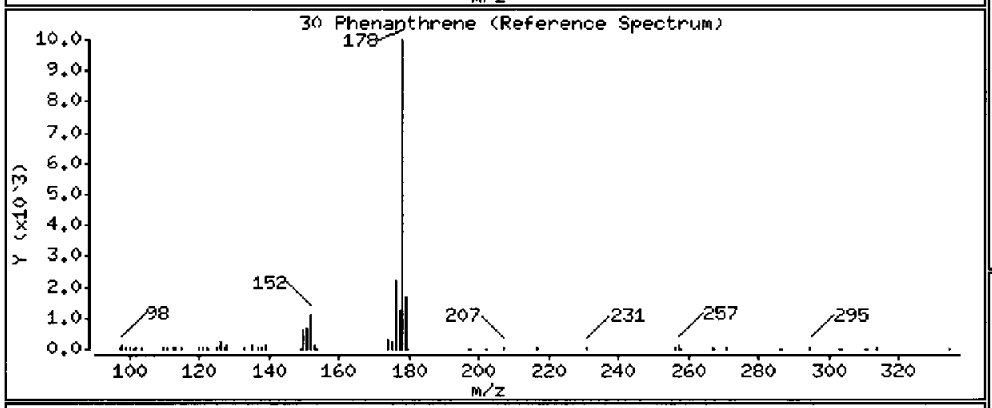
Column diameter: 0.25

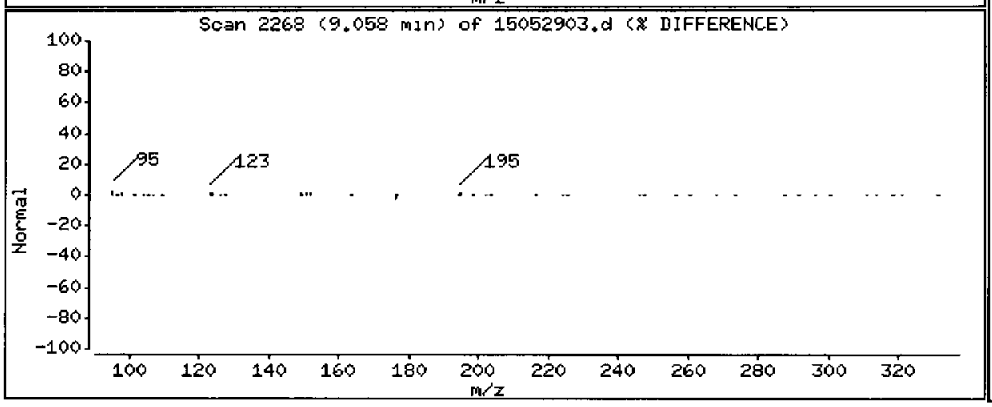
30 Phenanthrene

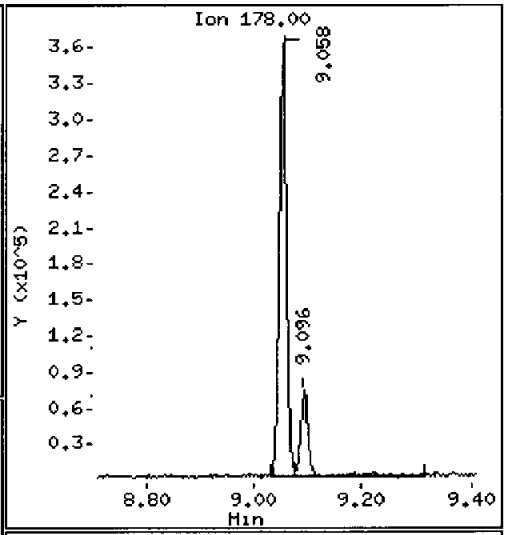
Concentration: 226.7 ug/kg

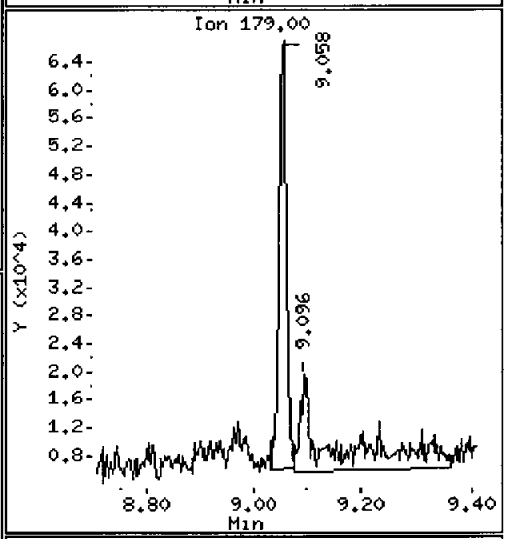


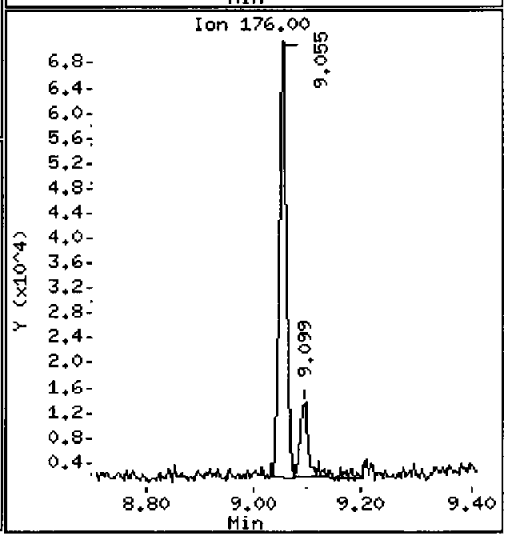












Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F.3.

Volume Injected (uL): 1.0

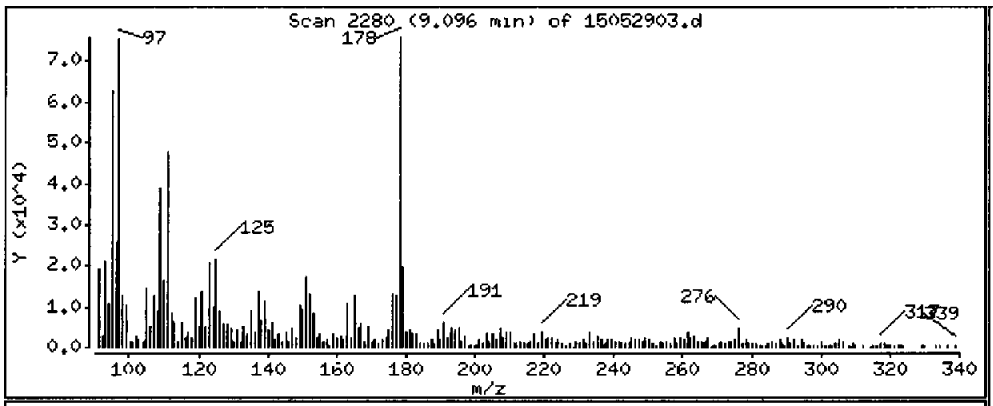
Operator: JZ

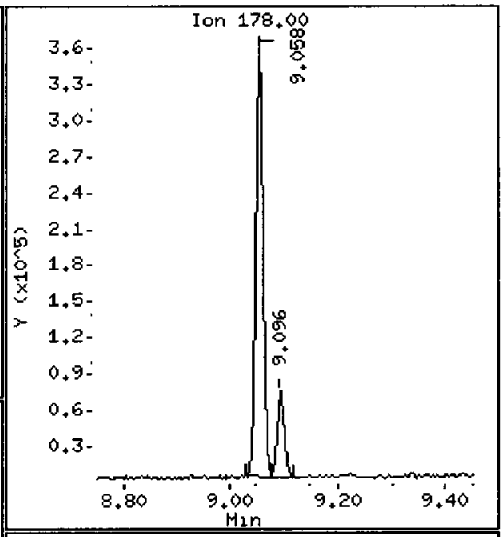
Column phase: ZB-35

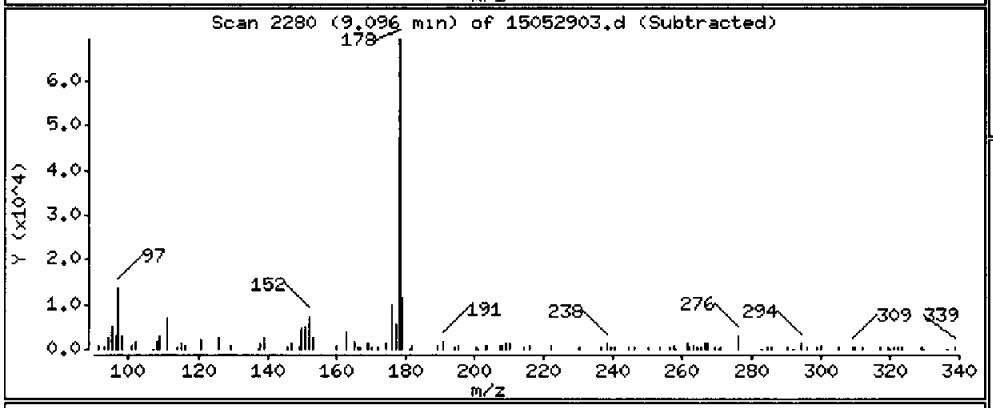
Column diameter: 0.25

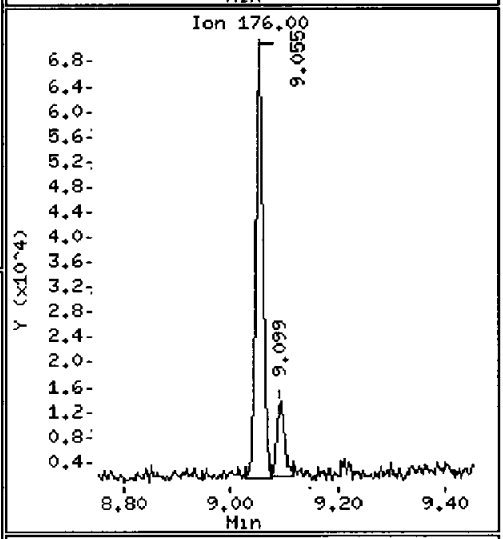
31 Anthracene

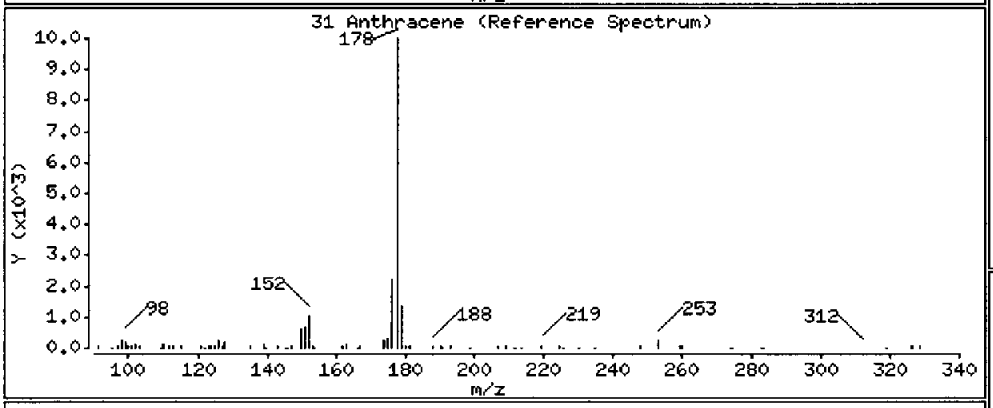
Concentration: 47.56 ug/kg

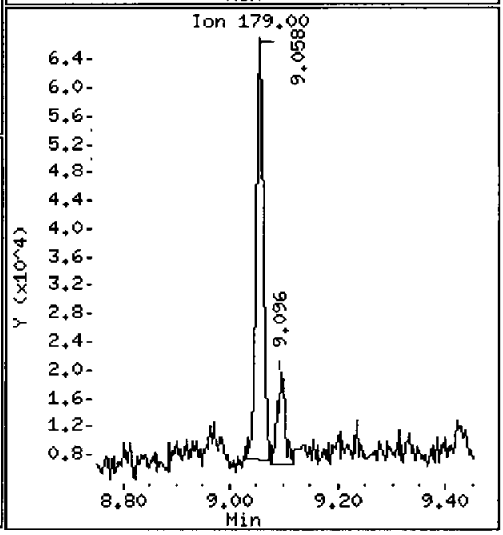


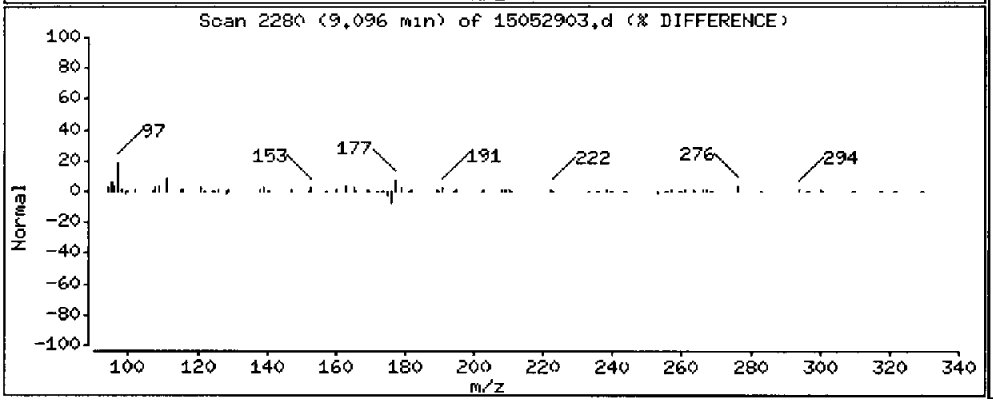












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

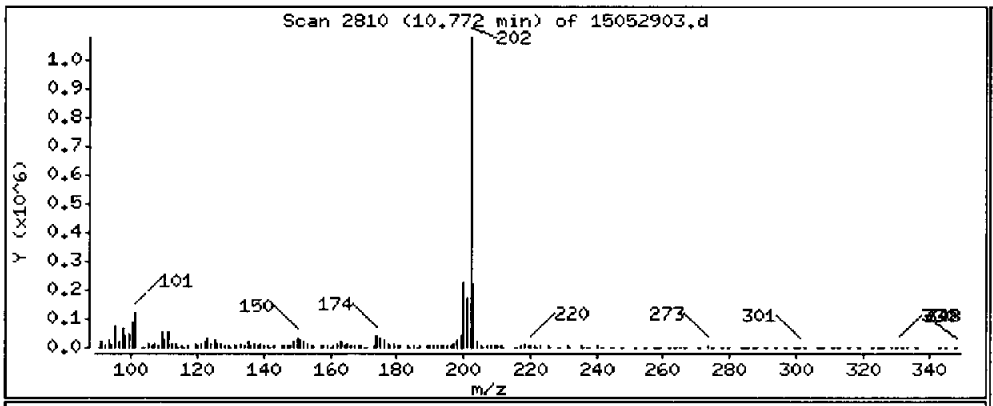
Operator: JZ

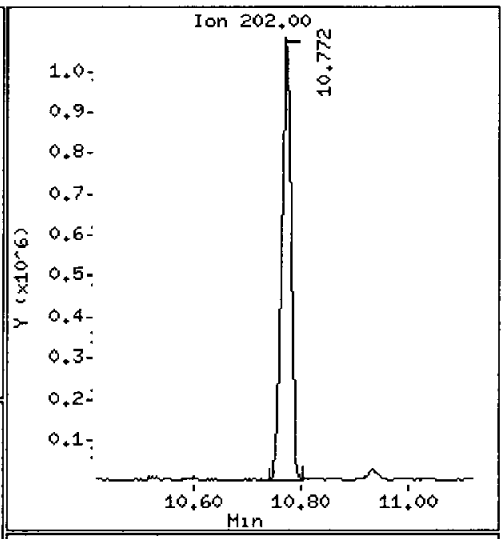
Column phase: ZB-35

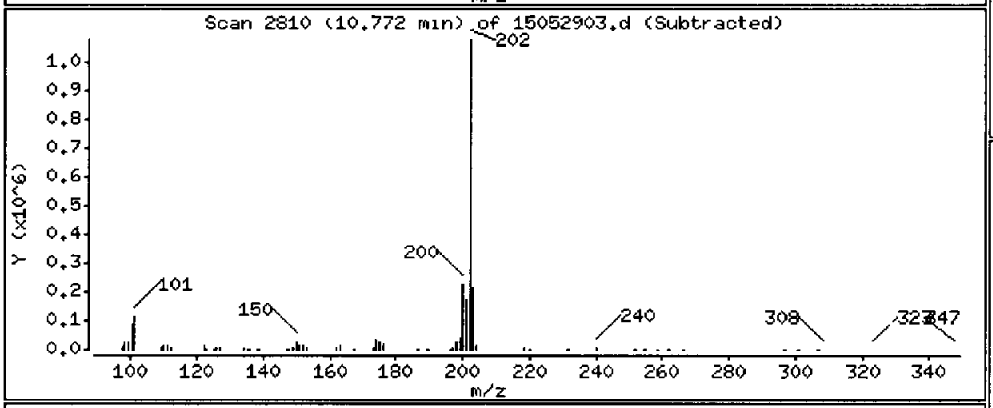
Column diameter: 0.25

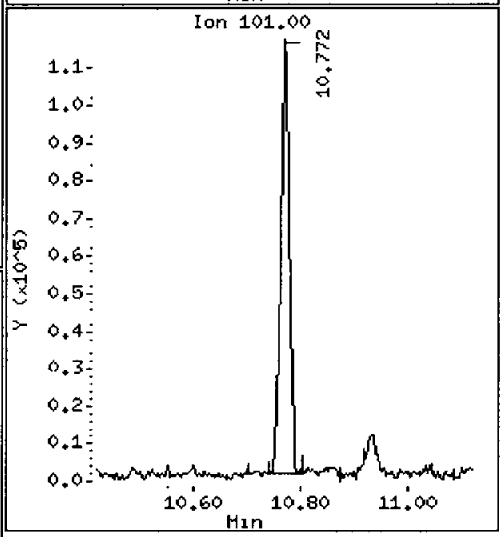
36 Fluoranthene

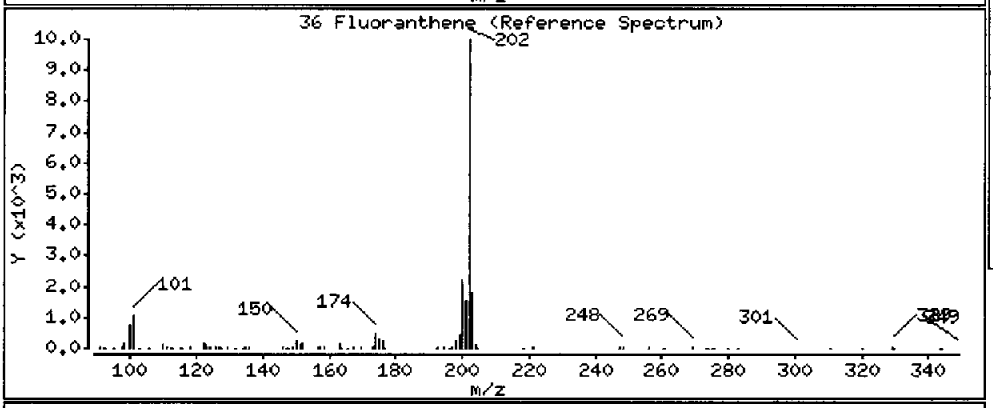
Concentration: 721.3 ug/kg

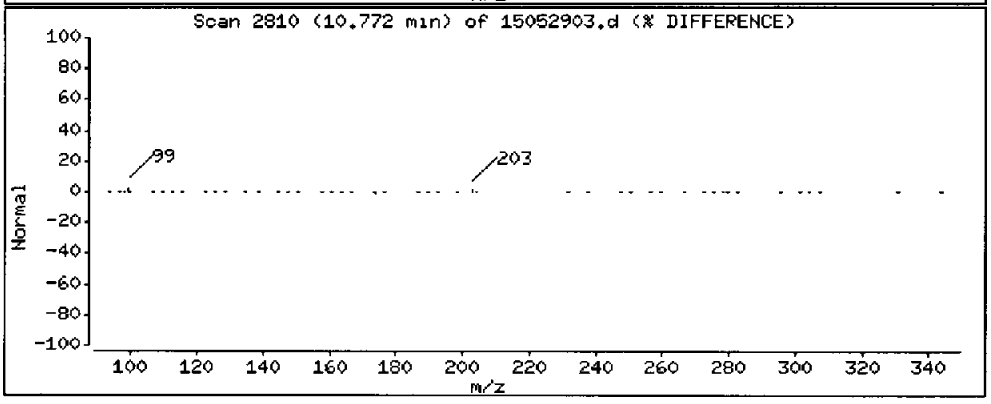












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F.3,

Volume Injected (uL): 1.0

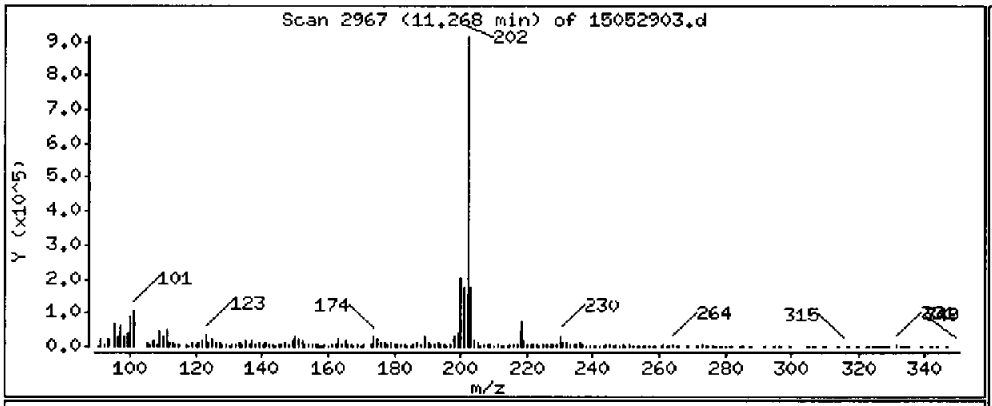
Operator: JZ

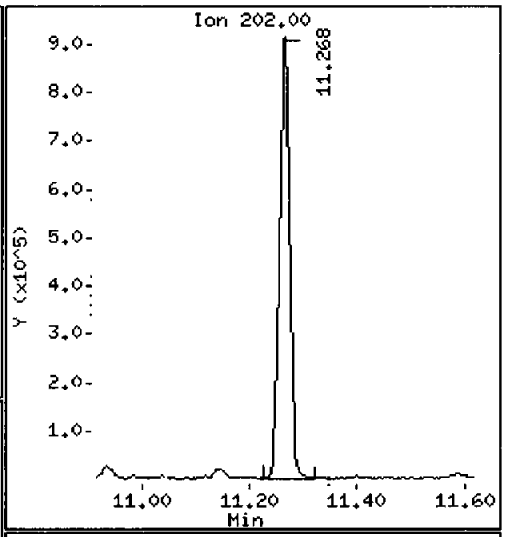
Column phase: ZB-35

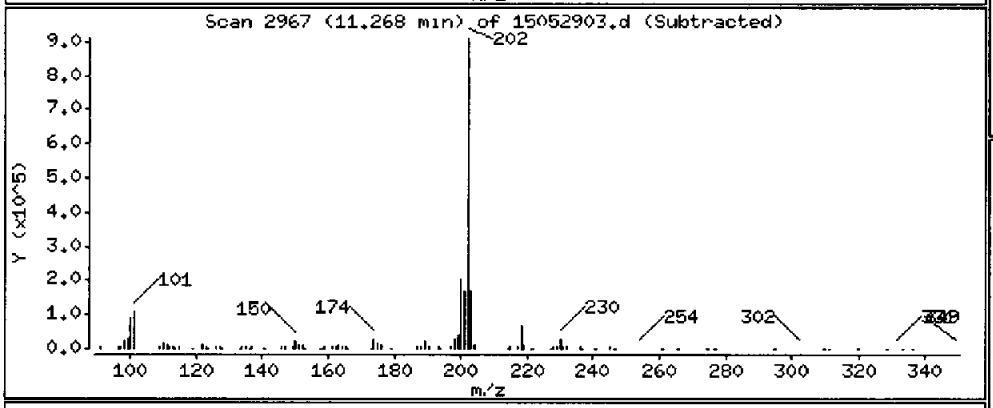
Column diameter: 0.25

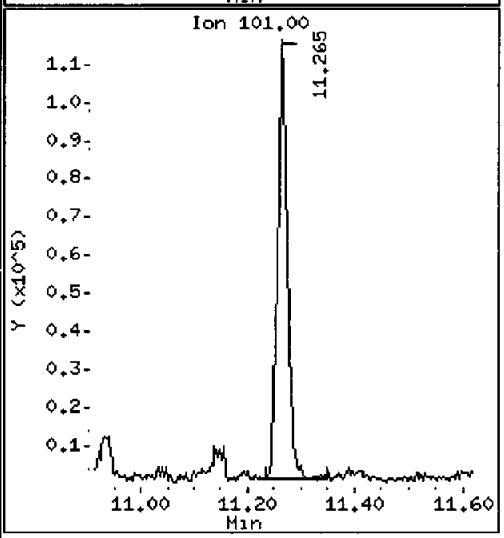
39 Pyrene

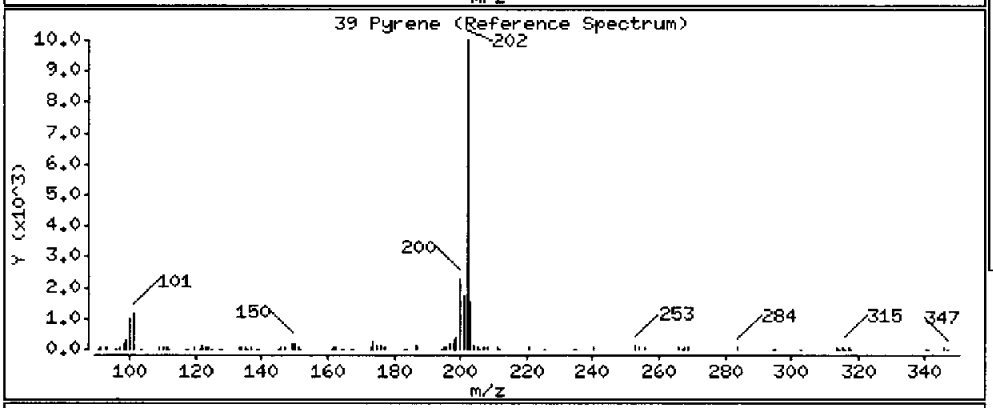
Concentration: 574.2 ug/kg

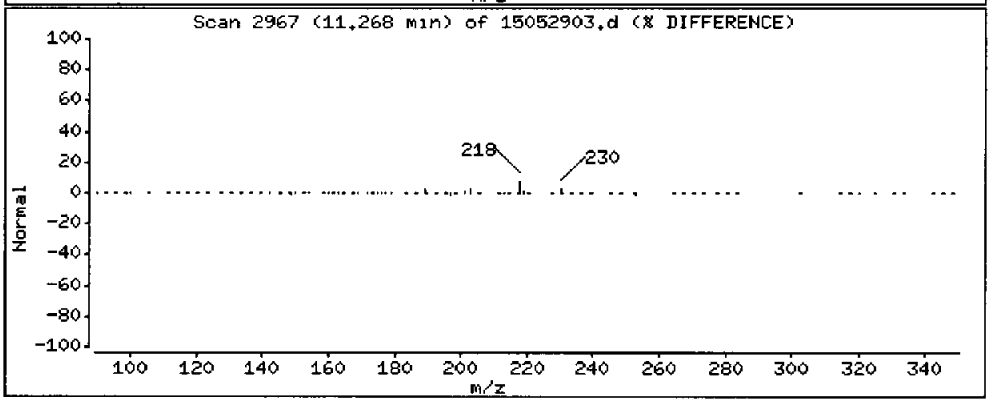












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F.3,

Volume Injected (uL): 1.0

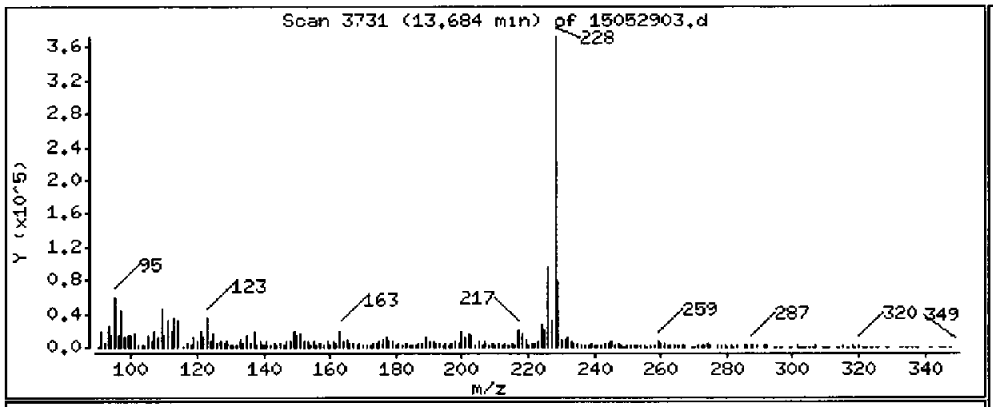
Operator: JZ

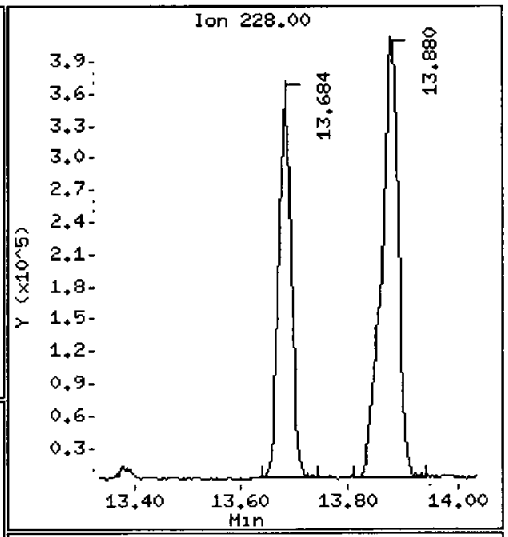
Column phase: ZB-35

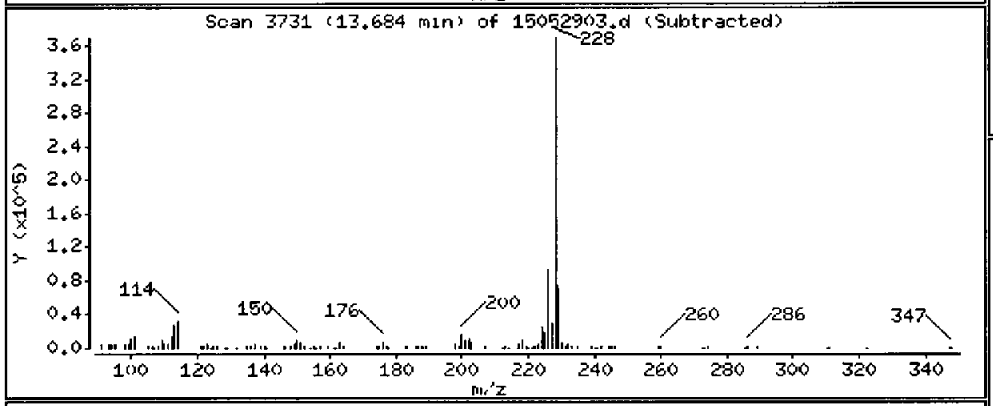
Column diameter: 0.25

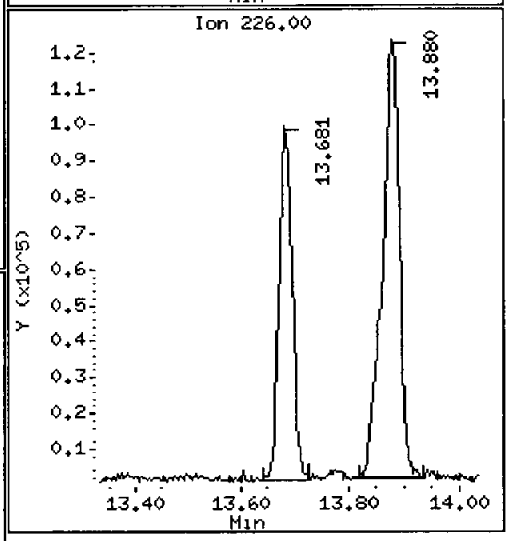
46 Benzo(a)anthracene

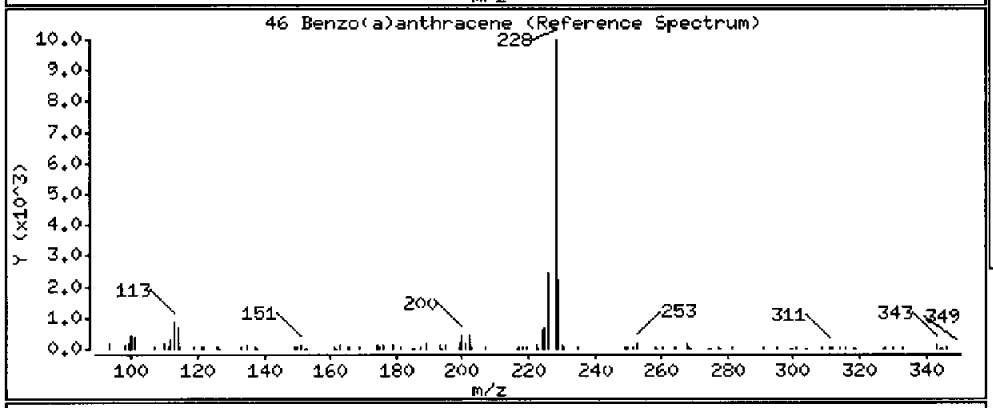
Concentration: 314.2 ug/kg

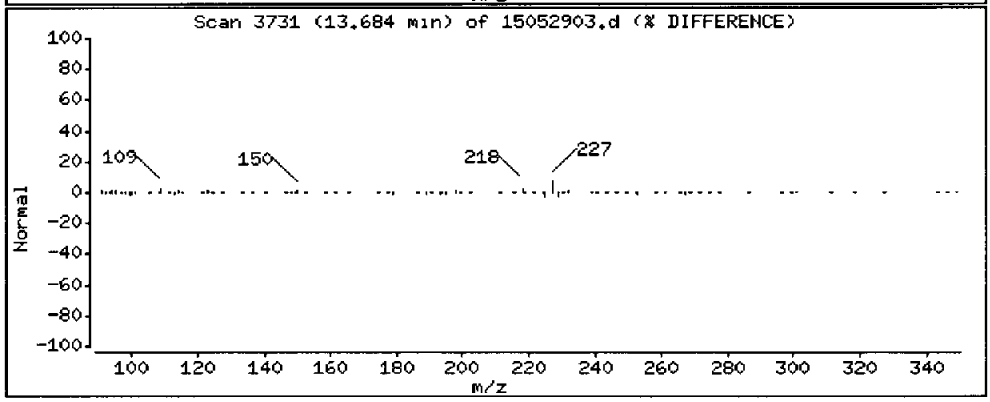












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

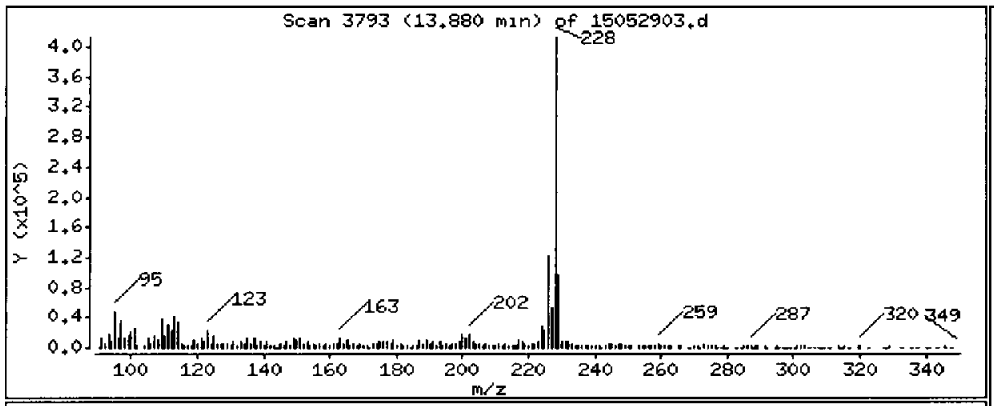
Operator: JZ

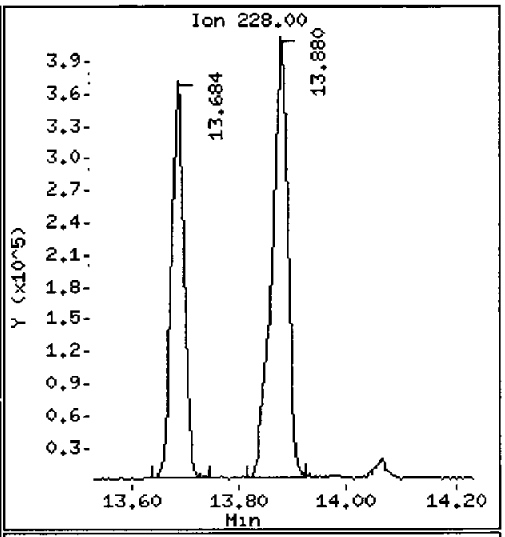
Column phase: ZB-35

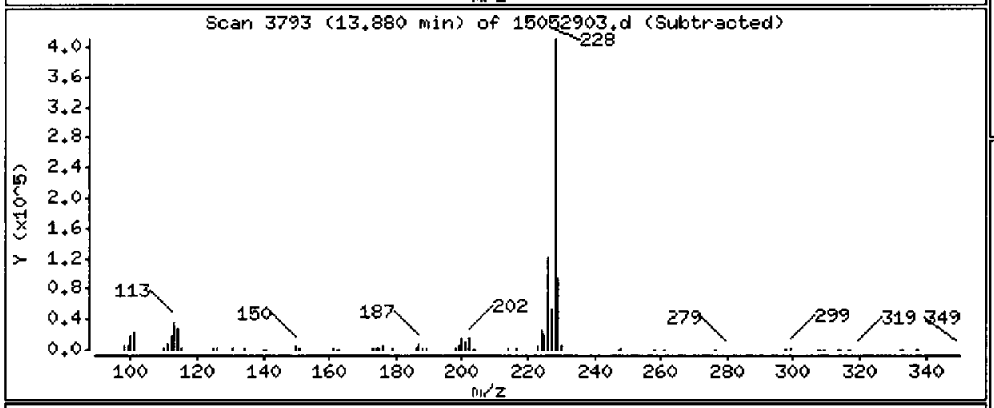
Column diameter: 0.25

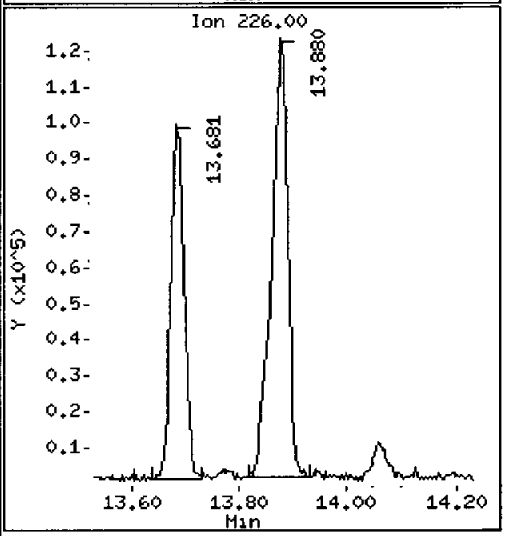
48 Chrysene

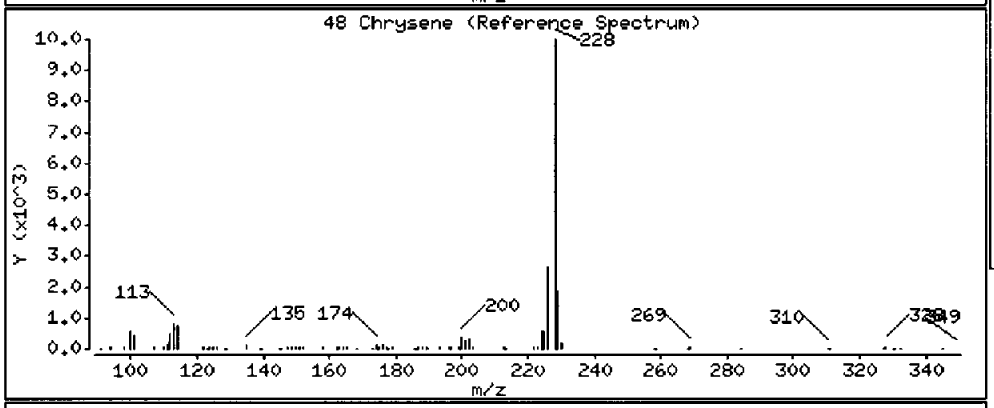
Concentration: 449.4 ug/kg

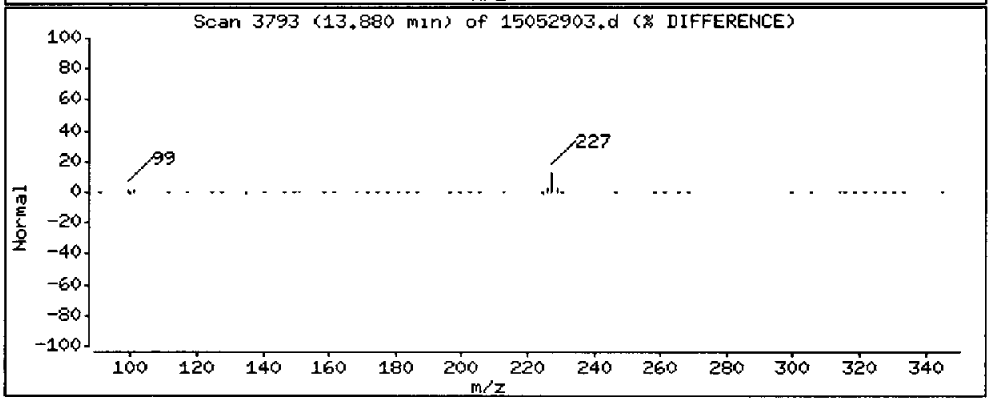












Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

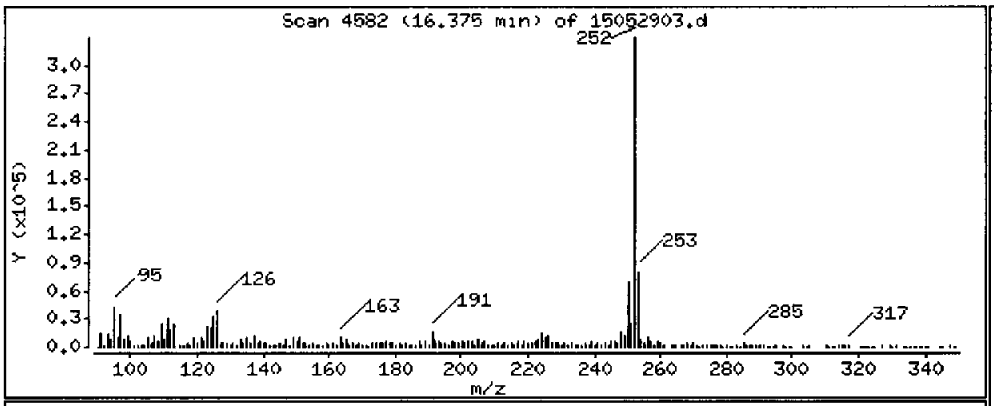
Operator: JZ

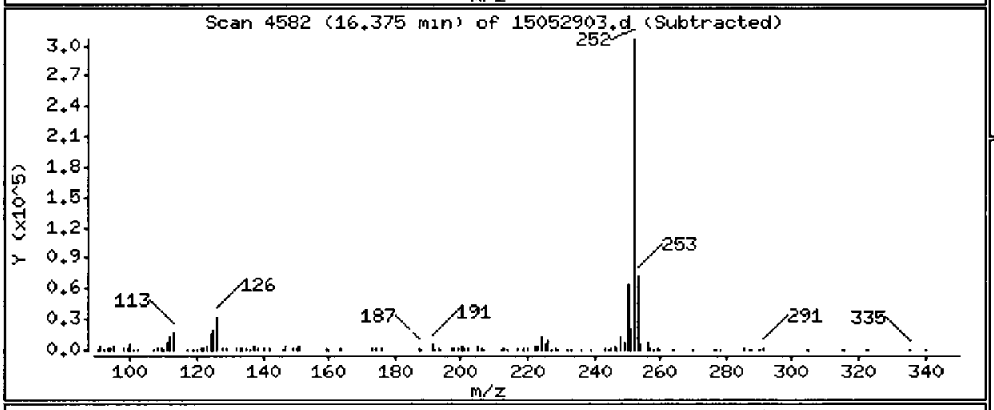
Column phase: ZB-35

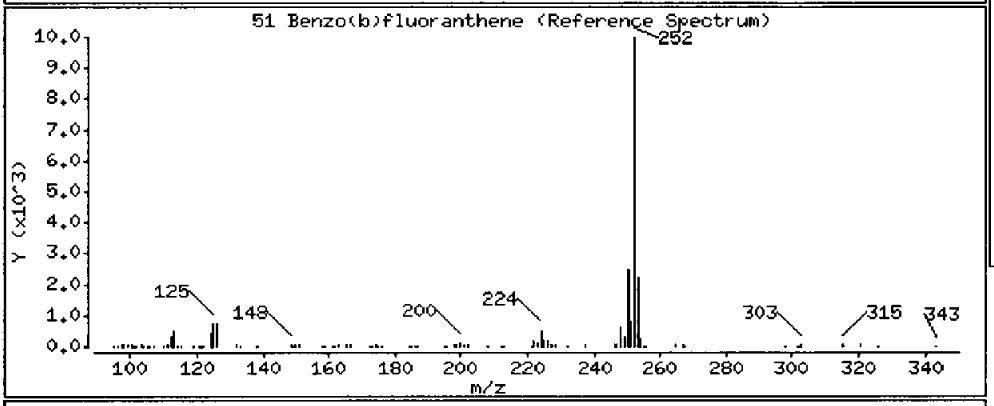
Column diameter: 0.25

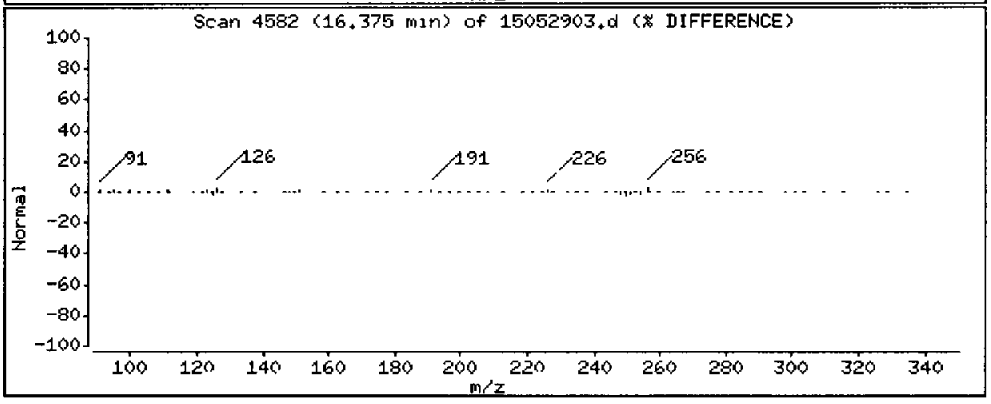
51 Benzo(b)fluoranthene

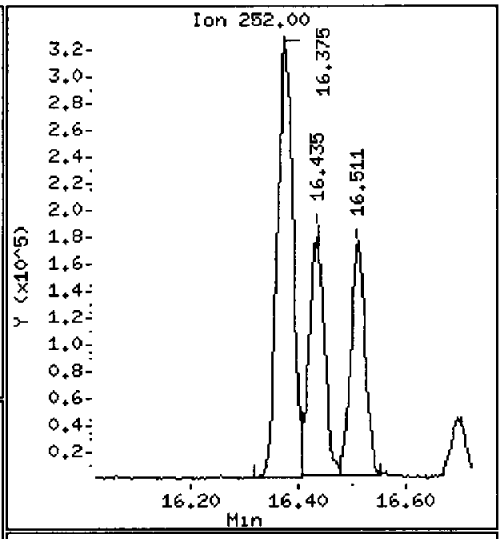
Concentration: 312.2 ug/kg

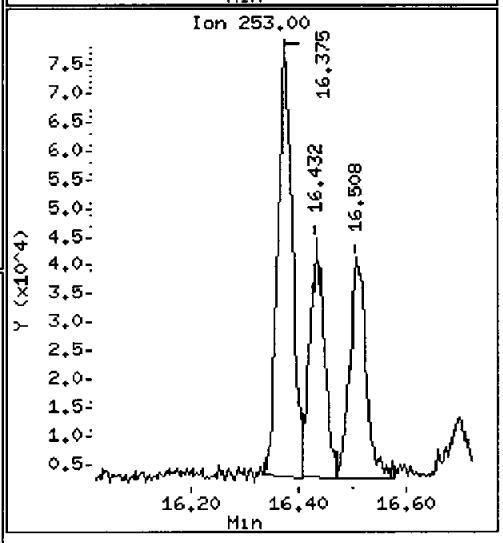












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

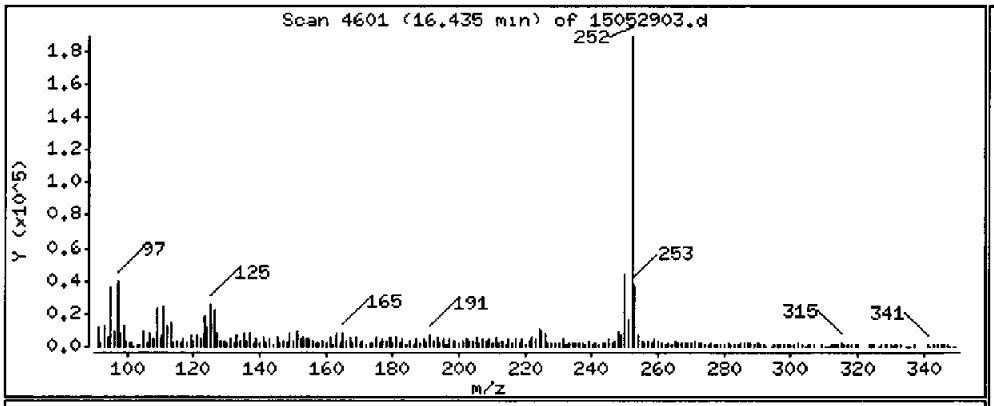
Operator: JZ

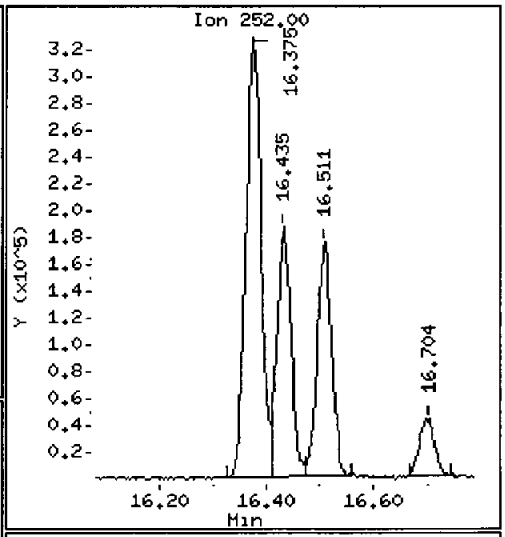
Column phase: ZB-35

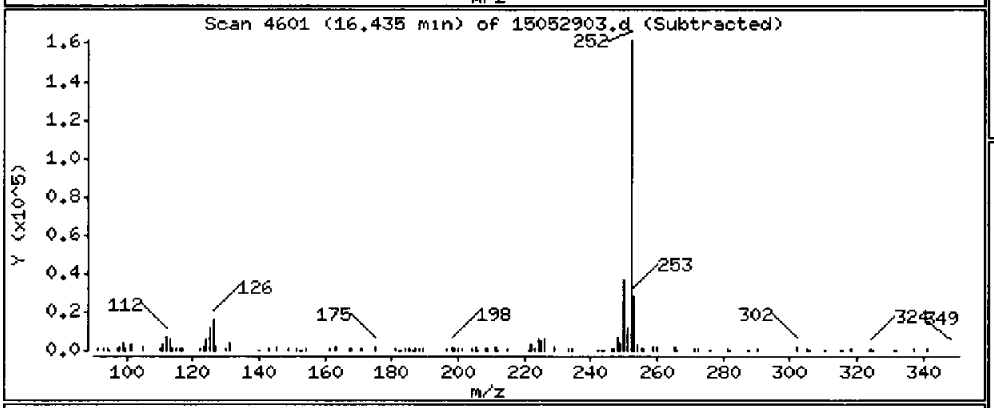
Column diameter: 0.25

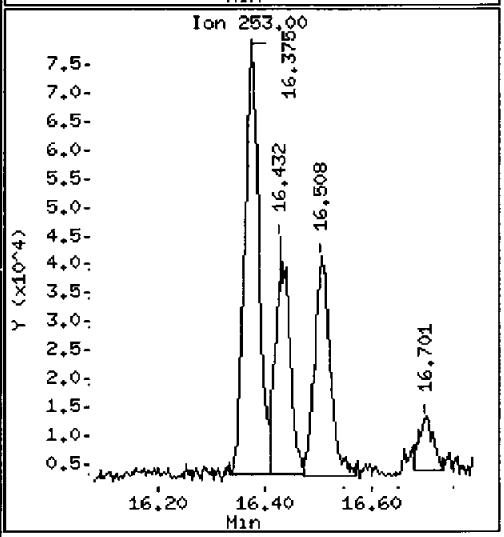
52 Benzo(k)fluoranthene

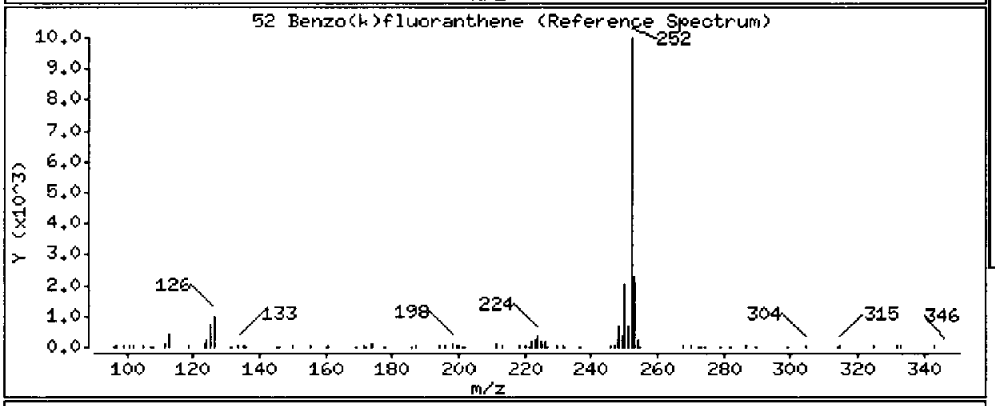
Concentration: 167.5 ug/kg

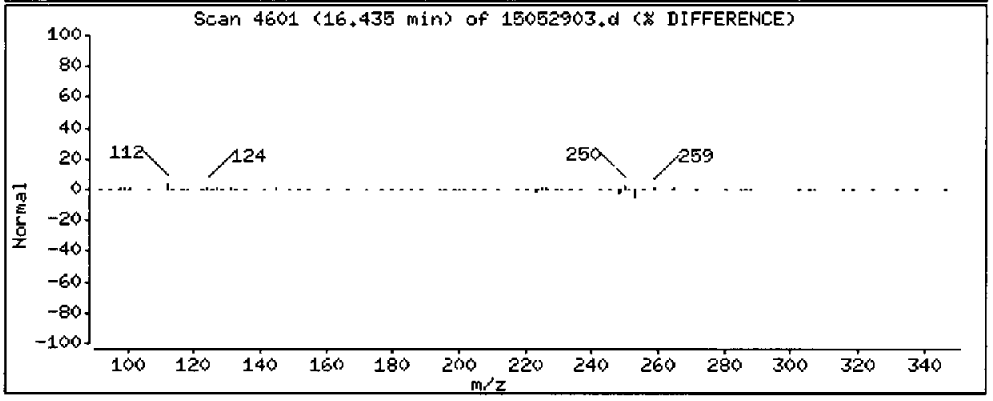












AGILENT

Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F.3,

Volume Injected (uL): 1.0

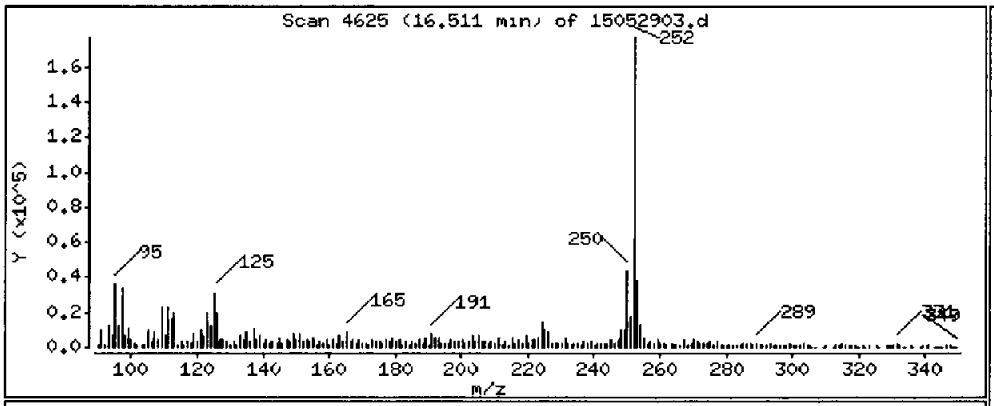
Operator: JZ

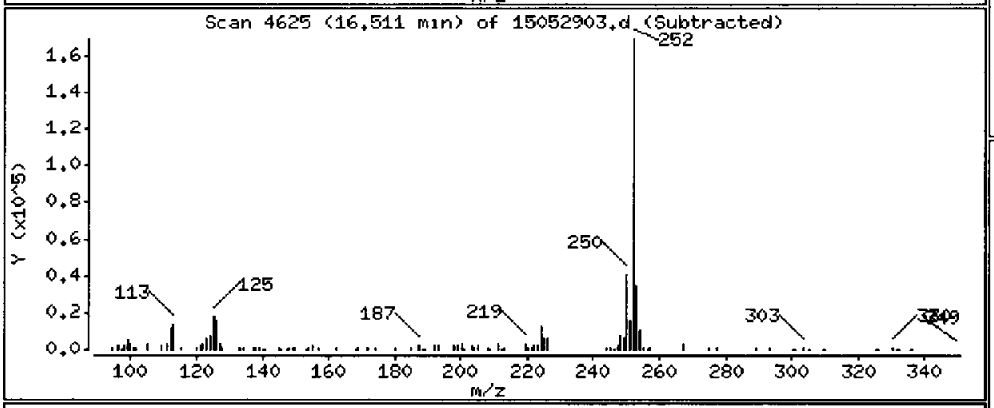
Column phase: ZB-35

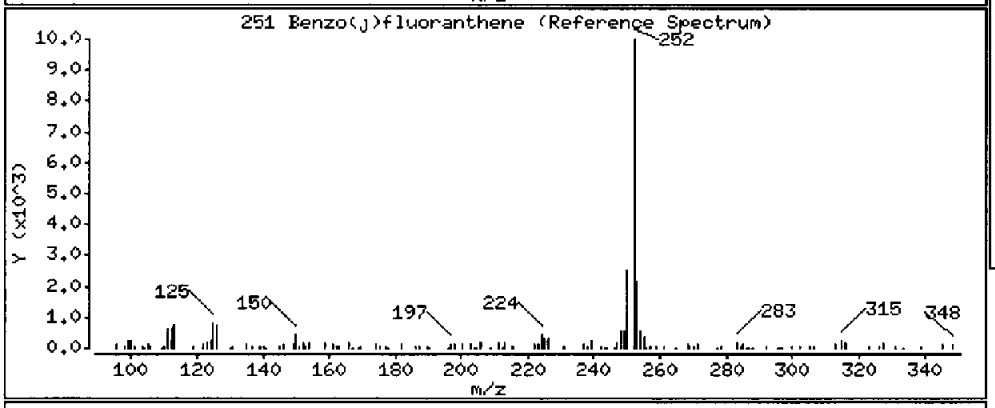
Column diameter: 0.25

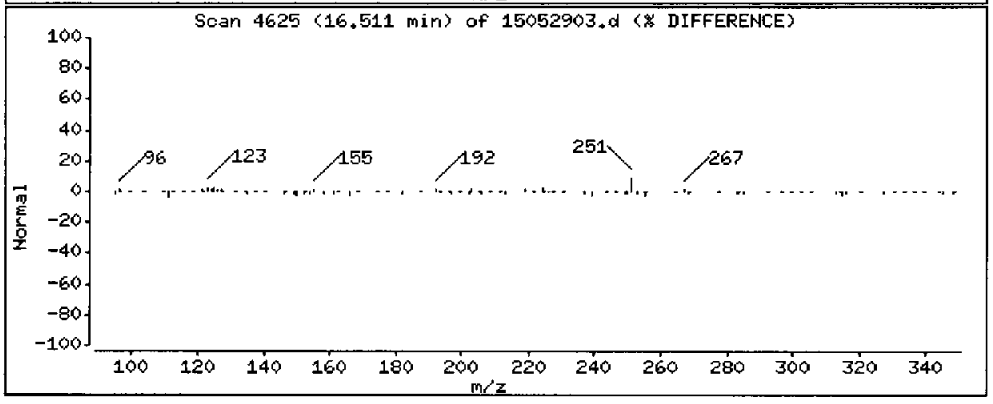
251 Benzo(j)fluoranthene

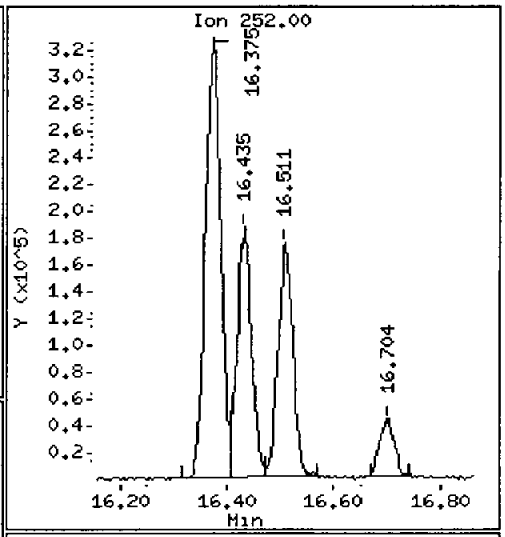
Concentration: 161.1 ug/kg

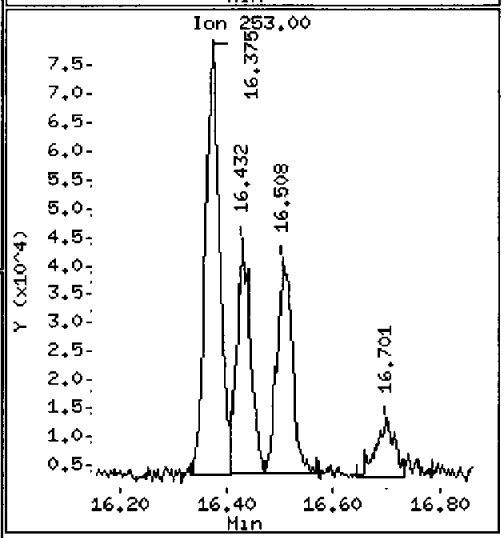












Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

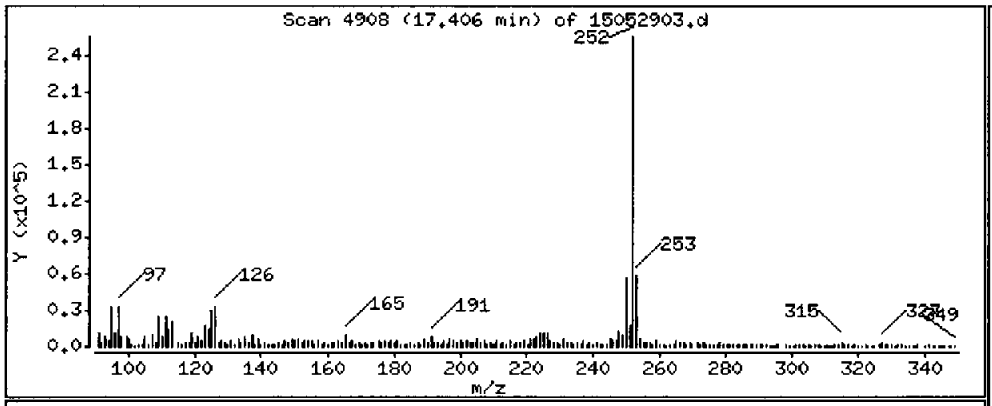
Operator: JZ

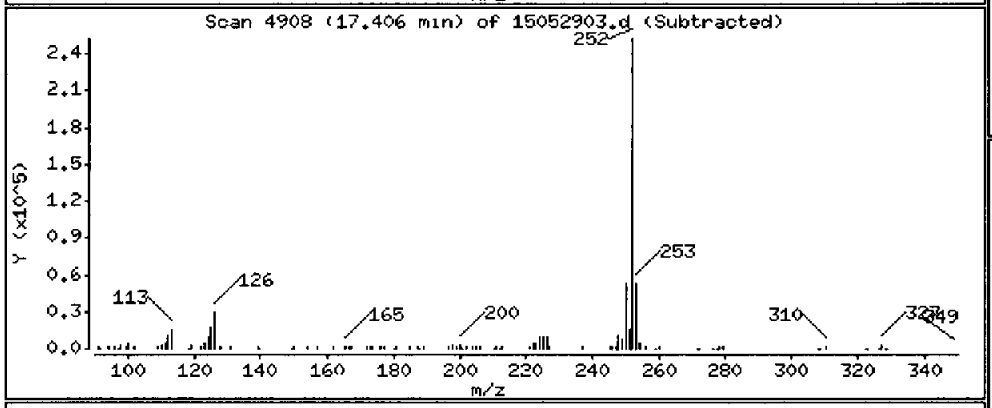
Column phase: ZB-35

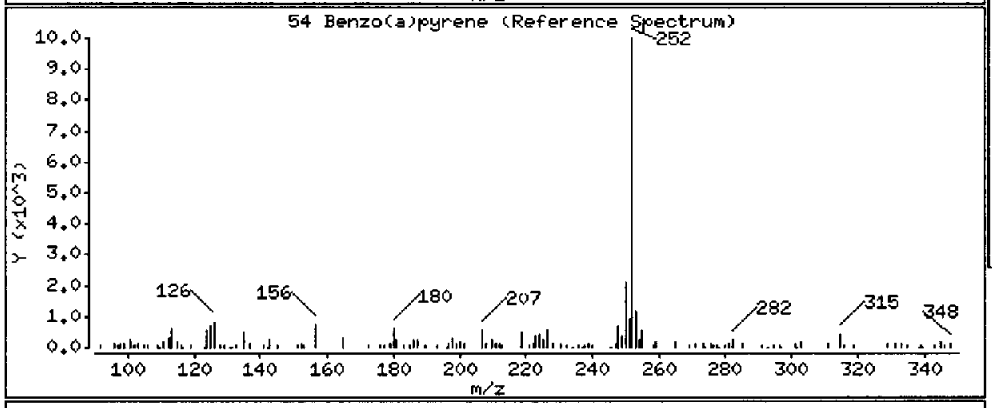
Column diameter: 0.25

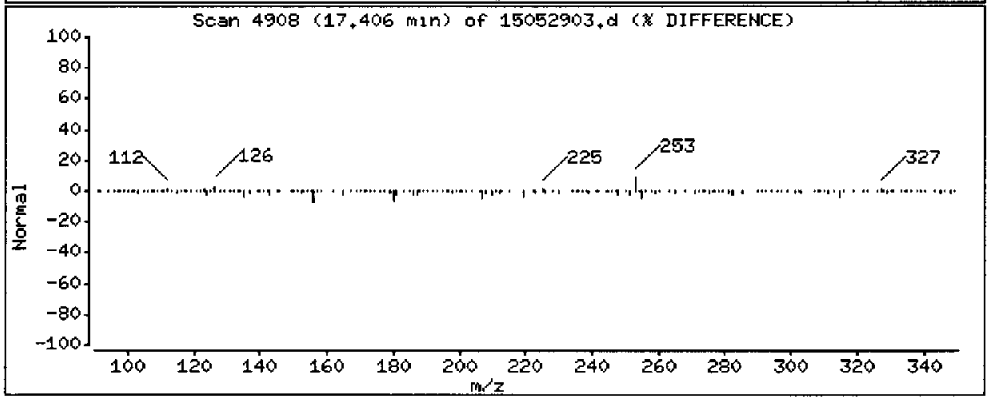
54 Benzo(a)pyrene

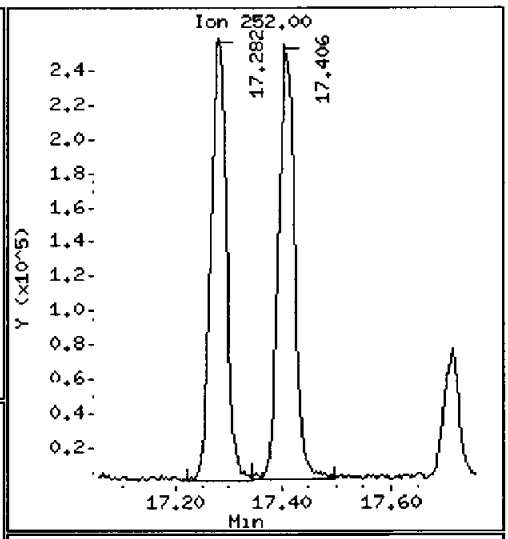
Concentration: 281.7 ug/kg

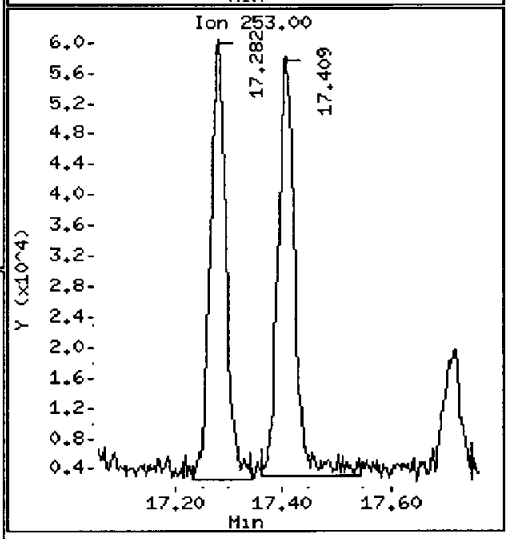












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

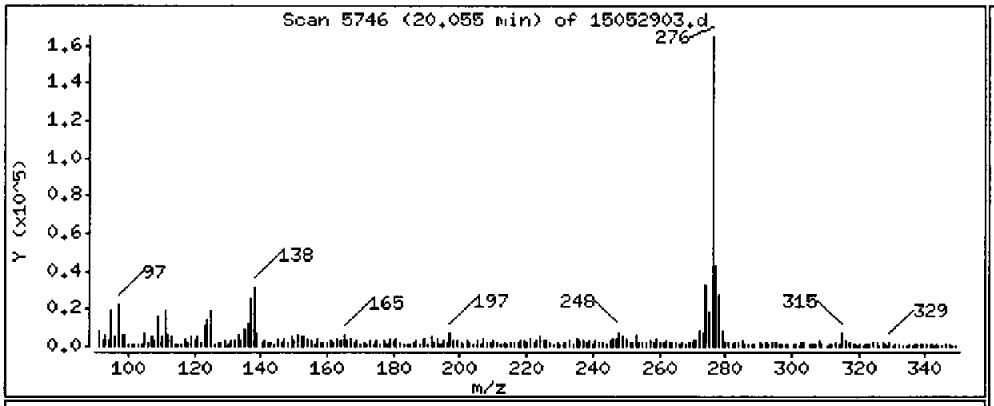
Operator: JZ

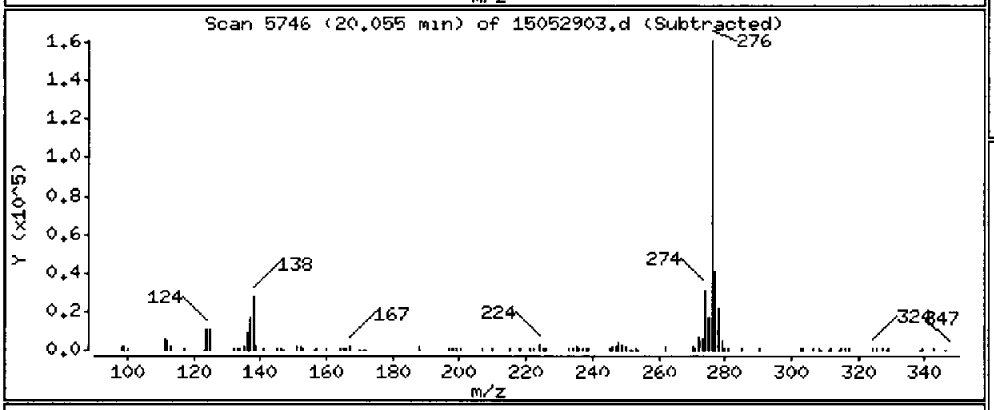
Column phase: ZB-35

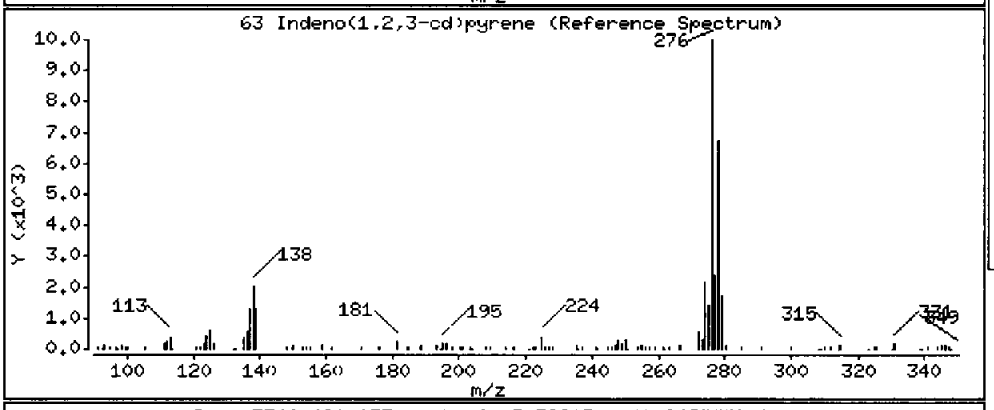
Column diameter: 0.25

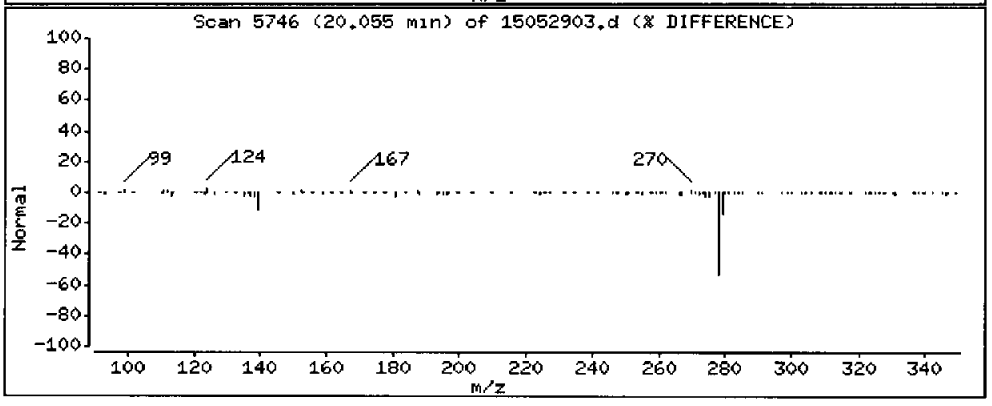
63 Indeno(1,2,3-cd)pyrene

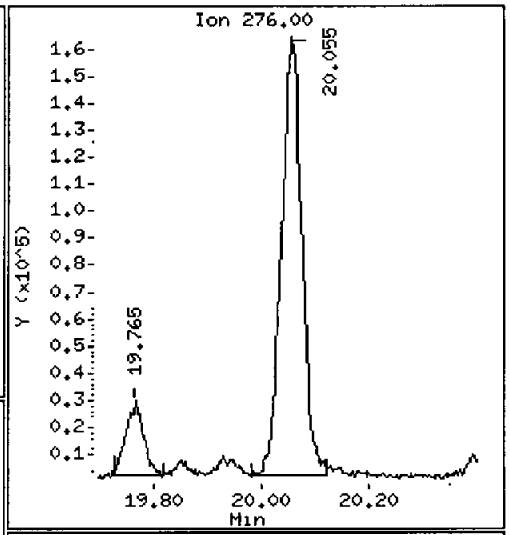
Concentration: 196.3 ug/kg

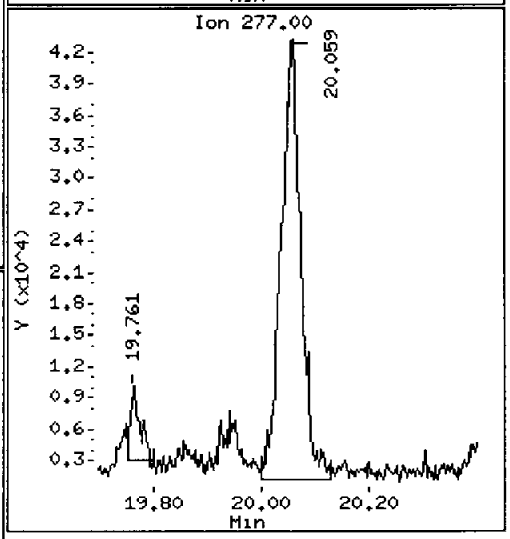












Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

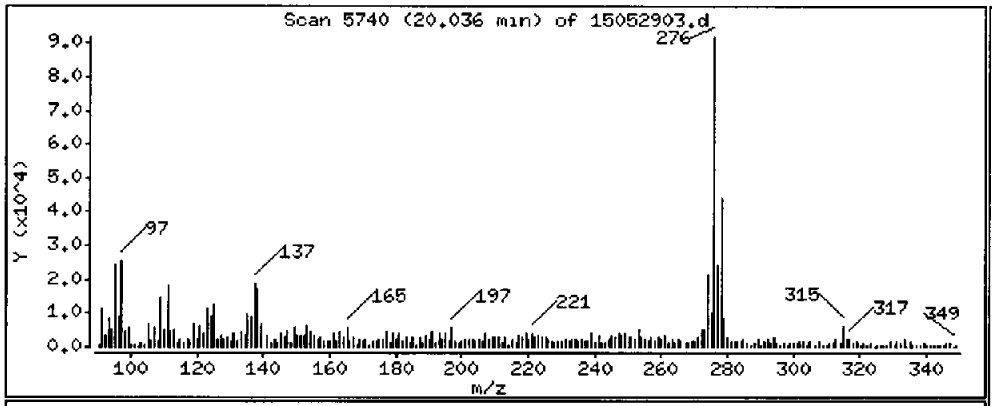
Operator: JZ

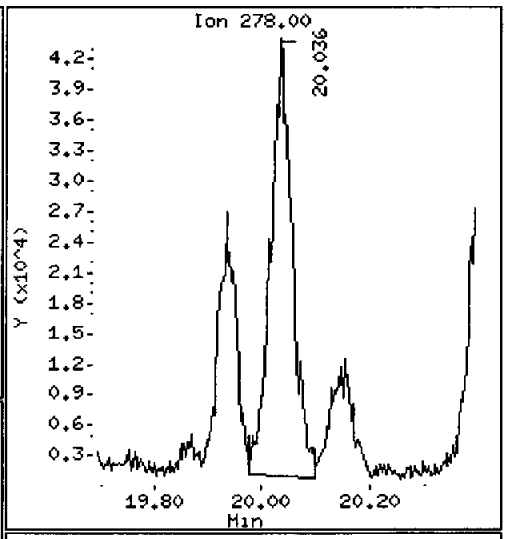
Column phase: ZB-35

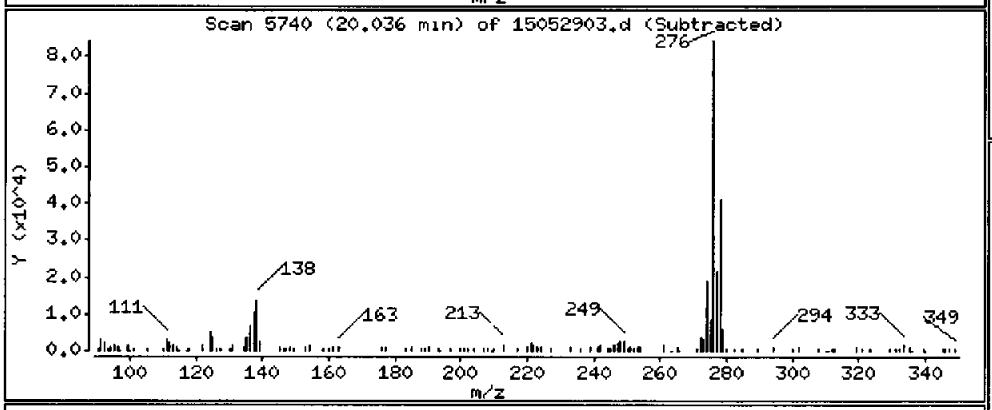
Column diameter: 0.25

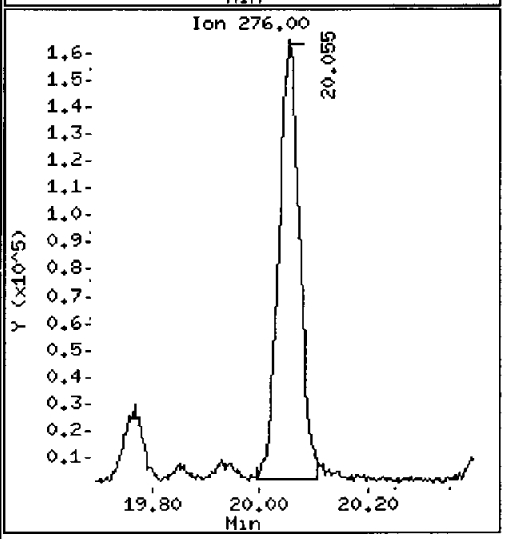
62 Dibenzo(a,h)anthracene

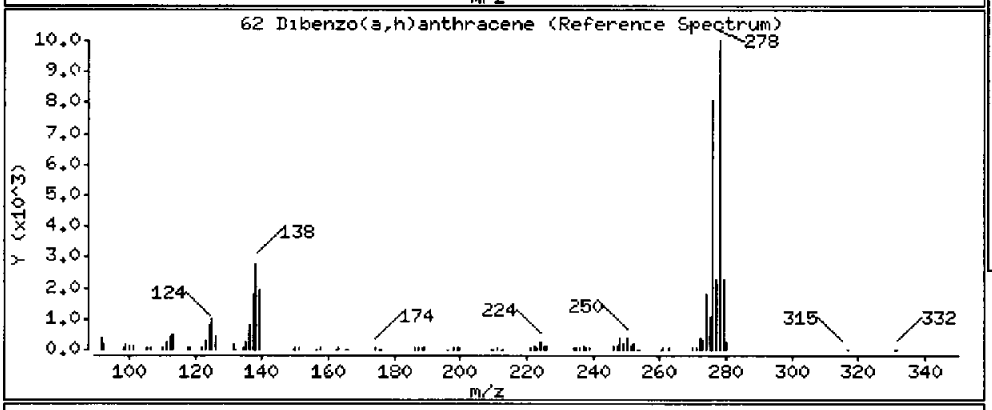
Concentration: 65.75 ug/kg

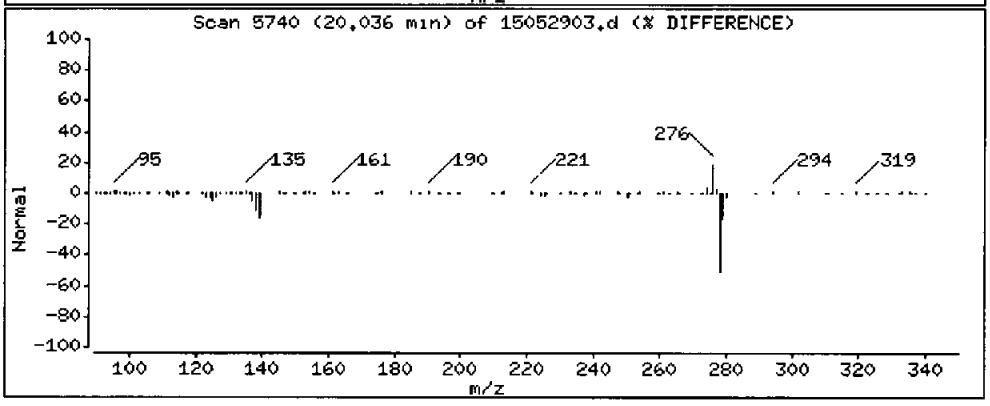












Data File: /chem3/nt8.i/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.i

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

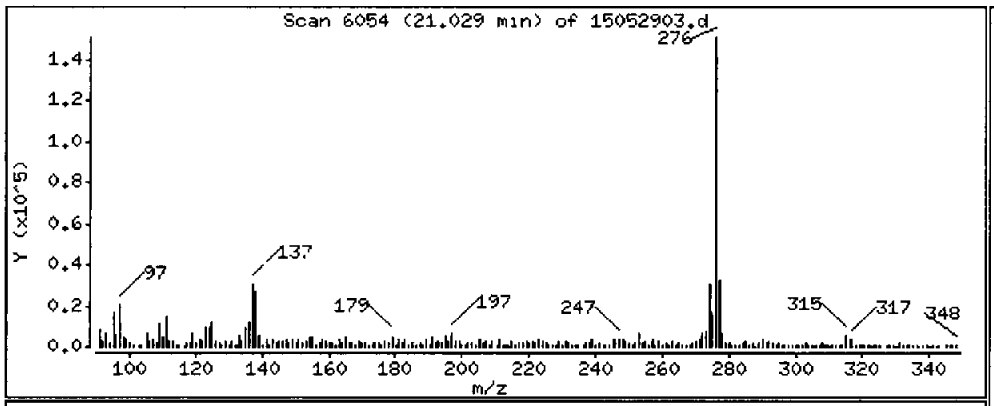
Operator: JZ

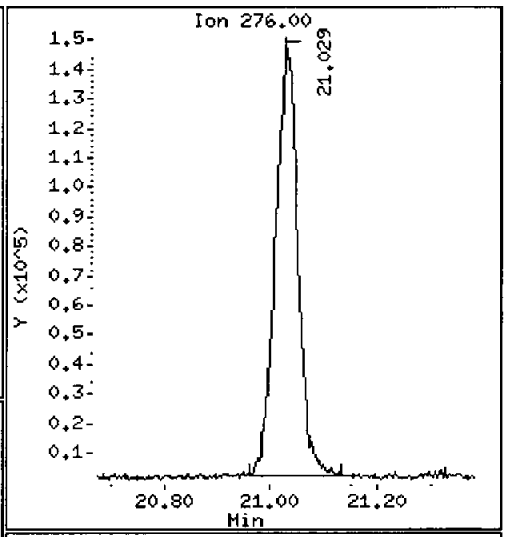
Column phase: ZB-35

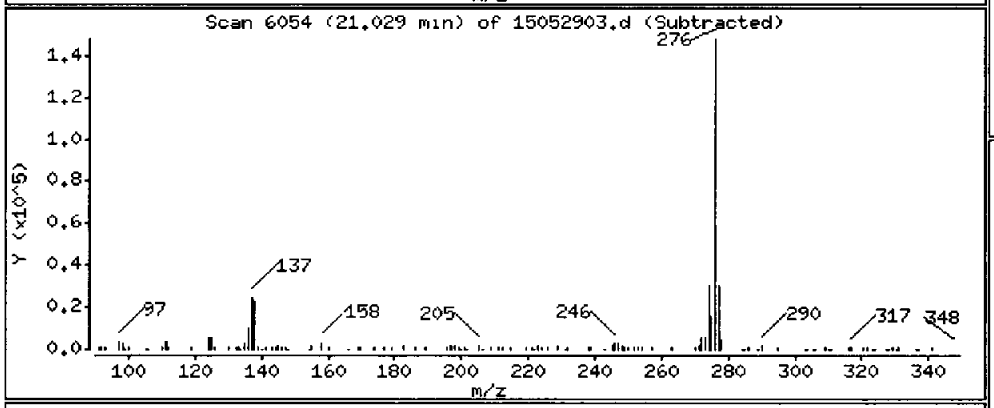
Column diameter: 0.25

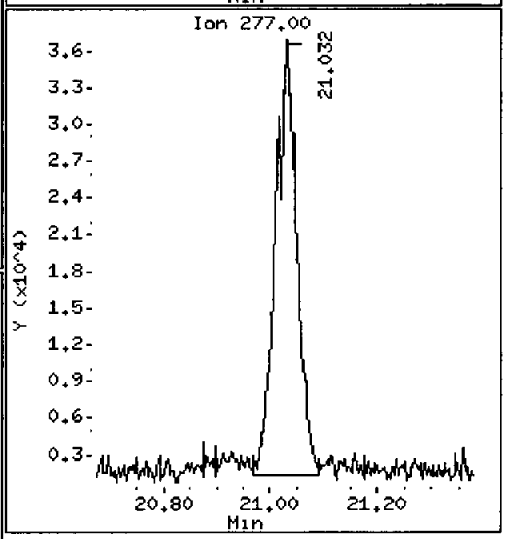
61 Benzo(g,h,i)perylene

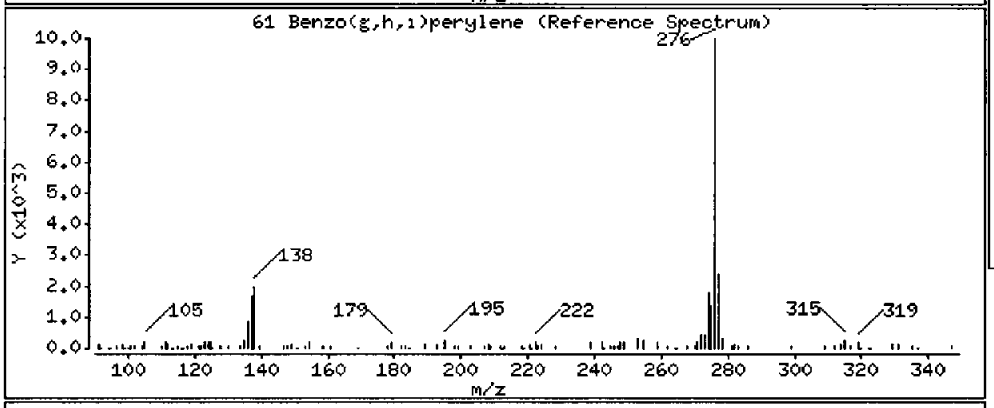
Concentration: 220.1 ug/kg

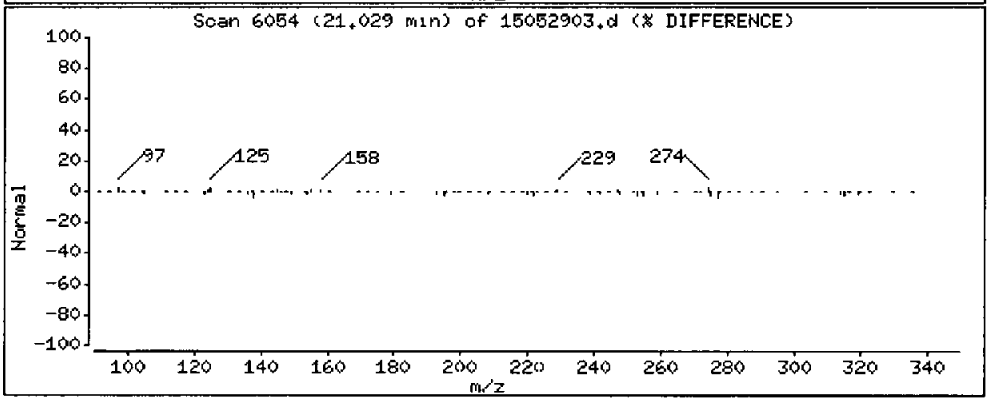












Data File: /chem3/nt8.1/20150529.b/15052903.d

Date : 29-MAY-2015 12:49

Client ID: SDP-07(1.5-3.0)

Instrument: nt8.1

Sample Info: AGA8F,3,

Volume Injected (uL): 1.0

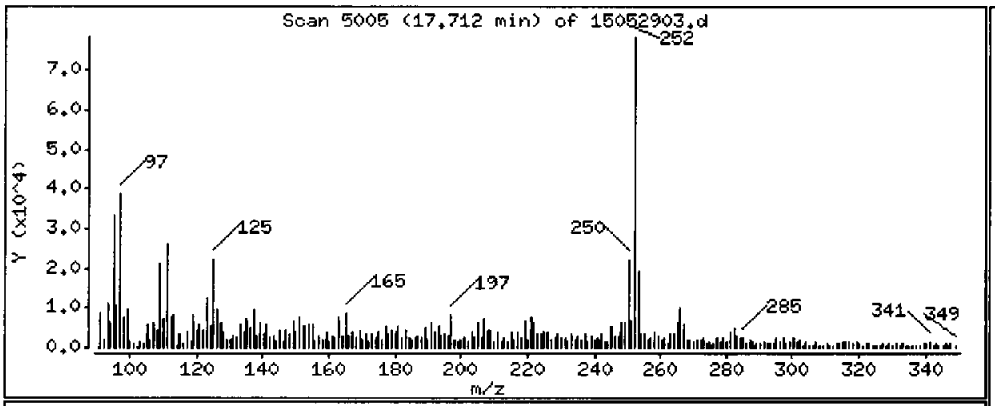
Operator: JZ

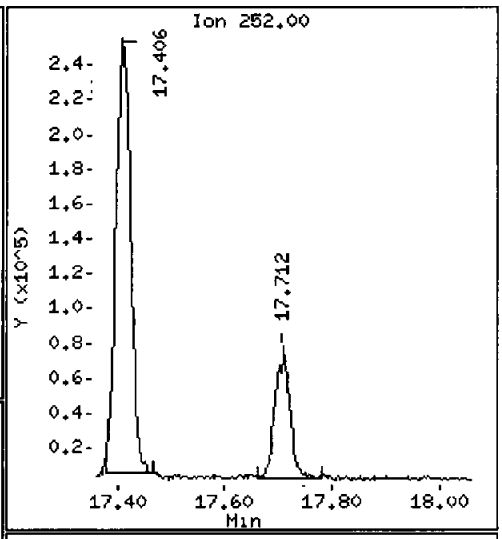
Column phase: ZB-35

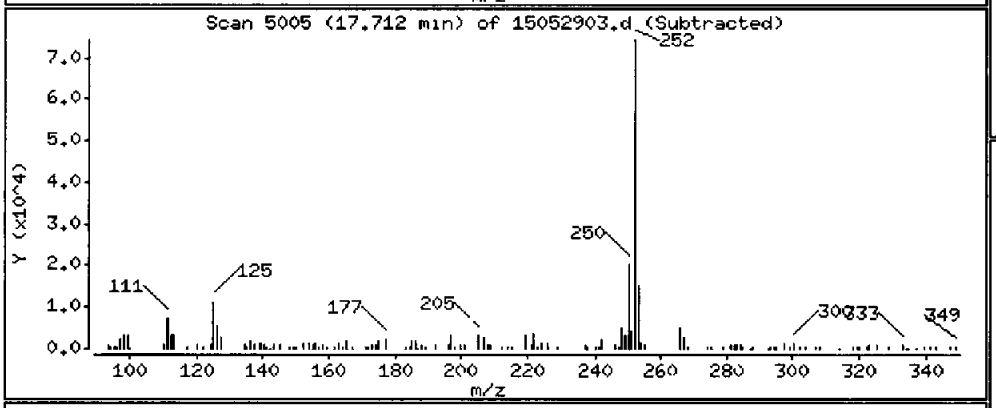
Column diameter: 0.25

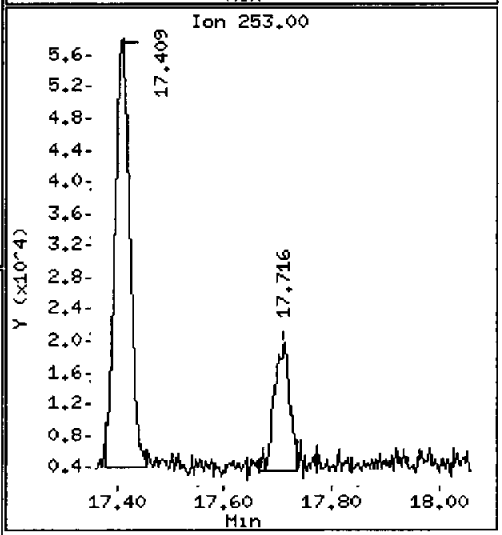
57 Perylene

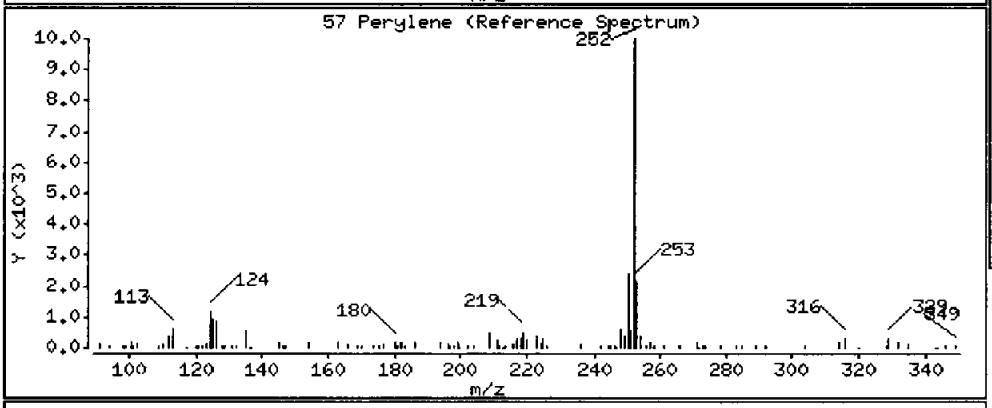
Concentration: 76.68 ug/kg

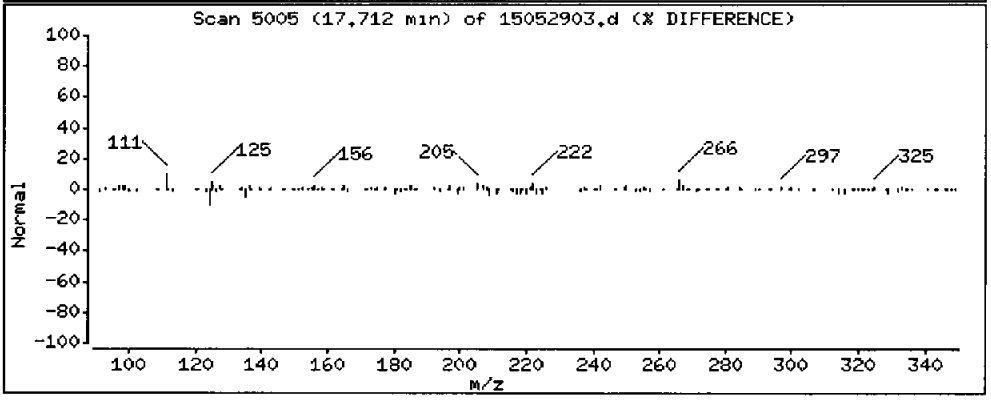












CO-ELUTION SUMMARY FOR FILE - 15052903.d

Lab ID: AGA8F, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 29-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC/MS SVOA Analyst Notes / Data Review Checklist

ELEMENT/NWA #.: 1648 Client: Kennedy Jenks

METHOD: **8270D** (SIM-SVOA) **KRONE** (Butyl Tins) **8270D** (SVOA) **8270D** (OP-Pest)

Instrument: NT-6 NT-8 NT-10 NT11 NT12 NT14

Calibration Code: YDec014 Analysis Start Date: 4/22/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
DFTPP Tune met Criteria?	Y / N /	Internal Standard within 50-200%?	Y / N /
DDT Breakdown <20%?	Y / N /	Retention Times within Windows?	Y / N /
Peak Tailing Factor ≤2?	Y / N /	Method Blank in Control?	Y / N /
ICV/CCV Meets %D?	Y / N /	BS/BSD Recovery in Control?	Y / N /
ICAL Q Flag applied?	Y / N /	BS/BSD RPD ≤ 30%?	NA /
ICV/CCV Q flag applied?	Y / N /	MS / MSD Recovery in Control?	Y / N /
Surrogate Recovery met?	Y / N /	MS / MSD RPD ≤ 30%?	NA /
Manual Integrations?	Y / N /	Samples Diluted?	Y / N /
Integration Summary?	Y / N /	Special Analysis Request?	Y / N /

Detail problems, corrective actions and/or other pertinent information below.

Samples 5 + MB/LCS/LCSD.
CCV included
Forms attached.
Element: Sequence # SDEcc16

(Review 1) Analyst: _____ **Date:** 04/28/15

(Review 2) Reviewer: _____ **Date:** 5/28/15

AGAS 08513

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 5/22/15 Analysis: SIM/FA Analyst: [illegible]

GC Program: SIM/FA Column No: 124778 Column Type: RXi-17SilMS

Instrument Tune (.U or .CT.): LE0413 EM Voltage: 1762

Calibration File: LE0522 Curve Date: 4/13/15 Injection Vol.: 1µl

YD00019

IS/SS	Ical/Ccal	LCS/ICV
D002072	D002176 [illegible]	
	D002310	

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

	Time	Filename	LabID	ClientId	DF									
1	1441	15052201.d	DFTPP150522	DFTPP150522	1	NO ISTDS FOUND								
2	1453	15052202.d	ICV150522	ICV150522	1	4.75	297291	7.01	191154	9.03	347015	13.82	373266	17.64	374830
3	1518	15052203.d	AGA0MBW1	AGA0MBW1	1	4.74	334480	7.01	211816	9.03	358520	13.81	396731	17.64	389951
4	1544	15052204.d	AGA0LCSW1	AGA0LCSW1	1	4.74	340624	7.01	220552	9.03	382669	13.82	424265	17.64	420810
5	1610	15052205.d	AGA0A	SS2-051315-G	1	4.74	341691	7.01	214967	9.03	381013	13.83	493942	17.66	482864
6	1635	15052206.d	AGA0B	SS3-051315-G	1	4.74	365334	7.01	225613	9.03	411310	13.83	528145	17.66	499373
7	1701	15052207.d	AGA0C	SS4-051315-G	1	4.74	373792	7.01	236297	9.03	397807	13.82	471757	17.65	477203
8	1727	15052208.d	AGA0D	SS5-051315-G	1	4.74	342243	7.01	218812	9.03	391871	13.82	449176	17.65	435025
9	1752	15052209.d	AGA0DMS	SS5-051315-G	1	4.74	365798	7.01	234973	9.03	403636	13.82	482207	17.66	485779
10	1818	15052210.d	AGA0DMSD	SS5-051315-G	1	4.74	364918	7.01	232351	9.03	401229	13.82	464690	17.65	460840
11	1844	15052211.d	AGA8MBW1	AGA8MBW1	1	4.74	344358	7.01	232596	9.03	401626	13.81	432555	17.65	413095
12	1909	15052212.d	AGA8LCSW1	AGA8LCSW1	1	4.74	375304	7.01	236209	9.03	423109	13.81	473638	17.64	444966
13	1935	15052213.d	AGA8LCSDW1	AGA8LCSDW1	1	4.74	365878	7.01	239375	9.03	424130	13.81	478376	17.64	455442
14	2001	15052214.d	AGA8J	RB-051315	1	4.74	368650	7.01	237975	9.03	421417	13.81	468779	17.64	427974
15	2026	15052215.d	AGC9L	RB-051415	1	4.74	354755	7.01	241022	9.03	422461	13.81	465993	17.64	433370
16	2052	15052216.d	CCV150522	CCV150522	1	4.75	318416	7.01	209270	9.03	373183	13.81	421598	17.64	414444

[illegible] 05/26/15

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

ntv8_0016

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

ARI Job No.: ICV1 Method: FSIMPNA150413.m Instrument: nt8.i Date: 22-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1453	15052202.d	ICV150522	ICV150522	1	NO MANUAL INTEGRATION
1844	15052211.d	AGA8MBW1	AGA8MBW1	1	NO MANUAL INTEGRATION
1909	15052212 d	AGA8LCSW1	AGA8LCSW1	1	NO MANUAL INTEGRATION
1935	15052213.d	AGA8LCSDW1	AGA8LCSDW1	1	NO MANUAL INTEGRATION
2001	15052214.d	AGA8J	RB-051315	1	NO MANUAL INTEGRATION
2052	15052216.d	CCV150522	CCV150522	1	NO MANUAL INTEGRATION

05/26/15

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

Instrument: nt8.i Date: 22-MAY-2015 Method: FSIMPNA150413.m

INITIAL CAL: 13-APR-2015

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 22-MAY-2015

Compound	%D
NO Q-FLAGS	

5/22/15

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 22-MAY-2015 14:53
Lab File ID: 15052202.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: ICV150522 Quant Type: ISTD
Method: /chem3/nt8.i/20150522.b/FSIMPNA150413.m

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.94011	0.100	-2.42288	20.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.58482	0.100	-4.24327	20.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.58405	0.100	1.66508	20.00000	Averaged
15 1-methylnaphthalene	0.55829	0.54794	0.100	-1.85284	20.00000	Averaged
21 Acenaphthylene	1.46062	1.53955	0.100	5.40381	20.00000	Averaged
23 Acenaphthene	0.97186	1.02721	0.100	5.69486	20.00000	Averaged
11 Dibenzofuran	1.34410	1.40136	0.100	4.26023	20.00000	Averaged
25 Fluorene	1.08551	1.20456	0.100	10.96714	20.00000	Averaged
30 Phenanthrene	0.95354	0.94683	0.100	-0.70428	20.00000	Averaged
31 Anthracene	0.85847	0.87269	0.100	1.65661	20.00000	Averaged
36 Fluoranthene	1.11525	1.11724	0.100	0.17776	20.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.00162	0.100	1.81344	20.00000	Averaged
39 Pyrene	1.11491	1.06544	0.100	-4.43728	20.00000	Averaged
46 Benzo(a)anthracene	1.00322	1.01067	0.100	0.74354	20.00000	Averaged
48 Chrysene	1.00588	0.97755	0.100	-2.81688	20.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	1.04208	0.100	-0.78282	20.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	1.04269	0.100	-0.64198	20.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	1.01710	0.100	-0.67547	20.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.90320	0.100	-3.55345	20.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.13407	0.100	0.82340	20.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.81652	0.010	7.19862	20.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.94819	0.100	3.49892	20.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.97617	0.100	-1.33755	20.00000	Averaged
57 Perylene	0.97216	0.94858	0.100	-2.42508	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052202.d
Lab Smp Id: ICV150522 Client Smp ID: ICV150522
Inj Date : 22-MAY-2015 14:53
Operator : JZ Inst ID: nt8.i
Smp Info : ICV150522
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 22-May-2015 18:22 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.748	4.748	(1.000)	297291	2.00000	
7 Naphthalene	128	4.777	4.777	(1 006)	349358	2.50000	2.439
$ 12 2-Methylnaphthalene-d10	152	5.472	5 472	(1.152)	217328	2.50000	2.394
14 2-Methylnaphthalene	141	5.520	5.520	(1.162)	217042	2.50000	2.542
15 1-methylnaphthalene	141	5.713	5 713	(1.203)	203622	2.50000	2.454
21 Acenaphthylene	152	6.898	6 898	(0.984)	367866	2.50000	2.635
* 22 Acenaphthene-d10	164	7.009	7 009	(1.000)	191154	2.00000	
23 Acenaphthene	153	7.060	7.060	(1.007)	245445	2.50000	2.642
11 Dibenzofuran	168	7.208	7 208	(1.028)	334846	2.50000	2.607
25 Fluorene	166	7.679	7.679	(1.096)	287822	2.50000	2 774
* 28 Phenanthrene-d10	188	9.026	9.026	(1.000)	347015	2.00000	
30 Phenanthrene	178	9.061	9.061	(1.004)	410703	2.50000	2.482
31 Anthracene	178	9.102	9 102	(1.008)	378545	2.50000	2.541
36 Fluoranthene	202	10.775	10.775	(1 194)	484623	2.50000	2.504
$ 253 Fluoranthene-d10	212	10.740	10.740	(1 190)	434470	2.50000	2.545
39 Pyrene	202	11.271	11.271	(0 816)	497116	2.50000	2.389
46 Benzo(a)anthracene	228	13.690	13.690	(0 991)	471563	2.50000	2.519
* 47 Chrysene-d12	240	13.817	13.817	(1 000)	373266	2.00000	
48 Chrysene	228	13.890	13.890	(1.005)	456105	2.50000	2.430
51 Benzo(b)fluoranthene	252	16.381	16.381	(0.928)	488255	2.50000	2.480
52 Benzo(k)fluoranthene	252	16.441	16.441	(0.932)	488541	2.50000	2.484
251 Benzo(j)fluoranthene	252	16.517	16.517	(0.936)	476548	2.50000	2.483
54 Benzo(a)pyrene	252	17.415	17.415	(0.987)	423182	2.50000	2.411
* 56 Perylene-d12	264	17.643	17.643	(1.000)	374830	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.059	20.059	(1.137)	531352	2.50000	2.521
$ 60 Dibenzo(a,h)anthracene-d14	292	19.942	19.942	(1.130)	382570	2.50000	2.680
62 Dibenzo(a,h)anthracene	278	20.043	20.043	(1.136)	444261	2.50000	2.587

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.029	21.029	(1.192)	457374	2.50000	2.467
57 Perylene	252	17.716	17.716	(1.004)	444447	2.50000	2.439

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052202.d
Lab Smp Id: ICV150522
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: ICV150522
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	297291	-13.35
22 Acenaphthene-d10	230598	115299	461196	191154	-17.11
28 Phenanthrene-d10	373928	186964	747856	347015	-7.20
47 Chrysene-d12	381262	190631	762524	373266	-2.10
56 Perylene-d12	380825	190412	761650	374830	-1.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.82	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

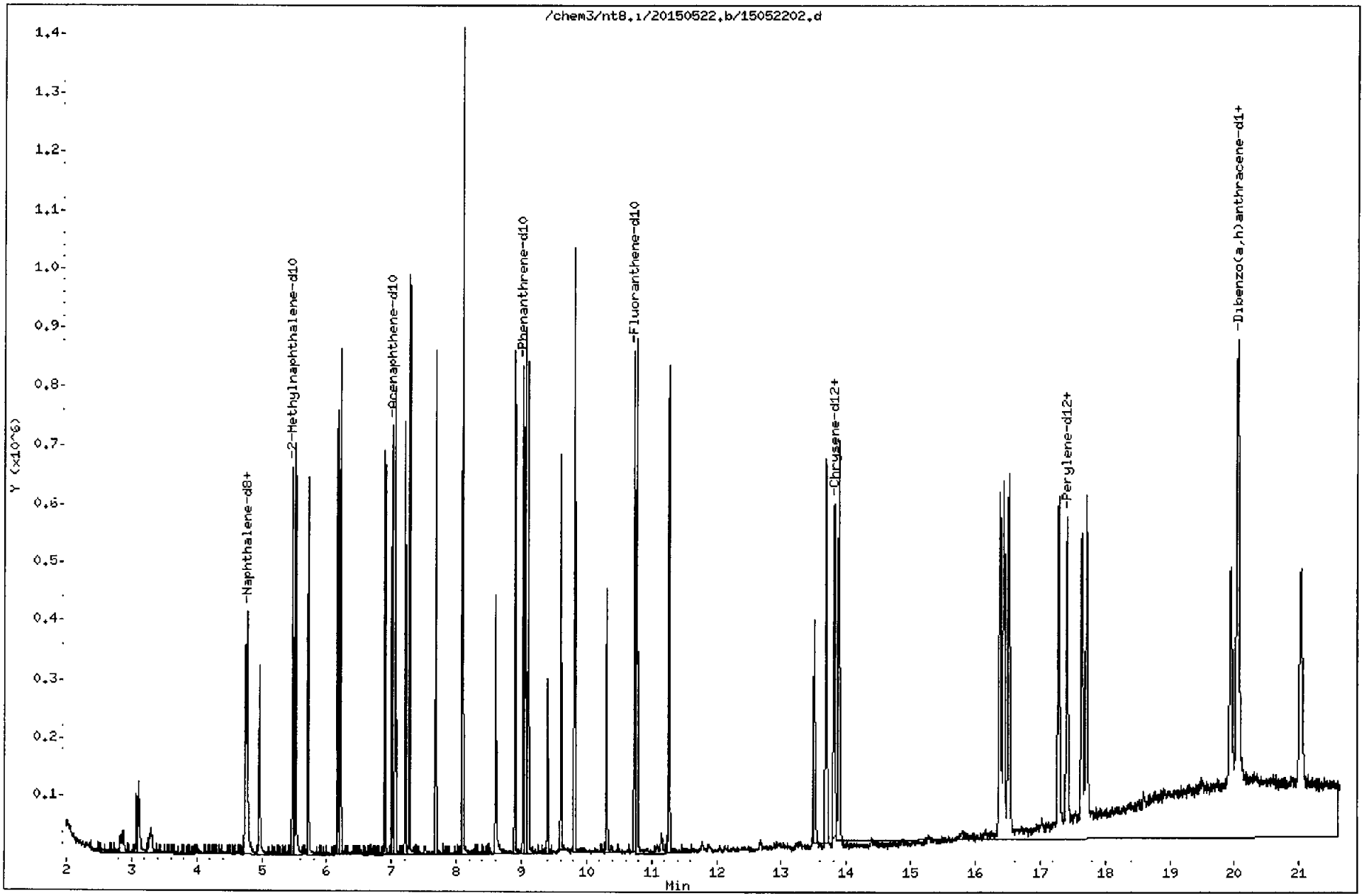
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150522.b/15052202.d
Date : 22-MAY-2015 14:53
Client ID: ICV150522
Sample Info: ICV150522

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052202.d

Lab ID: ICV150522, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem3/nt8.1/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

Instrument: nt8.1

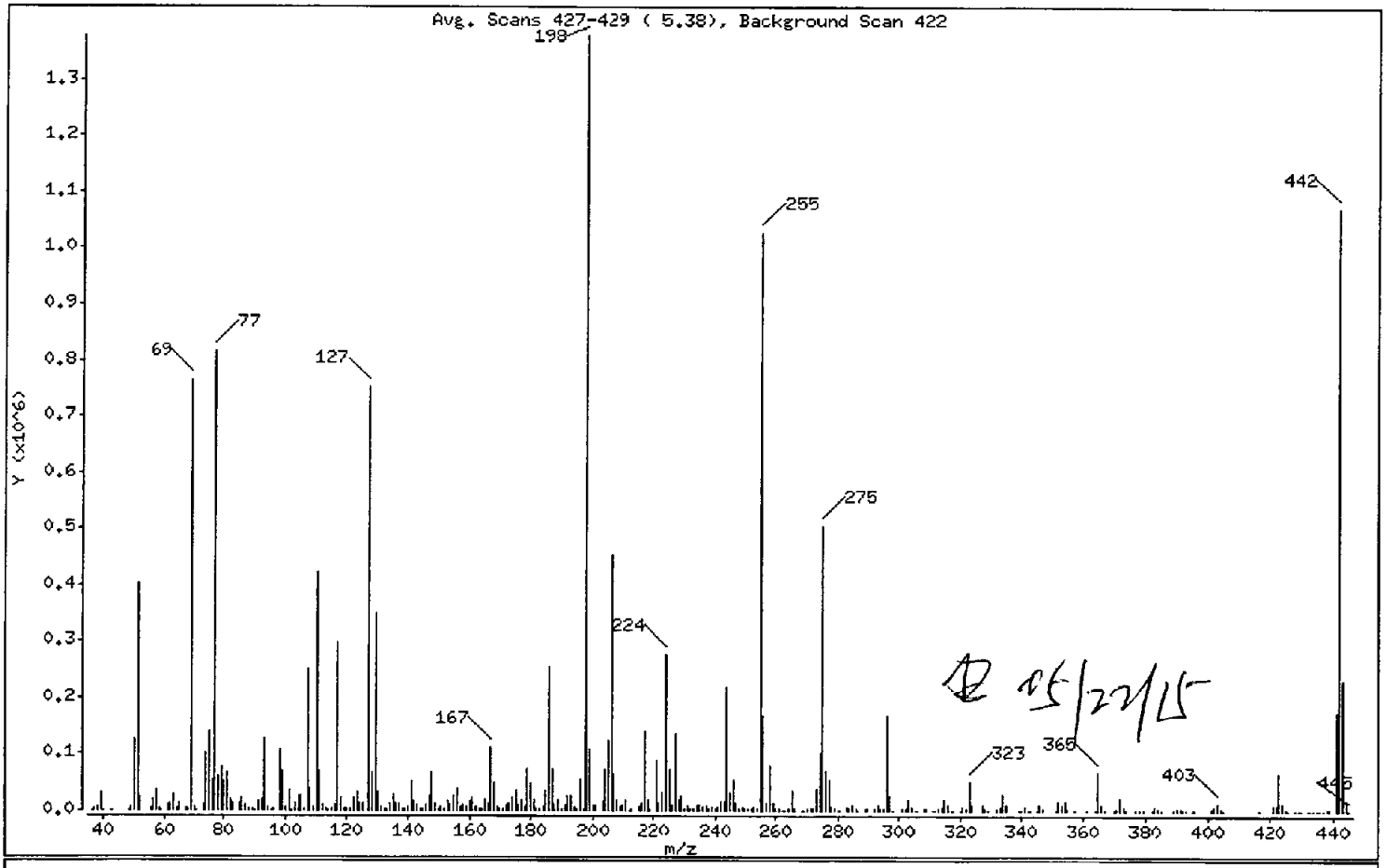
Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	29.11
68	Less than 2.00% of mass 69	0.22 (0.41)
69	Mass 69 relative abundance	55.30
70	Less than 2.00% of mass 69	0.35 (0.63)
127	10.00 - 80.00% of mass 198	54.48
197	Less than 2.00% of mass 198	0.26
199	5.00 - 9.00% of mass 198	7.75
275	10.00 - 60.00% of mass 198	36.47
365	Greater than 1.00% of mass 198	4.87
441	0.01 - 24.00% of mass 442	12.53 (16.11)
442	50.00 - 200.00% of mass 198	77.79
443	15.00 - 24.00% of mass 442	16.75 (21.54)

Data File: /chem3/nt8.1/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	133	133.00	2095	227.00	136960	323.00	49368
37.00	2809	134.00	11222	228.00	18576	324.00	8578
38.00	7849	135.00	29392	229.00	24776	325.00	1037
39.00	32344	136.00	13020	230.00	3346	326.00	844
40.00	1457	137.00	14258	231.00	9200	327.00	10834
41.00	656	138.00	3046	232.00	2175	328.00	4731
42.00	208	139.00	2131	233.00	2421	329.00	1148
43.00	462	140.00	5620	234.00	8771	331.00	94
44.00	148	141.00	50576	235.00	8737	332.00	3861
45.00	1002	142.00	15278	236.00	6449	333.00	5368
47.00	108	143.00	10218	237.00	8728	334.00	30008
48.00	486	144.00	2916	238.00	1664	335.00	8085
49.00	5506	145.00	2078	239.00	5233	336.00	857
50.00	126656	146.00	9702	240.00	4470	339.00	846
51.00	401216	147.00	24656	241.00	7769	340.00	564
52.00	21592	148.00	65440	242.00	15541	341.00	5293
53.00	439	149.00	11090	243.00	17384	342.00	1438
54.00	85	150.00	3256	244.00	219136	343.00	545
55.00	3619	151.00	6177	245.00	30280	345.00	182
56.00	17472	152.00	3120	246.00	53368	346.00	10368
57.00	35392	153.00	15554	247.00	11577	347.00	2438
58.00	2172	154.00	10768	248.00	2670	348.00	129
59.00	547	155.00	25120	249.00	7410	350.00	185
60.00	986	156.00	36760	250.00	1808	351.00	984
61.00	10440	157.00	7608	251.00	2494	352.00	14425
62.00	12711	158.00	8585	252.00	2317	353.00	10273
63.00	29888	159.00	7515	253.00	4782	354.00	14266
64.00	4742	160.00	16744	254.00	3900	355.00	2256
65.00	12367	161.00	21656	255.00	1025024	356.00	213
66.00	1347	162.00	5810	256.00	166720	357.00	89
67.00	2330	163.00	1976	257.00	13618	358.00	408
68.00	3089	164.00	2428	258.00	78344	359.00	818
69.00	762240	165.00	20048	259.00	11374	360.00	108
70.00	4825	166.00	13381	260.00	1785	361.00	125
71.00	491	167.00	110632	261.00	2437	363.00	415

Data File: /chem3/nt8.1/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	1279	168.00	46304	262.00	258	364.00	480
73.00	8486	169.00	6447	263.00	387	365.00	67168
74.00	101760	170.00	3710	264.00	2376	366.00	10579
75.00	138048	171.00	4204	265.00	34056	367.00	1003
76.00	53656	172.00	10014	266.00	4159	370.00	1161
77.00	814336	173.00	11349	267.00	189	371.00	2502
78.00	59624	174.00	20776	268.00	453	372.00	20800
79.00	75288	175.00	35792	269.00	88	373.00	5013
80.00	51216	176.00	9232	270.00	1790	374.00	794
81.00	66328	177.00	19960	271.00	2542	377.00	477
82.00	17520	178.00	6333	272.00	3882	378.00	440
83.00	12577	179.00	72056	273.00	37368	379.00	157
84.00	719	180.00	46176	274.00	100384	382.00	96
85.00	12263	181.00	19560	275.00	502656	383.00	5516
86.00	22536	182.00	3497	276.00	69032	384.00	1682
87.00	8695	183.00	2187	277.00	54464	385.00	673
88.00	3815	184.00	6739	278.00	7916	389.00	127
89.00	1832	185.00	35672	279.00	1711	390.00	2436
90.00	712	186.00	252928	280.00	116	391.00	1679
91.00	15213	187.00	73384	281.00	346	392.00	1578
92.00	18224	188.00	8027	282.00	1357	393.00	626
93.00	127472	189.00	19344	283.00	6520	395.00	110
94.00	7910	190.00	3027	284.00	4208	396.00	107
95.00	1570	191.00	8169	285.00	8767	397.00	398
96.00	4261	192.00	24600	286.00	1634	401.00	1734
98.00	108232	193.00	24392	287.00	105	402.00	7467
99.00	70344	194.00	5544	288.00	695	403.00	12187
100.00	5090	195.00	3551	289.00	1846	404.00	4515
101.00	33400	196.00	53392	290.00	1751	405.00	832
102.00	1451	197.00	3611	291.00	1146	410.00	545
103.00	12415	198.00	1378304	292.00	2279	415.00	439
104.00	24600	199.00	106832	293.00	10224	416.00	192
105.00	25024	200.00	8546	294.00	3051	420.00	281
106.00	3918	201.00	9616	295.00	3979	421.00	8393
107.00	249216	202.00	1249	296.00	167360	422.00	9079

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522 Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg, Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	39072	203.00	15691	297.00	24824	423.00	67848
109.00	5517	204.00	73424	298.00	1489	424.00	13402
110.00	422464	205.00	124248	301.00	2273	425.00	1638
111.00	69992	206.00	452480	302.00	3019	426.00	151
112.00	9466	207.00	62200	303.00	19336	427.00	111
113.00	3292	208.00	17952	304.00	4869	428.00	120
114.00	983	209.00	6435	305.00	776	429.00	307
115.00	1965	210.00	8007	306.00	163	430.00	663
116.00	9110	211.00	20480	307.00	517	431.00	123
117.00	299008	212.00	1184	308.00	2541	432.00	445
118.00	21312	213.00	2341	309.00	1677	433.00	117
119.00	2164	214.00	1002	310.00	1417	434.00	239
120.00	3561	215.00	6859	311.00	423	435.00	739
121.00	1836	216.00	11546	312.00	561	436.00	799
122.00	21816	217.00	140416	313.00	1684	437.00	1577
123.00	30416	218.00	17496	314.00	7178	438.00	1587
124.00	12613	219.00	1791	315.00	18624	439.00	3736
125.00	11800	220.00	1295	316.00	10566	440.00	651
127.00	750912	221.00	88656	317.00	1317	441.00	172736
128.00	67432	222.00	11367	318.00	137	442.00	1072128
129.00	349952	223.00	31256	319.00	585	443.00	230912
130.00	30120	224.00	276544	320.00	883	444.00	19888
131.00	6567	225.00	73432	321.00	5201	445.00	1341
132.00	3589	226.00	8680	322.00	2209		

Data File: /chem3/nt8.i/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

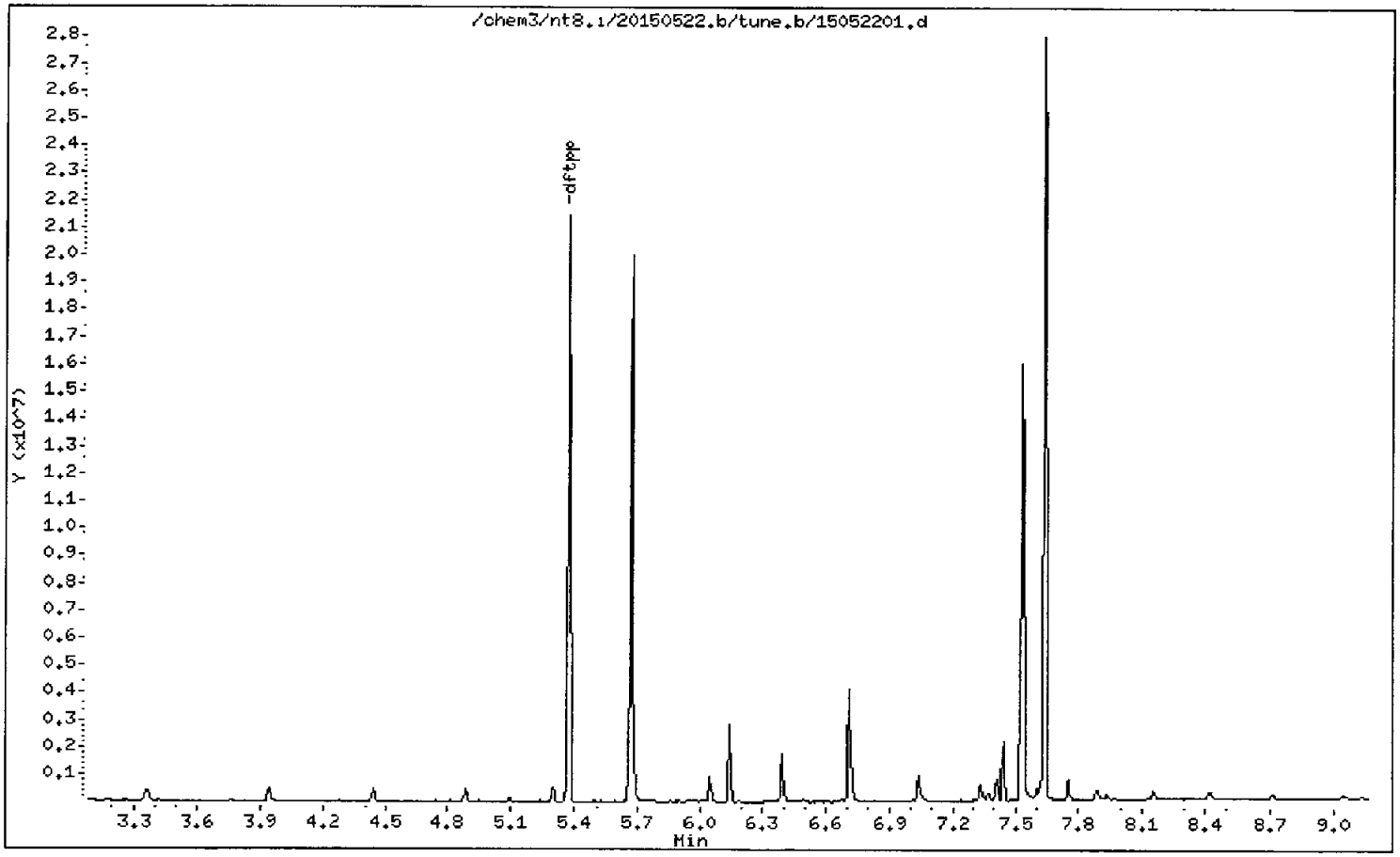
Instrument: nt8.i

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150522.b/ddt.b/15052201.d ARI ID: DDT150522
Method: /chem3/nt8.i/20150522.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 22-MAY-2015 14:41 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.670	1591237
Benzidine	7.532	4047505
4,4'-DDE	7.034	15796
4,4'-DDD	7.446	310923
4,4'-DDT	7.638	3132013

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

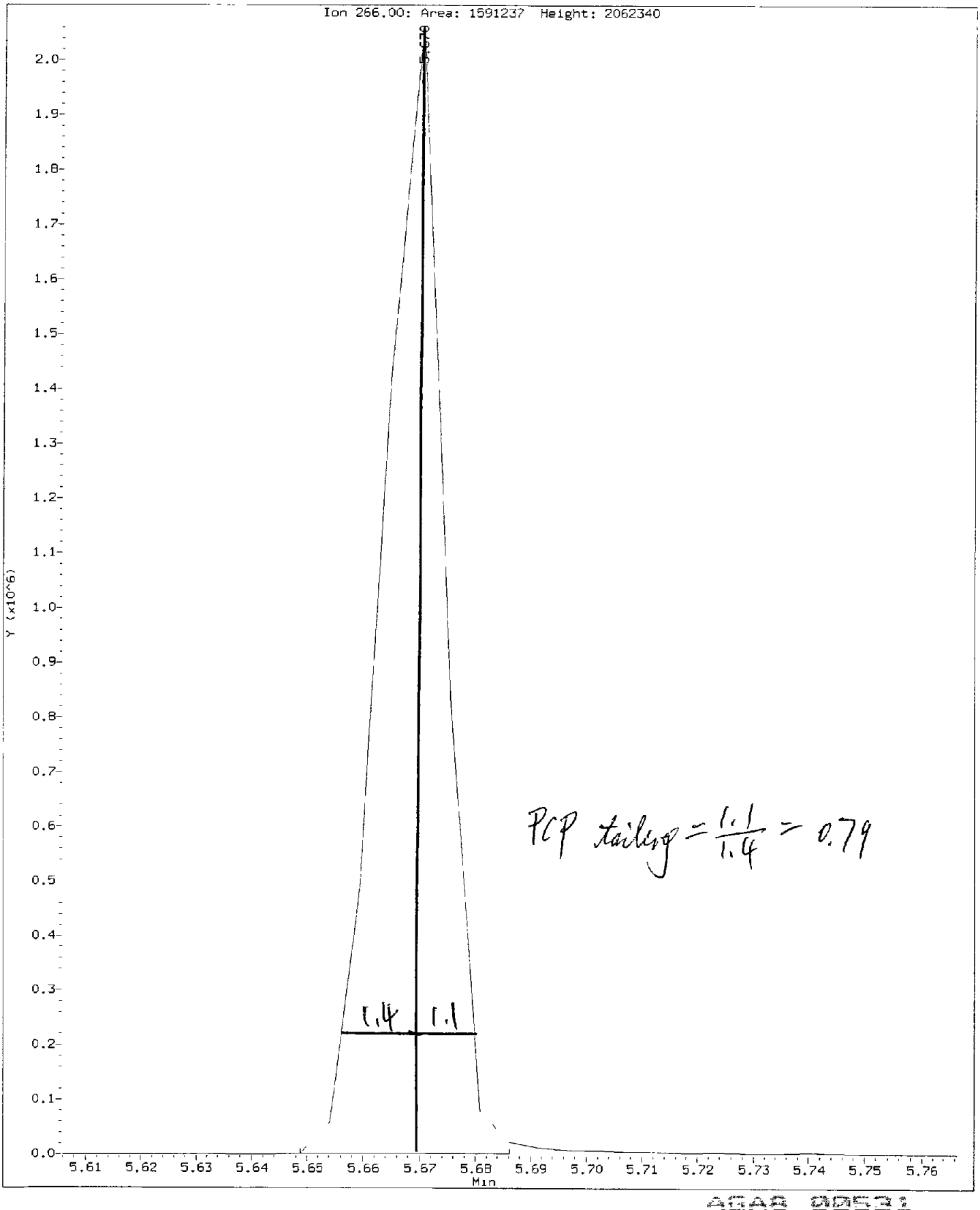
$$\text{DDT Percent Breakdown} = \frac{(15796 + 310923) * 100}{(15796 + 310923 + 3132013)}$$

DDT Percent Breakdown = 9.4 %

05/27/15

Data File: /chem3/nt8.1/20150522.b/ddt.b/15052201.d
Injection Date: 22-MAY-2015 14:41
Instrument: nt8.1
Client Sample ID: DDT150522

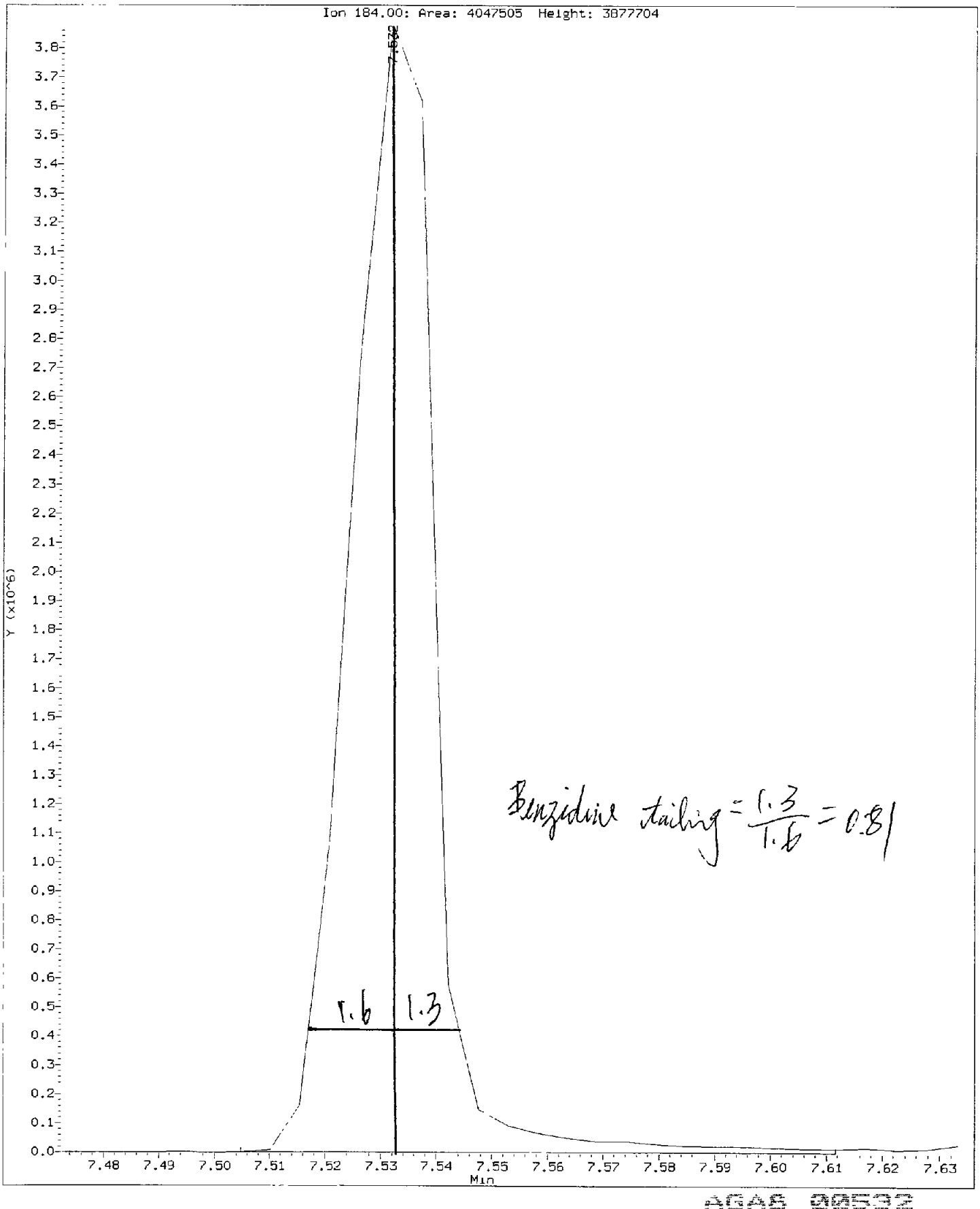
Compound: Pentachlorophenol
CAS Number: 87-86-5



PCP tailing = $\frac{1.1}{1.4}$ = 0.79

Data File: /chem3/nt8.i/20150522.b/ddt.b/15052201.d
Injection Date: 22-MAY-2015 14:41
Instrument: nt8.i
Client Sample ID: DDT150522

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 22-MAY-2015 20:52
Lab File ID: 15052216.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: CCV150522 Quant Type: ISTD
Method: /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m

AB cf 5/26/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0 92999	0.100	-3.47325	50.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.60364	0.100	-1.16261	50.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.58837	0.100	2.41716	50.00000	Averaged
15 1-methylnaphthalene	0.55829	0.56491	0.100	1.18656	50.00000	Averaged
21 Acenaphthylene	1.46062	1.55980	0.100	6.79008	50.00000	Averaged
23 Acenaphthene	0.97186	0.98787	0.100	1 64667	50 00000	Averaged
11 Dibenzofuran	1.34410	1.40866	0.100	4.80351	50 00000	Averaged
25 Fluorene	1.08551	1.19261	0.100	9.86628	50 00000	Averaged
30 Phenanthrene	0.95354	0.95187	0.100	-0.17525	50 00000	Averaged
31 Anthracene	0.85847	0.88054	0 100	2.57083	50.00000	Averaged
36 Fluoranthene	1.11525	1.13092	0.100	1.40433	50.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1 01014	0.100	2 67963	50.00000	Averaged
39 Pyrene	1.11491	1.02260	0.100	-8.27967	50.00000	Averaged
46 Benzo(a)anthracene	1.00322	1.01103	0.100	0.77850	50.00000	Averaged
48 Chrysene	1.00588	0.93485	0.100	-7.06189	50.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	1.01933	0.100	-2.94884	50.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	1.03704	0.100	-1.18117	50.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0.99911	0.100	-2.43242	50.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.89233	0.100	-4.71447	50 00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.12401	0.100	-0.07053	50 00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.80650	0.010	5.88351	50 00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.92962	0.100	1.47225	50.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.95966	0.100	-3.00700	50.00000	Averaged
57 Perylene	0.97216	0.97305	0.100	0.09192	50.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/ccv.b/15052216.d
Lab Smp Id: CCV150522 Client Smp ID: CCV150522
Inj Date : 22-MAY-2015 20:52
Operator : JZ Inst ID: nt8.i
Smp Info : CCV150522
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m
Meth Date : 26-May-2015 12:41 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 16 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.752	4.752	(1.000)	318416	2.00000	
	7 Naphthalene	128	4.777	4.777	(1.005)	370155	2.50000	2.413
$	12 2-Methylnaphthalene-d10	152	5.476	5.476	(1.152)	240259	2.50000	2.471
	14 2-Methylnaphthalene	141	5.520	5.520	(1.162)	234184	2.50000	2.560
	15 1-methylnaphthalene	141	5.716	5.716	(1.203)	224845	2.50000	2.530
	21 Acenaphthylene	152	6.902	6.902	(0.985)	408025	2.50000	2.670
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	209270	2.00000	
	23 Acenaphthene	153	7.060	7.060	(1.007)	258414	2 50000	2.541
	11 Dibenzofuran	168	7.209	7.209	(1.028)	368489	2.50000	2.620
	25 Fluorene	166	7.683	7.683	(1.096)	311973	2 50000	2 747
*	28 Phenanthrene-d10	188	9.030	9.030	(1.000)	373183	2.00000	
	30 Phenanthrene	178	9.061	9.061	(1 004)	444027	2 50000	2.496
	31 Anthracene	178	9.103	9.103	(1.008)	410751	2.50000	2 564
	36 Fluoranthene	202	10.775	10.775	(1.193)	527548	2.50000	2 535
$	253 Fluoranthene-d10	212	10.740	10.740	(1.189)	471207	2.50000	2 567
	39 Pyrene	202	11.268	11.268	(0.816)	538909	2.50000	2.293
	46 Benzo(a)anthracene	228	13.687	13.687	(0.991)	532808	2.50000	2 519
*	47 Chrysene-d12	240	13.814	13.814	(1.000)	421598	2.00000	
	48 Chrysene	228	13.887	13.887	(1.005)	492661	2.50000	2.323
	51 Benzo(b)fluoranthene	252	16.381	16.381	(0.928)	528071	2.50000	2.426
	52 Benzo(k)fluoranthene	252	16.438	16.438	(0.932)	537242	2.50000	2.470
	251 Benzo(j)fluoranthene	252	16.514	16.514	(0.936)	517592	2.50000	2.439
	54 Benzo(a)pyrene	252	17.409	17.409	(0.987)	462274	2.50000	2.382
*	56 Perylene-d12	264	17.643	17.643	(1 000)	414444	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.059	20.059	(1.137)	582299	2.50000	2.498
$	60 Dibenzo(a,h)anthracene-d14	292	19.945	19.945	(1 130)	417813	2.50000	2.647
	62 Dibenzo(a,h)anthracene	278	20.040	20.040	(1.136)	481594	2.50000	2.537

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.026	21.026	(1.192)	497155	2 50000	2.425
57 Perylene	252	17.716	17.716	(1.004)	504095	2.50000	2.502

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052216.d
Lab Smp Id: CCV150522
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m
Misc Info: 15-

Calibration Date: 22-MAY-2015
Calibration Time: 20:52
Client Smp ID: CCV150522
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	318416	-7.19
22 Acenaphthene-d10	230598	115299	461196	209270	-9.25
28 Phenanthrene-d10	373928	186964	747856	373183	-0.20
47 Chrysene-d12	381262	190631	762524	421598	10.58
56 Perylene-d12	380825	190412	761650	414444	8.83

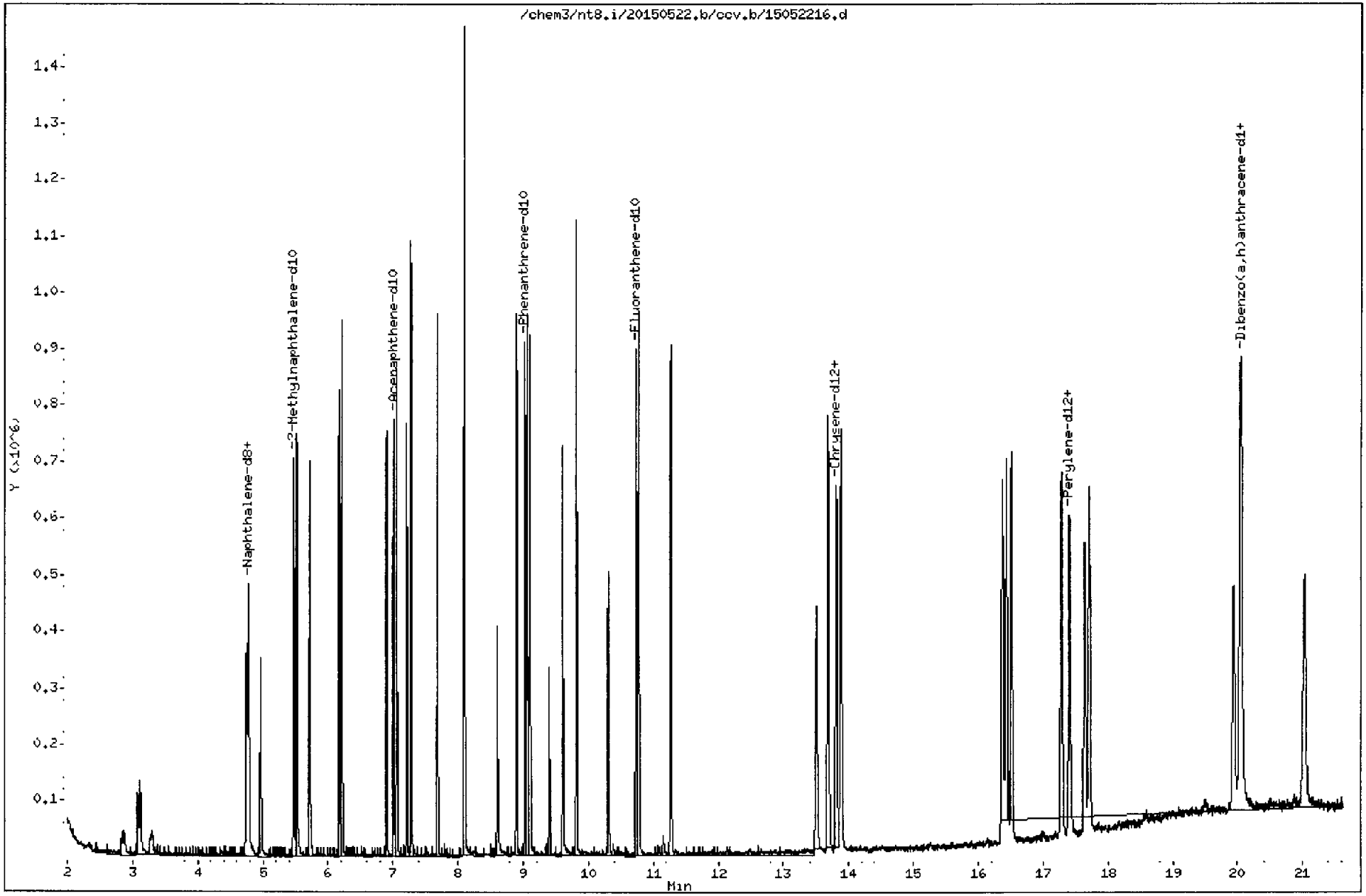
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150522.b/ccv.b/15052216.d
Date : 22-MAY-2015 20:52
Client ID: CCV150522
Sample Info: CCV150522

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052216.d

Lab ID: CCV150522, Method: ccv.b/FSIMPNA150413C.m, Instrument: nt8.i, Date: 2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052211.d
Lab Smp Id: AGA8MBW1 Client Smp ID: AGA8MBW1
Inj Date : 22-MAY-2015 18:44
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8MBW1
Misc Info : 15-9298
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 11 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.742	4.748	(1.000)	344358	2.00000	
7 Naphthalene	128	Compound Not Detected.					
$ 12 2-Methylnaphthalene-d10	152	5 472	5.472	(1.154)	224744	2.13724	2.137
14 2-Methylnaphthalene	141	Compound Not Detected.					
15 1-methylnaphthalene	141	Compound Not Detected.					
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	232596	2.00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	Compound Not Detected.					
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9.027	9.026	(1.000)	401626	2.00000	
30 Phenanthrene	178	Compound Not Detected.					
31 Anthracene	178	Compound Not Detected.					
36 Fluoranthene	202	Compound Not Detected.					
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.190)	520689	2.63567	2.636
39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.814	13.817	(1.000)	432555	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.646	17.643	(1.000)	413095	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.938	19.942	(1.130)	440635	2.80080	2.801
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052211.d
Lab Smp Id: AGA8MBW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8MBW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	344358	0.37
22 Acenaphthene-d10	230598	115299	461196	232596	0.87
28 Phenanthrene-d10	373928	186964	747856	401626	7.41
47 Chrysene-d12	381262	190631	762524	432555	13.45
56 Perylene-d12	380825	190412	761650	413095	8.47

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.02
56 Perylene-d12	17.64	17.14	18.14	17.65	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

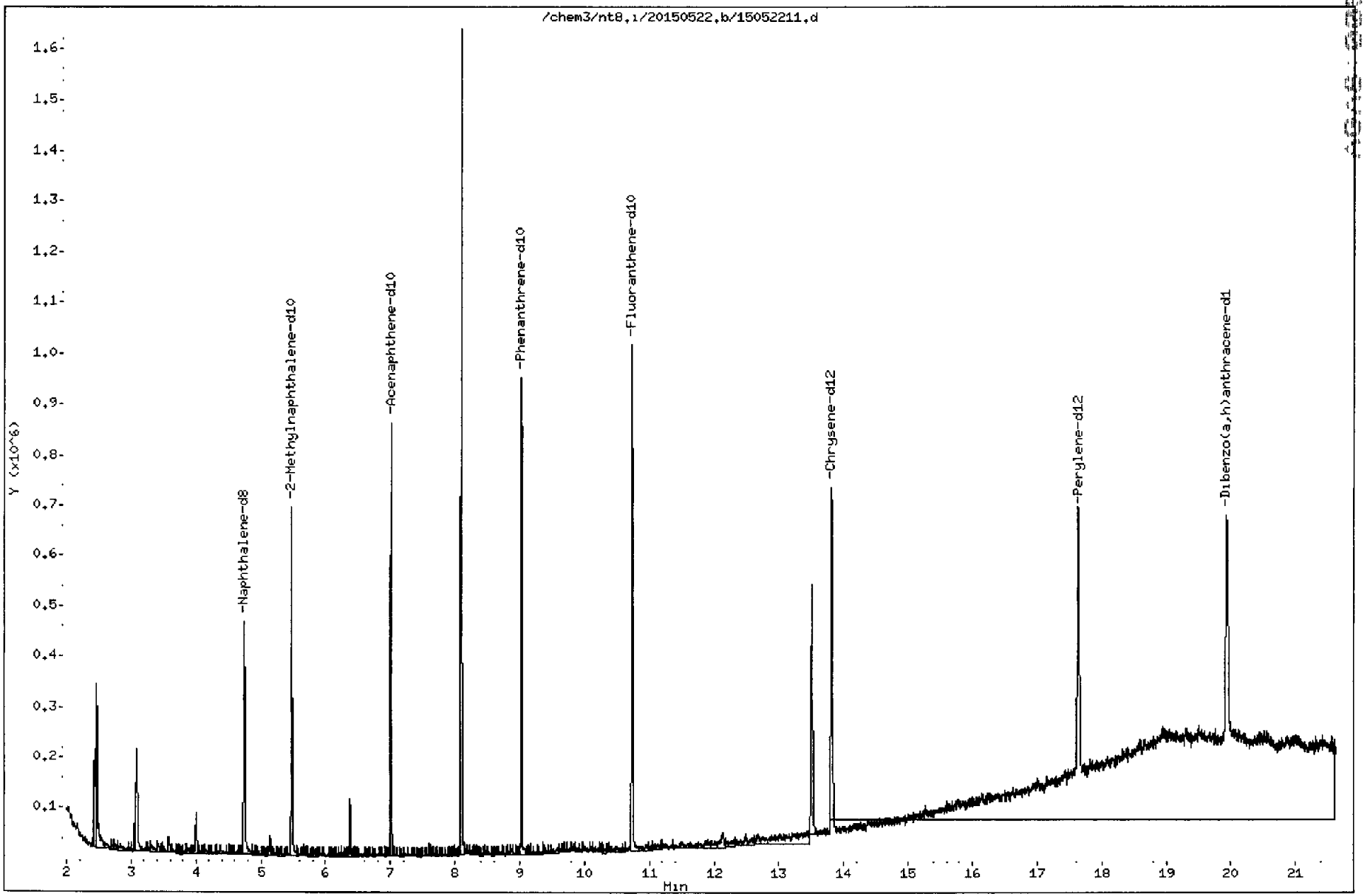
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8MBW1
Client Smp ID: AGA8MBW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: BLANK
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	2.137	71.24	31-120
$ 253 Fluoranthene-d10	3.000	2.636	87.86	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.801	93.36	10-125

Data File: /chem3/nt8.i/20150522.b/15052211.d
Date : 22-MAY-2015 18:44
Client ID: AGA8MBW1
Sample Info: AGA8MBW1
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052211.d

Lab ID: AGA8MBW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052212.d
Lab Smp Id: AGA8LCSW1 Client Smp ID: AGA8LCSW1
Inj Date : 22-MAY-2015 19:09
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8LCSW1,
Misc Info : 15-9298
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 12 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
* 6 Naphthalene-d8	136	4.742	4.748	(1.000)	375304	2.00000	
7 Naphthalene	128	4.771	4.777	(1.006)	354142	1.95881	1.959
$ 12 2-Methylnaphthalene-d10	152	5.472	5.472	(1.154)	224143	1.95577	1.956
14 2-Methylnaphthalene	141	5.520	5.520	(1.164)	229847	2.13210	2.132
15 1-methylnaphthalene	141	5.713	5.713	(1.205)	219533	2.09552	2.096
21 Acenaphthylene	152	6.902	6.898	(0.985)	385303	2.23355	2.234
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	236209	2.00000	
23 Acenaphthene	153	7.060	7.060	(1.007)	264019	2.30019	2 300
11 Dibenzofuran	168	7.208	7.208	(1.028)	370491	2.33388	2.334
25 Fluorene	166	7.683	7.679	(1.096)	318866	2.48717	2.487
* 28 Phenanthrene-d10	188	9.030	9.026	(1.000)	423109	2.00000	
30 Phenanthrene	178	9.061	9.061	(1.004)	481480	2.38680	2.387
31 Anthracene	178	9.102	9.102	(1.008)	461194	2.53944	2.539
36 Fluoranthene	202	10.775	10.775	(1.193)	608183	2.57773	2.578
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.189)	555326	2.66827	2.668
39 Pyrene	202	11.268	11.271	(0.816)	628320	2 37970	2.380

			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/L)
	46	Benzo(a)anthracene	228	13.690	13.690	(0.991)	606439	2.55256	2.553
*	47	Chrysene-d12	240	13.814	13 817	(1.000)	473638	2.00000	
	48	Chrysene	228	13.886	13.890	(1.005)	578166	2.42711	2.427
	51	Benzo(b)fluoranthene	252	16.381	16.381	(0.929)	631411	2.70209	2.702
	52	Benzo(k)fluoranthene	252	16.438	16.441	(0 932)	620598	2.65803	2.658
	251	Benzo(j)fluoranthene	252	16.517	16.517	(0.936)	471429	2.06925	2.069
	54	Benzo(a)pyrene	252	17.412	17.415	(0.987)	526096	2.52506	2.525
*	56	Perylene-d12	264	17.640	17.643	(1.000)	444966	2.00000	
	63	Indeno(1,2,3-cd)pyrene	276	20.055	20.059	(1.137)	666089	2.66170	2.662
$	60	Dibenzo(a,h)anthracene-d14	292	19.948	19.942	(1 131)	464126	2.73881	2.739
	62	Dibenzo(a,h)anthracene	278	20.049	20.043	(1 137)	561718	2.75590	2.756
	61	Benzo(g,h,i)perylene	276	21.033	21.029	(1.192)	568502	2.58262	2.583
	57	Perylene	252	17.719	17.716	(1.004)	465336	2.15146	2.151

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052212.d
Lab Smp Id: AGA8LCSW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8LCSW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	375304	9.39
22 Acenaphthene-d10	230598	115299	461196	236209	2.43
28 Phenanthrene-d10	373928	186964	747856	423109	13.15
47 Chrysene-d12	381262	190631	762524	473638	24.23
56 Perylene-d12	380825	190412	761650	444966	16.84

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.04
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.02
56 Perylene-d12	17.64	17.14	18.14	17.64	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

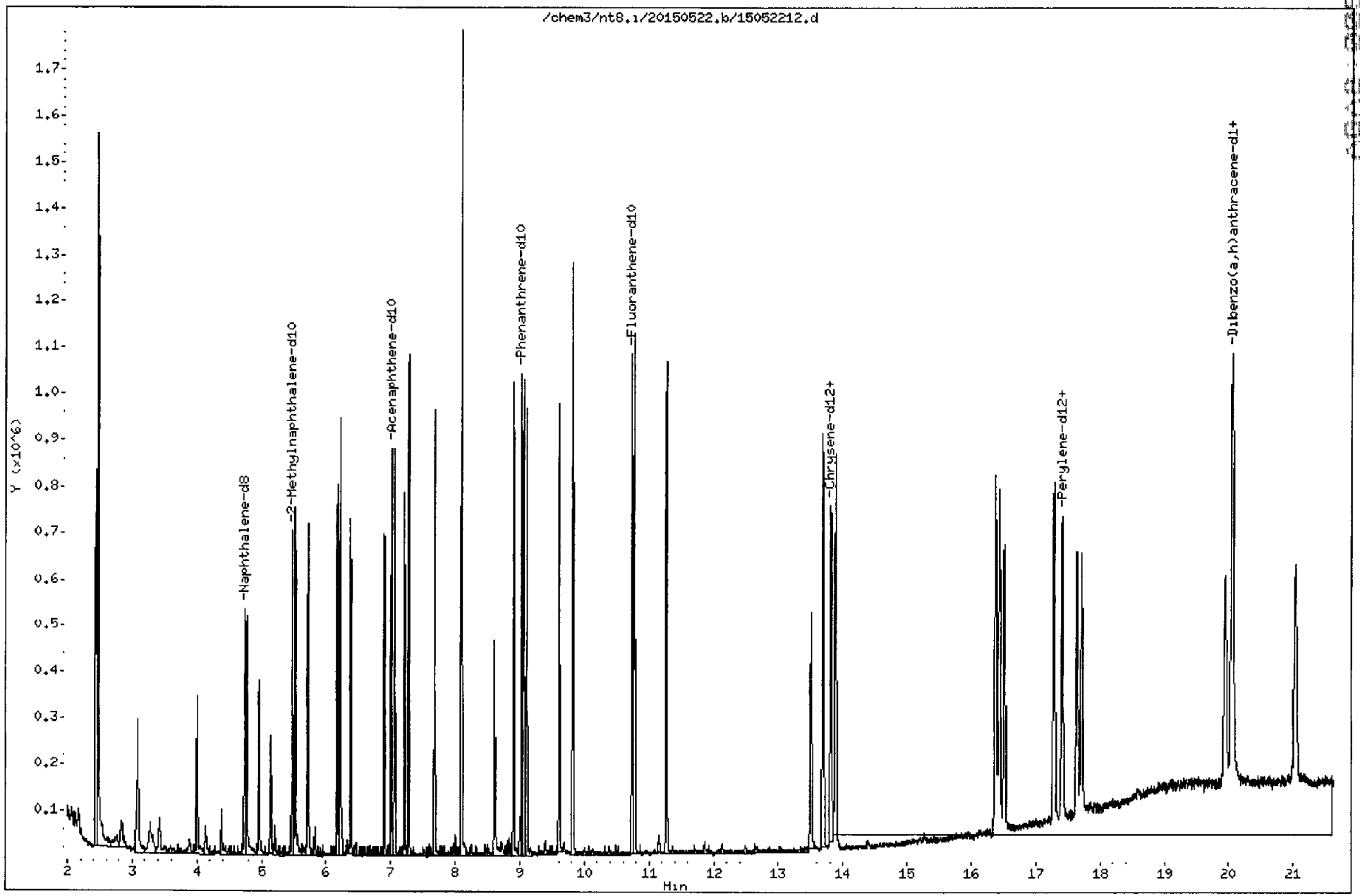
Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8LCSW1
Client Smp ID: AGA8LCSW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: LCS
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.959	65.29	36-120
14 2-Methylnaphthalen	3.000	2.132	71.07	35-120
15 1-methylnaphthalen	3.000	2.096	69.85	39-120
21 Acenaphthylene	3.000	2.234	74.45	35-120
23 Acenaphthene	3.000	2.300	76.67	39-120
11 Dibenzofuran	3.000	2.334	77.80	38-120
25 Fluorene	3.000	2.487	82.91	41-120
30 Phenanthrene	3.000	2.387	79.56	46-120
31 Anthracene	3.000	2.539	84.65	36-120
36 Fluoranthene	3.000	2.578	85.92	46-120
39 Pyrene	3.000	2.380	79.32	49-120
46 Benzo(a)anthracene	3.000	2.553	85.09	42-120
48 Chrysene	3.000	2.427	80.90	48-120
51 Benzo(b)fluoranthe	3.000	2.702	90.07	35-127
52 Benzo(k)fluoranthe	3.000	2.658	88.60	37-129
251 Benzo(j)fluoranthe	3.000	2.069	68.98	40-120
54 Benzo(a)pyrene	3.000	2.525	84.17	36-120
63 Indeno(1,2,3-cd)py	3.000	2.662	88.72	40-120
62 Dibenzo(a,h)anthra	3.000	2.756	91.86	38-120
61 Benzo(g,h,i)peryle	3.000	2.583	86.09	38-120
57 Perylene	3.000	2.151	71.72	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.956	65.19	31-120
$ 253 Fluoranthene-d10	3.000	2.668	88.94	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.739	91.29	10-125

Data File: /chem3/nt8.1/20150522.b/15052212.d
Date : 22-MAY-2015 19:09
Client ID: AGA8LCSW1
Sample Info: AGA8LCSW1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052212.d

Lab ID: AGA8LCSW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052213.d
Lab Smp Id: AGA8LCSDW1 Client Smp ID: AGA8LCSDW1
Inj Date : 22-MAY-2015 19:35
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8LCSDW1,
Misc Info : 15-9298
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 13 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.739	4.748	(1.000)	365878	2.00000	
7 Naphthalene	128	4.767	4.777	(1.006)	332494	1.88646	1.886
$ 12 2-Methylnaphthalene-d10	152	5.469	5.472	(1.154)	207939	1.86113	1.861
14 2-Methylnaphthalene	141	5.517	5.520	(1.164)	214237	2.03849	2.038
15 1-methylnaphthalene	141	5.713	5.713	(1.206)	203014	1.98776	1 988
21 Acenaphthylene	152	6.899	6 898	(0.984)	364753	2.08647	2.086
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	239375	2.00000	
23 Acenaphthene	153	7.057	7.060	(1.007)	249107	2.14157	2.142
11 Dibenzofuran	168	7.209	7.208	(1.028)	341955	2.12564	2.126
25 Fluorene	166	7.680	7.679	(1.096)	298164	2.29495	2.295
* 28 Phenanthrene-d10	188	9.027	9.026	(1.000)	424130	2.00000	
30 Phenanthrene	178	9.061	9.061	(1 004)	462273	2.28608	2.286
31 Anthracene	178	9.103	9.102	(1.008)	437997	2.40591	2.406
36 Fluoranthene	202	10.775	10.775	(1.194)	602187	2.54618	2.546
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.190)	530883	2.54469	2.545
39 Pyrene	202	11.268	11.271	(0.816)	610660	2.28991	2.290

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	13.691	13.690	(0.991)	587121	2 44677	2.447
*	47 Chrysene-d12	240	13.811	13.817	(1.000)	478376	2.00000	
	48 Chrysene	228	13.887	13.890	(1.005)	581550	2.41714	2.417
	51 Benzo(b)fluoranthene	252	16.378	16.381	(0 928)	623166	2 60546	2.605
	52 Benzo(k)fluoranthene	252	16.441	16.441	(0.932)	605390	2 53325	2.533
	251 Benzo(j)fluoranthene	252	16.514	16.517	(0.936)	471502	2.02196	2.022
	54 Benzo(a)pyrene	252	17.412	17.415	(0.987)	487921	2.28797	2.288
*	56 Perylene-d12	264	17.643	17 643	(1.000)	455442	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.056	20 059	(1.137)	596052	2.32704	2.327
$	60 Dibenzo(a,h)anthracene-d14	292	19.939	19.942	(1.130)	356777	2.05691	2.057
	62 Dibenzo(a,h)anthracene	278	20.046	20.043	(1.136)	443850	2.12753	2.128
	61 Benzo(g,h,i)perylene	276	21.033	21.029	(1.192)	507655	2.25315	2.253
	57 Perylene	252	17.713	17.716	(1.004)	452057	2.04198	2.042

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052213.d
Lab Smp Id: AGA8LCSDW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8LCSDW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	365878	6.64
22 Acenaphthene-d10	230598	115299	461196	239375	3.81
28 Phenanthrene-d10	373928	186964	747856	424130	13.43
47 Chrysene-d12	381262	190631	762524	478376	25.47
56 Perylene-d12	380825	190412	761650	455442	19.59

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.20
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.04
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

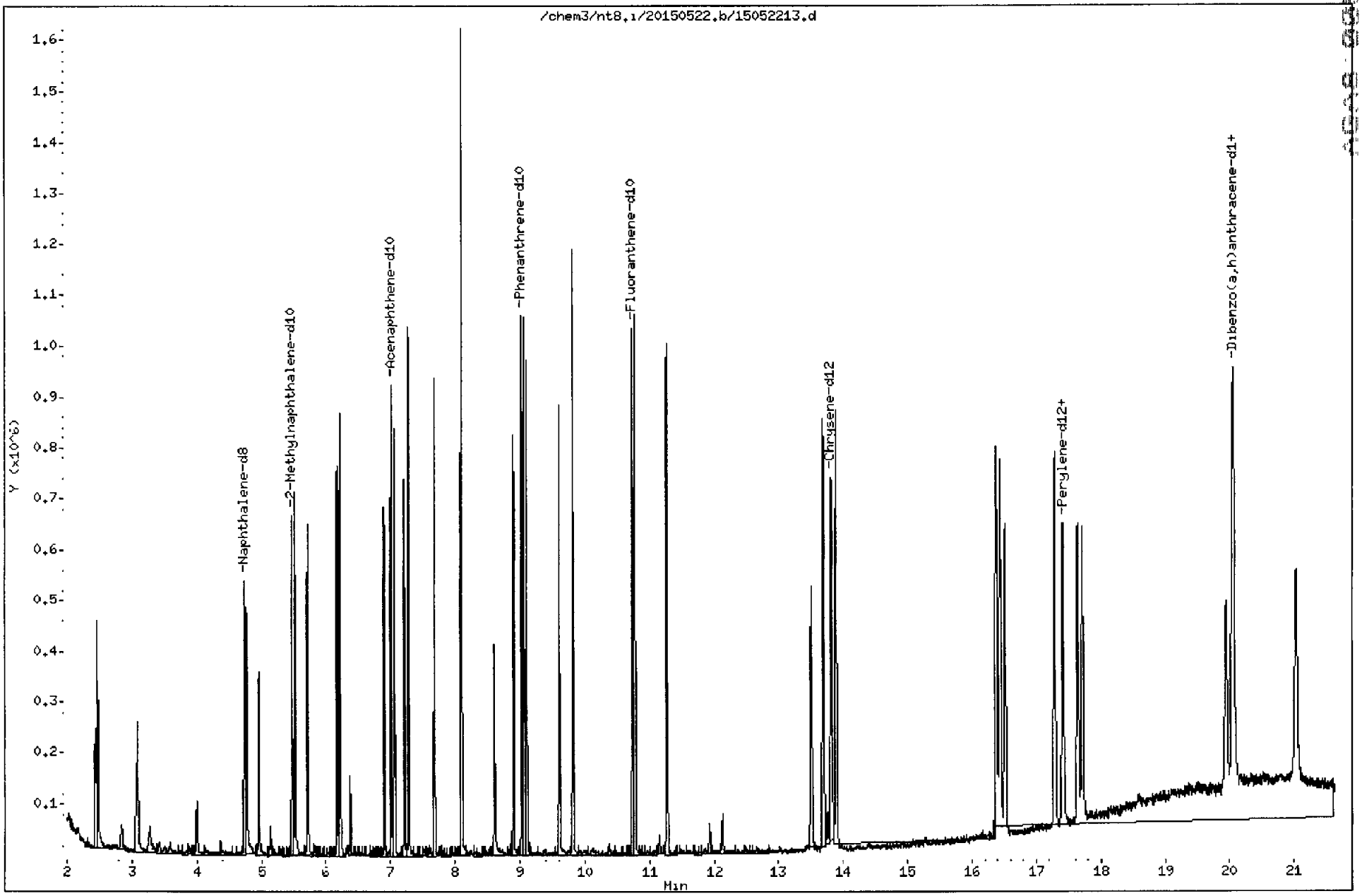
Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8LCSDW1
Client Smp ID: AGA8LCSDW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: LCSD
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.886	62.88	36-120
14 2-Methylnaphthalen	3.000	2.038	67.95	35-120
15 1-methylnaphthalen	3.000	1.988	66.26	39-120
21 Acenaphthylene	3.000	2.086	69.55	35-120
23 Acenaphthene	3.000	2.142	71.39	39-120
11 Dibenzofuran	3.000	2.126	70.85	38-120
25 Fluorene	3.000	2.295	76.50	41-120
30 Phenanthrene	3.000	2.286	76.20	46-120
31 Anthracene	3.000	2.406	80.20	36-120
36 Fluoranthene	3.000	2.546	84.87	46-120
39 Pyrene	3.000	2.290	76.33	49-120
46 Benzo(a)anthracene	3.000	2.447	81.56	42-120
48 Chrysene	3.000	2.417	80.57	48-120
51 Benzo(b)fluoranthe	3.000	2.605	86.85	35-127
52 Benzo(k)fluoranthe	3.000	2.533	84.44	37-129
251 Benzo(j)fluoranthe	3.000	2.022	67.40	40-120
54 Benzo(a)pyrene	3.000	2.288	76.27	36-120
63 Indeno(1,2,3-cd)py	3.000	2.327	77.57	40-120
62 Dibenzo(a,h)anthra	3.000	2.128	70.92	38-120
61 Benzo(g,h,i)peryle	3.000	2.253	75.10	38-120
57 Perylene	3.000	2.042	68.07	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.861	62.04	31-120
$ 253 Fluoranthene-d10	3.000	2.545	84.82	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.057	68.56	10-125

Data File: /chem3/nt8.i/20150522.b/15052213.d
Date : 22-MAY-2015 19:35
Client ID: AGA8LCSDW1
Sample Info: AGA8LCSDW1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052213.d

Lab ID: AGA8LCSDW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052214.d
Lab Smp Id: AGA8J Client Smp ID: RB-051315
Inj Date : 22-MAY-2015 20:01
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8J
Misc Info : 15-9298
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
*	6 Naphthalene-d8	136	4.742	4.748	(1.000)	368650	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.473	5.472	(1.154)	221820	1.97043	1.970
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	237975	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.027	9.026	(1.000)	421417	2.00000	
	30 Phenanthrene	178	Compound Not Detected.					
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10.737	10.740	(1.190)	524989	2.53263	2.533
	39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.814	13.817	(1.000)	468779	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.640	17.643	(1.000)	427974	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.942	19.942	(1.130)	385894	2.36757	2.368
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052214.d
Lab Smp Id: AGA8J
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: RB-051315
Level: LOW
Sample Type: Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	368650	7.45
22 Acenaphthene-d10	230598	115299	461196	237975	3.20
28 Phenanthrene-d10	373928	186964	747856	421417	12.70
47 Chrysene-d12	381262	190631	762524	468779	22.95
56 Perylene-d12	380825	190412	761650	427974	12.38

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.02
56 Perylene-d12	17.64	17.14	18.14	17.64	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

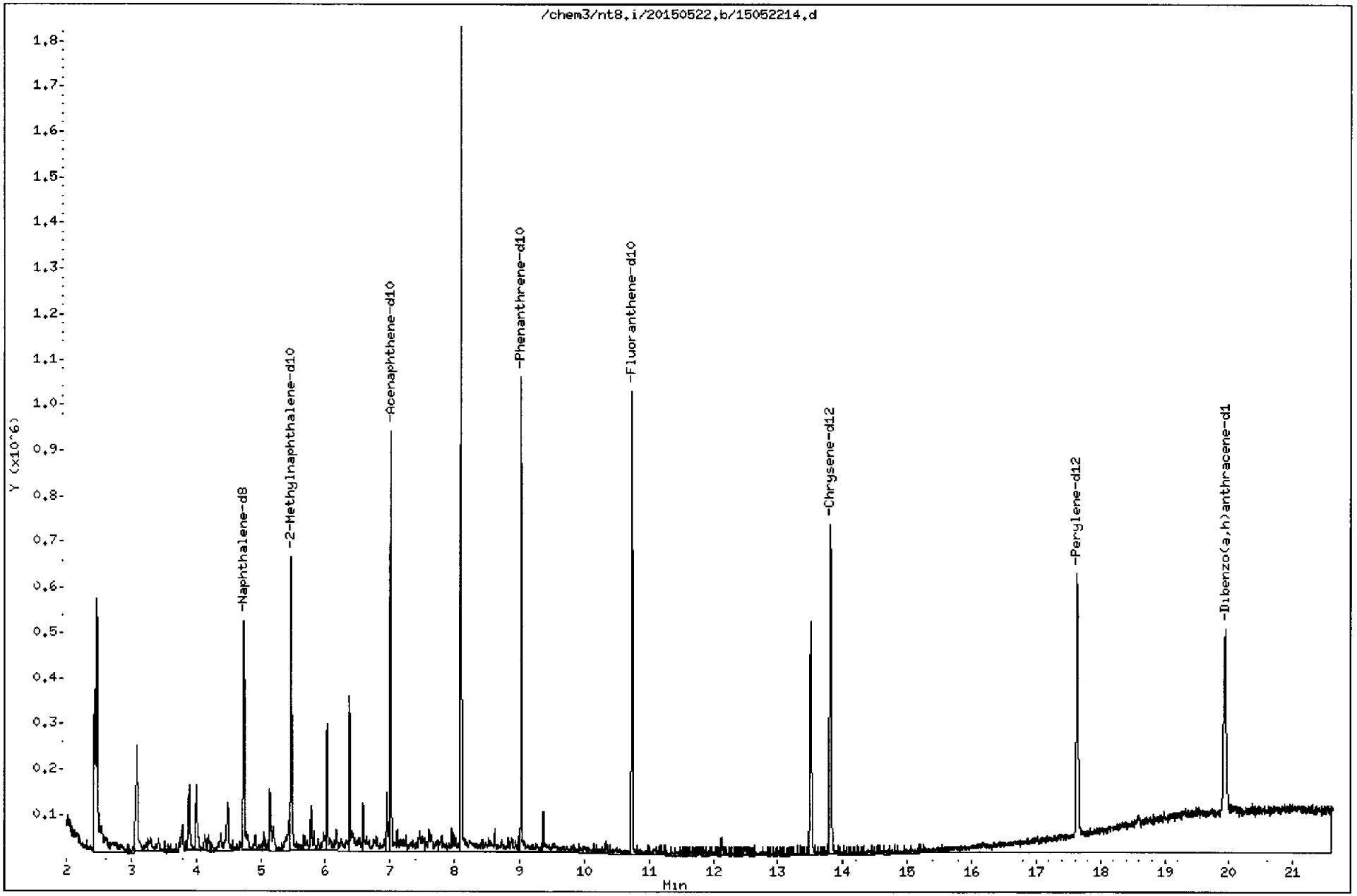
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8J
Client Smp ID: RB-051315
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.970	65.68	31-120
$ 253 Fluoranthene-d10	3.000	2.533	84.42	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.368	78.92	10-125

Data File: /chem3/nt8.i/20150522.b/15052214.d
Date : 22-MAY-2015 20:01
Client ID: RB-051315
Sample Info: AGA8J
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052214.d

Lab ID: AGA8J, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PCB Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGA8

Incorporated
Analytical Chemists and
Consultants
Element Batch BDE0449

(8082A) PCB – (Soil) / Sediment
Microwave (3546) (SOP # 3304S)

Preparation Test PCB PSDDA # 5

ARI Job No(s) AGA8 Page 1 of 1 PSDDA (20ppb) Batch set up by: ~~SH~~

Bottle #	ARI Sample I.D.	Weight Extracted (eq. to 5.0g dry wt)	(REQ) Acid Clean (5mL)	(REQ) Sulfur Clean (5mL) 1(2)3	(Opt/REQ) Silica Gel Clean (1:5) Y (N)	Extraction Final Volume	Volume to Lab	Comments	Verify Client ID
	MBS AGA8	5.00g	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	BDE0049	MC 05/21/15 Analyst/Date
	SBS	5.00g	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL		Microwave CT 1(2)3 5/21/15 MC Analyst/Date
	~~SBSDup~~	~~5.00g~~	~~5.0mL~~	~~5.0mL~~	1mL Y / N	~~5.0mL~~	~~1mL~~		
	~~QLS~~	~~5.00g~~	~~5.0mL~~	~~5.0mL~~	1mL Y / N	5.0mL	1mL		KD 100°C Exchange to Hexane (2 X 20mL) 1 2 3 4 5 6 TH 5/22/15 Analyst/Date
1	AGA8A	8.03	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	15E0411-01A	
1	B	7.06	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-02A	
1	C	7.04	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-03A	
1	D	6.05	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-04A	
1	E	7.05	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-05A	TurboVap (1)2 3 Pre-Cleanups TH 5/26/15 Analyst/Date
1	F	6.04	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-06A	
1	FMS	6.01	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-06A	
1	FMSD	6.03	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-06A	
1	G	7.06	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-07A	TurboVap 1 2 3 Post Cleanups Analyst/Date
1	H	7.06	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-08A	
1	I	7.05	5.0mL	5.0mL	1mL Y (N)	5.0mL	1mL	-09A	
Analyst/Date		MC 05/21/15	TH 5/26/15	TH 5/26/15		TH 5/24/15	TH 5/26/15	Reviewed by: TH 5/26/15	

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	N(D040454)	2µg/mL	100µL	10/10/15	CT	MC
Spike	1(D040667)	20µg/mL	125µL	2/13/16	CT	MC
~~QLS Spike~~	~~5(~~ ~~)~~	~~2µg/mL~~	~~50µL~~			
Extraction Time: 15:20			Balance ID: B13929040 2			

SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone until the solvent layer is 3" inches above the soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in cold water 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into E. flask with sodium sulfate in bottom+ funnel with neutral glasswool plug. 8. Rinse with Hexane. 9. Add 8:2 Hexane/Acetone to the vessel 3"inches above the soil layer after homogenization. Microwave a 2nd time. 10. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 11. KD (~~Small or Large Drying Column~~) on 100° bath. (~~Blanks=only 5g Sodium Sulfate~~). 12. Exchange (2 X with 20mL) Hexane. 13. TurboVap. 14. Clean-ups. 15. TurboVap (if Silica Clean). 16. Vial with Hexane.

A. Need Total Solids Y (N) B. Archive/Freeze Y (N)

AGA8 05/21

Organic Extractions
Reagent and Solutions Identification

(8082A) PCB - (Soil) / Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) AGA8

(8082A) PCB PSDDA (20ppb) Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station: Anhydrous Sodium Sulfate: DØØ1876 Neutral Glasswool: DØØ1494 1:1 Hexane/Acetone: DØØ2019 80:20 Hexane/Acetone: DØØ2475 Hexane: DØØ1384	Microwave CT 5/21/15 NA
KD Station: Hexane: DØØ1893 Anhydrous Sodium Sulfate: N/A Neutral Glasswool: N/A	KD KB 5/22/15
Vialing Station: Hexane: DØØ1893 Concentrated Sulfuric Acid: DØØ1179 Tetrabutylammonium hydrogensulfate (TBAS): DØØ1534 Sodium Sulfite: CØØ4322 Silica Gel (SPE) Darts: NA	Vialing TH 5/26/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/15EΦ11 Client ID: Kennedy Jenks Consultants

Parameter: PCB PSDDA Client Project: Pos sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= B C, E, G, 5/14/15	MφΦS/14/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☒ Clay/Clumps (Difficult to homogenize)= H, I. 10% 20%	MφΦS/14/15
☒ Rocks (%+size)? 20% A, B, D 10% F.	MφΦS/14/15
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: 5/26/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8082A) PCB – Water
Separatory Funnel (3510C) (SOP # 3311S)

Element Batch BDE#942

Preparation Test PCB # 1 (PCBWSI)

In-House (1ppb)

ARI Job No(s) AGA8, AGC9 Page 1 of 1 Batch set up by: ~~SH~~

Bottle #	ARI Sample ID	Volume Extracted	(REQ) Acid Clean (5mL)	(REQ) Sulfur Clean (5mL) 1 2 3	(opt) Silica Gel Clean (1:5) Y/N	FEV	Volume to Lab	Comments
	AGA8 MBW	500mL	5mL	5mL	1mL Y/N	5mL	1mL	
2	SBW	500mL	5mL	5mL	1mL Y/N	5mL	1mL	
3	SBW Dup	500mL	5mL	5mL	1mL Y/N	5mL	1mL	
	~~QLS~~	~~500mL~~	~~5mL~~	~~5mL~~	~~1mL Y/N~~	~~5mL~~	~~1mL~~	
4	AGA8 J	500mL	5mL	5mL	1mL Y/N	5mL	1mL	15E#911-1# D
7	AGC9 L	500mL	5mL	5mL	1mL Y/N	5mL	1mL	15E#913-12 D
		~~500mL~~	~~5mL~~	~~5mL~~	~~1mL Y/N~~	~~5mL~~	~~1mL~~	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
		500mL	5mL	5mL	1mL Y/N	5mL	1mL	
Analyst/Date		AR #5/20/15	GM 5/26/15	GM 5/26/15		GM 5/26/15	GM 5/26/15	GM 5/26/15

Verify Client ID: CT 5/24/15

Analyst/Date

Verify pH is 5-9: CT 5/24/15

Analyst/Date

KD 80-85°C

Hexane Exchange (2 X 20mL) 100°C: (1) (2) (3) (4) 5 6

RB 5/22/15

Analyst/Date

TurboVap 1 2 3 Pre-Cleanups (4mL=10mL Hexane Exchange

missed - see notes GM

Analyst/Date 5/26/15

TurboVap 1 2 3 Post Cleanups

Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	N (D#1454)	2µg/mL	100µL	10/14/15	AR	~~SH~~
Spike	1 (D#E67)	20µg/mL	125µL	2/13/16	AR	~~SH~~
~~QLS Spike~~	~~5 ( )~~	~~2µg/mL~~	~~250µL~~			

Extraction Time: 14:34

SPECIAL INSTRUCTIONS: 1. Verify pH 2. Adjust pH (if necessary=Analyst Notes). 3. Add Surr/Spike.
4. Extract 3X with 30mL DCM. 5. KD (NO Drying Column) at 80°. 6. Exchange (2 X with 20mL) Hexane at 100°.
7. TurboVap to 4mL=10mL Hexane Exchange. 8. TurboVap 9. Clean-ups? 10. TurboVap (if Silica Clean).
11. Vial 1mL with Hexane. Archive (Y) N

AGA8 - BDE#

Reagent and Solutions Identification

(8082A) PCB – Water
Separatory Funnel (3510C) (SOP # 3311S)

ARI Job No(s) AGA8, AGC9

(8082 A) PCB Aqueous:	Analyst/Date
Separatory Funnel Station:	Sep. Funnel
Methylene Chloride: (I#) D#41946	CT 5/24/15
Anhydrous Sodium Sulfate: (I# + jar date) D#41874	
KD Station:	KD
Methylene Chloride: (I#) DΦΦ2226	RB 5/22/15
Hexane: (I#) DΦΦ1893	
Vialing Station:	
Hexane: (I#) DΦΦ1893	Vialing
Concentrated Sulfuric Acid: (I#) DΦ1179	
Tetrabutylammonium hydrogensulfate (TBAS): (H#) DΦΦ1534	GM 5/26/15
Sodium Sulfite: (I#) CΦΦ4322	
Silica Gel (SPE) Darts: (I#) N/A	

AGA8 - 29568

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/AGC9 Client ID: Kennedy Jenks Consultants

Parameter: PCB Client Project: POS Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☑ No Anomalies AGA8 sample J, AGC9 L	PC 05/20/15
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☑ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	
Hexane exchanged was missed at final vialing	GM 5/26/15

Reviewed by/Date: MS 5/29/15

PCB Raw Data
Initial Calibration

ARI Job ID: AGA8

Analysis	Matrix	Method
8082A PCB Solid 4	Water	EPA 8082A

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JGR	05/28/2015
	Comments: *YE00033*			
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	05/28/2015
3	Manual integrations include before/after pictures	NA	JGR	05/28/2015
4	Internal Standard areas within 50-200% from reference	YES	JGR	05/28/2015
5	All SCV within +/- 20% (DOD)	YES	JGR	05/28/2015
6	All SCV within +/- 30%	YES	JGR	05/28/2015
7	NO Linear or Quadratic Fits Used	YES	JGR	05/28/2015
8	NO Calibration points dropped	YES	JGR	05/28/2015
9	Additional Notes	NA	JGR	05/28/2015
10	Reviewer Approval (Reviewer)	YES	BB	05/28/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB1.m
Batch File: /chem2/ecd7.i/20150527.b/ical-1.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05271511	05271512	05271513	05271514	05271515	05271516
INJ.DATE:	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015
INJ.TIME:	18:11	18:33	18:54	19:15	19:37	19:58

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	41 IS-BNB	3.349	3.348	3.345	3.347	3.348	3.347	3.345	3.245-3.445	3.347	0.001
$	1 Tetrachloro-m-xylene	6.345	6.344	6.342	6.344	6.345	6.345	6.343	6.243-6.443	6.344	0.001
	2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.023	4.923-5.123	+++++	+++++
	3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.829	8.729-8.929	+++++	+++++
	4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.026	4.926-5.126	+++++	+++++
	7 Aroclor-1016	8.346	8.346	8.345	8.346	8.347	8.347	8.347	8.247-8.447	8.346	0.001
	6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	9.395	9.295-9.495	+++++	+++++
	8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.368	10.268-10.468	+++++	+++++
	9 Aroclor-1260	12.468	12.469	12.468	12.468	12.469	12.469	12.469	12.369-12.569	12.469	0.001
	10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.467	12.367-12.567	+++++	+++++
	11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.612	13.512-13.712	+++++	+++++
$	13 Decachlorobiphenyl	14.889	14.890	14.889	14.889	14.890	14.890	14.889	14.789-14.989	14.890	0.000
*	12 IS-HBBP	15.142	15.142	15.142	15.142	15.143	15.143	15.142	15.042-15.242	15.142	0.000
	42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.653	10.603-10.703	+++++	+++++
	43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.212	11.162-11.262	+++++	+++++
	44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.721	11.671-11.771	+++++	+++++
	46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.089	10.989-11.189	+++++	+++++

Reviewer 1 _____ Date: 05/28/15

Reviewer 2 _____ Date: 5/28/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB1.m
Batch File: /chem2/ecd7.i/20150527.b/ical-1.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.664	11.564-11.764	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.177	12.077-12.277	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB2.m
Batch File: /chem2/ecd7.i/20150527.b/ical-2.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05271511	05271512	05271513	05271514	05271515	05271516
INJ.DATE:	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015
INJ.TIME:	18:11	18:33	18:54	19:15	19:37	19:58

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	3.699	3.697	3.695	3.696	3.698	3.696	3.694	3.594-3.794	3.697	0.001
$ 2 Tetrachloro-m-xylene	5.910	5.909	5.907	5.910	5.910	5.909	5.908	5.808-6.008	5.909	0.001
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.018	4.918-5.118	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.021	4.921-5.121	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.029	7.929-8.129	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.803	8.703-8.903	+++++	+++++
7 Aroclor-1016	8.029	8.029	8.029	8.029	8.031	8.031	8.031	7.931-8.131	8.030	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.615	10.515-10.715	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.394	12.294-12.494	+++++	+++++
9 Aroclor-1260	12.394	12.394	12.394	12.394	12.395	12.395	12.395	12.295-12.495	12.394	0.000
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.569	13.469-13.669	+++++	+++++
$ 13 Decachlorobiphenyl	14.862	14.862	14.861	14.862	14.862	14.863	14.862	14.762-14.962	14.862	0.001
* 12 IS-HBBP	15.445	15.444	15.444	15.445	15.445	15.445	15.445	15.345-15.545	15.445	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.701	10.651-10.751	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.090	11.040-11.140	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.391	11.291-11.491	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.849	11.749-11.949	+++++	+++++

Reviewer 1 JR Date: 05/28/15
Reviewer 2 [illegible] Date: 5/28/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB2.m
Batch File: /chem2/ecd7.i/20150527.b/ical-2.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.280	12.180-12.380	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.117	7.017-7.217	+++++	+++++

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

ARI Job No.: IB Method: PCB1.m Instrument: ecd7.i Date: 27-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1750	05271510.d	IB		1	NO MANUAL INTEGRATION
1811	05271511.d	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1833	05271512.d	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1854	05271513.d	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1915	05271514.d	1PPMAR1660		1	NO MANUAL INTEGRATION
1937	05271515.d	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1958	05271516.d	0.5PPMAR1660		1	NO MANUAL INTEGRATION
2020	05271517.d	AR1242		1	NO MANUAL INTEGRATION
2041	05271518.d	AR1248		1	NO MANUAL INTEGRATION
2102	05271519.d	AR1254		1	NO MANUAL INTEGRATION
2124	05271520.d	AR2162		1	NO MANUAL INTEGRATION
2145	05271521.d	AR3268		1	NO MANUAL INTEGRATION
2207	05271522.d	AR1660ICV		1	NO MANUAL INTEGRATION
2228	05271523.d	AR1242ICV		1	NO MANUAL INTEGRATION
2249	05271524.d	AR1248ICV		1	NO MANUAL INTEGRATION
2311	05271525.d	AR1254ICV		1	NO MANUAL INTEGRATION
2332	05271526.d	AR2162		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2354	05271527.d	AR3268		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	27-MAY-2015 17:50	05271510.d	1	IB	
2	27-MAY-2015 18:11	05271511.d	1	0.25PPMAR1660	
3	27-MAY-2015 18:33	05271512.d	1	0.02PPMAR1660	
4	27-MAY-2015 18:54	05271513.d	1	0.05PPMAR1660	
5	27-MAY-2015 19:15	05271514.d	1	1PPMAR1660	
6	27-MAY-2015 19:37	05271515.d	1	0.1PPMAR1660	
7	27-MAY-2015 19:58	05271516.d	1	0.5PPMAR1660	
8	27-MAY-2015 20:20	05271517.d	1	AR1242	
9	27-MAY-2015 20:41	05271518.d	1	AR1248	
10	27-MAY-2015 21:02	05271519.d	1	AR1254	
11	27-MAY-2015 21:24	05271520.d	1	AR2162	
12	27-MAY-2015 21:45	05271521.d	1	AR3268	
13	27-MAY-2015 22:07	05271522.d	1	AR1660ICV	
14	27-MAY-2015 22:28	05271523.d	1	AR1242ICV	
15	27-MAY-2015 22:49	05271524.d	1	AR1248ICV	
16	27-MAY-2015 23:11	05271525.d	1	AR1254ICV	
17	27-MAY-2015 23:32	05271526.d	1	AR2162	
18	27-MAY-2015 23:54	05271527.d	1	AR3268	

MSAD - 29578

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

SDE64

Calibration File Names:
Level 1: /chem2/ecd7.i/20150527.b/ical-1.b/05271512.d
Level 2: /chem2/ecd7.i/20150527.b/ical-1.b/05271513.d
Level 3: /chem2/ecd7.i/20150527.b/ical-1.b/05271515.d
Level 4: /chem2/ecd7.i/20150527.b/ical-1.b/05271511.d
Level 5: /chem2/ecd7.i/20150527.b/ical-1.b/05271516.d
Level 6: /chem2/ecd7.i/20150527.b/ical-1.b/05271514.d
Level 7: /chem2/ecd7.i/20150527.b/ical-1.b/05271521.d
Level 8: /chem2/ecd7.i/20150527.b/ddt-1.b/05271528.d

YE33

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00326	+++++	0.00326	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.00510	+++++	0.00510	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01438	+++++	0.01438	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.02886	+++++	0.02886	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01033	+++++	0.01033	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00963	+++++	0.00963	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01442	+++++							0.01442	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00185	+++++							0.00185	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00352	+++++							0.00352	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00960	+++++							0.00960	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01605	+++++							0.01605	0.000
7 Aroclor-1016(1)	0.01358	0.01357	0.01357	0.01220	0.01205	0.01224				
	+++++	+++++							0.01287	6.025
(2)	0.04083	0.04089	0.04124	0.03709	0.03724	0.03932				
	+++++	+++++							0.03944	4.771
(3)	0.01261	0.01419	0.01422	0.01304	0.01311	0.01375				
	+++++	+++++							0.01349	4.944
(4)	0.01446	0.01469	0.01482	0.01390	0.01368	0.01435				
	+++++	+++++							0.01432	3.124

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00919	+++++	0.00919	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01954	+++++	0.01954	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02270	+++++	0.02270	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02296	+++++	0.02296	0.000
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.01461	+++++	0.01461	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02088	+++++	0.02088	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01694	+++++	0.01694	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.03196	+++++	0.03196	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.02291	+++++	0.02291	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
9 Aroclor-1260(1)	0.02997	0.02758	0.02708	0.02400	0.02350	0.02447	+++++	+++++	0.02610	9.684
(2)	0.08018	0.08338	0.08516	0.08110	0.08414	0.09286	+++++	+++++	0.08447	5.345
(3)	0.03873	0.03890	0.03983	0.03761	0.03854	0.04186	+++++	+++++	0.03924	3.731
(4)	0.02377	0.02374	0.02448	0.02275	0.02291	0.02442	+++++	+++++	0.02368	3.086
(5)	0.01234	0.01281	0.01343	0.01263	0.01294	0.01394	+++++	+++++	0.01301	4.461
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04717	+++++	0.04717	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.13122	+++++	0.13122	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.04136	+++++	0.04136	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.07177	+++++	0.07177	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06421	+++++					0.06421	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12401	+++++					0.12401	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14535	+++++					0.14535	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12995	+++++					0.12995	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.45431	+++++					0.45431	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	686					686	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	667					667	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	870					870	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1259					1259	0.000

AGAR 00533

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1017	1017	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1043	1043	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	0.52435	0.52735	0.54619	0.51871	0.54317	0.59505	+++++	+++++	0.54247	5.149
$ 13 Decachlorobiphenyl	1.03626	0.99724	1.01909	0.93885	0.97962	1.06519	+++++	+++++	1.00604	4.417

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Calibration File Names:
Level 1: /chem2/ecd7.i/20150527.b/ical-2.b/05271512.d
Level 2: /chem2/ecd7.i/20150527.b/ical-2.b/05271513.d
Level 3: /chem2/ecd7.i/20150527.b/ical-2.b/05271515.d
Level 4: /chem2/ecd7.i/20150527.b/ical-2.b/05271511.d
Level 5: /chem2/ecd7.i/20150527.b/ical-2.b/05271516.d
Level 6: /chem2/ecd7.i/20150527.b/ical-2.b/05271514.d
Level 7: /chem2/ecd7.i/20150527.b/ical-2.b/05271521.d
Level 8: /chem2/ecd7.i/20150527.b/ddt-2.b/05271528.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
1 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00831	+++++	0.00831	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01390	+++++	0.01390	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00785	+++++	0.00785	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02401	+++++	0.02401	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00505	+++++	0.00505	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01695	+++++	0.01695	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF		% RSD	
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01987	+++++	0.01987	✓	0.000	
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.01020	+++++	0.01020		0.000	
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03218	+++++	0.03218		0.000	
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.06793	+++++	0.06793	✓	0.000	
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02366	+++++	0.02366		0.000	
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02878	+++++	0.02878		0.000	
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04409	+++++	0.04409		0.000	
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03523	+++++	0.03523	✓	0.000	
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03734	+++++	0.03734		0.000	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04820	+++++	0.04820	0.000
7 Aroclor-1016(1)	0.04972	0.04779	0.04653	0.04082	0.03905	0.03918	+++++	+++++	0.04385	10.753
(2)	0.10420	0.09885	0.09747	0.08636	0.08466	0.08713	+++++	+++++	0.09311	8.694
(3)	0.02641	0.02558	0.02523	0.02237	0.02200	0.02254	+++++	+++++	0.02402	8.028
(4)	0.01851	0.01814	0.01795	0.01582	0.01544	0.01595	+++++	+++++	0.01697	8.087
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04214	+++++	0.04214	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01997	+++++	0.01997	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03293	+++++	0.03293	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.07025	+++++	0.07025	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.04197	+++++	0.04197	0.000
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.12680	+++++	0.12680	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.11918	+++++	0.11918	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.24458	+++++	0.24458	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.10546	+++++	0.10546	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.08290	+++++	0.08290	0.000
9 Aroclor-1260(1)	0.08448	0.07743	0.07497	0.06642	0.06361	0.06347	+++++	+++++	0.07173	11.960
(2)	0.17811	0.17649	0.17306	0.15917	0.15655	0.15914	+++++	+++++	0.16709	5.880
(3)	0.05734	0.05431	0.05309	0.04683	0.04662	0.04620	+++++	+++++	0.05073	9.442

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	0.12245	0.11651	0.11547	0.10218	0.10211	0.10183		
	+++++	+++++					0.11009	8.301
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.18747	+++++					0.18747	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.17713	+++++					0.17713	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14275	+++++					0.14275	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.40246	+++++					0.40246	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	708					708	0.000
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1104					1104	0.000
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	666					666	0.000
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	825					825	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	954	954	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene	1.11693	1.07901	1.10652	1.02308	1.04522	1.10241	+++++	+++++	1.07886	✓ 3.471
$ 13 Decachlorobiphenyl	1.06750	1.00112	0.99763	0.89052	0.90874	0.92137	+++++	+++++	0.96448	✓ 7.107

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271510.d
Data file 2: 20150527.b/ical-2.b/05271510.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 27-MAY-2015 17:50
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.342	-0.001	693959	5.907	-0.001	3342051	19.1	19.4	1.5	Tetrachloro-m-xylene
14.889	0.000	2802412	14.862	0.000	4111207	40.2	38.6	4.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	47.7	48.4
Decachlorobiphenyl	100.4	96.5

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5364462	-1.6
Hexabromobiphenyl	5633814	5547552	-1.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12796516	-2.0
Hexabromobiphenyl	8980422	8835826	-1.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

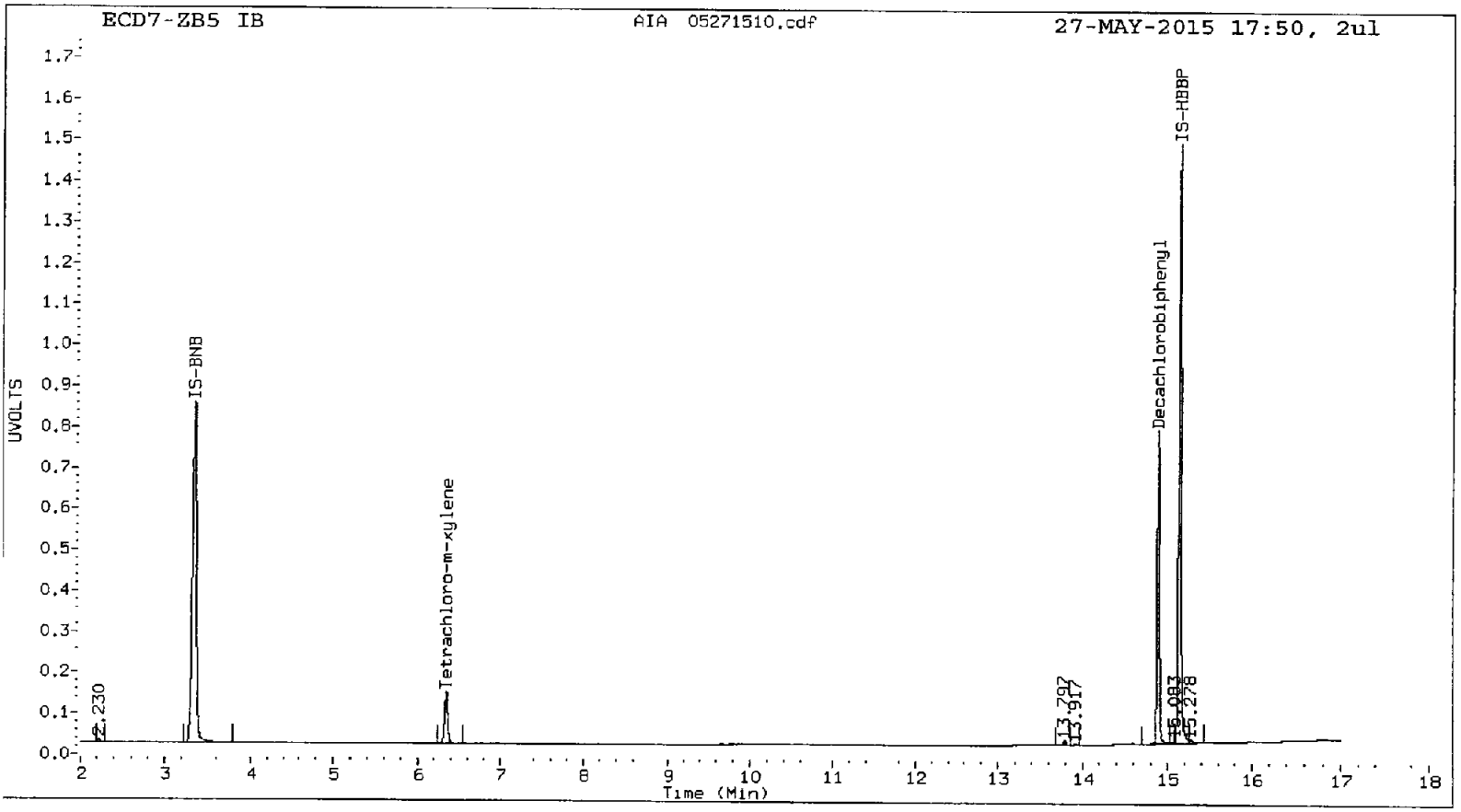
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	12.431	0.037	14830	1.1
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	14.250	0.038	46157	5.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.443 - 14.789) = 57680 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 293463 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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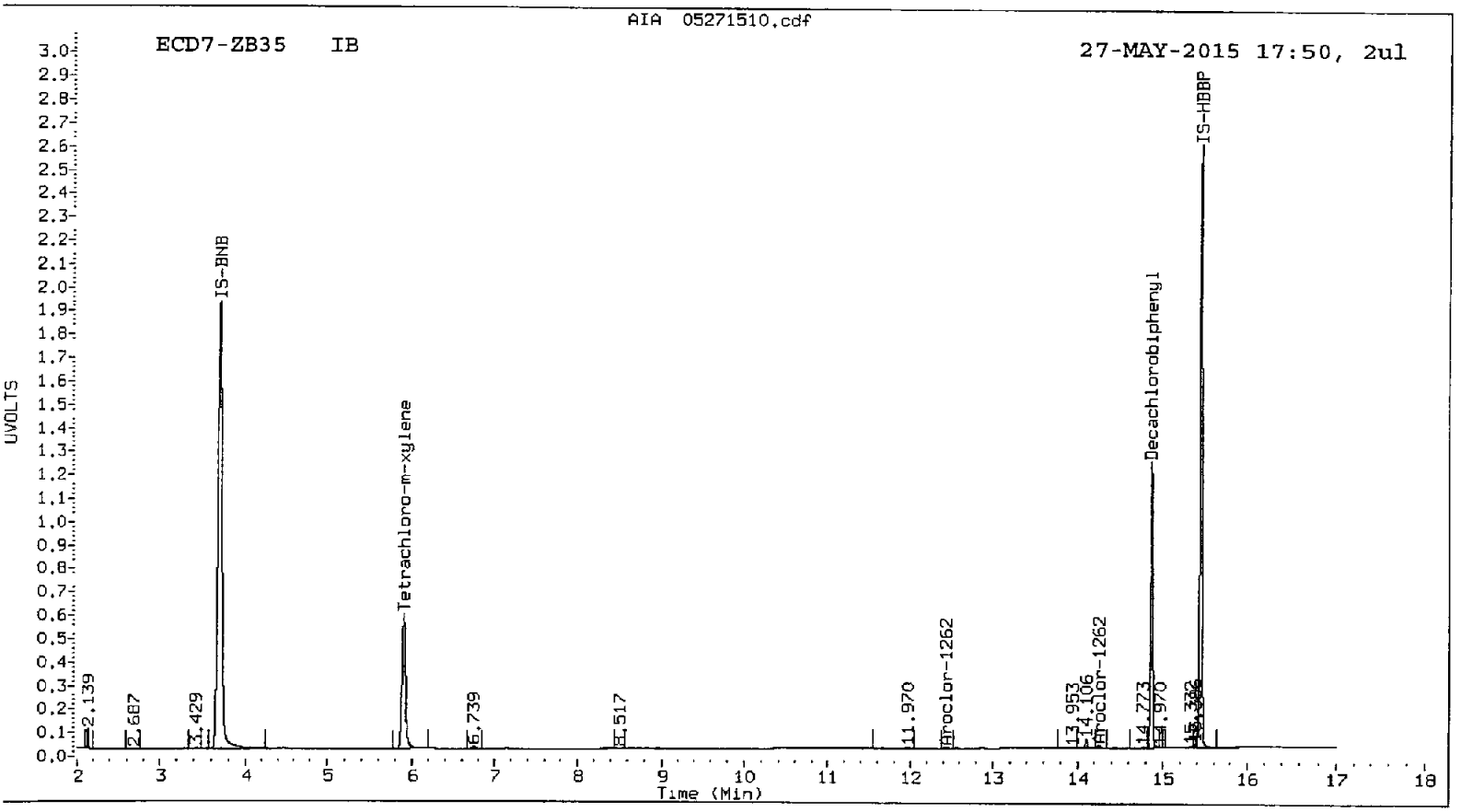
AIA 05271510.cdf
27-MAY-2015 17:50, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.230
13.797
13.917
15.083
15.278
Time (Min)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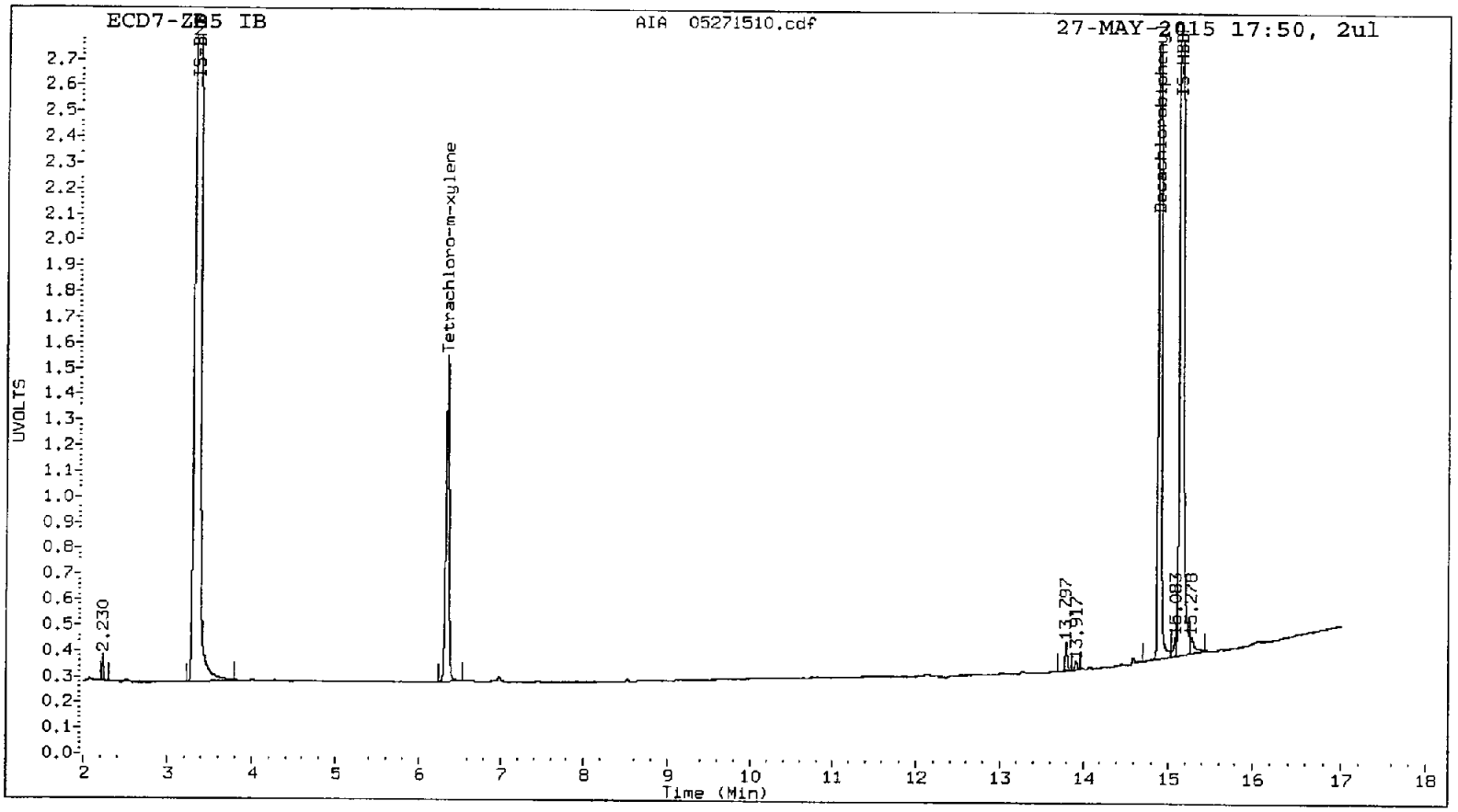
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1262
Aroclor-1262
2.139
2.687
3.429
5.739
8.517
11.970
13.953
14.106
14.723
14.970
Time (Min)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AIA 05271510.cdf
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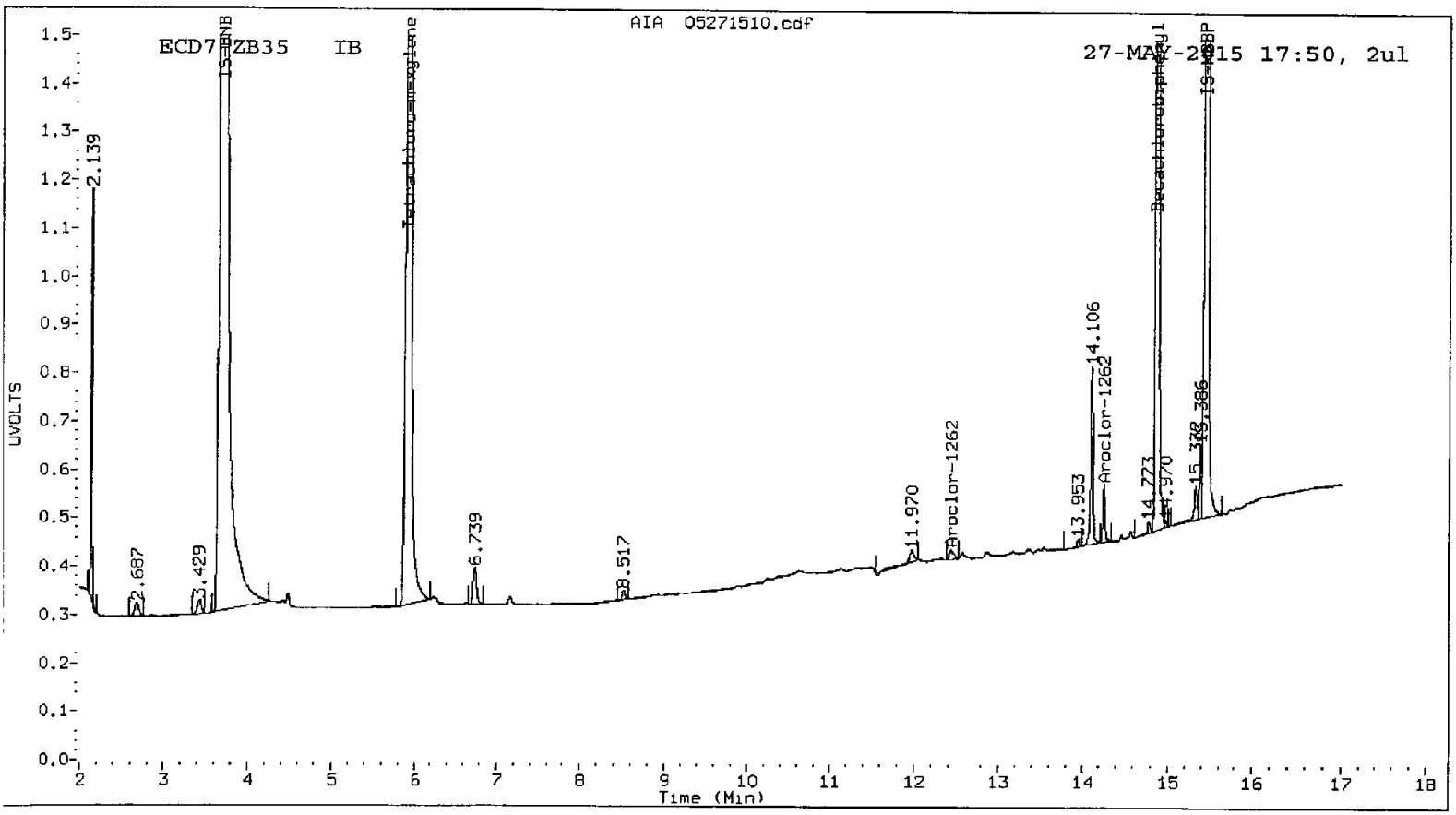
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.230
13.797
13.917
16.083
15.278
UVOLTS
Time (Min)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AIA 05271510.cdf
27-MAY-2015 17:50, 2ul
IS-HBB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.139
2.687
3.429
6.739
8.517
11.970
Aroclor-1262
13.953
14.106
Aroclor-1262
14.773
14.970
15.378
15.386
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271511.d
Data file 2: 20150527.b/ical-2.b/05271511.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:11
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.002	706669	5.910	0.002	3340230	19.1	19.0	0.8	Tetrachloro-m-xylene
14.889	0.000	1322328	14.862	0.000	1999318	18.7	18.5	1.1	Decachlorobiphenyl

t Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

1 05/29/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	47.8	47.4
Decachlorobiphenyl	46.7	46.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5449431	0.0
Hexabromobiphenyl	5633814	5633814	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13059494	0.0
Hexabromobiphenyl	8980422	8980422	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAB 08596

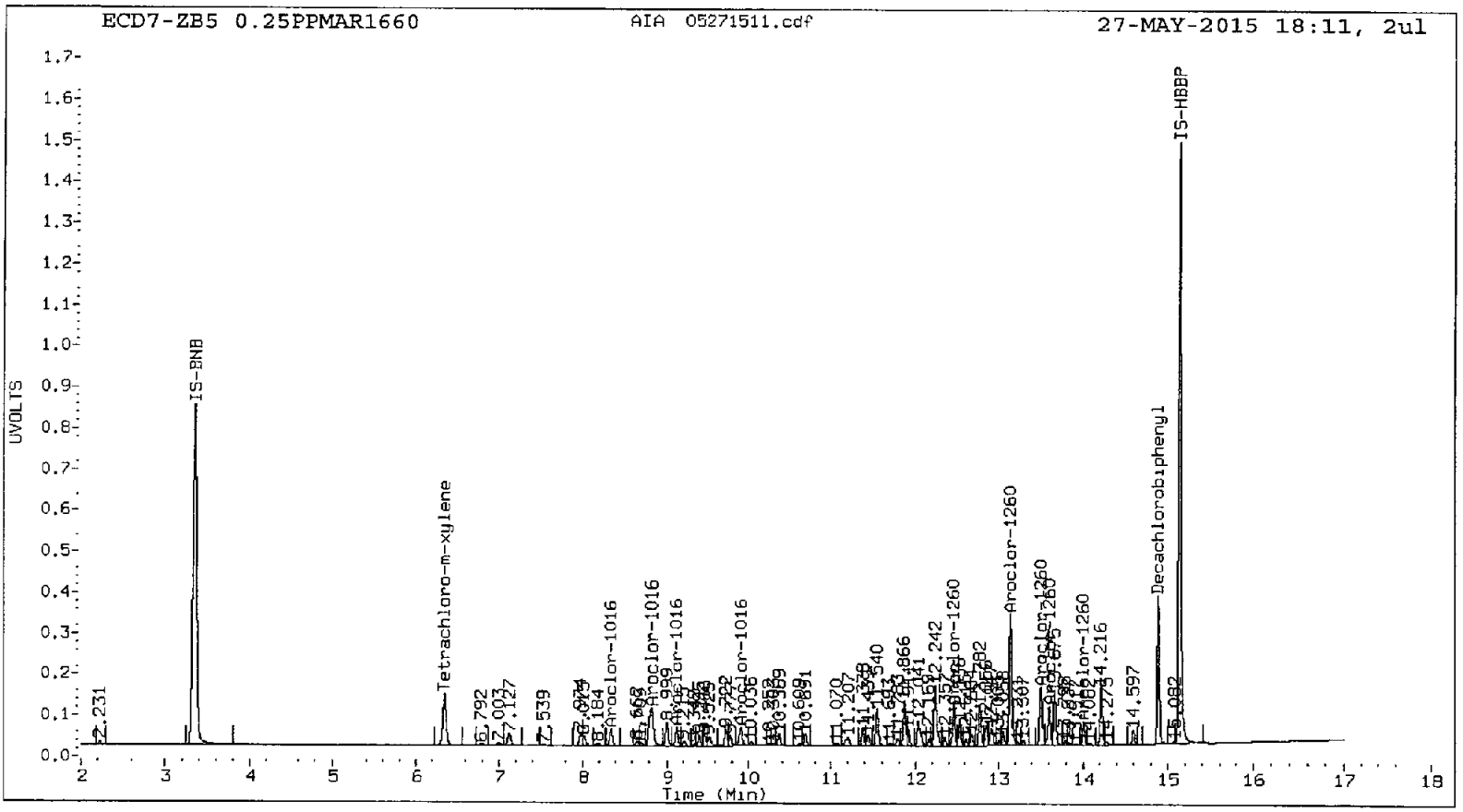
Aroclor	Peak#	RT	Shift	ZB5 Col Area	ZB5 Col Amount	Peak#	RT	Shift	ZB35 Col Area	ZB35 Col Amount
Aroclor-1016	1	8.346	-0.001	207713	237.0	1	8.029	-0.002	1665955	232.7
Aroclor-1016	2	8.831	0.000	631583	235.1	2	8.808	0.001	3524576	231.9
Aroclor-1016	3	9.127	-0.002	222143	241.8	3	9.246	-0.002	913106	232.9
Aroclor-1016	4	9.911	-0.001	236641	242.7	4	10.009	-0.001	645674	233.1
Total Col1Ave (4 peaks):					239.1	Total Col2Ave (4 peaks):				232.6 RPD = 3
Corrected Ave (3 peaks):					238.0	Corrected Ave (3 peaks):				232.5 RPD = 2
CalAmt %D:					-4.3	CalAmt %D:				-6.9
Aroclor-1260	1	12.468	-0.001	422529	229.9	1	12.394	-0.001	1863920	231.5
Aroclor-1260	2	13.143	-0.001	1427781	240.0	2	13.100	-0.001	4466798	238.1
Aroclor-1260	3	13.513	-0.002	662195	239.6	3	13.571	-0.001	1314314	230.8
Aroclor-1260	4	13.612	-0.001	400456	240.1	4	13.623	-0.001	2867509	232.0
Aroclor-1260	5	14.011	-0.001	222390	242.7	NS	---			----
Total Col1Ave (5 peaks):					238.5	Total Col2Ave (4 peaks):				233.1 RPD = 2
Corrected Ave (4 peaks):					237.4	Corrected Ave (3 peaks):				231.4 RPD = 3
CalAmt %D:					-4.6	CalAmt %D:				-6.8

Total PCB Area Col1 (6.443 - 14.789) = 11981775 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 51420896 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGAB : 80537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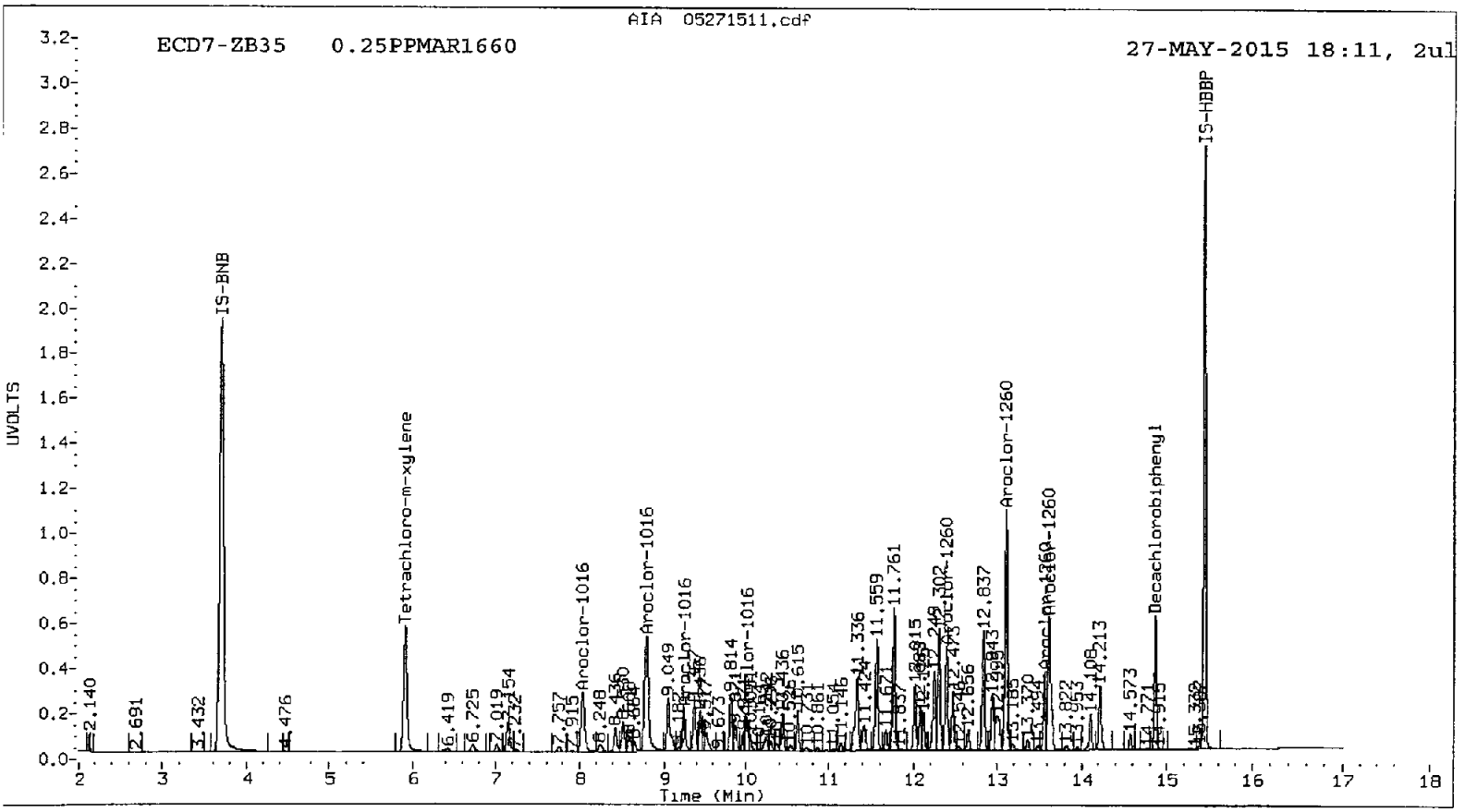
AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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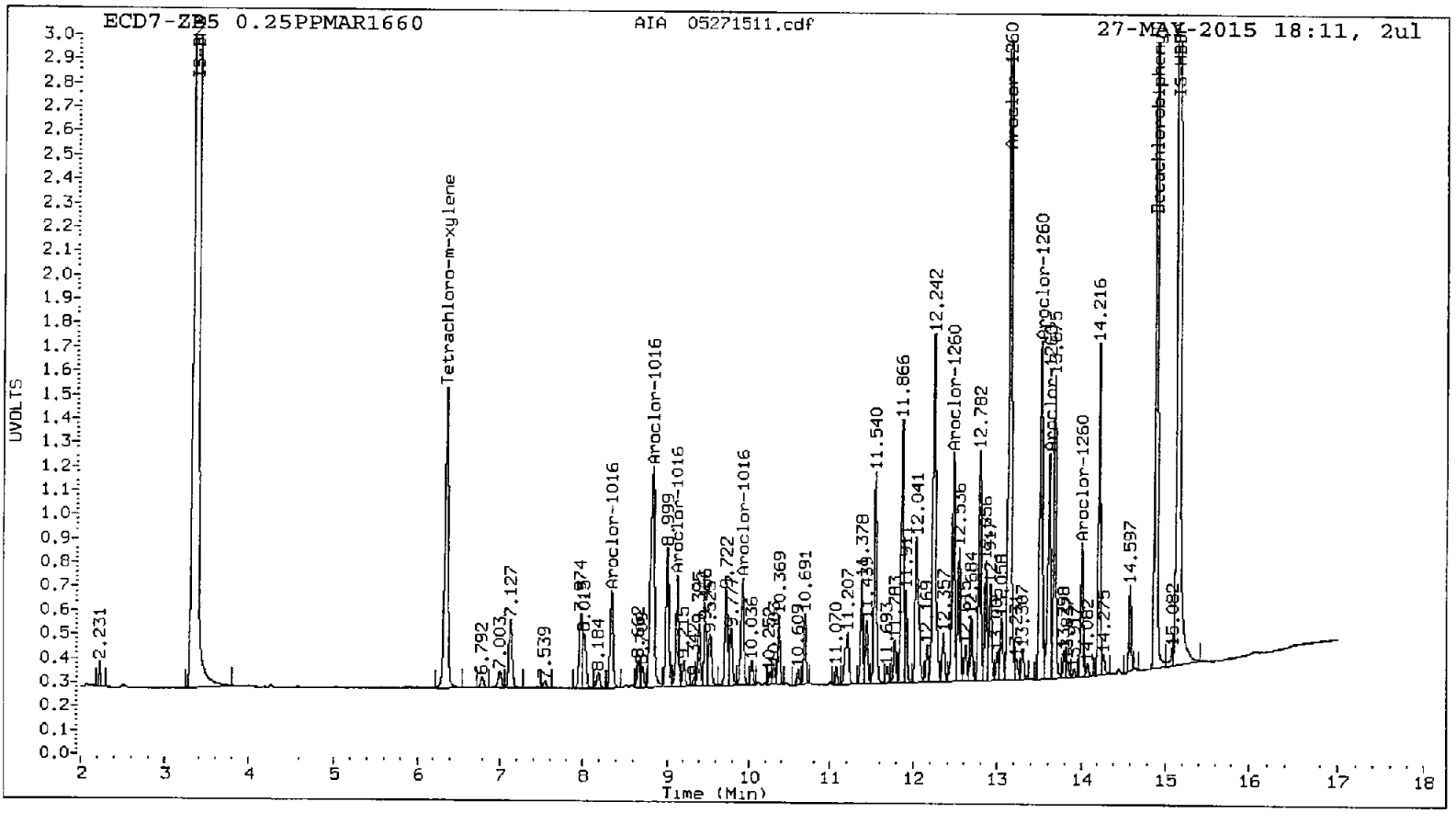
ECD7-ZB35 0.25PPMAR1660
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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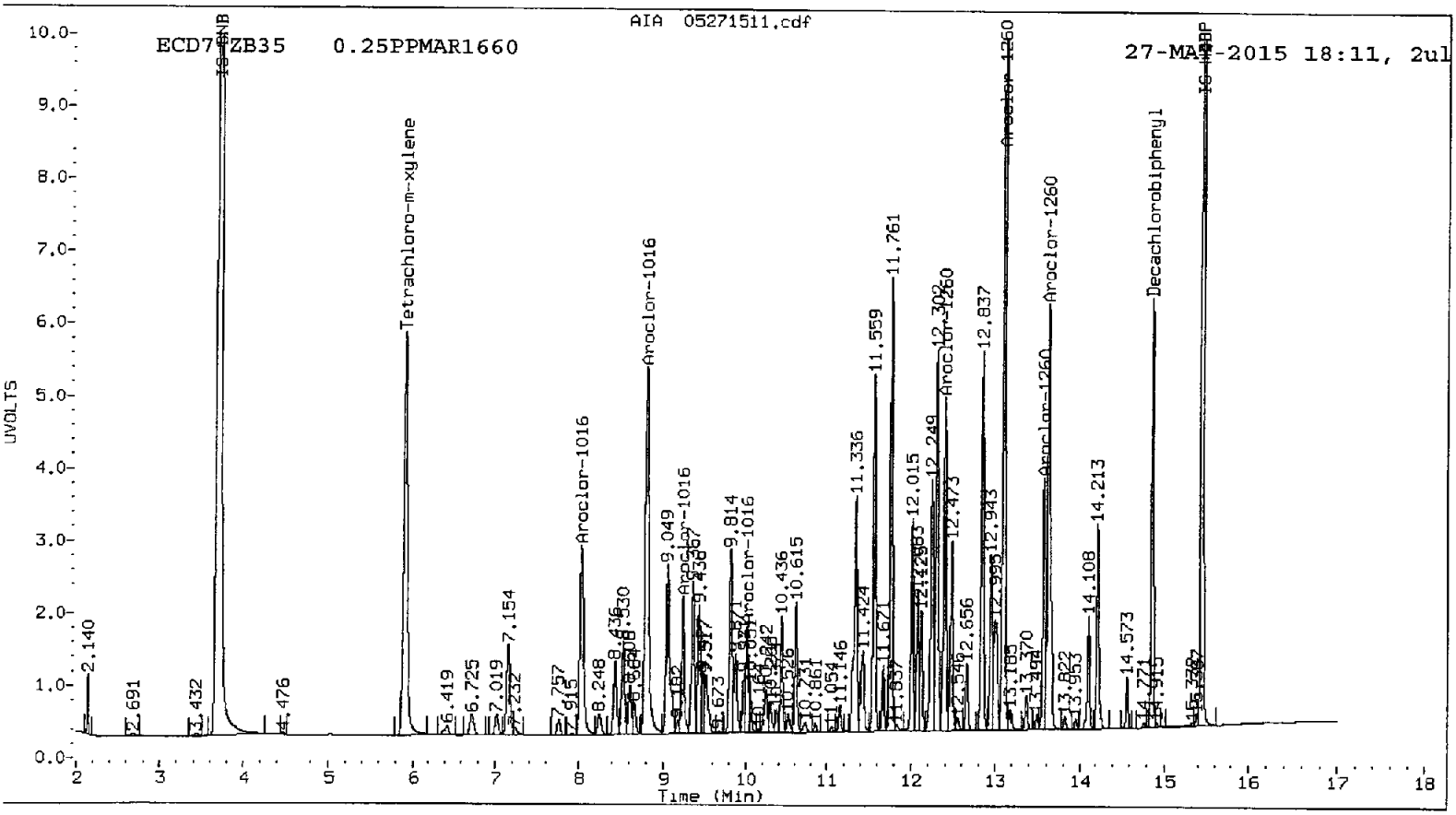
AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271512.d
Data file 2: 20150527.b/ical-2.b/05271512.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:33
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.344	0.000	57092	5.909	0.001	292135	1.5	1.7	6.9	Tetrachloro-m-xylene
14.890	0.001	117645	14.862	0.000	193634	1.6	1.8	7.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	3.9	4.1
Decachlorobiphenyl	4.1	4.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5444099	-0.1
Hexabromobiphenyl	5633814	5676446	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13077546	0.1
Hexabromobiphenyl	8980422	9069474	1.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

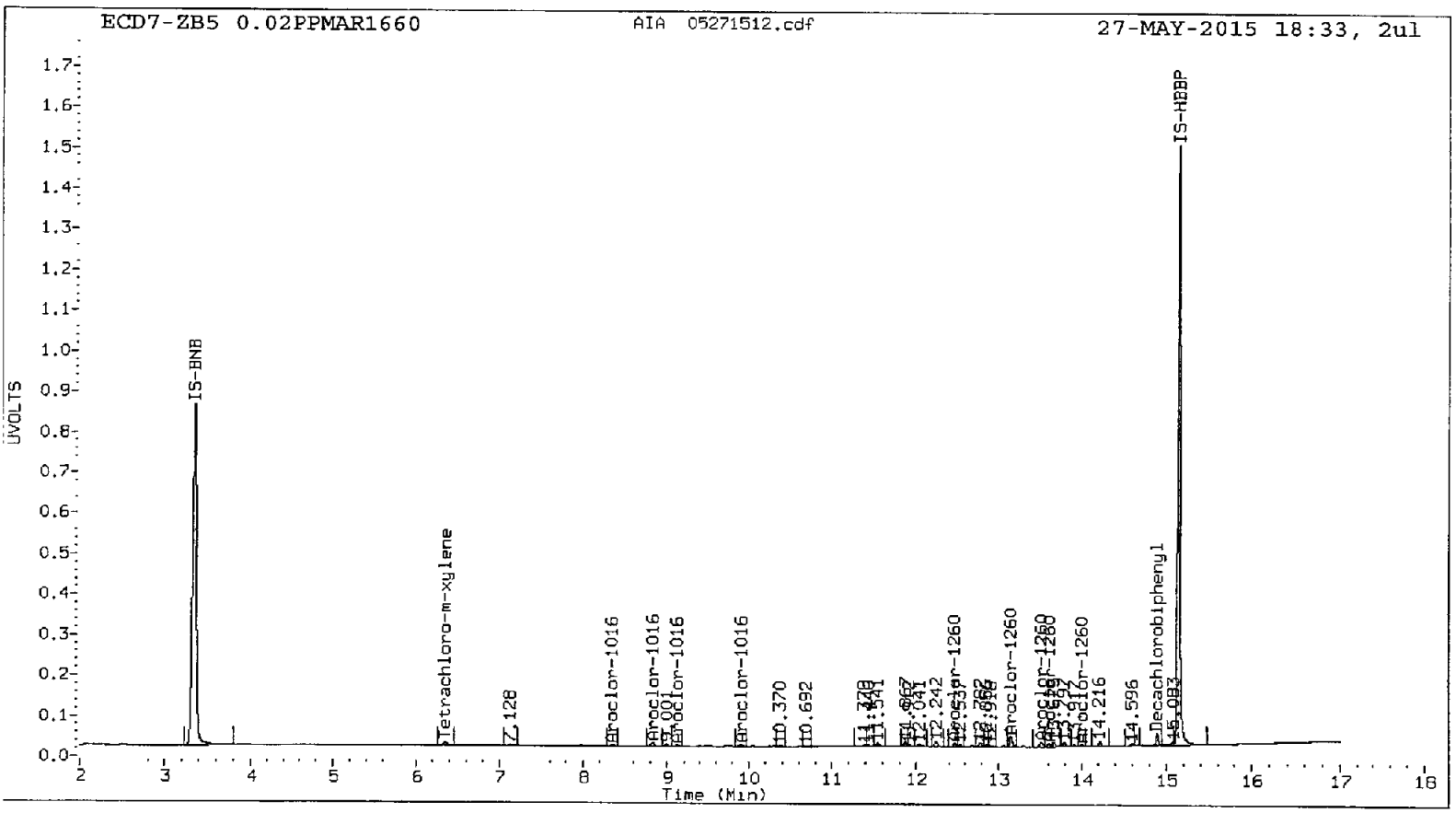
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	18479	21.1	1	8.029	-0.002	162568	22.7
Aroclor-1016	2	8.831	-0.001	55575	20.7	2	8.809	0.001	340656	22.4
Aroclor-1016	3	9.128	-0.001	17157	18.7	3	9.247	0.000	86337	22.0
Aroclor-1016	4	9.912	-0.001	19679	20.2	4	10.009	-0.001	60509	21.8
Total Col1Ave (4 peaks):					20.2	Total Col2Ave (4 peaks):				22.2 RPD = 10
Corrected Ave (3 peaks):					19.9	Corrected Ave (3 peaks):				22.1 RPD = 10
CalAmt %D:					0.9	CalAmt %D:				11.1
Aroclor-1260	1	12.469	0.000	42532	23.0	1	12.394	-0.001	191541	23.6
Aroclor-1260	2	13.144	-0.001	113778	19.0	2	13.102	0.000	403851	21.3
Aroclor-1260	3	13.513	-0.002	54959	19.7	3	13.572	0.000	130018	22.6
Aroclor-1260	4	13.613	0.000	33738	20.1	4	13.624	0.000	277647	22.2
Aroclor-1260	5	14.011	0.000	17505	19.0	NS	---			----
Total Col1Ave (5 peaks):					20.1	Total Col2Ave (4 peaks):				22.4 RPD = 11
Corrected Ave (4 peaks):					19.4	Corrected Ave (3 peaks):				22.1 RPD = 13
CalAmt %D:					0.7	CalAmt %D:				12.2

Total PCB Area Col1 (6.443 - 14.789) = 917096 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 5083290 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGAS 00601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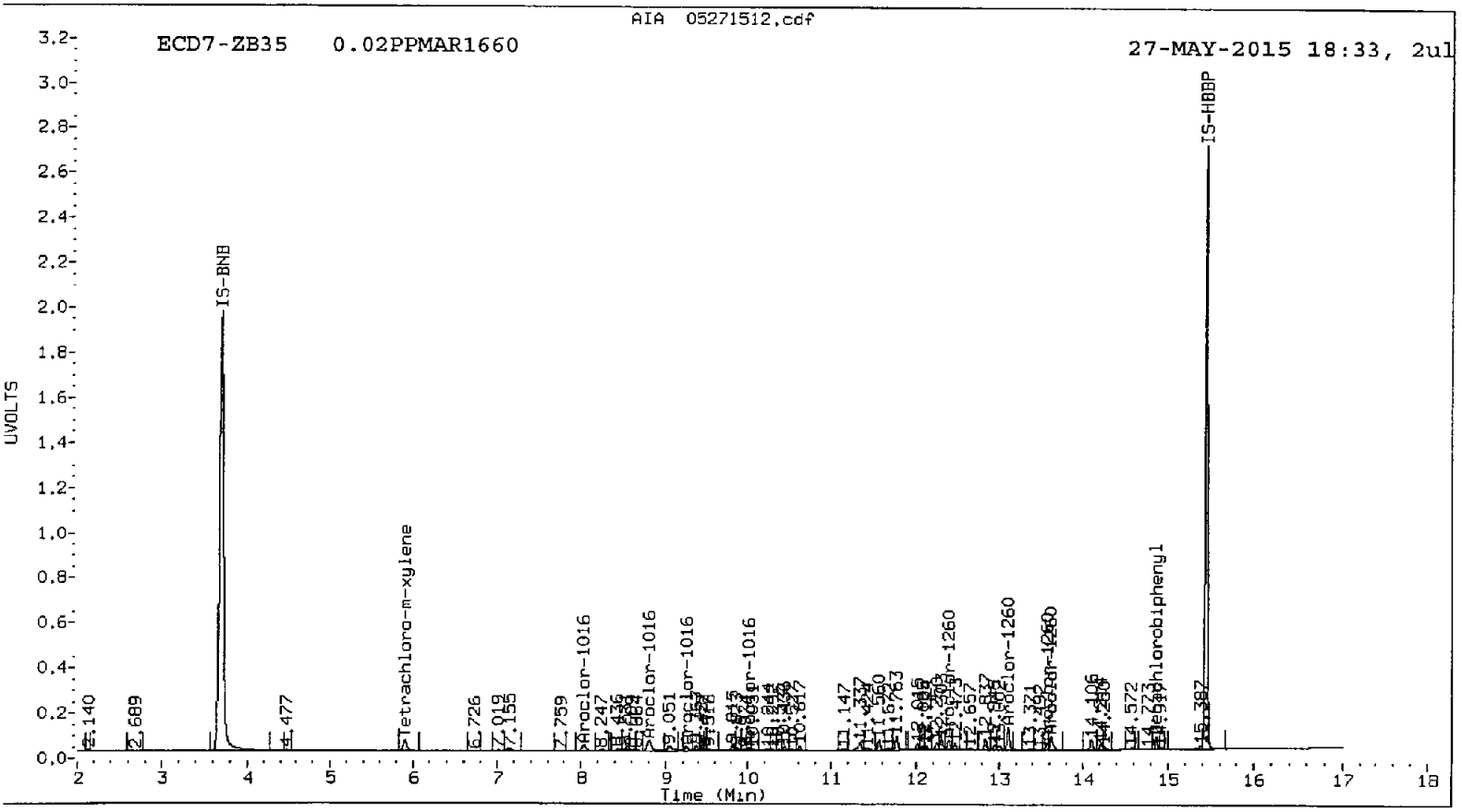
AIA 05271512.cdf
27-MAY-2015 18:33, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
IS-HBBP
Decachlorobiphenyl
Time (Min)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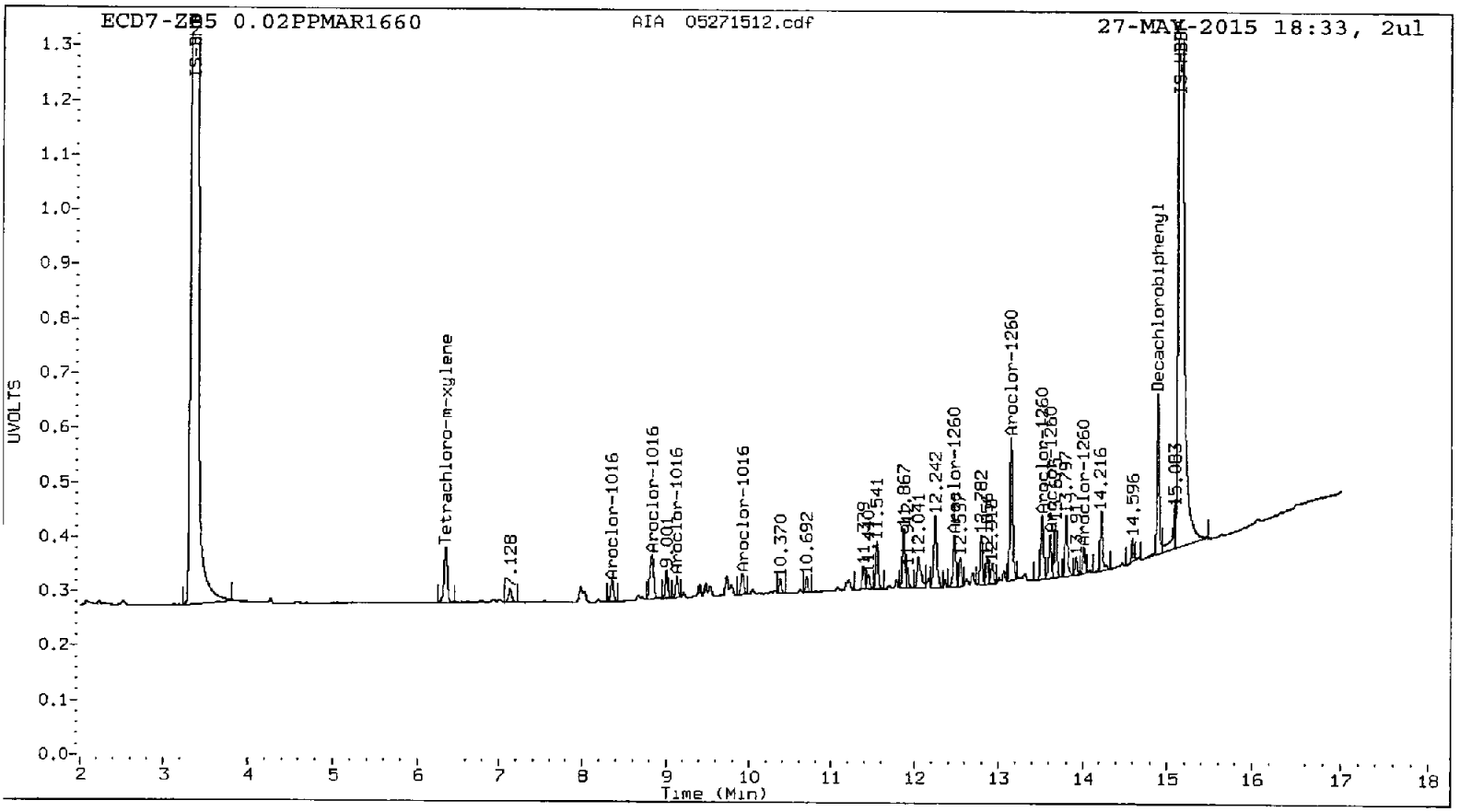
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
IS-HBBP
Decachlorobiphenyl
Time (Min)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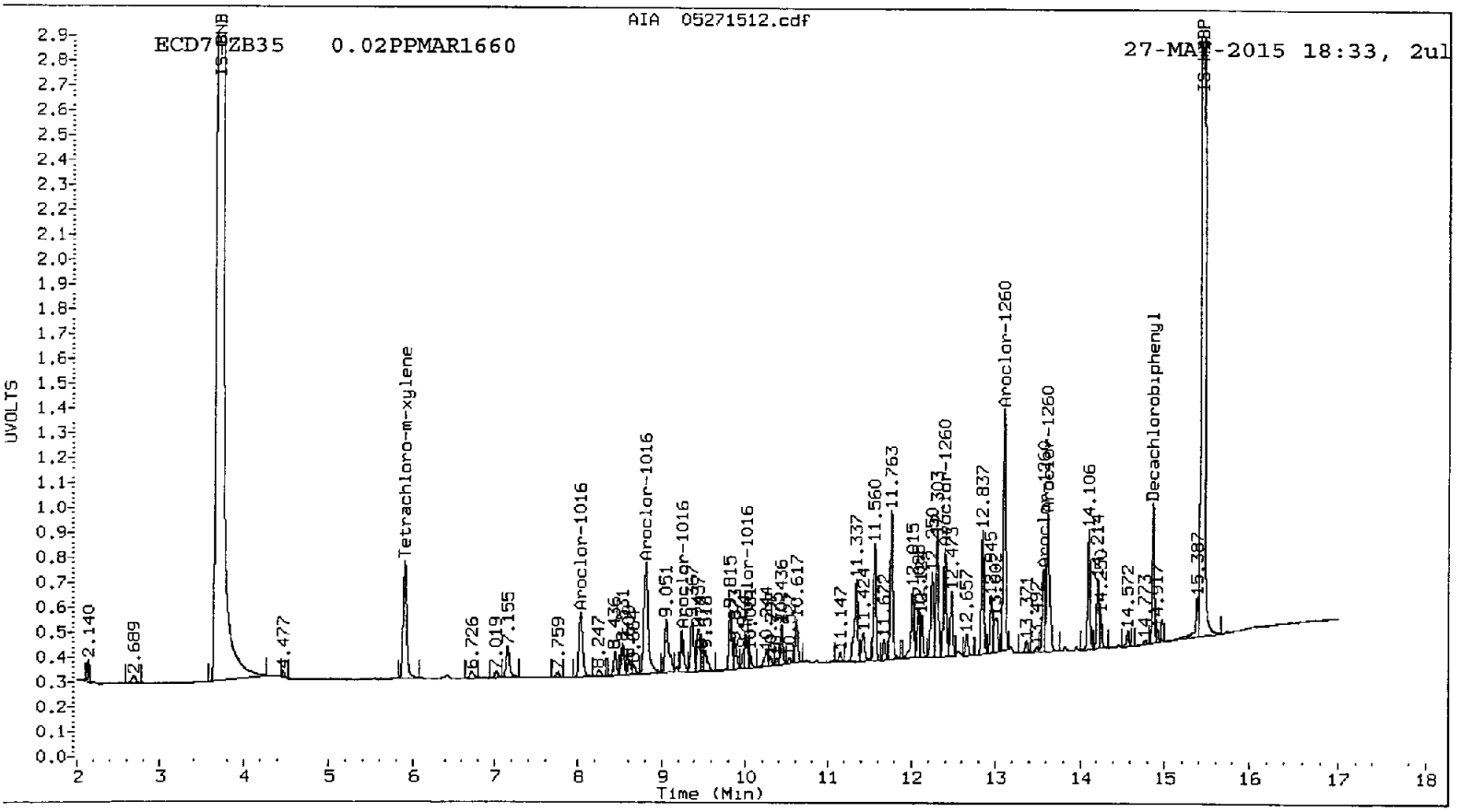
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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ECD7-ZB35 0.02PPMAR1660
27-MAY-2015 18:33, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271513.d
Data file 2: 20150527.b/ical-2.b/05271513.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:54
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.001	138921	5.907	-0.001	687323	3.9	4.0	2.8	Tetrachloro-m-xylene
14.889	0.000	273941	14.861	-0.001	443553	4.0	4.2	4.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

05/23/15

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.7	10.0
Decachlorobiphenyl	9.9	10.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5268631	-3.3
Hexabromobiphenyl	5633814	5493956	-2.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12739883	-2.4
Hexabromobiphenyl	8980422	8861124	-1.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

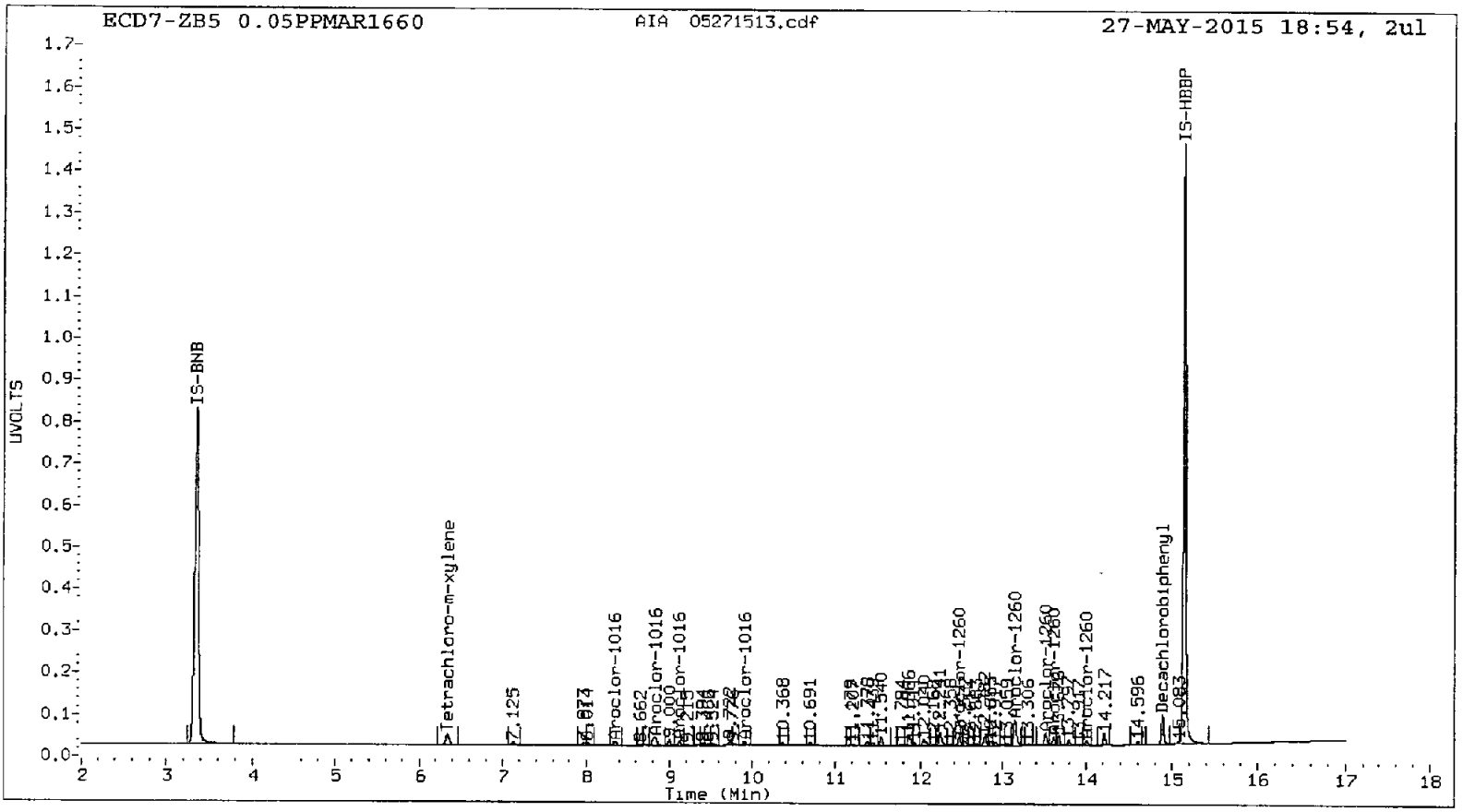
AGAR : 04534

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.345	-0.002	44685	52.7	1	8.029	-0.002	380495	54.5
Aroclor-1016	2	8.830	-0.002	134641	51.8	2	8.809	0.001	787120	53.1
Aroclor-1016	3	9.127	-0.001	46728	52.6	3	9.247	0.000	203655	53.2
Aroclor-1016	4	9.910	-0.002	48379	51.3	4	10.009	-0.001	144440	53.5
Total Col1Ave (4 peaks):					52.1	Total Col2Ave (4 peaks):				53.6 RPD = 3
Corrected Ave (3 peaks):					51.9	Corrected Ave (3 peaks):				53.3 RPD = 3
CalAmt %D:					4.2	CalAmt %D:				7.1
Aroclor-1260	1	12.468	-0.001	94690	52.8	1	12.394	-0.001	428821	54.0
Aroclor-1260	2	13.143	-0.001	286305	49.4	2	13.101	-0.001	977460	52.8
Aroclor-1260	3	13.513	-0.001	133583	49.6	3	13.571	-0.001	300793	53.5
Aroclor-1260	4	13.612	-0.001	81530	50.1	4	13.622	-0.002	645251	52.9
Aroclor-1260	5	14.011	-0.001	43978	49.2	NS	---			----
Total Col1Ave (5 peaks):					50.2	Total Col2Ave (4 peaks):				53.3 RPD = 6
Corrected Ave (4 peaks):					49.6	Corrected Ave (3 peaks):				53.1 RPD = 7
CalAmt %D:					0.4	CalAmt %D:				6.6

Total PCB Area Col1 (6.443 - 14.789) = 2455199 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 11769510 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical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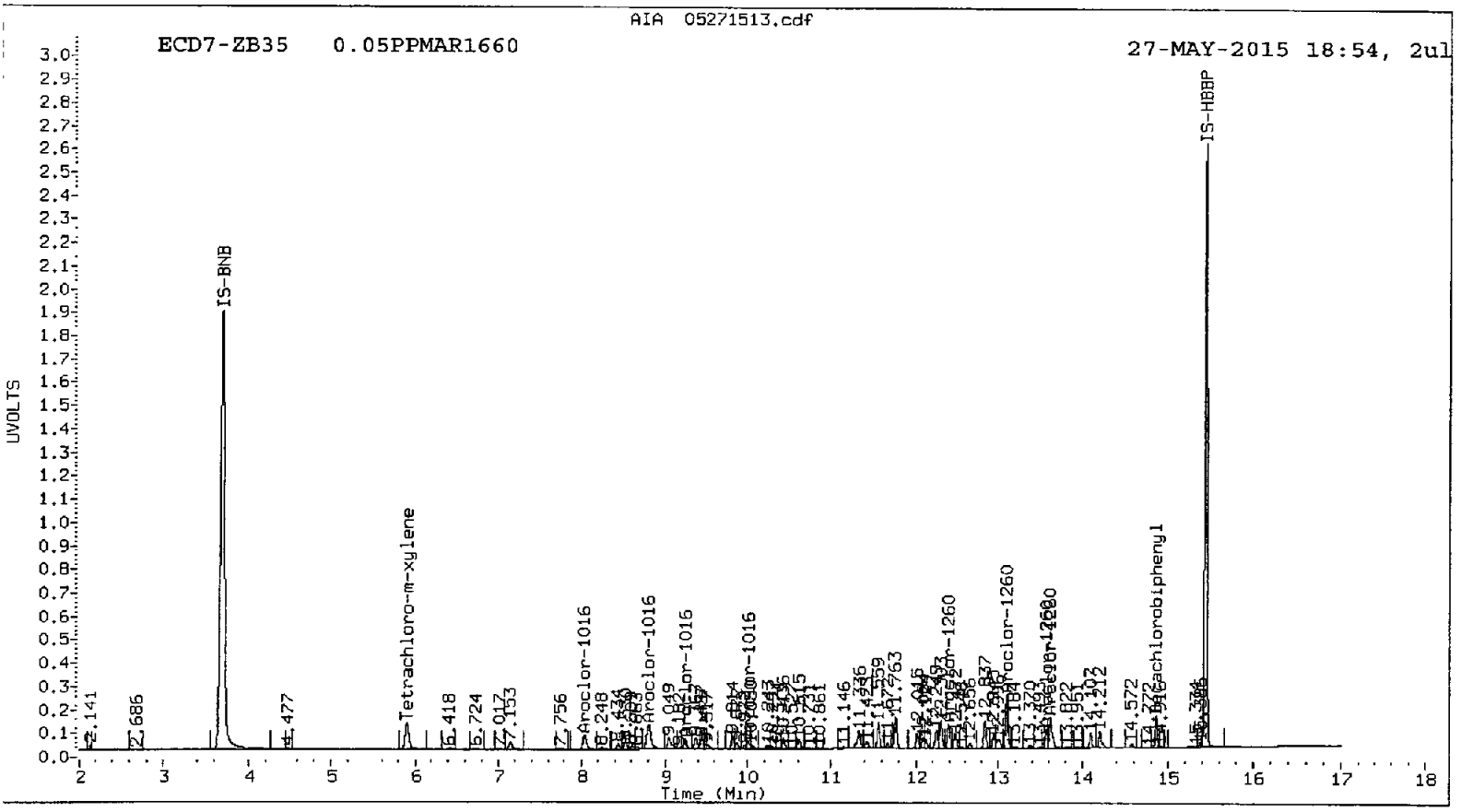
27-MAY-2015 18:54, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl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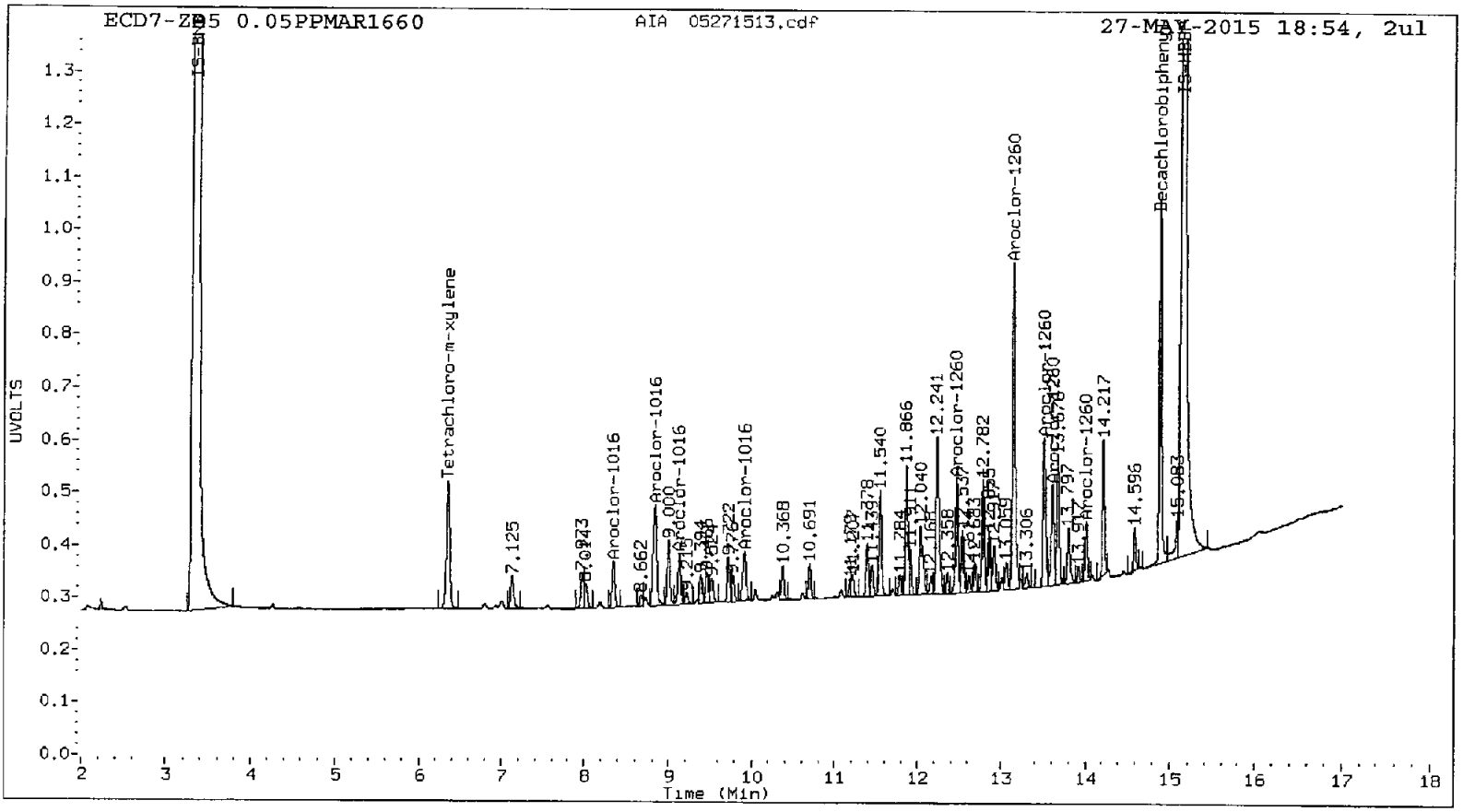
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP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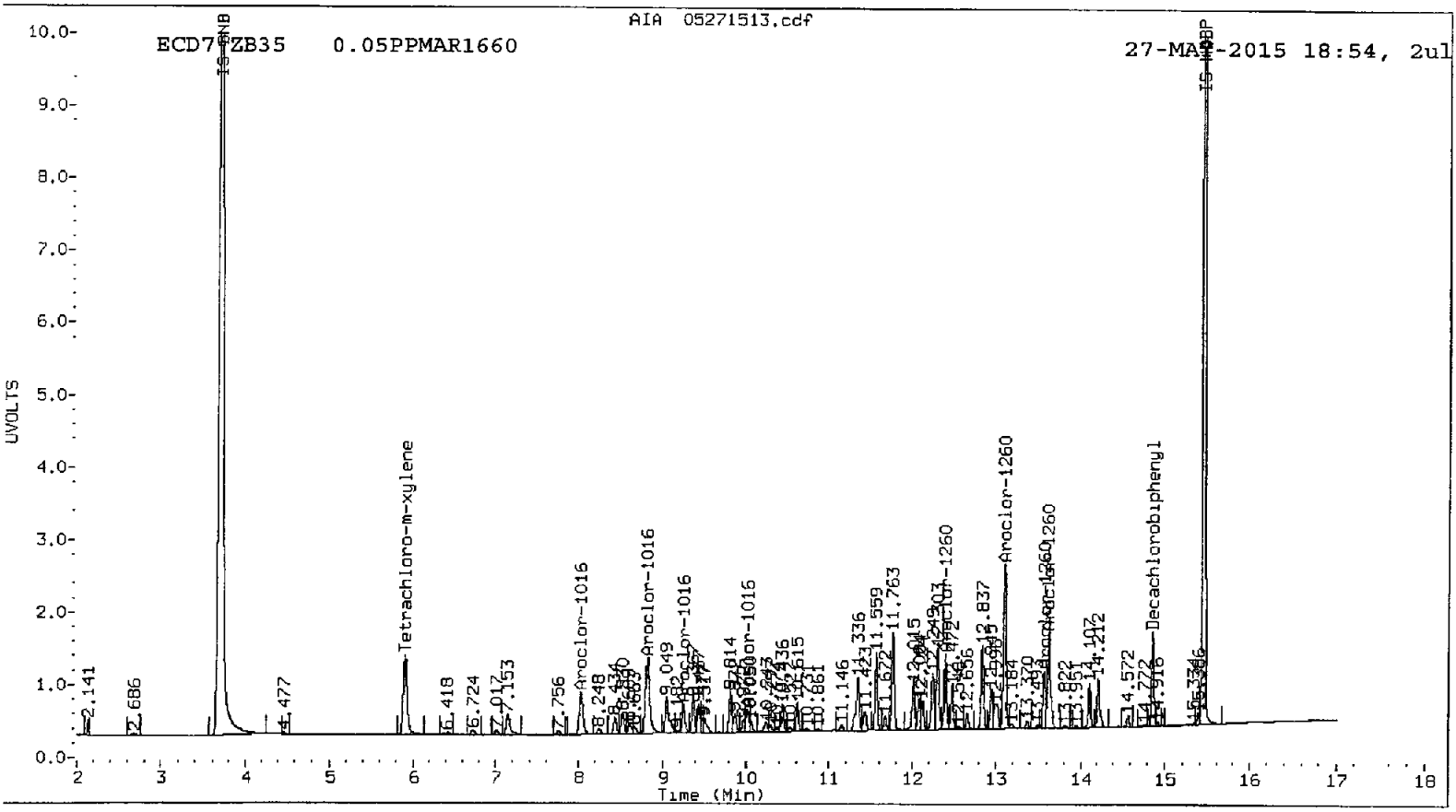
27-MAY-2015 18:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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27-MAY-2015 18:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271514.d
Data file 2: 20150527.b/ical-2.b/05271514.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:15
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.344	0.000	2882414	5.910	0.002	12810289	87.8	81.7	7.1	Tetrachloro-m-xylene
14.889	0.000	5331373	14.862	0.000	7853980	84.7	76.4	10.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

JK 05/28/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	219.4	204.4
Decachlorobiphenyl	211.8	191.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	4843983	-11.1
Hexabromobiphenyl	5633814	5005102	-11.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	11620227	-11.0
Hexabromobiphenyl	8980422	8524199	-5.1

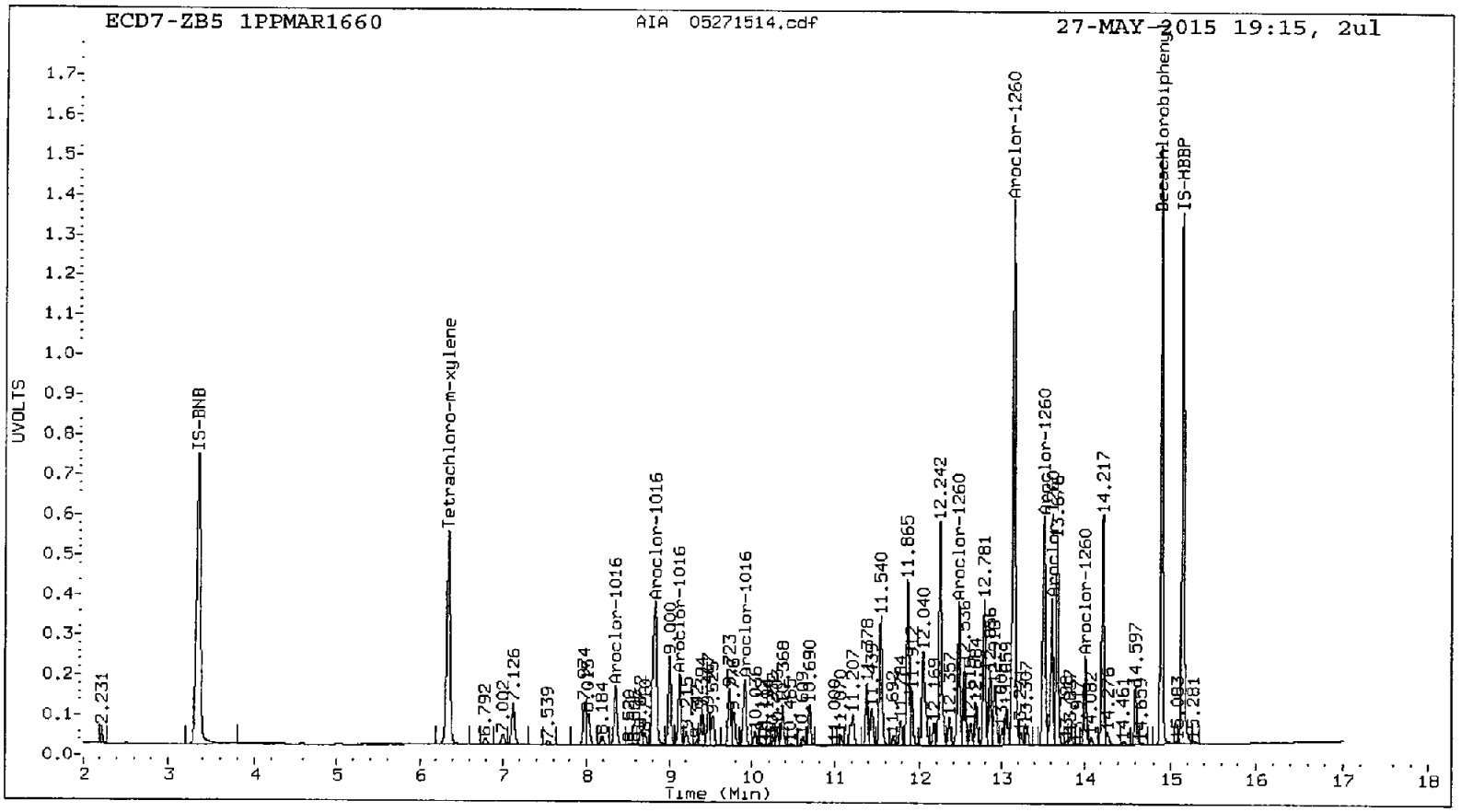
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	741024	951.1	1	8.029	-0.002	5691193	893.5
Aroclor-1016	2	8.831	0.000	2380984	997.1	2	8.805	-0.003	12655187	935.7
Aroclor-1016	3	9.127	-0.002	832842	1019.7	3	9.246	-0.002	3273725	938.3
Aroclor-1016	4	9.912	-0.001	869109	1002.7	4	10.009	-0.001	2316782	940.0
Total Col1Ave (4 peaks):				992.7		Total Col2Ave (4 peaks):			926.9	RPD = 7
Corrected Ave (3 peaks):				983.6		Corrected Ave (3 peaks):			922.5	RPD = 6
CalAmt %D:				-0.7		CalAmt %D:			-7.3	
Aroclor-1260	1	12.468	0.000	1530628	937.4	1	12.394	-0.001	6762544	884.8
Aroclor-1260	2	13.144	-0.001	5809504	1099.3	2	13.100	-0.002	16956803	952.4
Aroclor-1260	3	13.514	0.000	2618806	1066.6	3	13.571	-0.001	4922721	910.6
Aroclor-1260	4	13.612	-0.001	1527909	1031.3	4	13.623	0.000	10850121	925.0
Aroclor-1260	5	14.011	-0.001	872237	1071.3	NS	---			----
Total Col1Ave (5 peaks):				1041.2		Total Col2Ave (4 peaks):			918.2	RPD = 13
Corrected Ave (4 peaks):				1026.7		Corrected Ave (3 peaks):			906.8	RPD = 12
CalAmt %D:				4.1		CalAmt %D:			-8.2	

Total PCB Area Col1 (6.443 - 14.789) = 45014113 Col1 Total PCB = 2.1 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 185578222 Col2 Total PCB = 2.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical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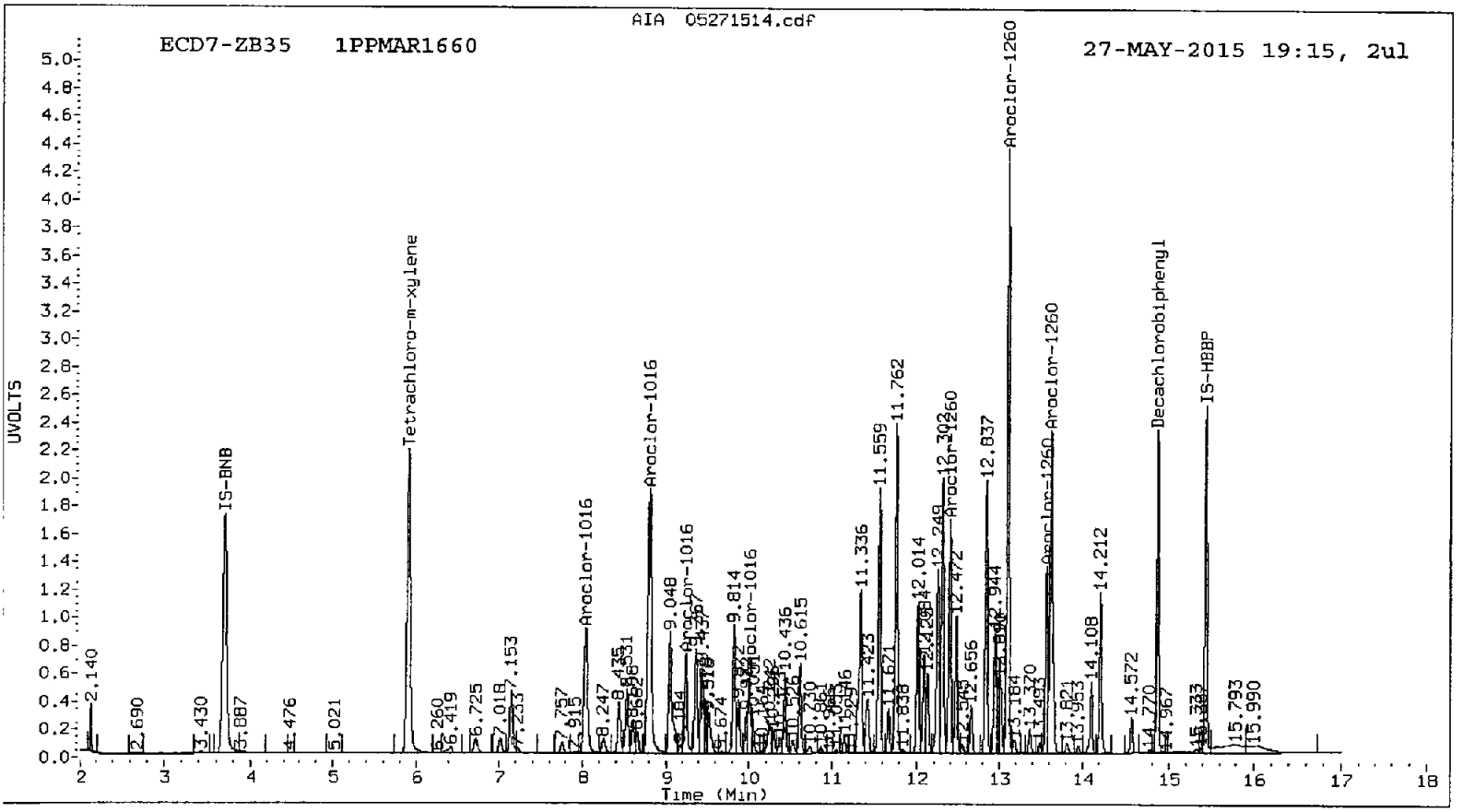
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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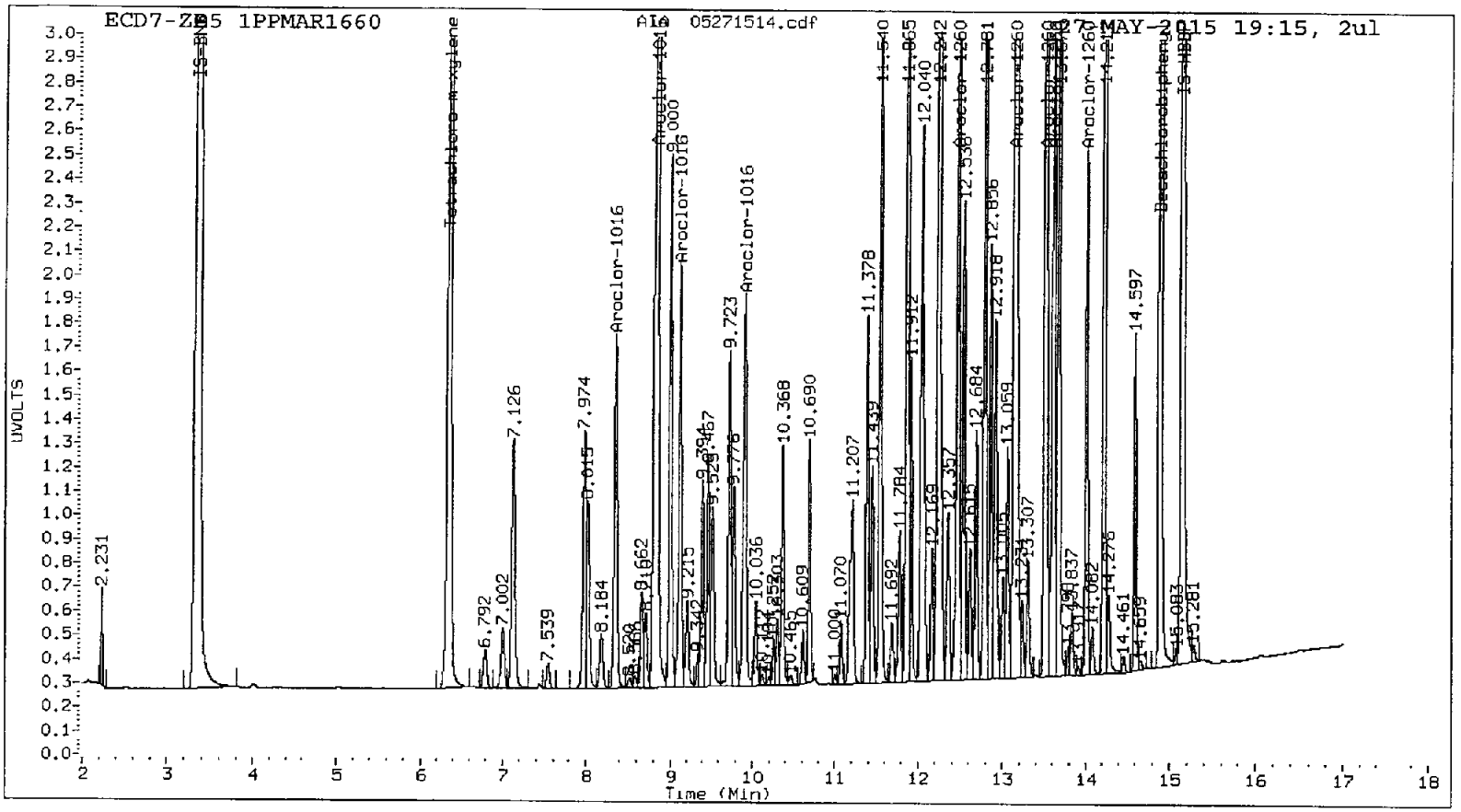
ECD7-ZB35 1PPMAR1660
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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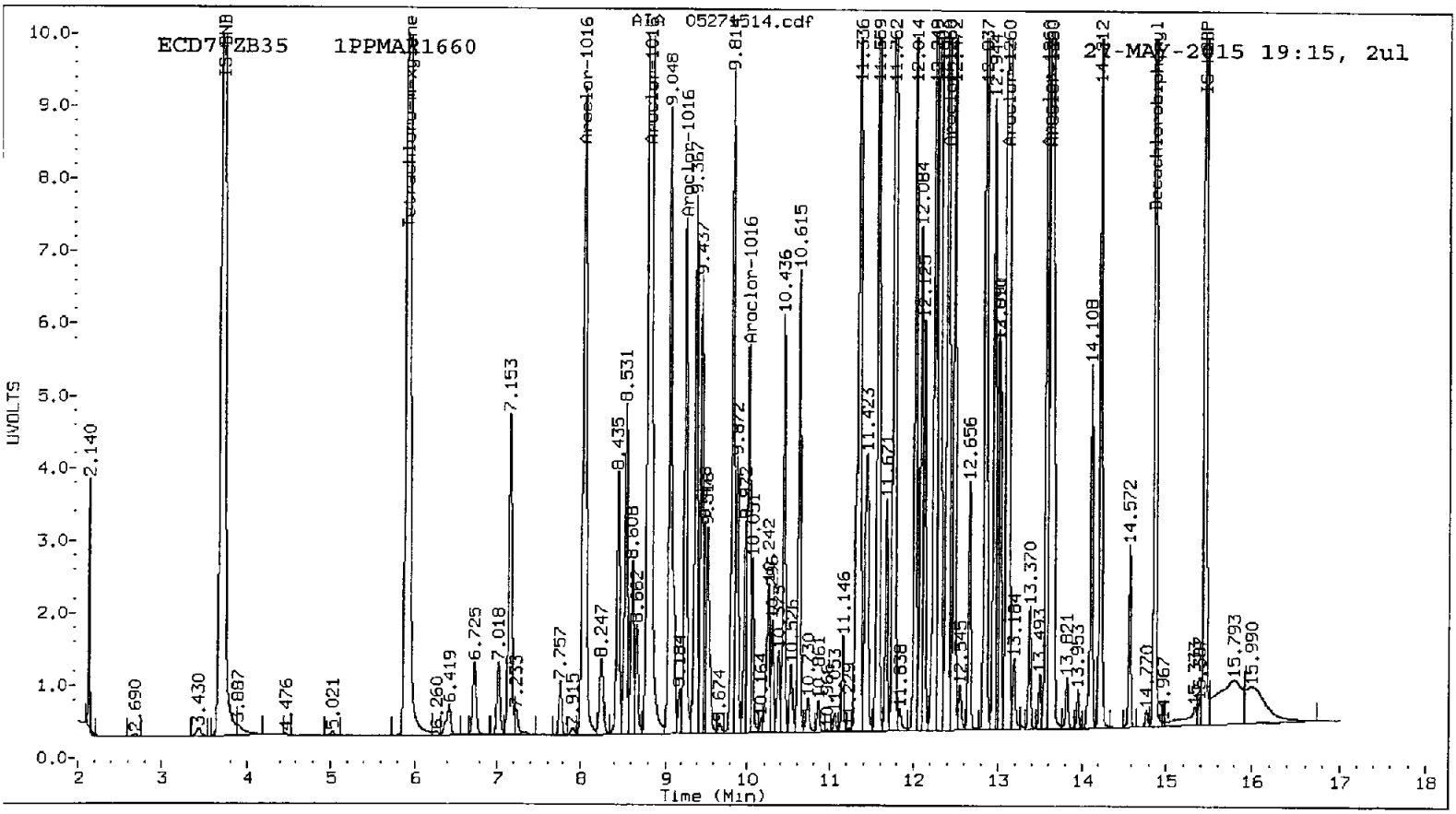
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
IS-DNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 1PPMAR1660
A1a 05271514.cdf
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
IS-DNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271515.d
Data file 2: 20150527.b/ical-2.b/05271515.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:37
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.001	282130	5.910	0.002	1391197	8.1	8.2	1.8	Tetrachloro-m-xylene
14.890	0.001	549031	14.862	-0.001	888566	8.1	8.3	2.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	20.1	20.5
Decachlorobiphenyl	20.3	20.7

05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5165460	-5.2
Hexabromobiphenyl	5633814	5387445	-4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12572695	-3.7
Hexabromobiphenyl	8980422	8906734	-0.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

ARI : 08612

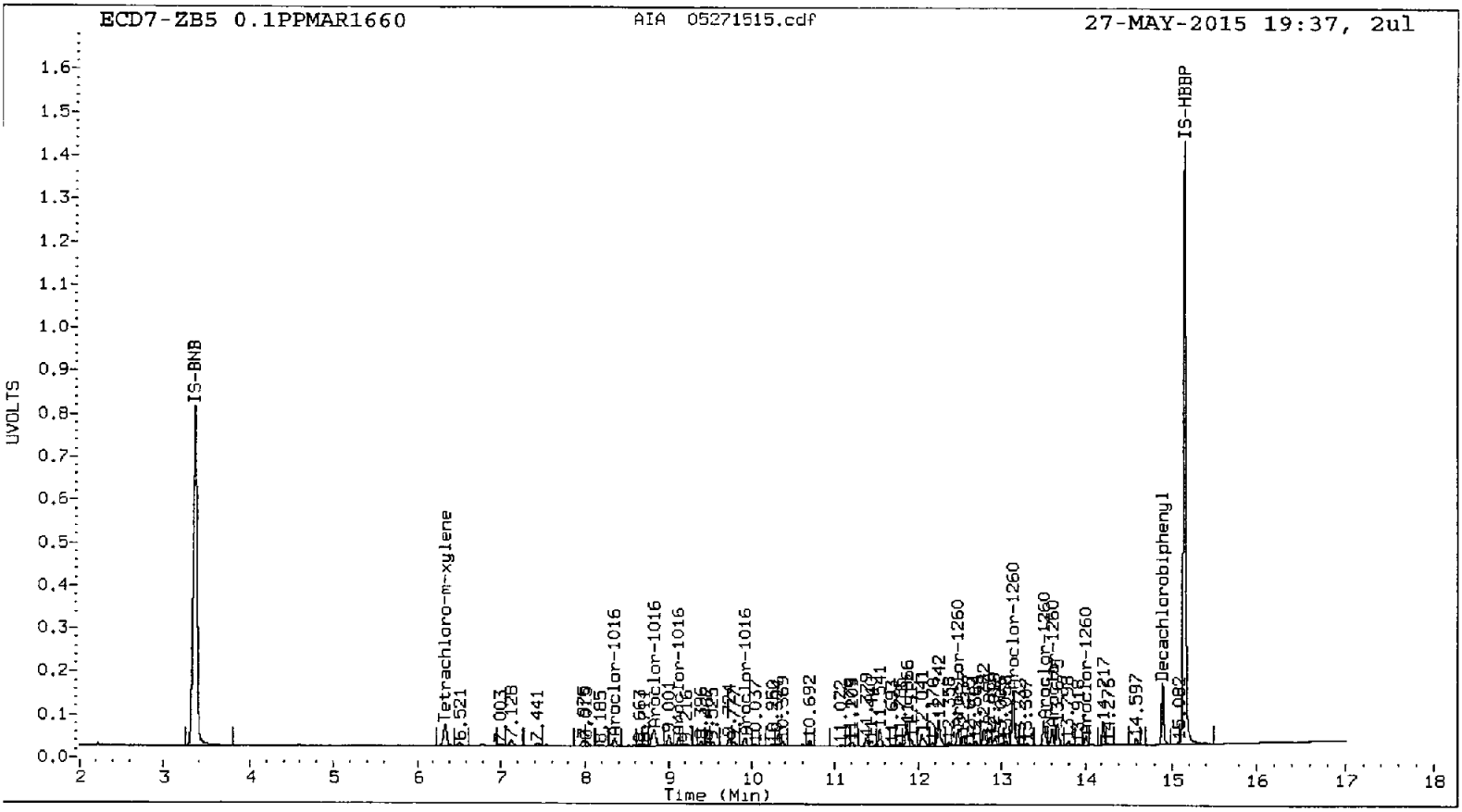
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.347	0.000	87623	105.5	1	8.031	0.000	731291	106.1
Aroclor-1016	2	8.832	0.000	266305	104.6	2	8.809	0.002	1531751	104.7
Aroclor-1016	3	9.128	-0.001	91848	105.5	3	9.248	0.001	396569	105.0
Aroclor-1016	4	9.912	0.000	95672	103.5	4	10.010	0.000	282160	105.8
Total Col1Ave (4 peaks):					104.8	Total Col2Ave (4 peaks):				105.4 RPD = 1
Corrected Ave (3 peaks):					104.5	Corrected Ave (3 peaks):				105.2 RPD = 1
CalAmt %D:					4.8	CalAmt %D:				5.4
Aroclor-1260	1	12.469	0.000	182360	103.8	1	12.395	0.000	834711	104.5
Aroclor-1260	2	13.143	-0.001	573485	100.8	2	13.102	0.000	1926703	103.6
Aroclor-1260	3	13.513	-0.001	268212	101.5	3	13.572	0.000	591076	104.6
Aroclor-1260	4	13.613	0.000	164874	103.4	4	13.623	-0.001	1285567	104.9
Aroclor-1260	5	14.011	-0.001	90413	103.2	NS	---			----
Total Col1Ave (5 peaks):					102.5	Total Col2Ave (4 peaks):				104.4 RPD = 2
Corrected Ave (4 peaks):					102.2	Corrected Ave (3 peaks):				104.2 RPD = 2
CalAmt %D:					2.5	CalAmt %D:				4.4

Total PCB Area Col1 (6.443 - 14.789) = 5050585 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 22891501 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGAB 00613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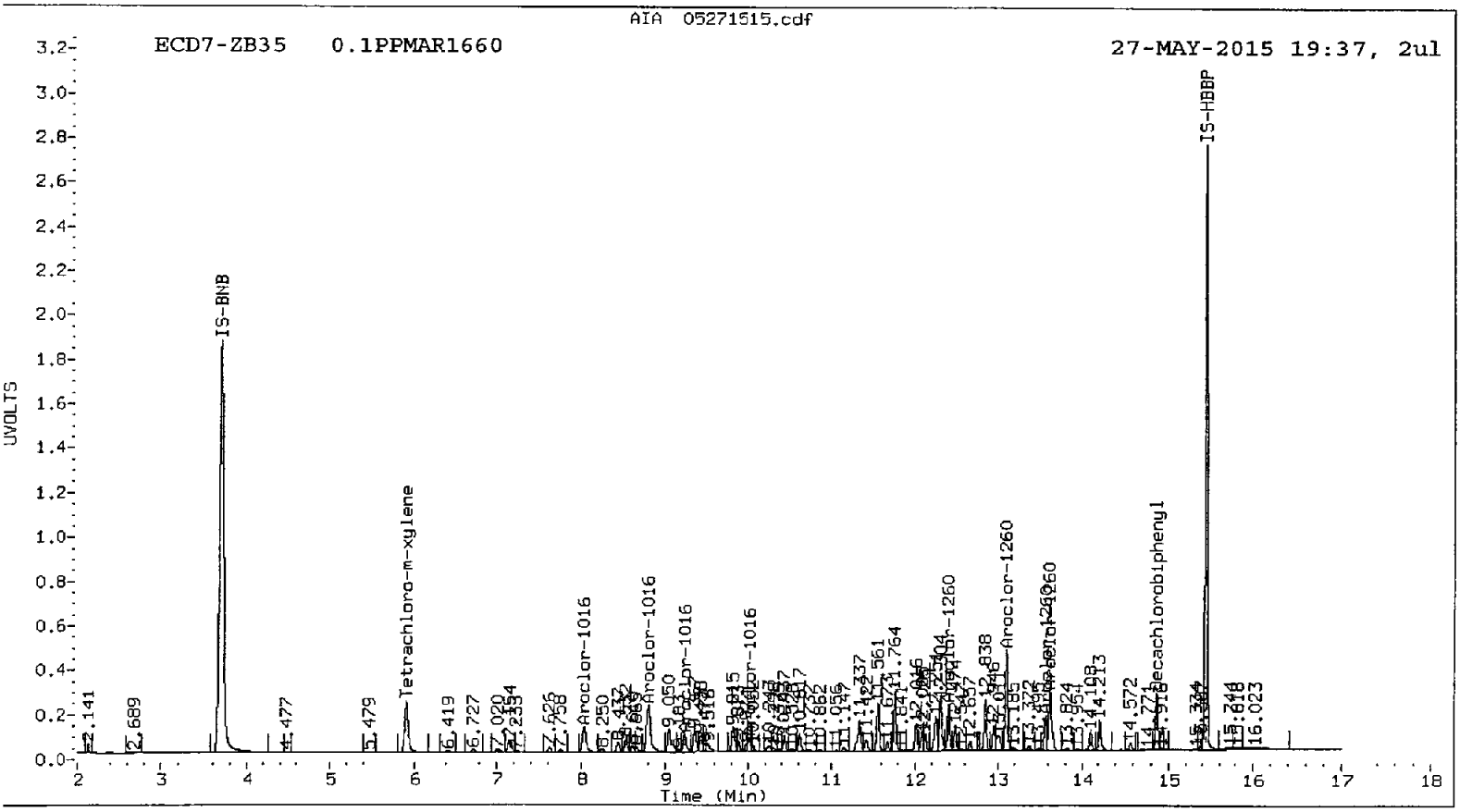
27-MAY-2015 19:37, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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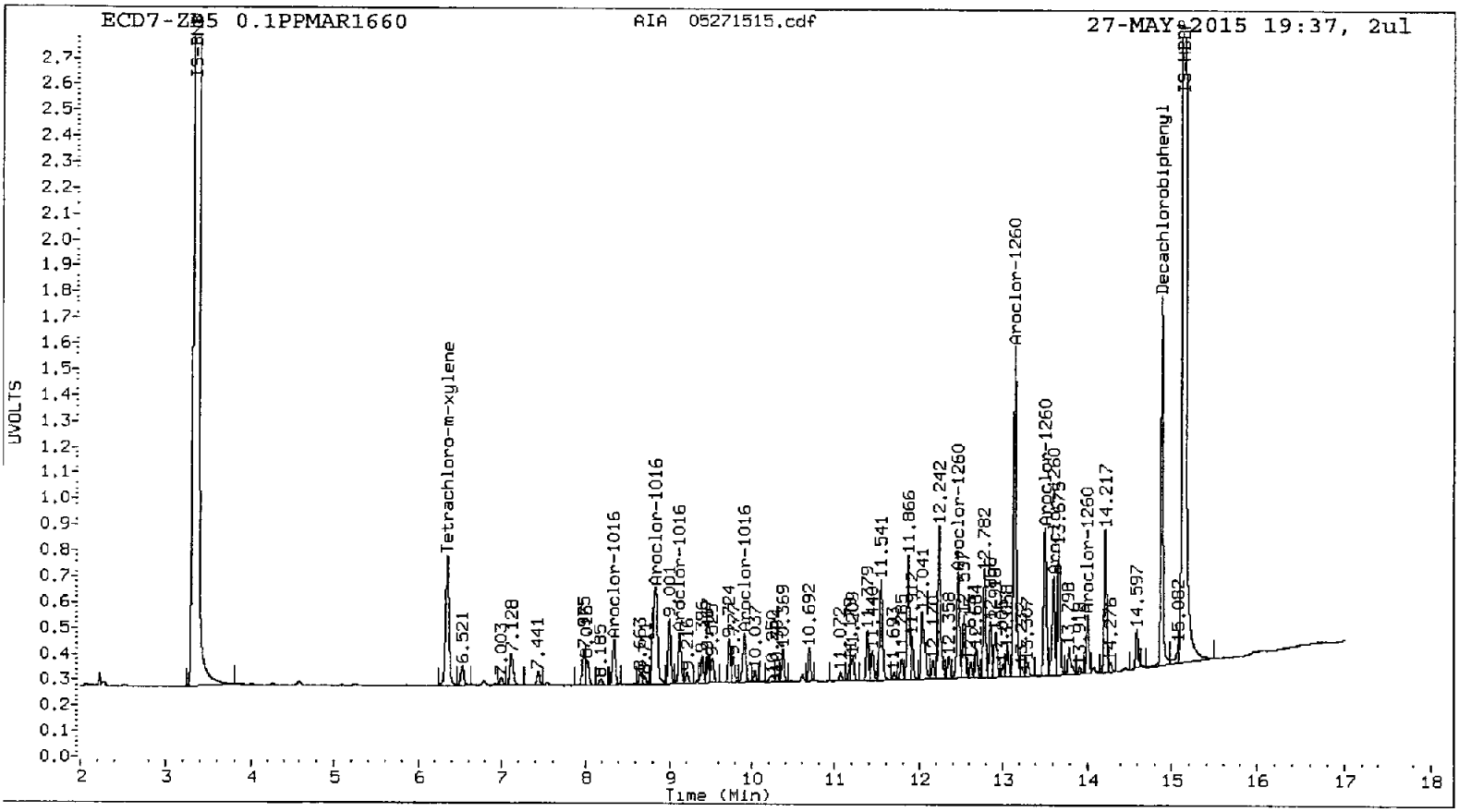
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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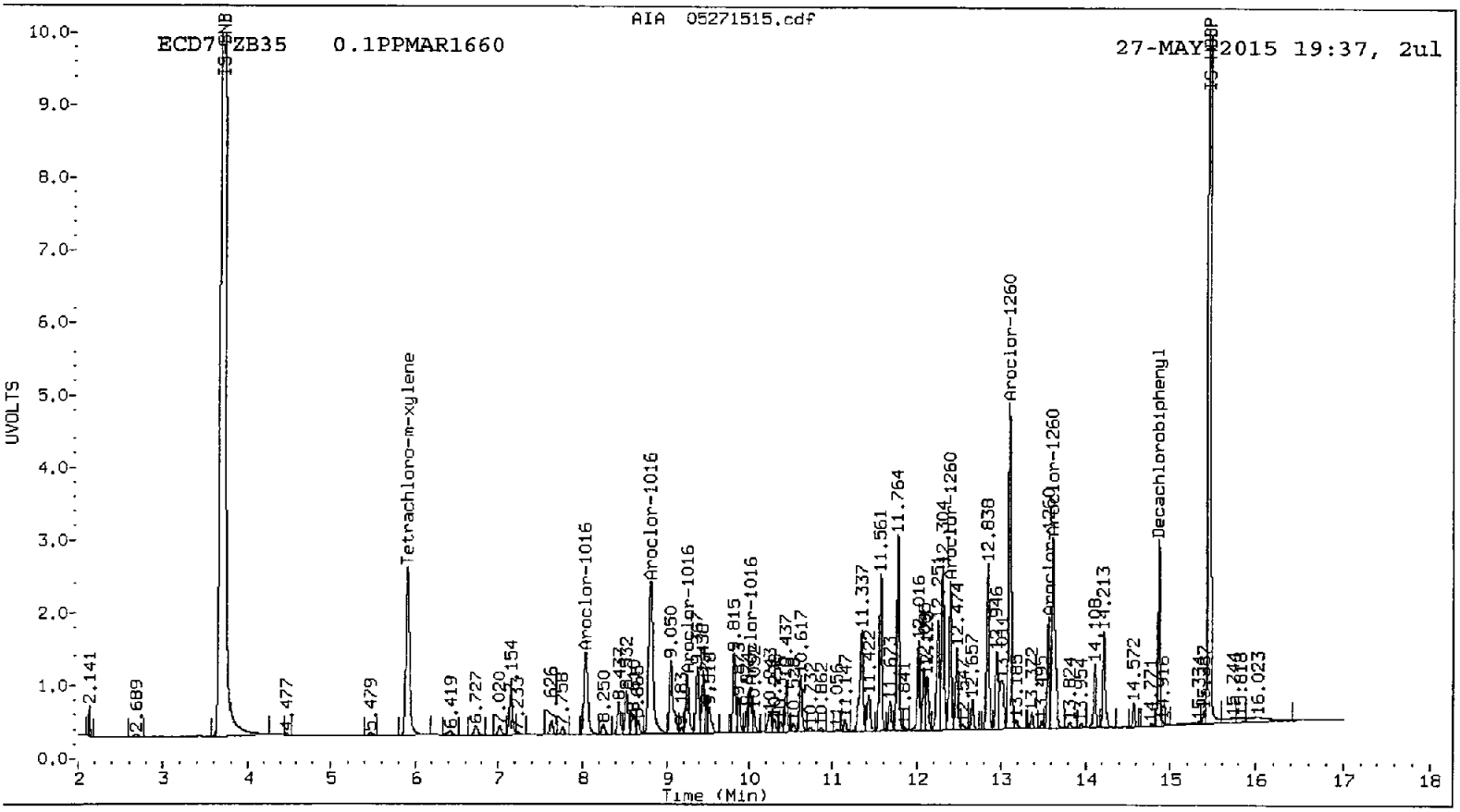
IS-HBB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
UVOLTS
Time (Min)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ECD7-ZB35 0.1PPMAR1660
27-MAY-2015 19:37, 2ul
IS-HBB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271516.d
Data file 2: 20150527.b/ical-2.b/05271516.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:58
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.002	1405725	5.909	0.001	6638488	40.1	38.8	3.3	Tetrachloro-m-xylene
14.890	0.001	2640170	14.863	0.001	4084650	38.9	37.7	3.3	Decachlorobiphenyl

' Indicates RPD > 40%
I Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.1	96.9
Decachlorobiphenyl	97.4	94.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5176005	-5.0
Hexabromobiphenyl	5633814	5390218	-4.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12702598	-2.7
Hexabromobiphenyl	8980422	8989742	0.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

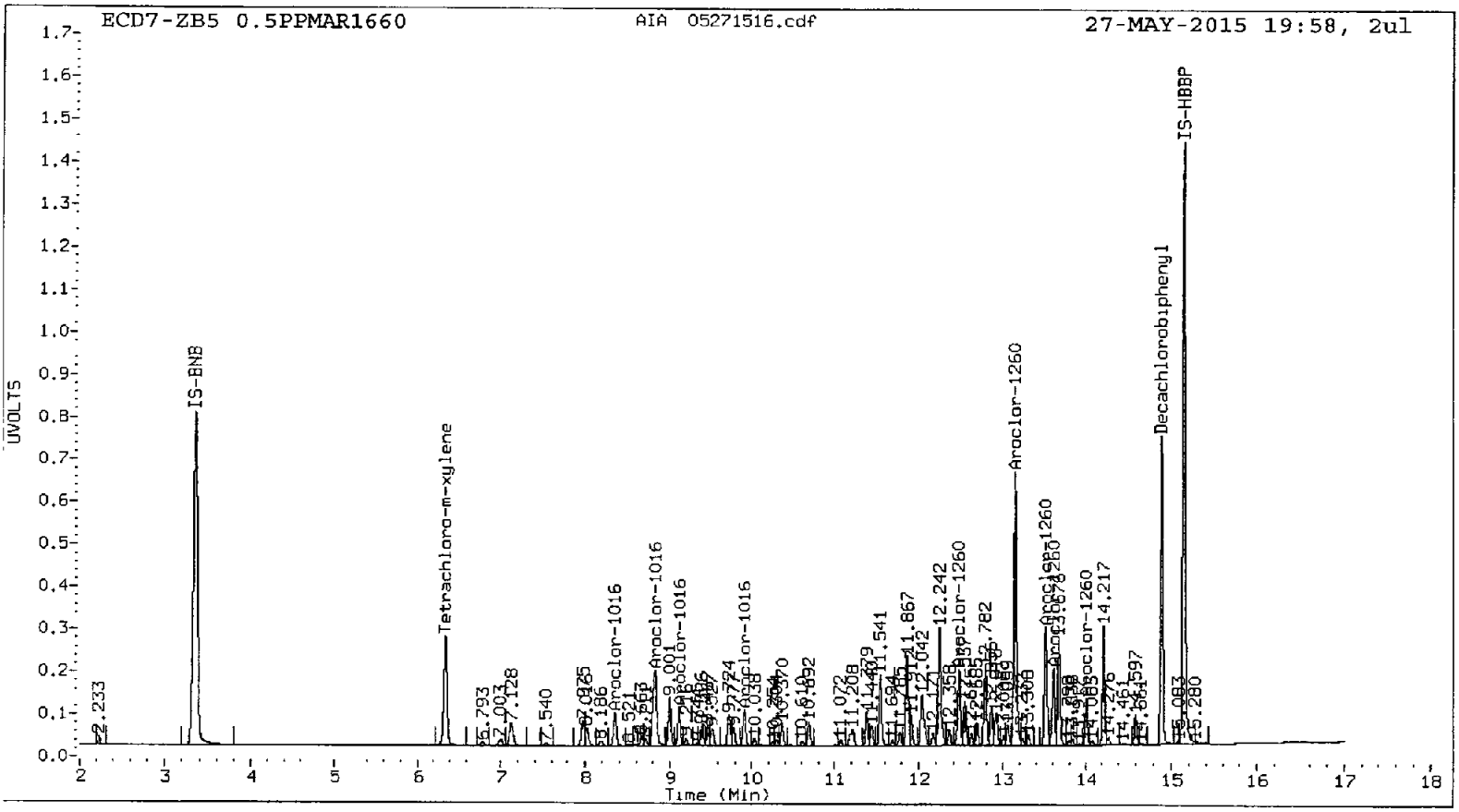
AGAS : 88616

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.347	0.000	389815	468.2	1	8.031	0.000	3100536	445.3
Aroclor-1016	2	8.832	0.000	1204584	472.1	2	8.808	0.000	6720867	454.6
Aroclor-1016	3	9.128	0.000	424170	486.0	3	9.247	0.000	1746398	457.9
Aroclor-1016	4	9.912	0.000	442431	477.7	4	10.010	0.000	1225491	454.9
Total Col1Ave (4 peaks):					476.0	Total Col2Ave (4 peaks):				453.2 RPD = 5
Corrected Ave (3 peaks):					472.7	Corrected Ave (3 peaks):				451.6 RPD = 5
CalAmt %D:					-4.8	CalAmt %D:				-9.4
Aroclor-1260	1	12.469	0.000	791853	450.3	1	12.395	0.000	3573779	443.4
Aroclor-1260	2	13.144	0.000	2834432	498.0	2	13.102	0.000	8795809	468.5
Aroclor-1260	3	13.514	0.000	1298221	491.0	3	13.572	0.000	2619481	459.5
Aroclor-1260	4	13.613	0.000	771860	483.8	4	13.624	0.000	5736997	463.7
Aroclor-1260	5	14.012	0.000	435930	497.2	NS	---			----
Total Col1Ave (5 peaks):					484.0	Total Col2Ave (4 peaks):				458.8 RPD = 5
Corrected Ave (4 peaks):					480.6	Corrected Ave (3 peaks):				455.5 RPD = 5
CalAmt %D:					-3.2	CalAmt %D:				-8.2

Total PCB Area Col1 (6.443 - 14.789) = 22904862 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 98764106 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical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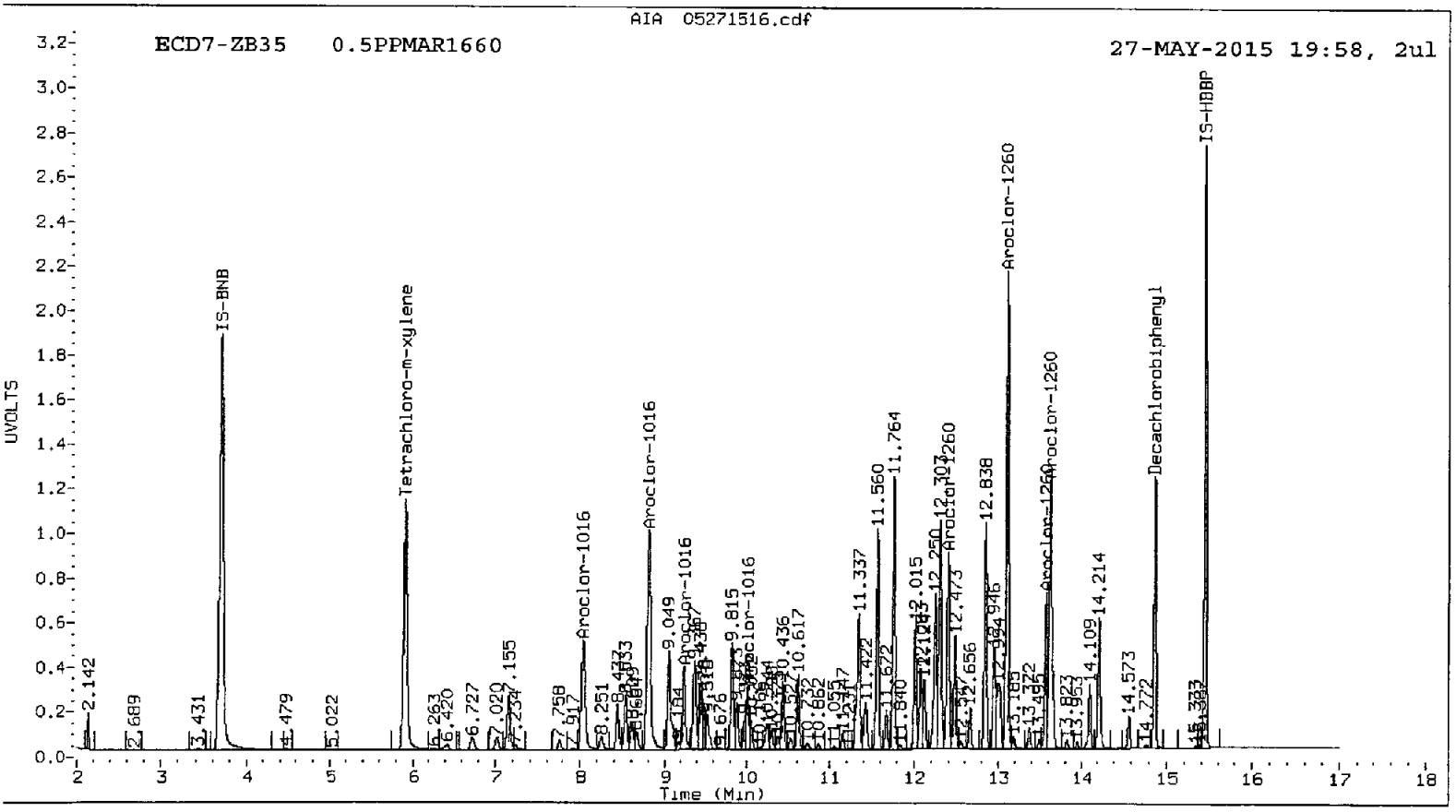
27-MAY-2015 19:58, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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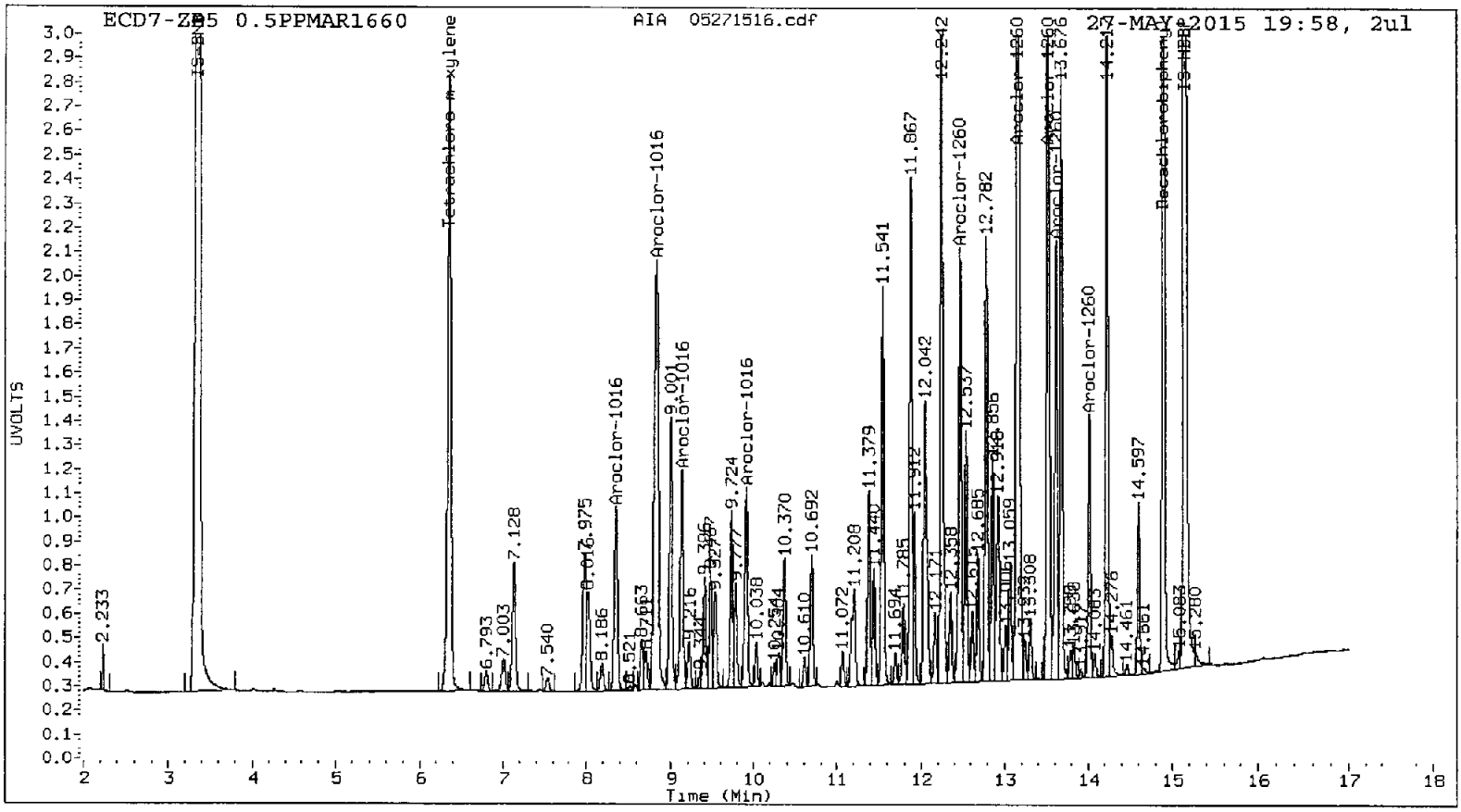
ECD7-ZB35 0.5PPMAR1660
27-MAY-2015 19:58, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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UVOLTS
Time (Min)
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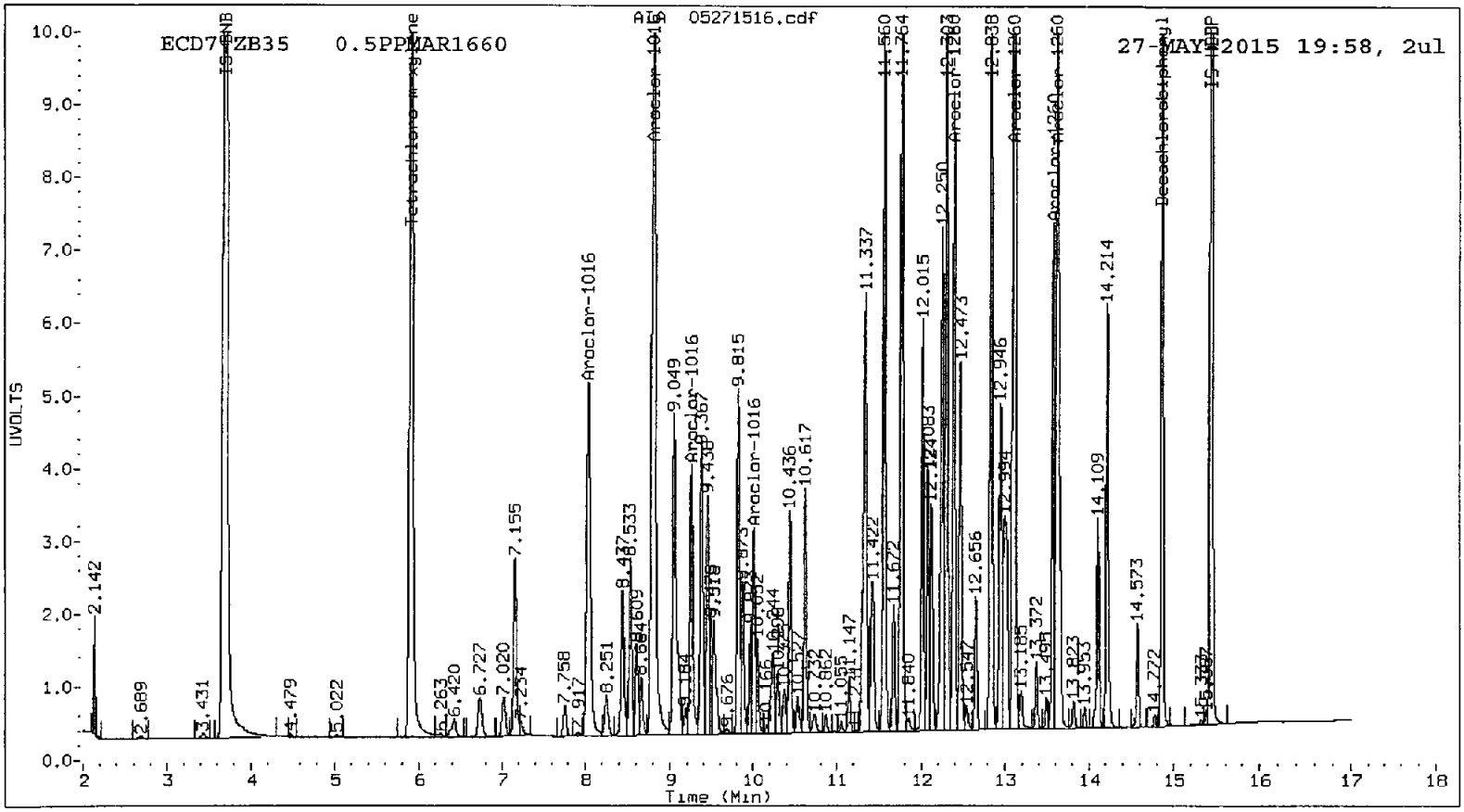
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP


ECD7-ZB35 0.5PPMAR1660
AIA 05271516.cdf
27-MAY-2015 19:58, 2ul
UVOLTS
Time (Min)
IS-DNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271517.d
Data file 2: 20150527.b/ical-2.b/05271517.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 27-MAY-2015 20:20
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.342	-0.002	1357315	5.907	-0.001	6439566	37.5	36.8	1.8	Tetrachloro-m-xylene
14.890	0.000	2679761	14.862	-0.001	4088443	38.2	36.7	4.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.8	92.1
Decachlorobiphenyl	95.6	91.7

JM 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5337516	-2.1
Hexabromobiphenyl	5633814	5573924	-1.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12964295	-0.7
Hexabromobiphenyl	8980422	9247281	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	8.829	0.000	481393	250.0	1	8.029	0.000	1303521	250.0
Aroclor-1242	2	9.126	0.000	172377	250.0	2	8.808	0.000	2752038	250.0
Aroclor-1242	3	10.302	0.000	160584	250.0	3	10.374	0.000	958680	250.0
Aroclor-1242	4	10.607	0.000	240586	250.0	4	10.732	0.000	1165956	250.0

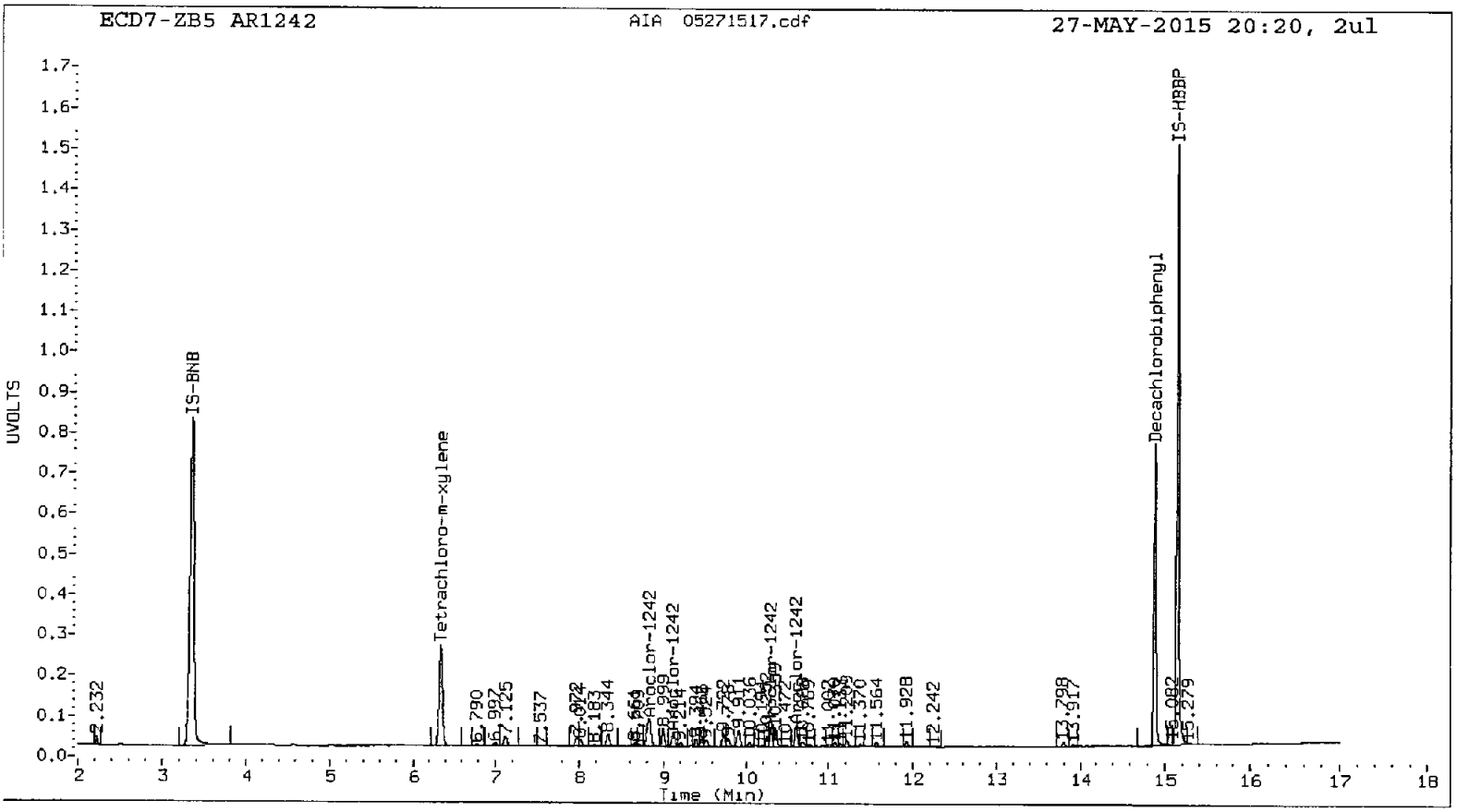
Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

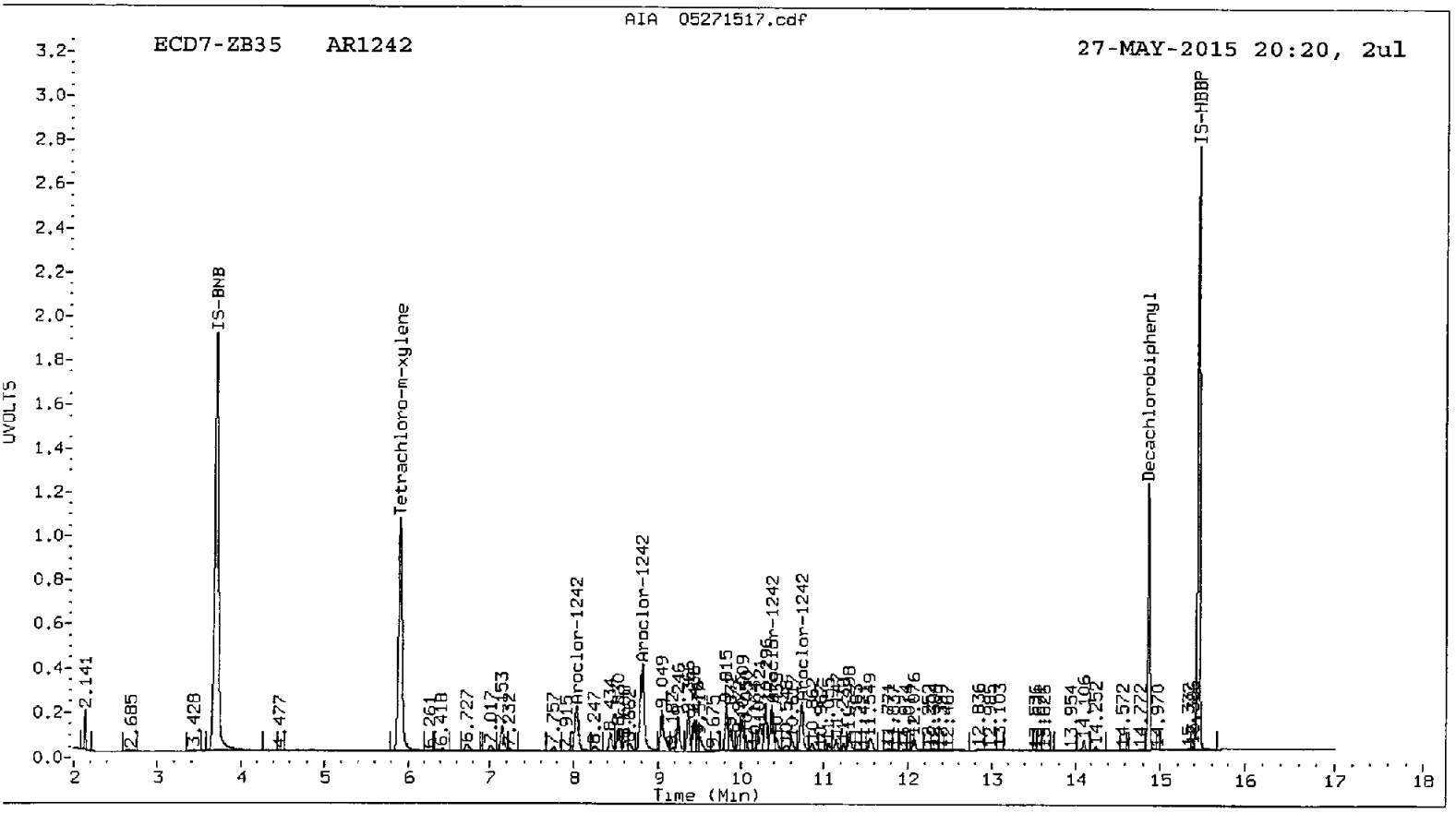
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

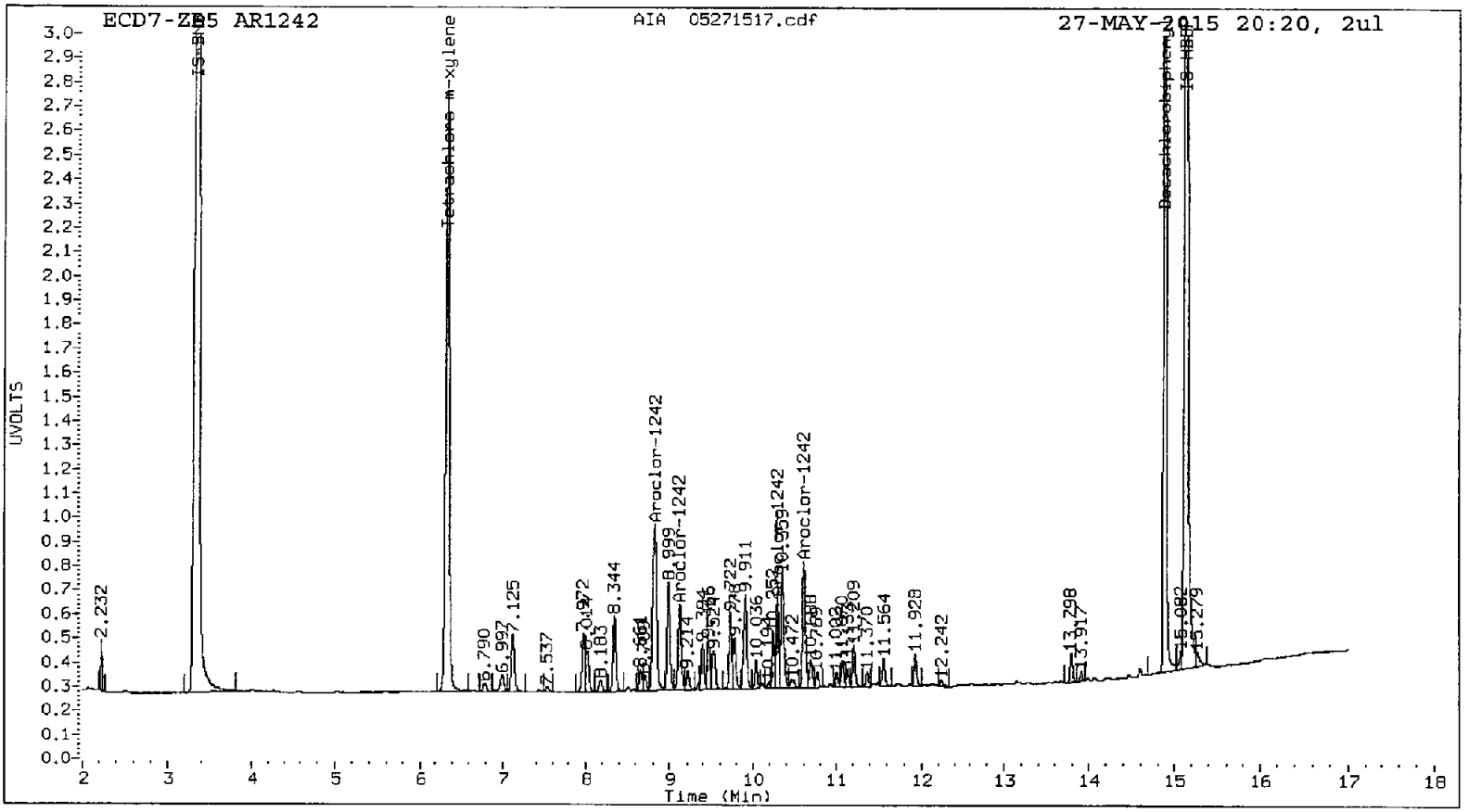
Total PCB Area Col1 (6.443 - 14.789) = 3565925 Col1 Total PCB = 0.2 ppm*

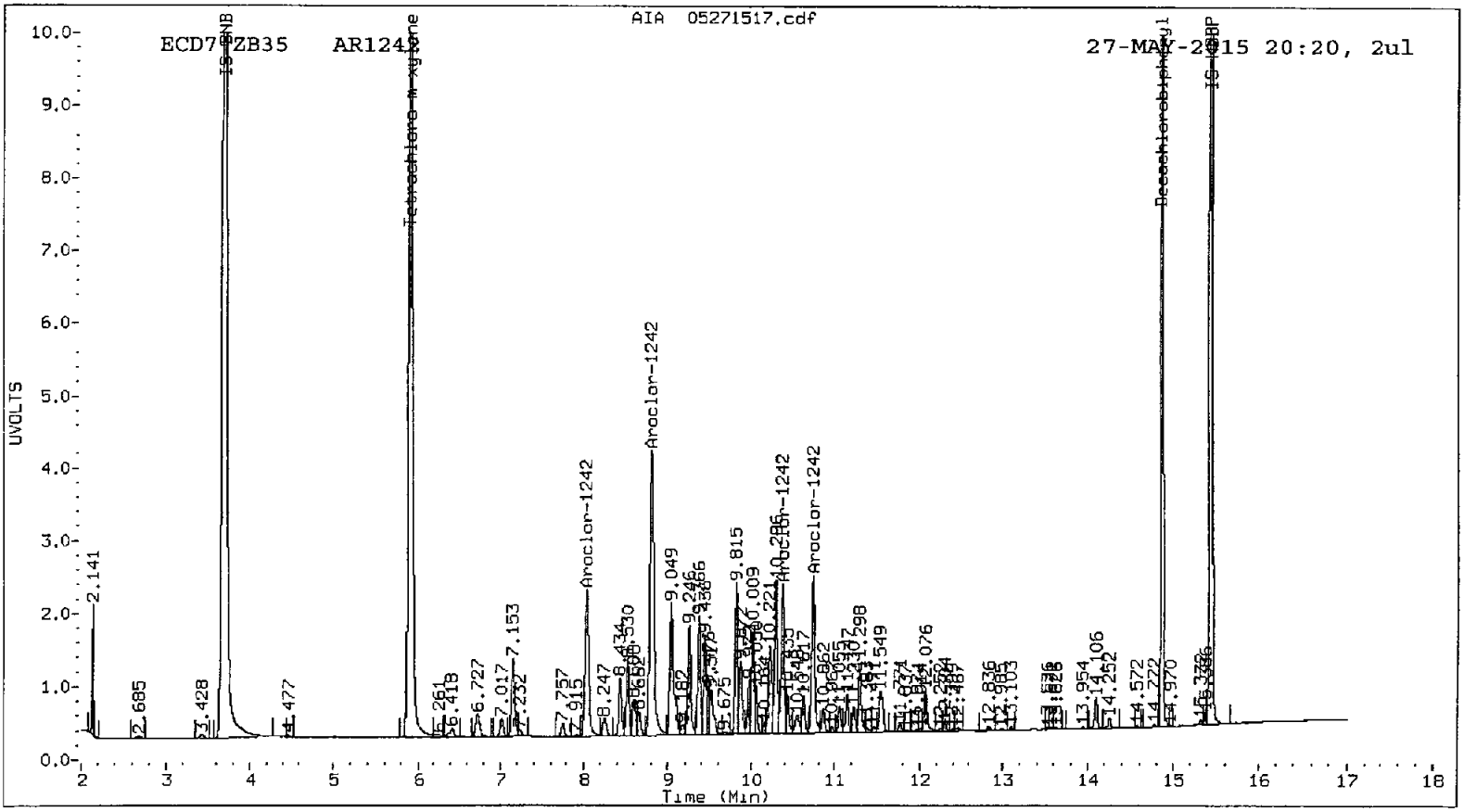
Total PCB Area Col2 (6.008 - 14.762) = 20149285 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)


AIA 05271517.cdf
ECD7-ZB35 AR1242
27-MAY-2015 20:20, 2ul
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)


ECD7-ZB35 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1242
Aroclor-1242
Aroclor-1242


AIA 05271517.cdf
ECD7-ZB35 AR1242
27-MAY-2015 20:20, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1242
Aroclor-1242
Aroclor-1242

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271518.d
Data file 2: 20150527.b/ical-2.b/05271518.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 27-MAY-2015 20:41
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.002	1350928	5.910	0.002	6411219	37.6	37.1	1.4	Tetrachloro-m-xylene
14.889	0.000	2633172	14.861	-0.001	4093839	37.7	36.6	2.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.0	92.7
Decachlorobiphenyl	94.1	91.6

JA 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5300438	-2.7
Hexabromobiphenyl	5633814	5560964	-1.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12820555	-1.8
Hexabromobiphenyl	8980422	9271038	3.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAB 0054

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	9.395	0.000	152243	250.0	1	8.803	0.000	1766425	250.0
Aroclor-1248	2	9.911	0.000	323695	250.0	2	9.815	0.000	1411453	250.0
Aroclor-1248	3	10.361	0.000	376060	250.0	3	10.373	0.000	1495961	250.0
Aroclor-1248	4	10.606	0.000	380380	250.0	4	10.730	0.000	1931054	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

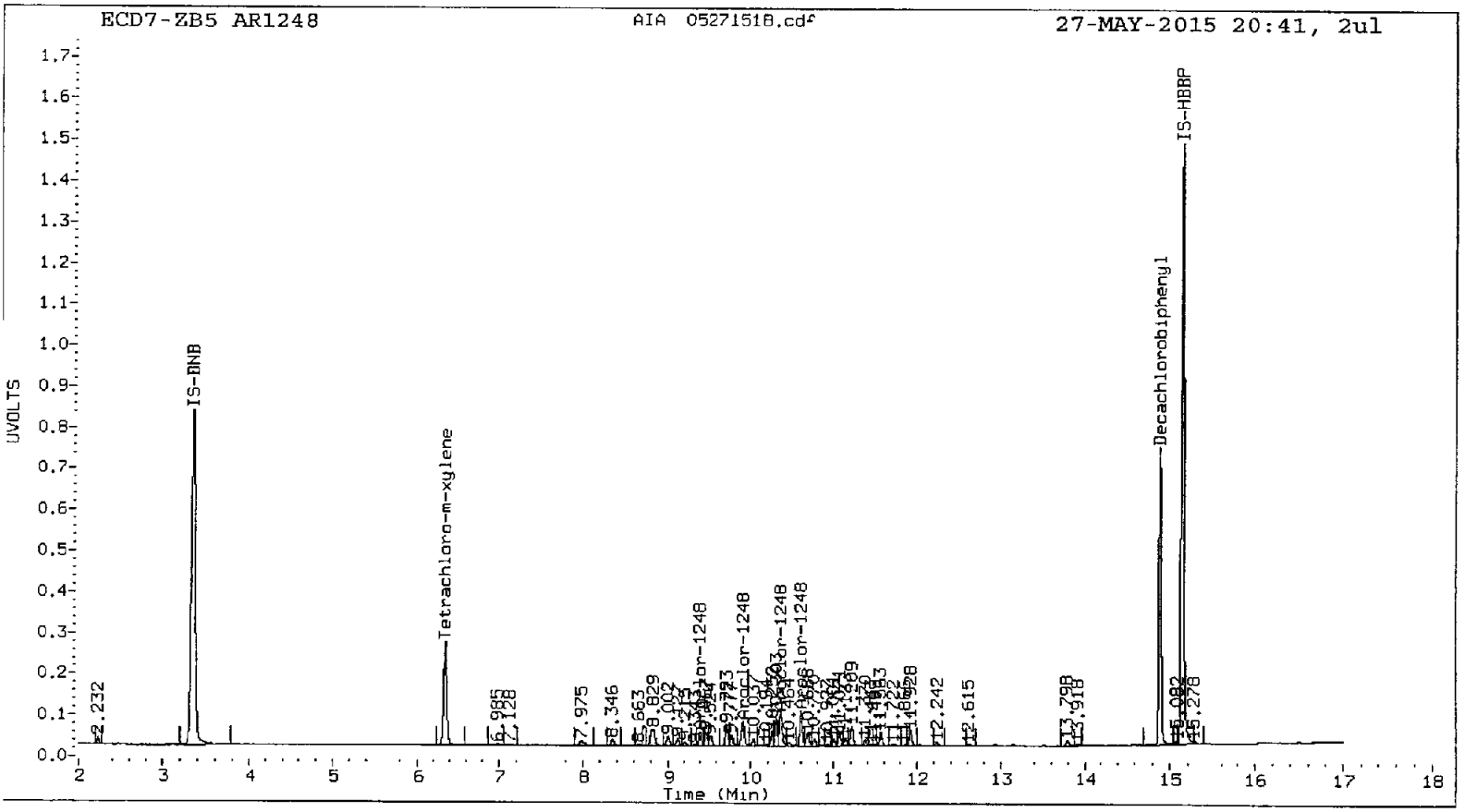
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

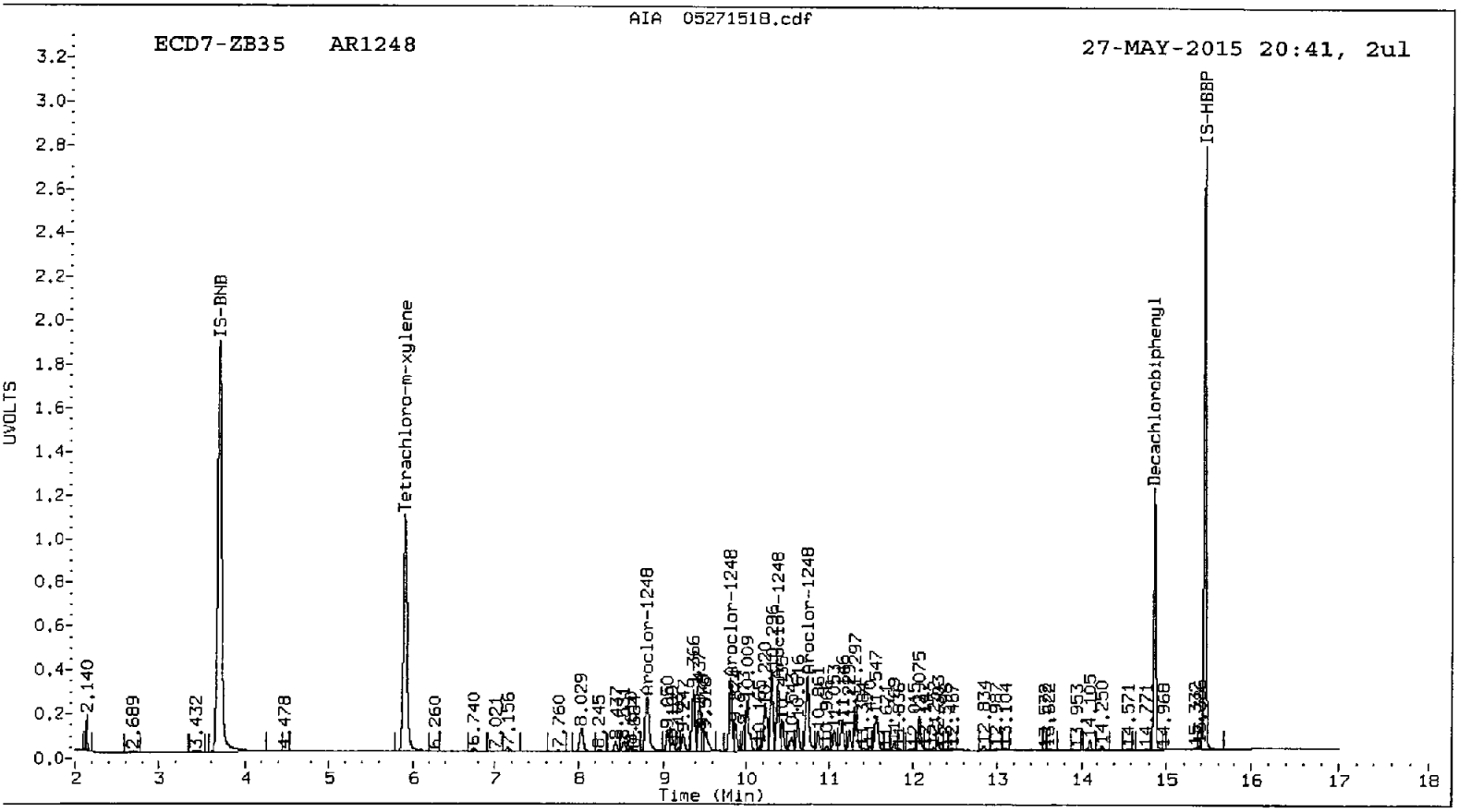
Total PCB Area Col1 (6.443 - 14.789) = 4573831 Col1 Total PCB = 0.2 ppm*

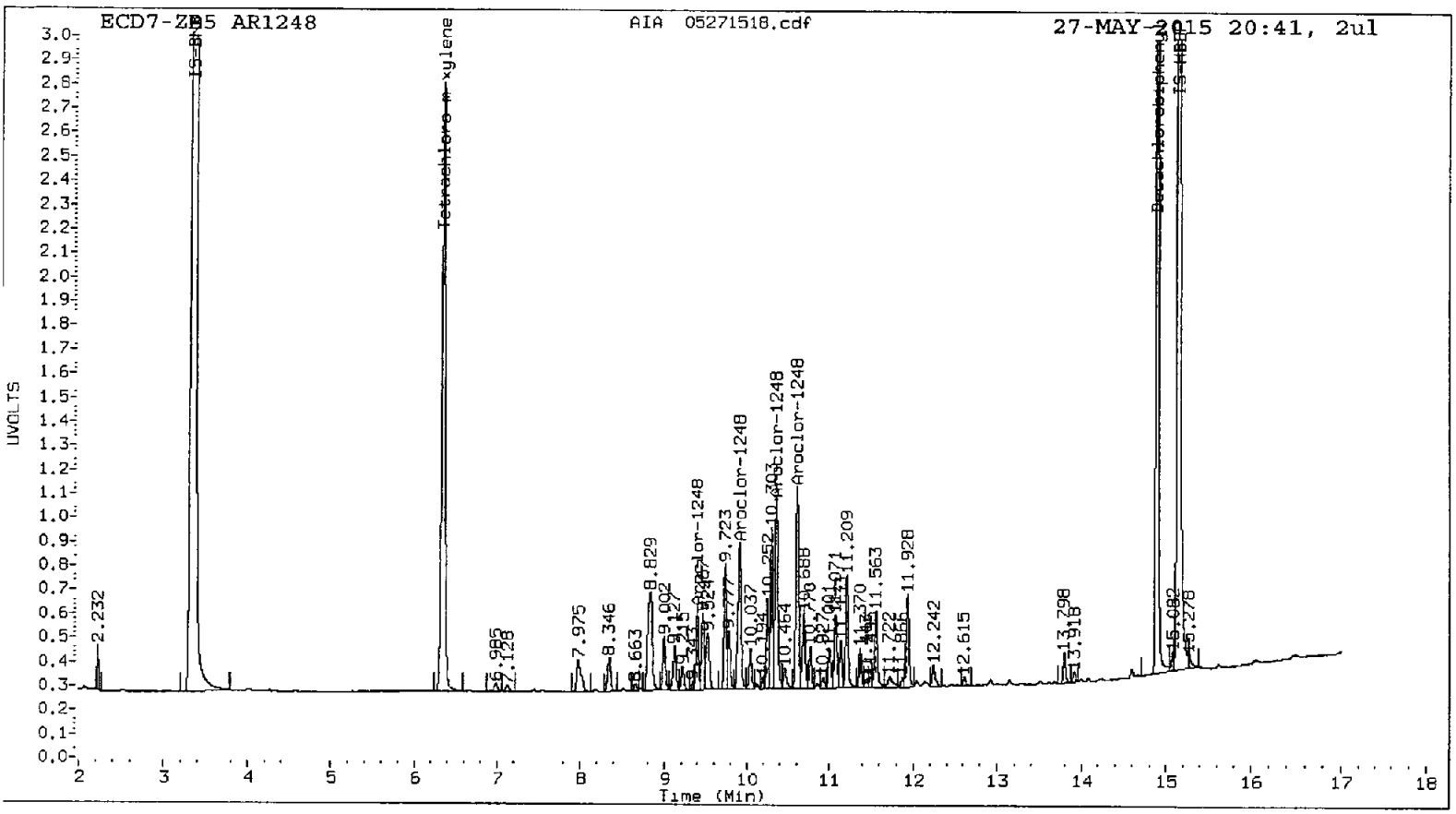
Total PCB Area Col2 (6.008 - 14.762) = 24756093 Col2 Total PCB = 0.2 ppm*

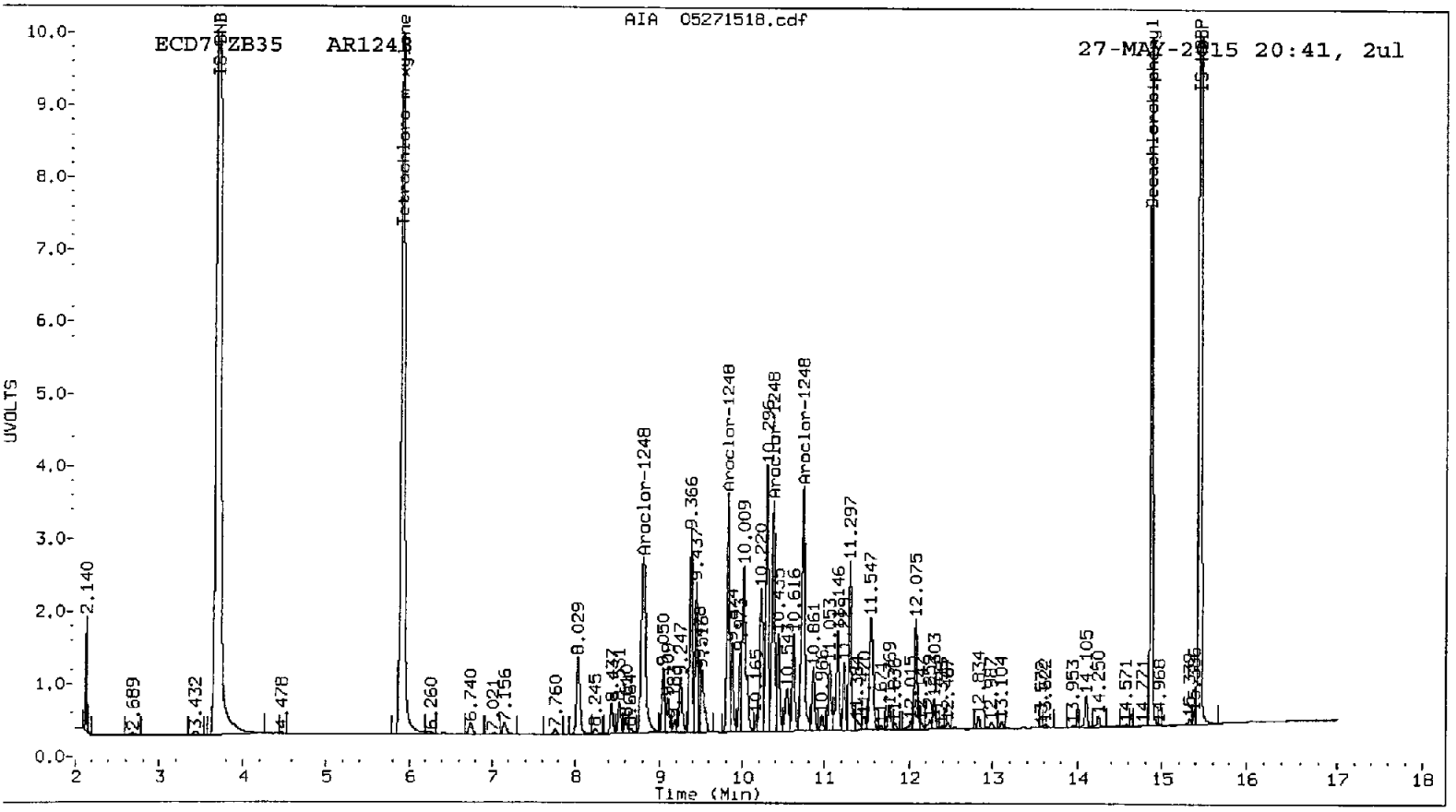
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
IS-HBBP
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)


AIA 05271518.cdf
ECD7-ZB35 AR1248
27-MAY-2015 20:41, 2ul
IS-HBBP
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)


ECD7-ZB35 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
IS-DNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
Aroclor-1248
UVOLTS
Time (Min)


AIA 05271518.cdf
ECD7-ZB35 AR1248
27-MAY-2015 20:41, 2ul
IS-DNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
Aroclor-1248
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271519.d
Data file 2: 20150527.b/ical-2.b/05271519.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 27-MAY-2015 21:02
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.341	-0.002	1336926	5.906	-0.002	6393445	37.7	37.4	0.8	Tetrachloro-m-xylene
14.889	0.000	2668224	14.862	-0.001	4168711	39.0	37.9	2.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.2	93.4
Decachlorobiphenyl	97.5	94.8

JL 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5232643	-4.0
Hexabromobiphenyl	5633814	5441303	-3.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12686823	-2.9
Hexabromobiphenyl	8980422	9119341	1.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AR48 88624

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.368	0.000	238926	250.0	1	10.615	0.000	1670782	250.0
Aroclor-1254	2	10.689	0.000	341464	250.0	2	10.710	0.000	791751	250.0
Aroclor-1254	3	11.070	0.000	276947	250.0	3	11.145	0.000	1305721	250.0
Aroclor-1254	4	11.208	0.000	522624	250.0	4	11.297	0.000	2785036	250.0
Aroclor-1254	5	11.922	0.000	374654	250.0	5	12.079	0.000	1663907	250.0

Total Col1Ave (5 peaks): 250.0 Total Col2Ave (5 peaks): 250.0 RPD = 0

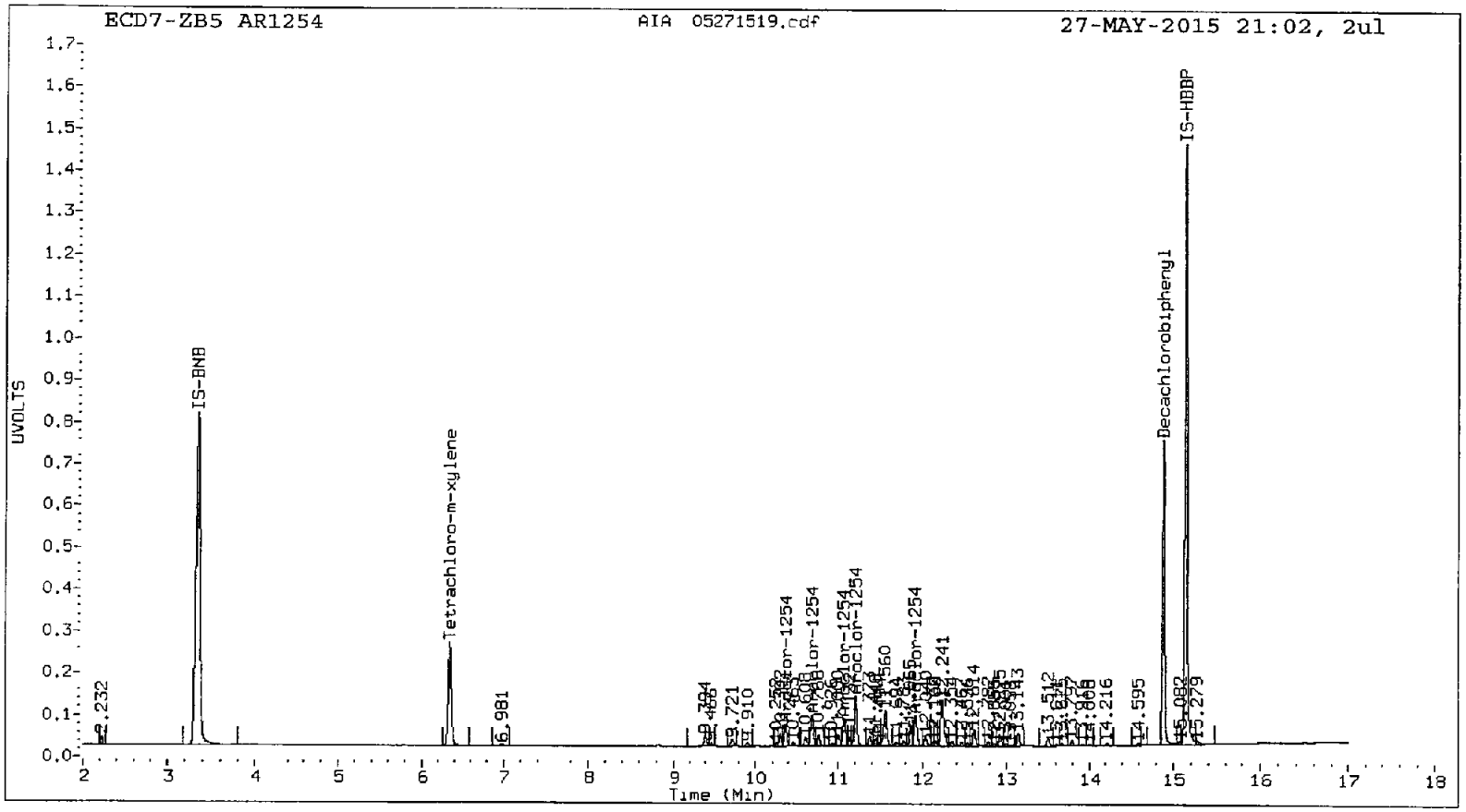
Corrected Ave (4 peaks): 250.0 Corrected Ave (4 peaks): 250.0 RPD = 0

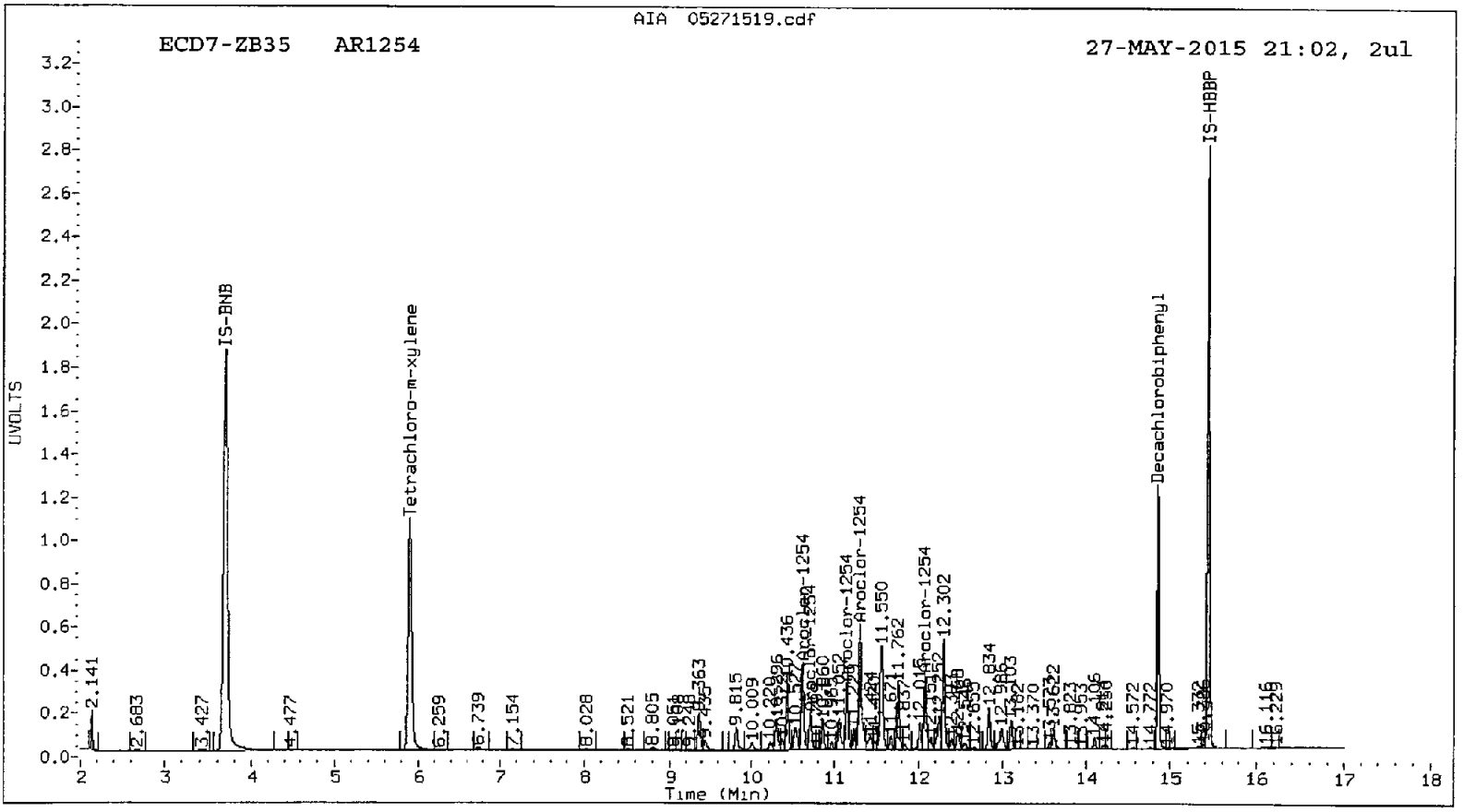
Total PCB Area Col1 (6.443 - 14.789) = 5273972 Col1 Total PCB = 0.2 ppm*

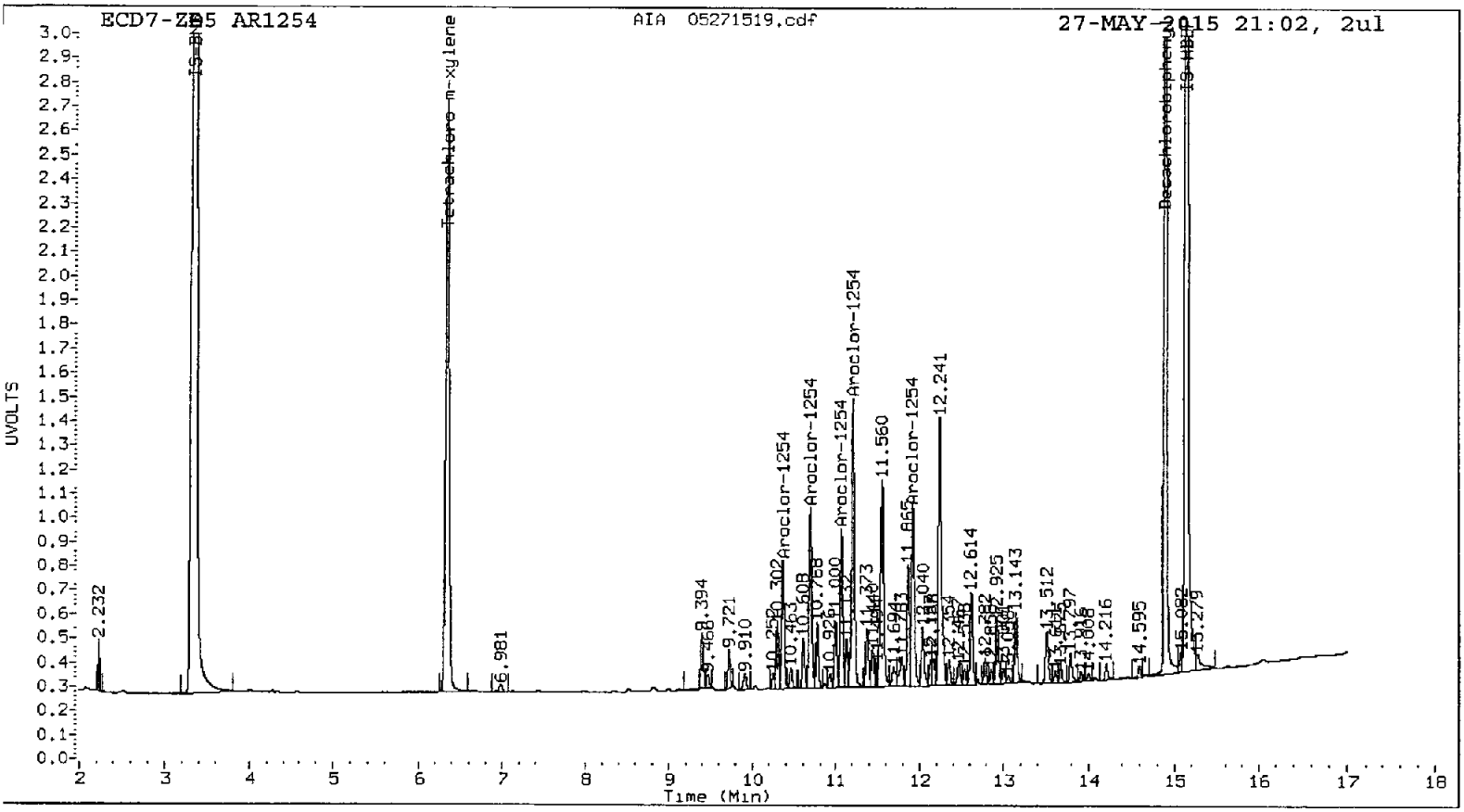
Total PCB Area Col2 (6.008 - 14.762) = 27296317 Col2 Total PCB = 0.3 ppm*

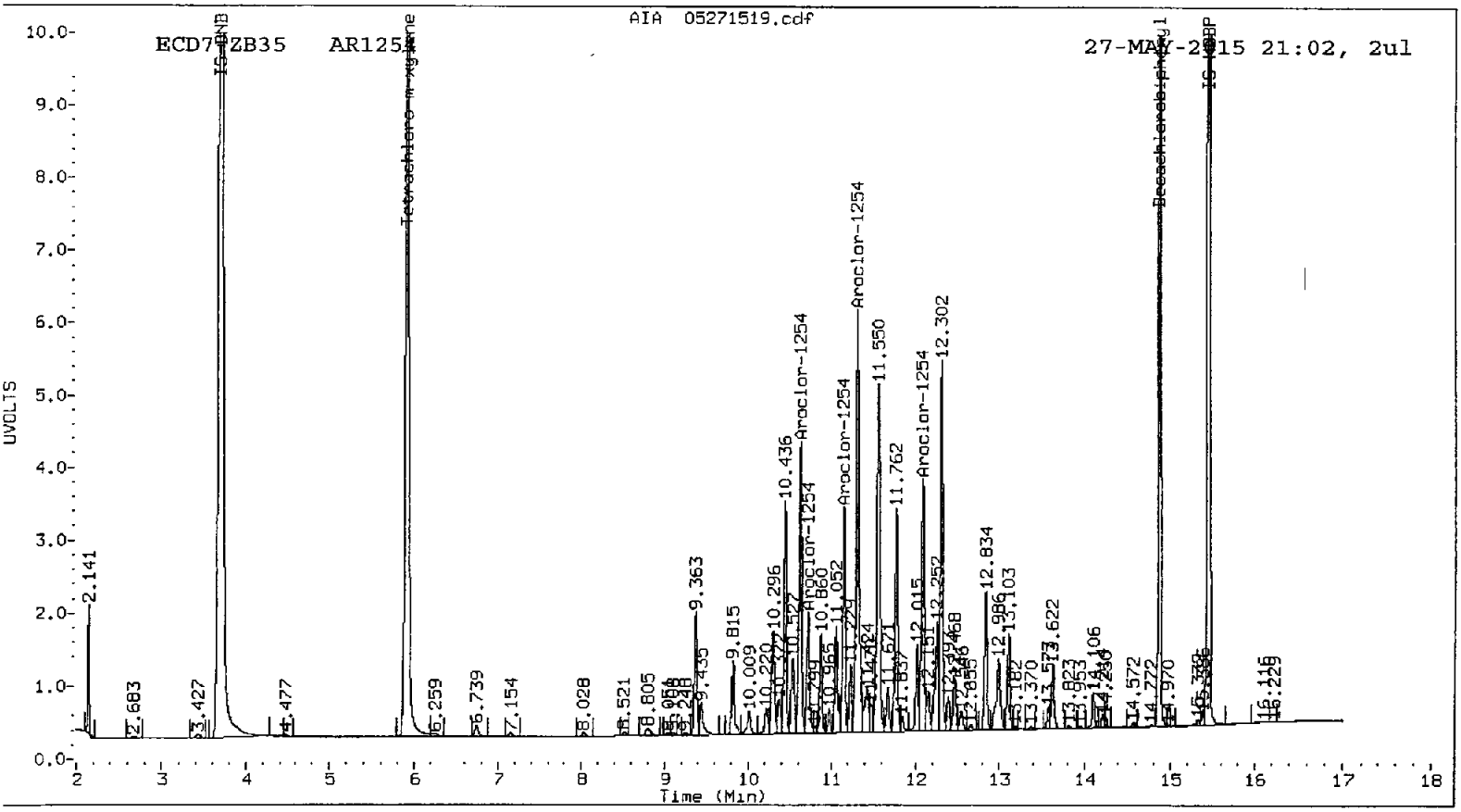
* Quantitated against AR1660 0.25ppm in Ical

AGAS 08629


ECD7-ZB5 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
6.981
Aroclor-1254
Aroclor-1254
Aroclor-1254
Aroclor-1254
Aroclor-1254


AIA 05271519.cdf
ECD7-ZB35 AR1254
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1254
Aroclor-1254
Aroclor-1254
Aroclor-1254
Aroclor-1254
11.550
12.302


ECD7-ZB35 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
2.232
6.981
11.560
12.241
12.614
13.143


AIA 05271519.cdf
ECD7-ZB35 AR125
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
2.141
9.363
9.815
10.436
11.550
11.762
12.302
12.834

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271520.d
Data file 2: 20150527.b/ical-2.b/05271520.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-MAY-2015 21:24
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.340	-0.003	1377630	5.906	-0.002	6388369	38.5	37.6	2.3	Tetrachloro-m-xylene
14.889	0.000	2652552	14.862	-0.001	4220288	38.0	37.2	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	96.2	94.1
Decachlorobiphenyl	95.1	92.9

JK 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5278972	-3.1
Hexabromobiphenyl	5633814	5544225	-1.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12591250	-3.6
Hexabromobiphenyl	8980422	9419455	4.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAA : 00632

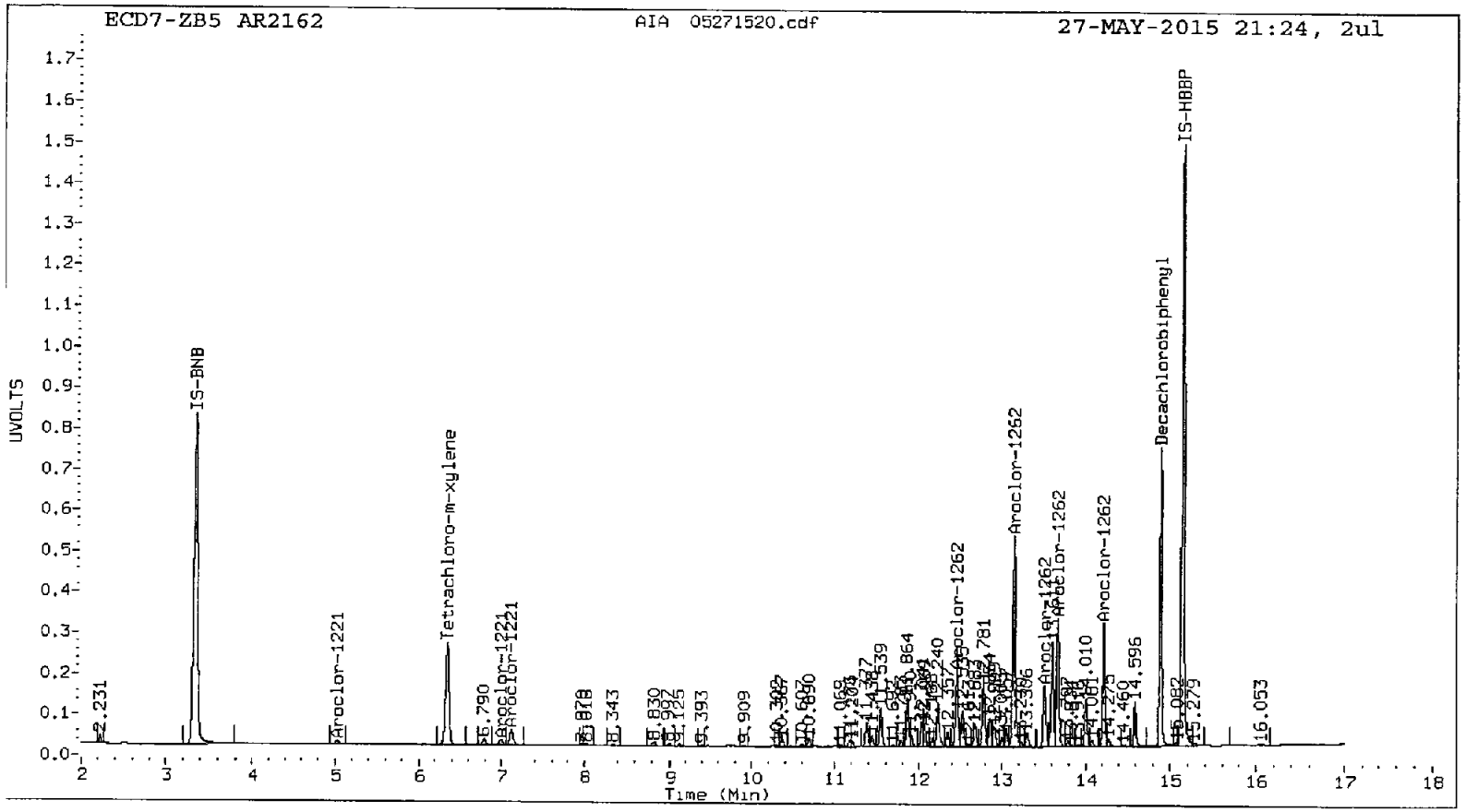
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	5.023	0.000	53713	250.0	1	5.018	0.000	326848	250.0
Aroclor-1221	2	6.999	0.000	84055	250.0	2	6.720	0.000	546909	250.0
Aroclor-1221	3	7.123	0.000	237232	250.0	3	7.015	0.000	308704	250.0
Aroclor-1221	NS	---			----	4	7.150	0.000	944566	250.0
Total Col1Ave (3 peaks): 250.0						Total Col2Ave (4 peaks): 250.0 RPD = 0				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 250.0				
Aroclor-1262	1	12.467	0.000	817204	250.0	1	12.394	0.000	3732561	250.0
Aroclor-1262	2	13.143	0.000	2273520	250.0	2	12.836	0.000	3508085	250.0
Aroclor-1262	3	13.513	0.000	716553	250.0	3	13.100	0.000	7199514	250.0
Aroclor-1262	4	13.675	0.000	1243502	250.0	4	13.570	0.000	3104261	250.0
Aroclor-1262	5	14.216	0.000	1112519	250.0	5	14.212	0.000	2440147	250.0
Total Col1Ave (5 peaks): 250.0						Total Col2Ave (5 peaks): 250.0 RPD = 0				
Corrected Ave (4 peaks): 250.0						Corrected Ave (4 peaks): 250.0 RPD = 0				

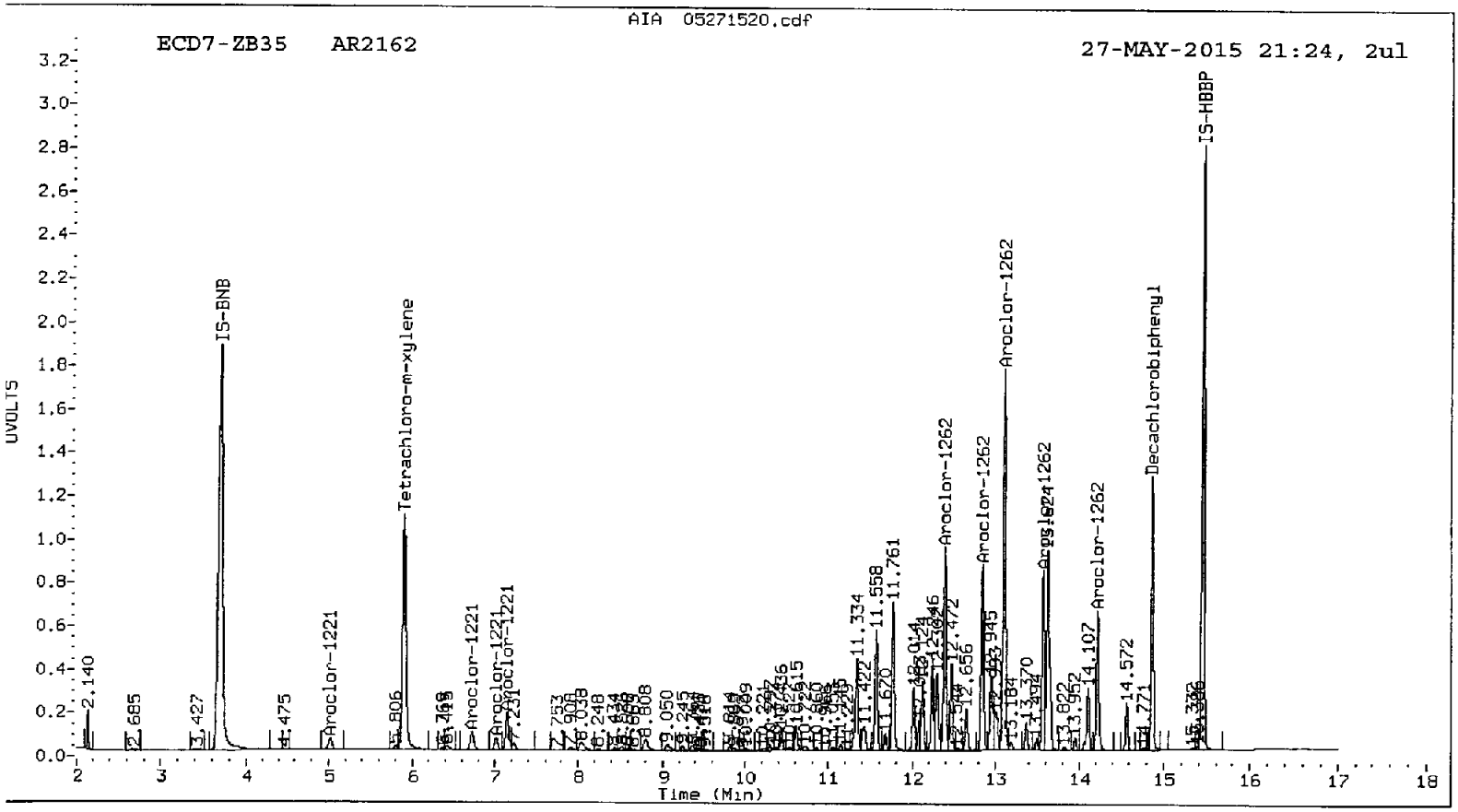
Total PCB Area Col1 (6.443 - 14.789) = 14166242 Col1 Total PCB = 0.6 ppm*

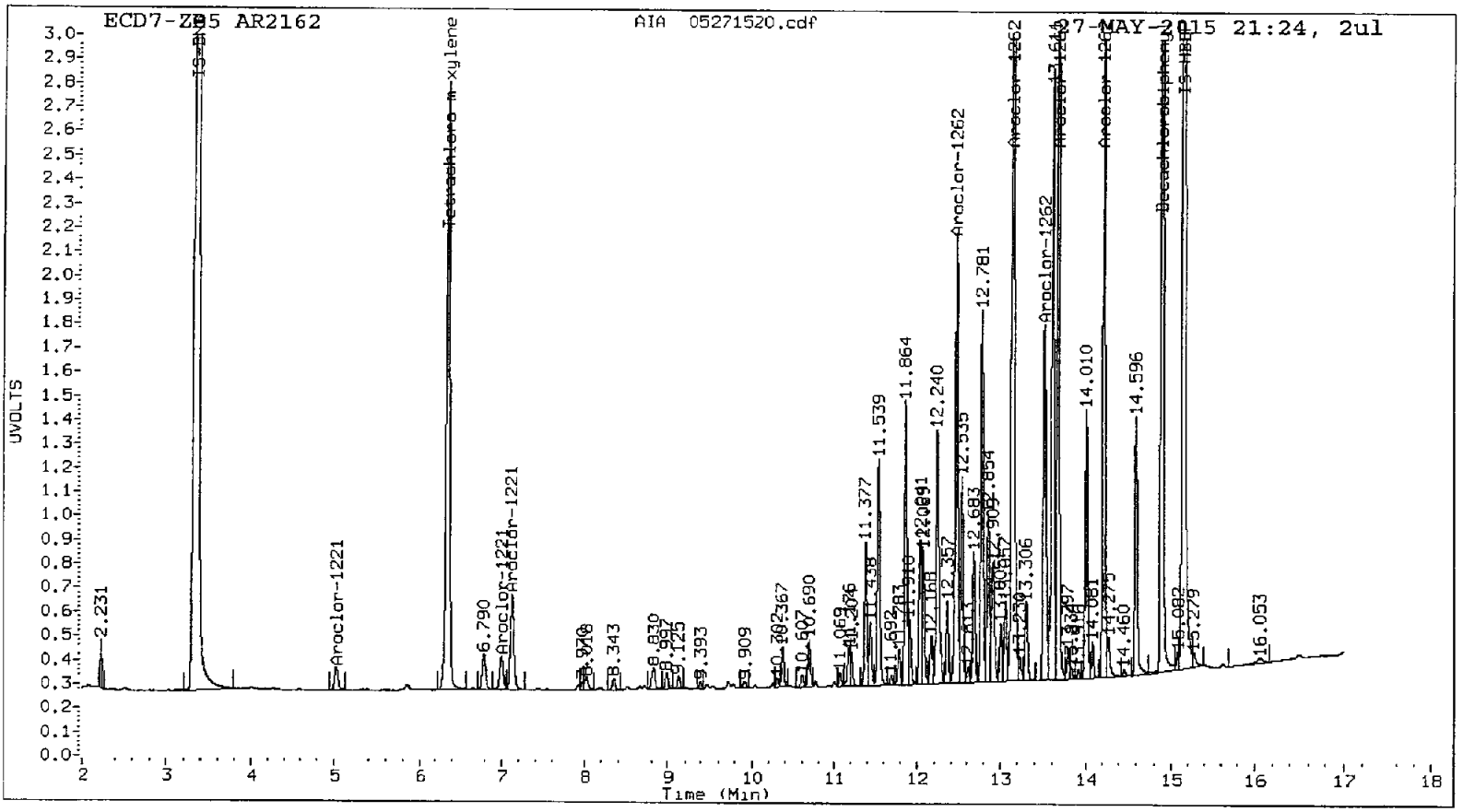
Total PCB Area Col2 (6.008 - 14.762) = 53324743 Col2 Total PCB = 0.5 ppm*

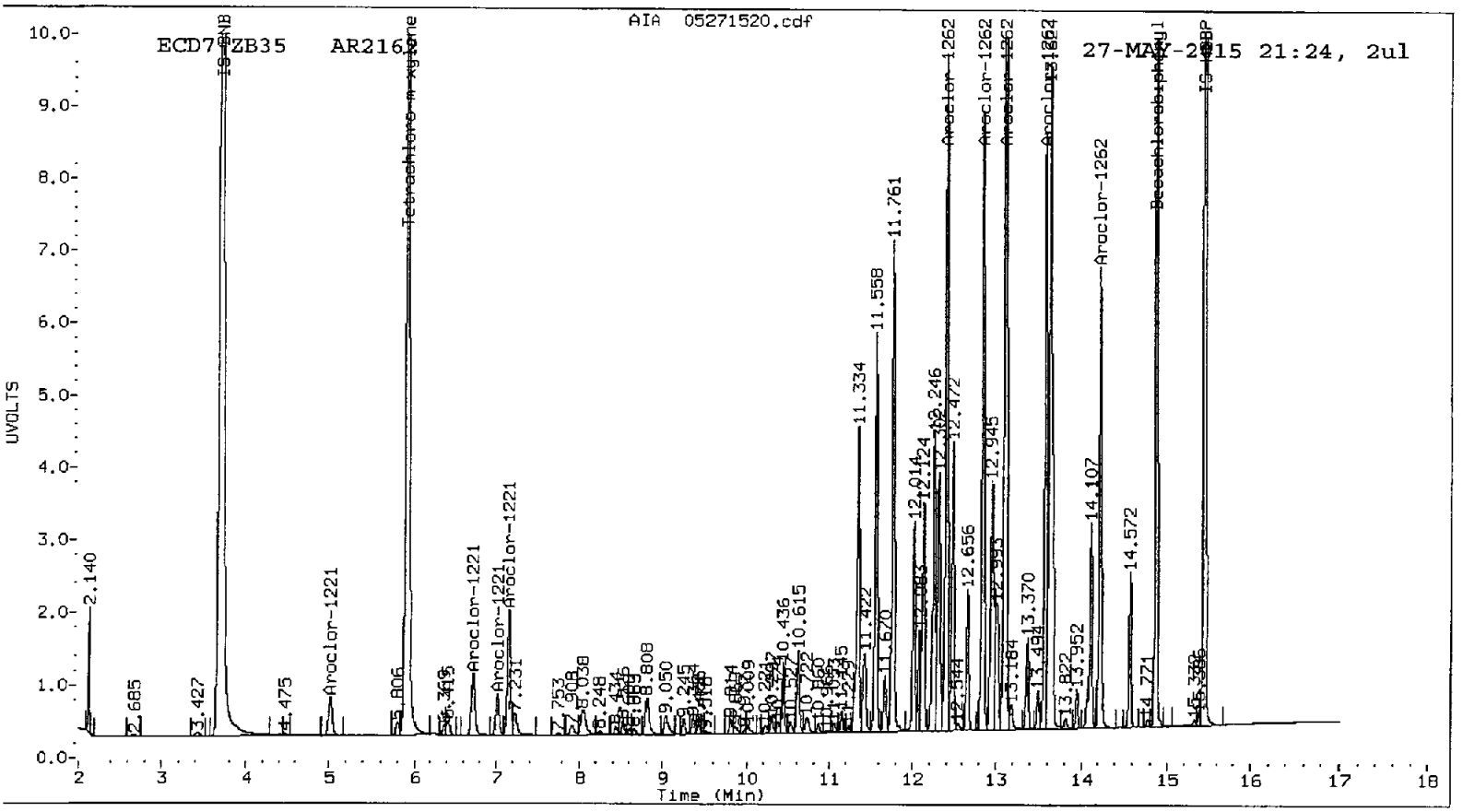
* Quantitated against AR1660 0.25ppm in Ical

AGAS-00633


ECD7-ZB5 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl
IS-HBBP


AIA 05271520.cdf
ECD7-ZB35 AR2162
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl
IS-HBBP


ECD7-ZB35 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1262
Decachlorobiphenyl
IS-HBB
2.231
6.790
11.864
12.240
11.539
12.781
14.010
14.596
16.053


ECD7-ZB35 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1262
Decachlorobiphenyl
IS-HBB
2.140
11.761
11.558
11.334
12.656
14.102
14.572

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271521.d
Data file 2: 20150527.b/ical-2.b/05271521.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-MAY-2015 21:45
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.343	0.000	1384607	5.908	0.000	6560313	38.3	37.9	1.1	Tetrachloro-m-xylene
14.889	0.000	4020390	14.862	0.000	6306995	58.1	55.6	4.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	94.7
Decachlorobiphenyl	145.4	138.9

JM 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5332927	-2.1
Hexabromobiphenyl	5633814	5498000	-2.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12844090	-1.6
Hexabromobiphenyl	8980422	9415095	4.8

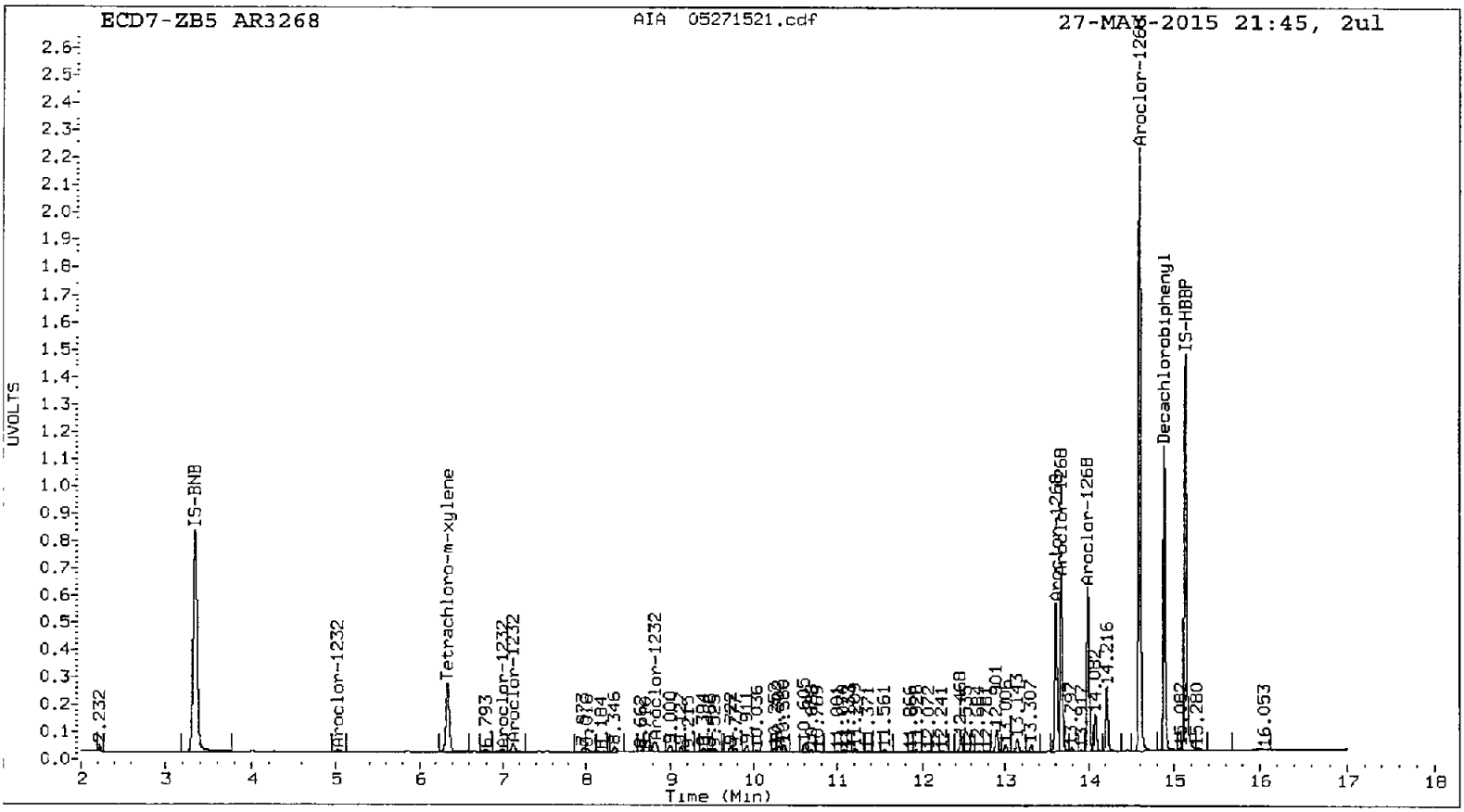
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1232	1	5.026	0.000	30871	250.0	1	5.021	0.000	202864	250.0
Aroclor-1232	2	6.999	0.000	58639	250.0	2	7.153	0.000	680303	250.0
Aroclor-1232	3	7.126	0.000	160027	250.0	3	8.029	0.000	797677	250.0
Aroclor-1232	4	8.830	0.000	267459	250.0	4	9.247	0.000	409273	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	13.612	0.000	2130607	250.0	1	13.569	0.000	5515830	250.0
Aroclor-1268	2	13.674	0.000	2497316	250.0	2	13.628	0.000	5211679	250.0
Aroclor-1268	3	13.996	0.000	2232678	250.0	3	13.953	0.000	4199960	250.0
Aroclor-1268	4	14.597	0.000	7805665	250.0	4	14.573	0.000	11841389	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.443 - 14.789) = 19433102 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 47500203 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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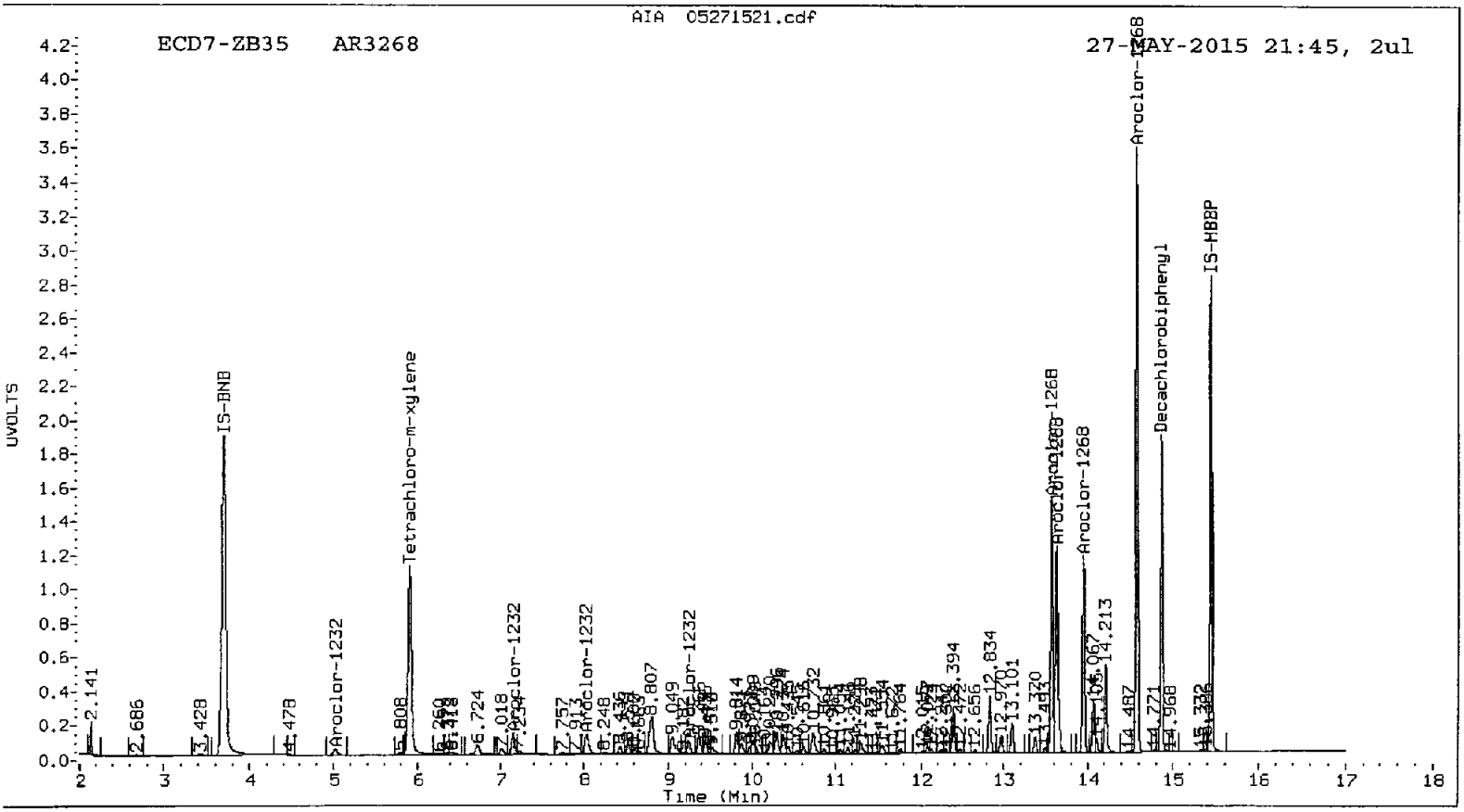
27-MAY-2015 21:45, 2ul
UVOLTS
IS-BNB
Aroclor-1232
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1268
Aroclor-1268
Aroclor-1268
Decachlorobiphenyl
IS-HBBP
14.216
16.053
Time (Min)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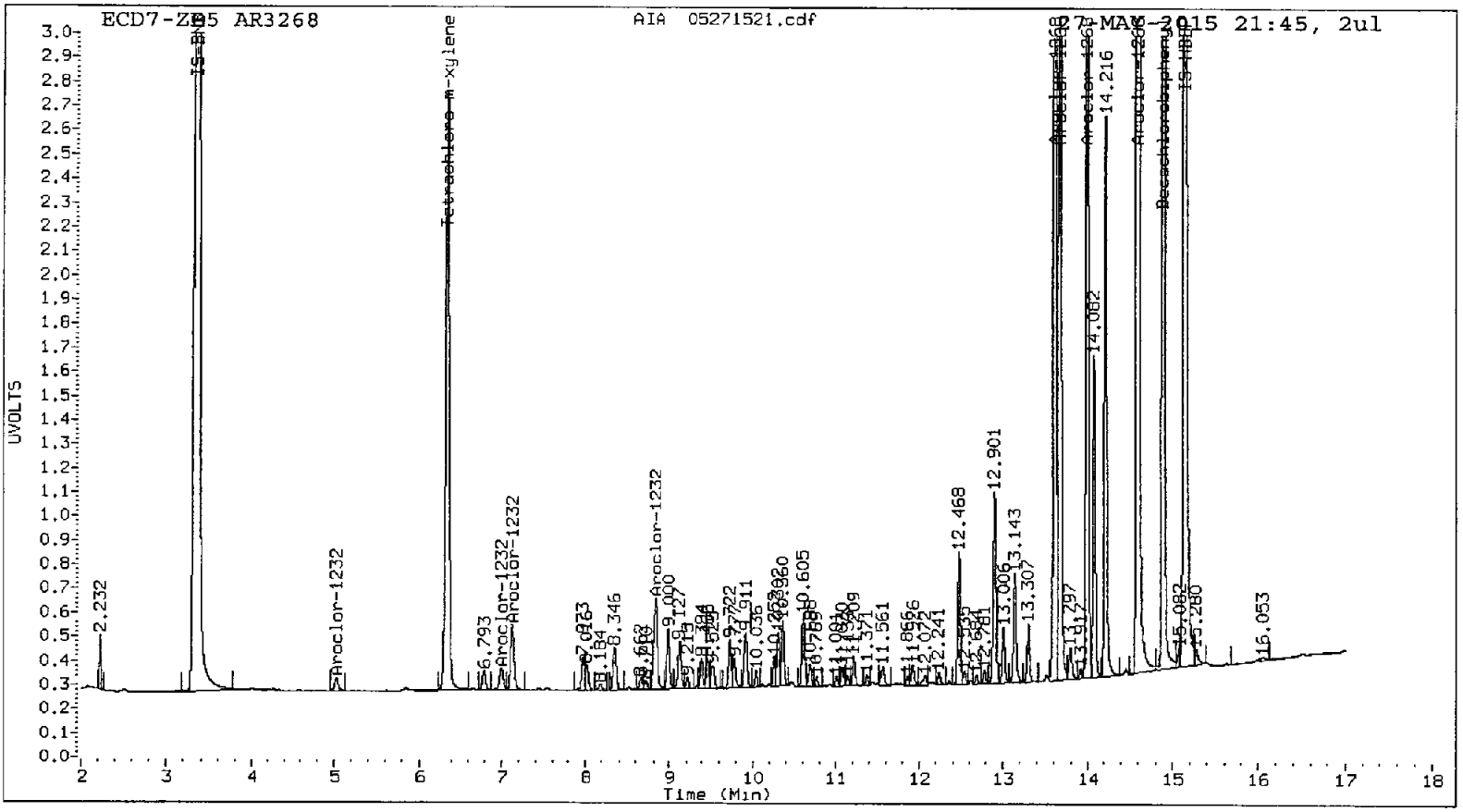
UVOLTS
2.141
2.686
3.428
IS-BNB
4.478
Aroclor-1232
5.808
Tetrachloro-m-xylene
6.724
Aroclor-1232
Aroclor-1232
8.807
Aroclor-1232
Aroclor-1268
Aroclor-1268
Aroclor-1268
13.101
14.213
Decachlorobiphenyl
IS-HBBP
Time (Min)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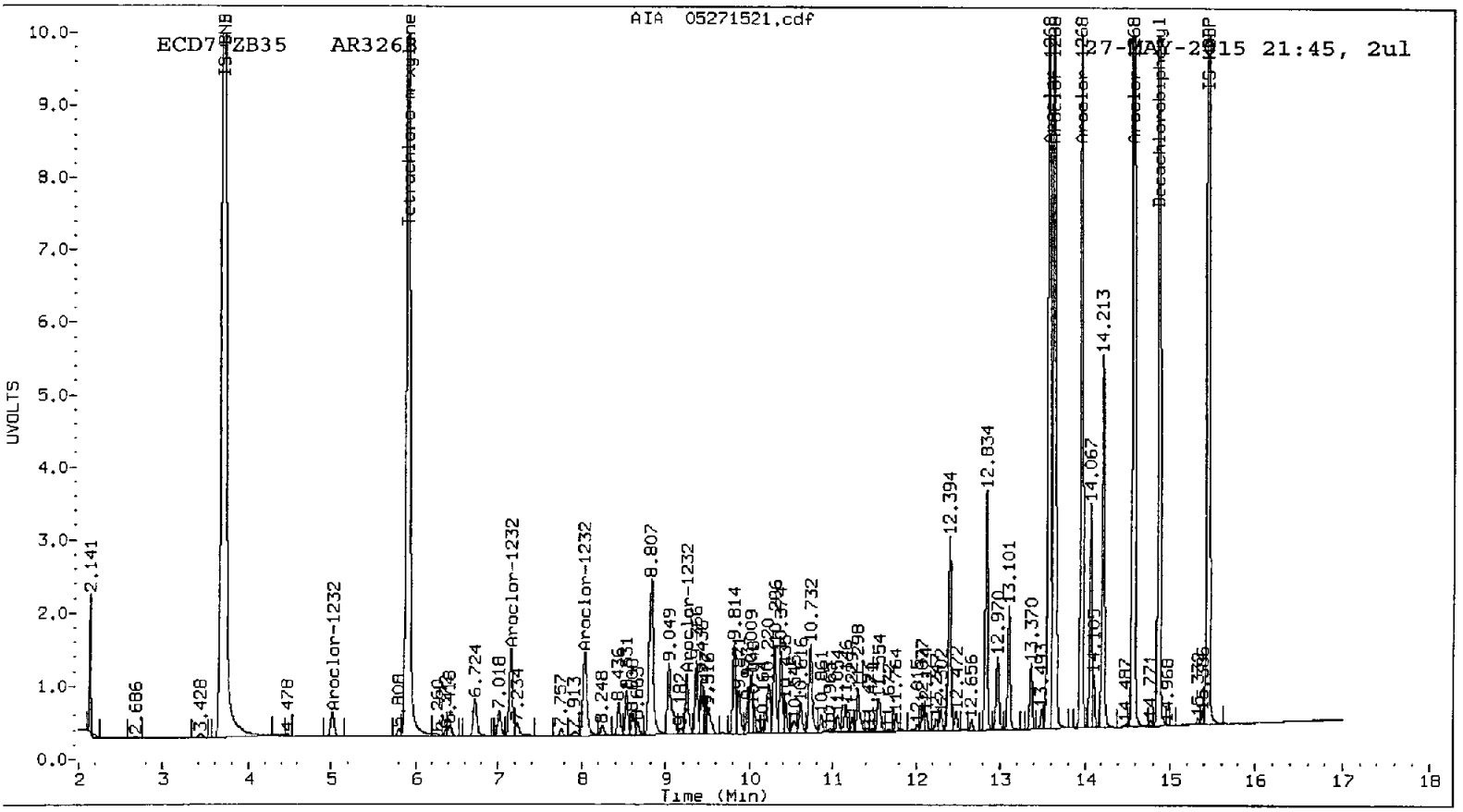
AIA 05271521.cdf
27-MAY-2015 21:45, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
2.232
6.793
7.473
8.184
8.346
9.000
9.722
9.911
10.036
10.605
11.371
11.561
12.241
12.468
12.901
13.006
13.143
13.307
13.797
14.082
14.216
15.082
15.280
16.053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27-MAY-2015 21:45, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
2.141
2.686
3.428
4.478
5.808
6.724
7.018
7.234
7.757
7.913
8.248
8.436
8.807
9.049
9.182
9.814
10.732
12.394
12.656
12.834
12.970
13.101
13.370
14.067
14.213
14.487
14.771
14.968

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271522.d
Data file 2: 20150527.b/ical-2.b/05271522.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV
Client ID:
Injection Date: 27-MAY-2015 22:07
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.002	1403919	5.910	0.002	6616925	38.7	37.9	2.1	Tetrachloro-m-xylene
14.890	0.001	2762609	14.863	0.000	4406367	39.0	37.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

A 05/28/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	96.8	94.8
Decachlorobiphenyl	97.6	94.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5348403	-1.9
Hexabromobiphenyl	5633814	5628466	-0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12940835	-0.9
Hexabromobiphenyl	8980422	9714071	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAS 080418

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.347	0.000	223069	259.3	1	8.032	0.001	1807447	254.8
Aroclor-1016	2	8.831	-0.001	673141	255.3	2	8.809	0.001	3762564	249.8
Aroclor-1016	3	9.128	0.000	238542	264.5	3	9.247	0.000	989571	254.7
Aroclor-1016	4	9.912	0.000	281445	294.1	4	10.009	0.000	801531	292.0
Total Col1Ave (4 peaks):					268.3	Total Col2Ave (4 peaks):				262.8 RPD = 2
Corrected Ave (3 peaks):					259.7	Corrected Ave (3 peaks):				253.1 RPD = 3
Aroclor-1221	1	---			0.0	1	5.023	0.004	12121	9.0
Aroclor-1221	2	7.001	0.002	57895	170.0	2	6.728	0.009	260200	115.7
Aroclor-1221	3	7.127	0.004	186624	194.1	3	7.019	0.004	190535	150.1
Aroclor-1221	NS	---			----	4	7.155	0.004	823085	212.0
Col1Ave: <3 Quant Peaks						Col2Ave: 121.7				
Aroclor-1232	1	---			0.0	1	5.023	0.002	12121	14.8
Aroclor-1232	2	7.001	0.001	57895	246.1	2	7.155	0.002	823085	300.2
Aroclor-1232	3	7.127	0.001	186624	290.7	3	8.032	0.002	1807447	562.2
Aroclor-1232	4	8.831	0.001	673141	627.4	4	9.247	0.000	989571	599.9
Total Col1Ave (3 peaks):					388.1	Total Col2Ave (4 peaks):				369.3 RPD = 5
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				292.4
Aroclor-1242	1	8.831	0.001	673141	348.9	1	8.032	0.003	1807447	347.3
Aroclor-1242	2	9.128	0.002	238542	345.3	2	8.809	0.001	3762564	342.4
Aroclor-1242	3	10.304	0.002	38794	60.3	3	10.375	0.001	169743	44.3
Aroclor-1242	4	10.610	0.004	23651	24.5	4	10.732	-0.001	73490	15.8
Total Col1Ave (4 peaks):					194.7	Total Col2Ave (4 peaks):				187.5 RPD = 4
Corrected Ave (3 peaks):					143.4	Corrected Ave (3 peaks):				134.2 RPD = 7
Aroclor-1248	1	9.395	0.001	118337	192.6	1	8.809	0.006	3762564	527.6
Aroclor-1248	2	9.912	0.001	281445	215.4	2	9.816	0.001	1219052	213.9
Aroclor-1248	3	10.370	0.009	135317	89.2	3	10.375	0.001	169743	28.1
Aroclor-1248	4	10.610	0.004	23651	15.4	4	10.732	0.001	73490	9.4
Total Col1Ave (4 peaks):					128.1	Total Col2Ave (4 peaks):				194.8 RPD = 41*
Corrected Ave (3 peaks):					99.0	Corrected Ave (3 peaks):				83.8 RPD = 17
Aroclor-1254	1	10.370	0.001	135317	138.5	1	10.616	0.001	751171	110.2
Aroclor-1254	2	10.693	0.004	122809	88.0	2	10.732	0.021	73490	22.7
Aroclor-1254	3	11.071	0.001	24453	21.6	3	11.147	0.002	129565	24.3
Aroclor-1254	4	11.207	-0.001	81477	38.1	4	11.337	0.039	1876257	165.1
Aroclor-1254	5	11.912	-0.011	157951	103.1	5	12.084	0.006	835361	123.0
Total Col1Ave (5 peaks):					77.9	Total Col2Ave (5 peaks):				89.1 RPD = 13
Corrected Ave (4 peaks):					62.7	Corrected Ave (4 peaks):				70.1 RPD = 11
Aroclor-1260	1	12.470	0.001	475964	259.2	1	12.394	-0.001	2156601	247.6
Aroclor-1260	2	13.144	0.000	1633087	274.8	2	13.101	-0.001	5310024	261.7
Aroclor-1260	3	13.514	-0.001	764957	277.1	3	13.572	0.000	1519306	246.6
Aroclor-1260	4	13.612	0.000	420525	252.4	4	13.623	-0.001	3499311	261.8
Aroclor-1260	5	14.012	0.000	249693	272.6	NS	---			----
Total Col1Ave (5 peaks):					267.2	Total Col2Ave (4 peaks):				254.4 RPD = 5
Corrected Ave (4 peaks):					264.8	Corrected Ave (3 peaks):				252.0 RPD = 5
Aroclor-1262	1	12.470	0.003	475964	143.4	1	12.394	0.000	2156601	140.1
Aroclor-1262	2	13.144	0.001	1633087	176.9	2	12.837	0.001	2478885	171.3
Aroclor-1262	3	13.514	0.000	764957	262.9	3	13.101	0.001	5310024	178.8
Aroclor-1262	4	13.676	0.001	553609	109.6	4	13.572	0.001	1519306	118.6
Aroclor-1262	5	14.218	0.002	561821	124.4	5	14.214	0.001	1371663	136.3
Total Col1Ave (5 peaks):					163.4	Total Col2Ave (5 peaks):				149.0 RPD = 9

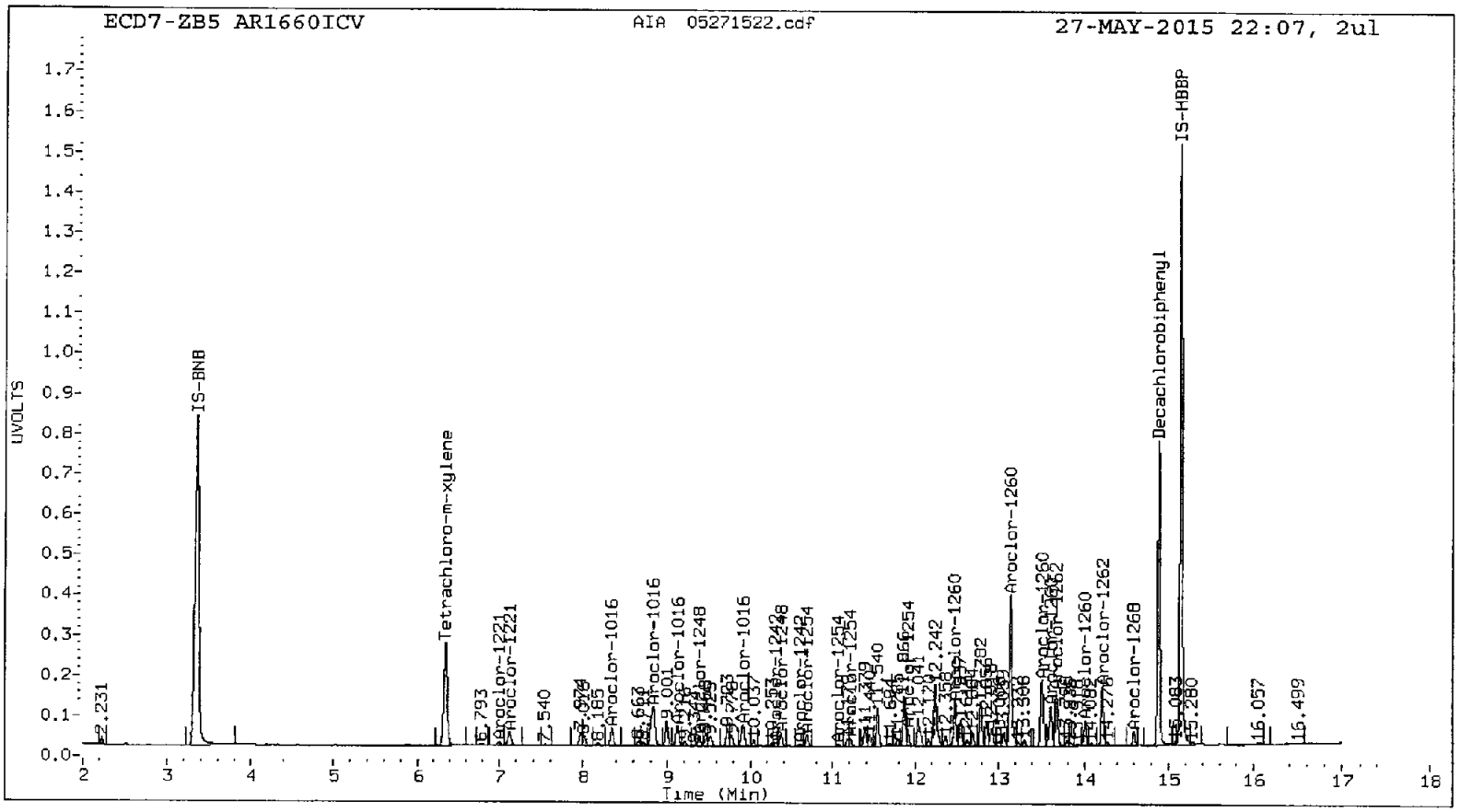
Corrected Ave (4 peaks):			138.6		Corrected Ave (4 peaks):			141.6	RPD = 2
Aroclor-1268 1	13.612	0.001	420525	48.2	1	13.572	0.003	1519306	66.7
Aroclor-1268 2	13.676	0.002	553609	54.1	2	13.623	-0.005	3499311	162.7
Aroclor-1268 3	14.012	0.015	249593	27.3	3	13.953	0.000	57329	3.3
Aroclor-1268 4	14.597	0.000	128680	4.0	4	14.572	0.000	262227	5.4
Total Col1Ave (4 peaks):			33.4		Total Col2Ave (4 peaks):			59.5	RPD = 56*
Corrected Ave (3 peaks):			26.5		Corrected Ave (3 peaks):			25.1	RPD = 5

Total PCB Area Col1 (6.443 - 14.789) = 13251332 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 58493588 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGAS 86512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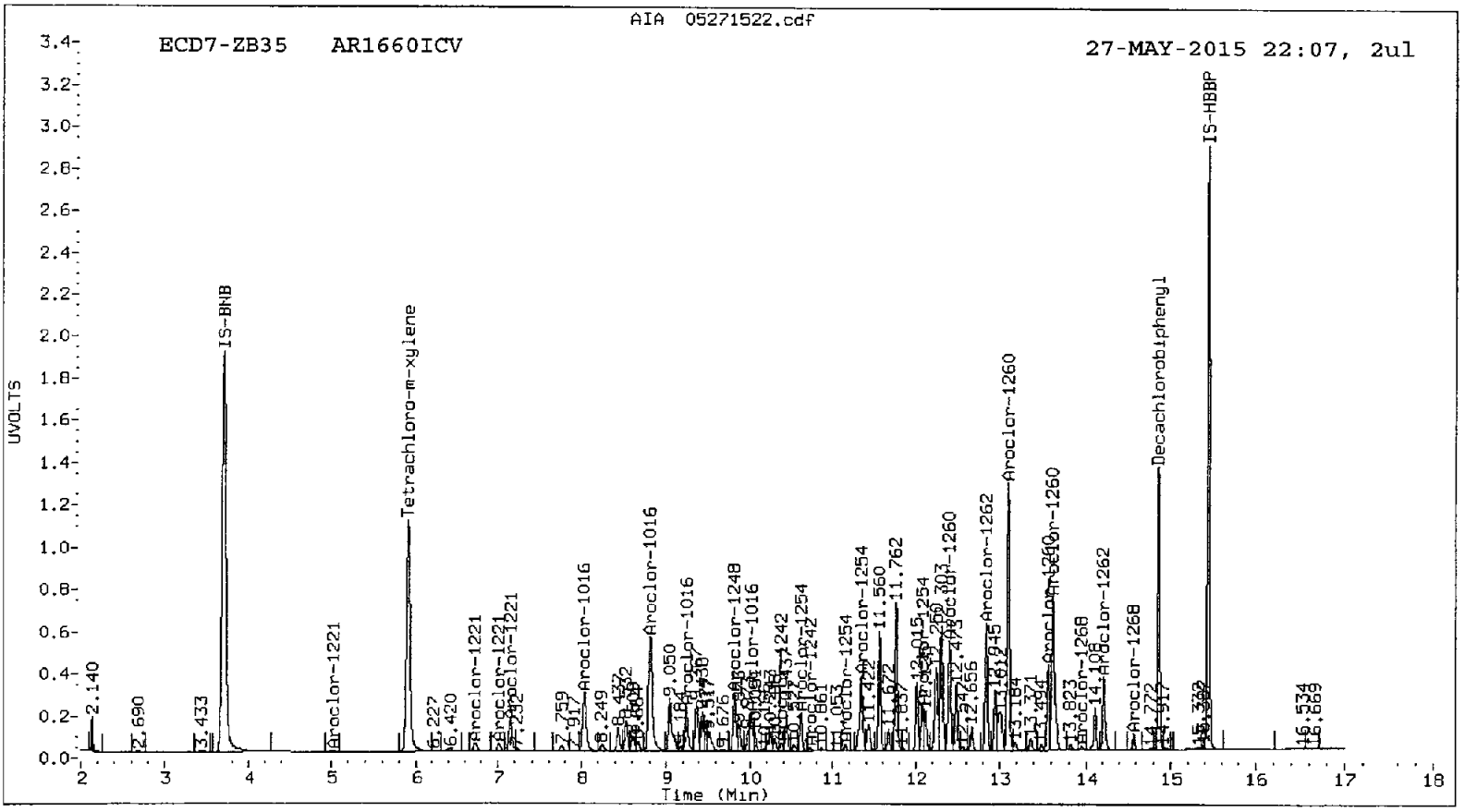
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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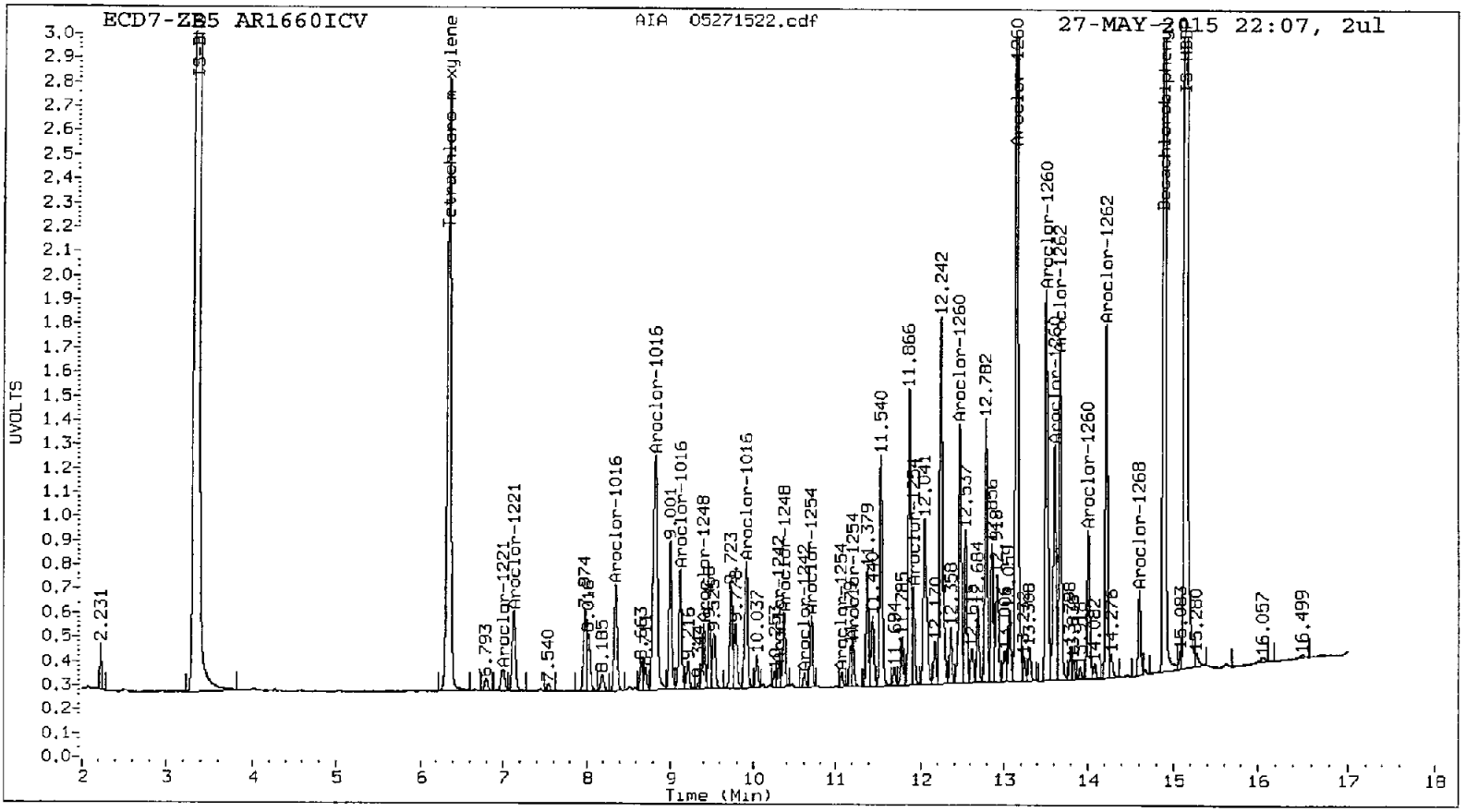
ECD7-ZB35 AR1660ICV
27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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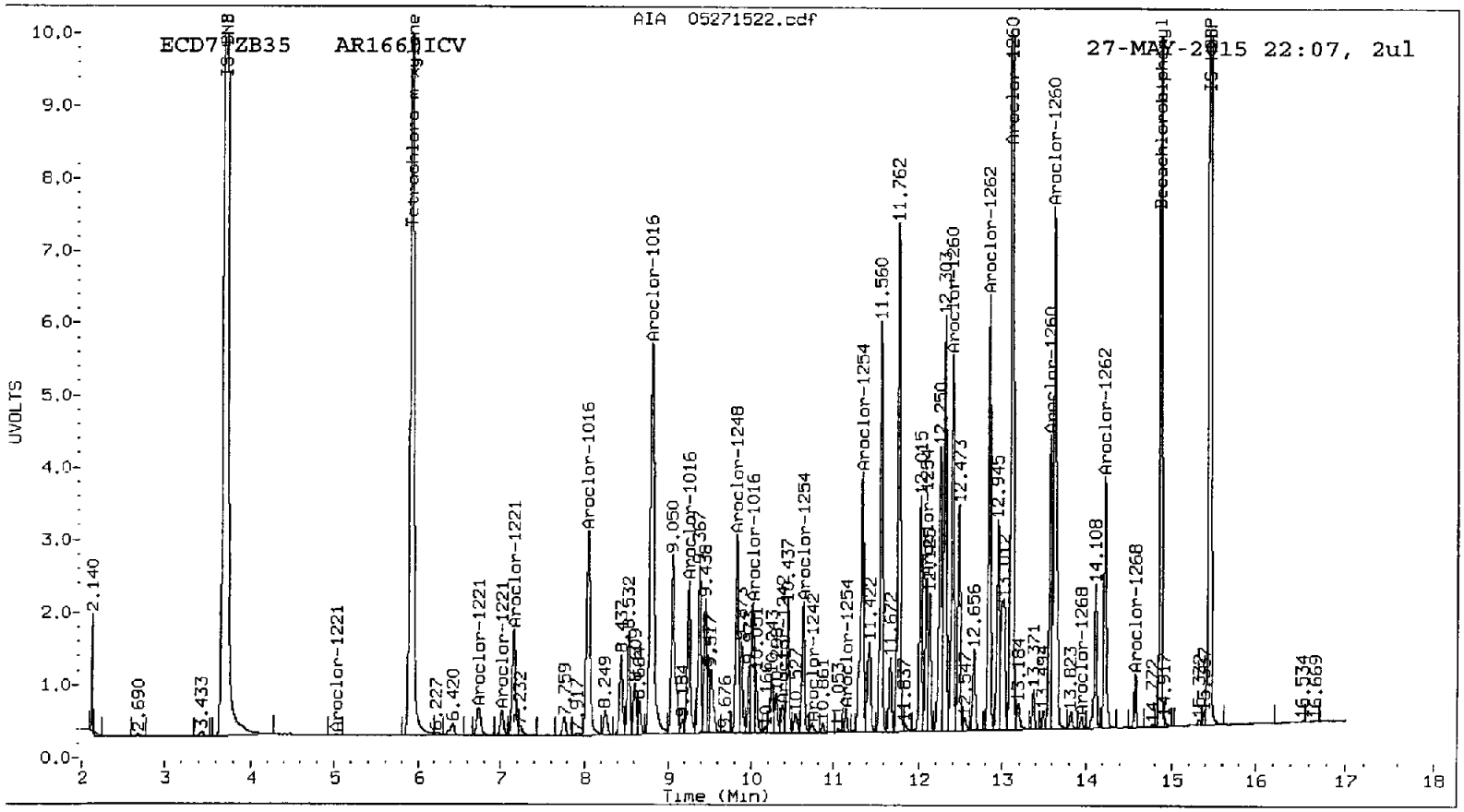
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271523.d
Data file 2: 20150527.b/ical-2.b/05271523.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 27-MAY-2015 22:28
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.343	0.000	1373297	5.908	0.000	6395999	38.1	37.3	2.3	Tetrachloro-m-xylene
14.889	0.000	2722859	14.862	0.000	4336792	39.7	37.2	6.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.3	93.1
Decachlorobiphenyl	99.3	93.1

JR 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5313543	-2.5
Hexabromobiphenyl	5633814	5448595	-3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12729044	-2.5
Hexabromobiphenyl	8980422	9658995	7.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAS : 08545

Aroclor	Peak#	RT	Shift	ZB5 Col Area	Amount	Peak#	RT	Shift	ZB35 Col Area	Amount
Aroclor-1016	1	8.345	-0.002	164046	191.9	1	8.029	-0.003	1321301	189.4
Aroclor-1016	2	8.829	-0.002	488134	186.4	2	8.807	-0.001	2736648	184.7
Aroclor-1016	3	9.126	-0.003	172293	192.3	3	9.246	-0.001	723186	189.2
Aroclor-1016	4	9.910	-0.002	219680	231.0	4	10.008	-0.002	642177	237.9
Total Col1Ave (4 peaks):					200.4	Total Col2Ave (4 peaks):				200.3 RPD = 0
Corrected Ave (3 peaks):					190.2	Corrected Ave (3 peaks):				187.8 RPD = 1
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.997	-0.001	46710	138.0	2	6.728	0.009	208567	94.3
Aroclor-1221	3	7.125	0.002	135489	141.9	3	7.018	0.003	137235	109.9
Aroclor-1221	NS	---			----	4	7.153	0.002	600495	157.2
Col1Ave: <3 Quant Peaks						Col2Ave:				120.5
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.997	-0.002	46710	199.9	2	7.153	0.000	600495	222.7
Aroclor-1232	3	7.125	-0.001	135489	212.4	3	8.029	-0.001	1321301	417.9
Aroclor-1232	4	8.829	-0.001	488134	457.9	4	9.246	-0.001	723186	445.7
Total Col1Ave (3 peaks):					290.1	Total Col2Ave (3 peaks):				362.1 RPD = 22
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.829	0.000	488134	254.6	1	8.029	0.000	1321301	258.1
Aroclor-1242	2	9.126	-0.001	172293	251.0	2	8.807	-0.001	2736648	253.2
Aroclor-1242	3	10.302	0.000	160105	250.4	3	10.373	0.000	897475	238.4
Aroclor-1242	4	10.606	-0.001	234997	245.3	4	10.732	0.000	1137199	248.3
Total Col1Ave (4 peaks):					250.3	Total Col2Ave (4 peaks):				249.5 RPD = 0
Corrected Ave (3 peaks):					248.9	Corrected Ave (3 peaks):				246.6 RPD = 1
Aroclor-1248	1	9.394	-0.001	92077	150.8	1	8.807	0.004	2736648	390.1
Aroclor-1248	2	9.910	-0.001	219680	169.2	2	9.815	0.000	937026	167.2
Aroclor-1248	3	10.360	-0.001	224035	148.6	3	10.373	0.000	897475	151.1
Aroclor-1248	4	10.606	-0.001	234997	154.1	4	10.732	0.002	1137199	148.3
Total Col1Ave (4 peaks):					155.7	Total Col2Ave (4 peaks):				214.2 RPD = 32
Corrected Ave (3 peaks):					151.2	Corrected Ave (3 peaks):				155.5 RPD = 3
Aroclor-1254	1	10.360	-0.008	224035	230.8	1	10.615	0.000	348230	51.9
Aroclor-1254	2	10.688	-0.001	84336	60.8	2	10.732	0.022	1137199	357.9
Aroclor-1254	3	11.070	0.000	70049	62.3	3	11.146	0.001	324847	62.0
Aroclor-1254	4	11.209	0.001	110807	52.2	4	11.298	0.001	541760	48.5
Aroclor-1254	5	11.927	0.004	83629	55.0	5	12.077	-0.002	351024	52.6
Total Col1Ave (5 peaks):					92.2	Total Col2Ave (5 peaks):				114.6 RPD = 22
Corrected Ave (4 peaks):					57.6	Corrected Ave (4 peaks):				53.7 RPD = 7
Aroclor-1260	1	---			0.0	1	12.467	0.072	39557	4.6
Aroclor-1260	2	---			0.0	2	13.103	0.001	28728	1.4
Aroclor-1260	3	---			0.0	3	13.622	0.051	15301	2.5
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:				2.8
Aroclor-1262	1	---			0.0	1	12.467	0.073	39557	2.6
Aroclor-1262	2	---			0.0	2	12.834	-0.002	77205	5.4
Aroclor-1262	3	---			0.0	3	13.103	0.003	28728	1.0
Aroclor-1262	4	---			0.0	4	13.622	0.052	15301	1.2
Aroclor-1262	5	---			0.0	5	14.251	0.038	90443	9.0
Col1Ave: <3 Quant Peaks						Col2Ave:				3.8

Aroclor-1268	1	---			0.0	1	13.622	0.053	15301	0.7
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	13.917	-0.080	23283	2.6	3	13.953	0.001	9516	0.6
Aroclor-1268	4	14.594	-0.003	10910	0.4	4	14.571	-0.002	29723	0.6

Col1Ave: <3 Quant Peaks Col2Ave: 0.6

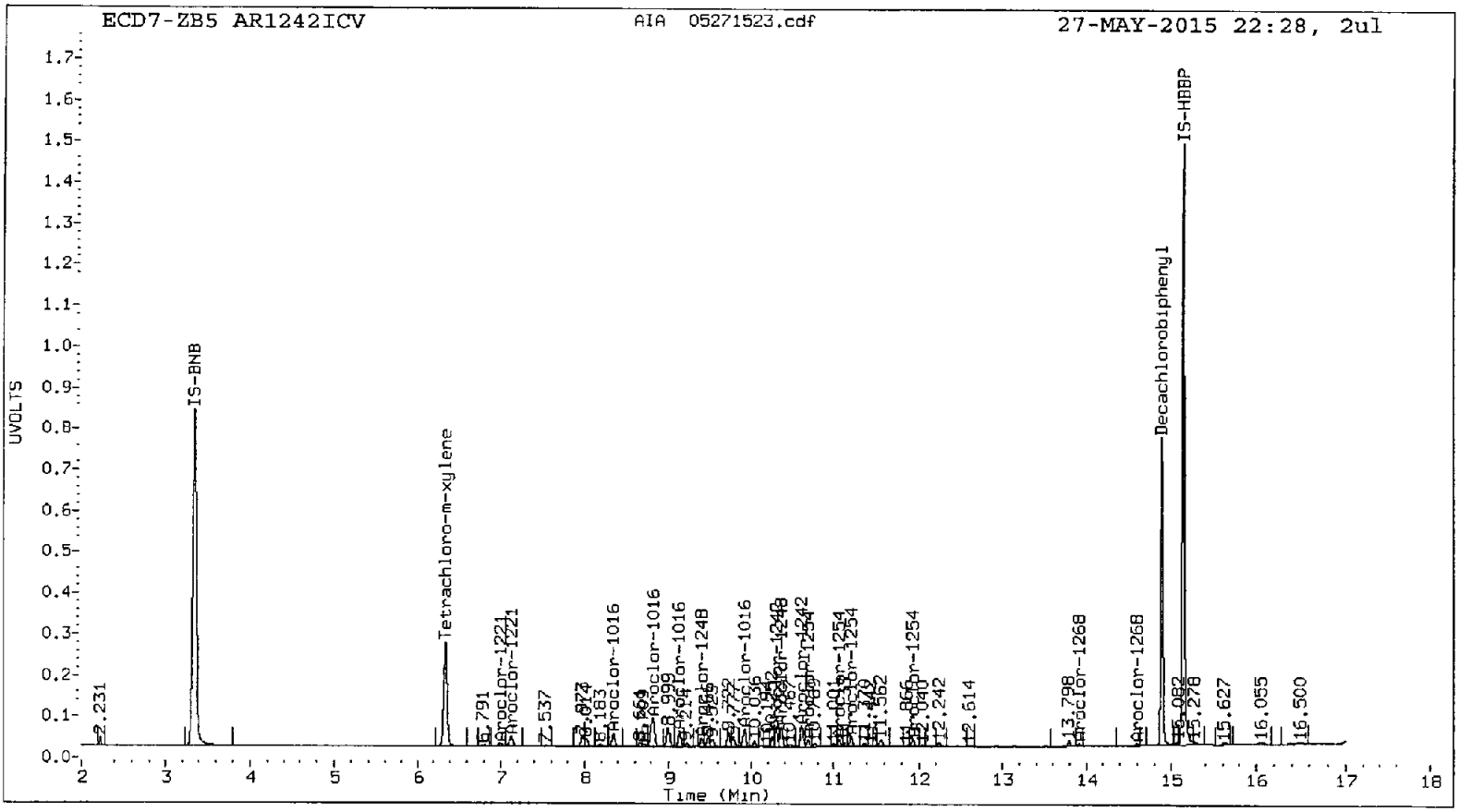
Total PCB Area Col1 (6.443 - 14.789) = 3966417 Col1 Total PCB = 0.2 ppm*

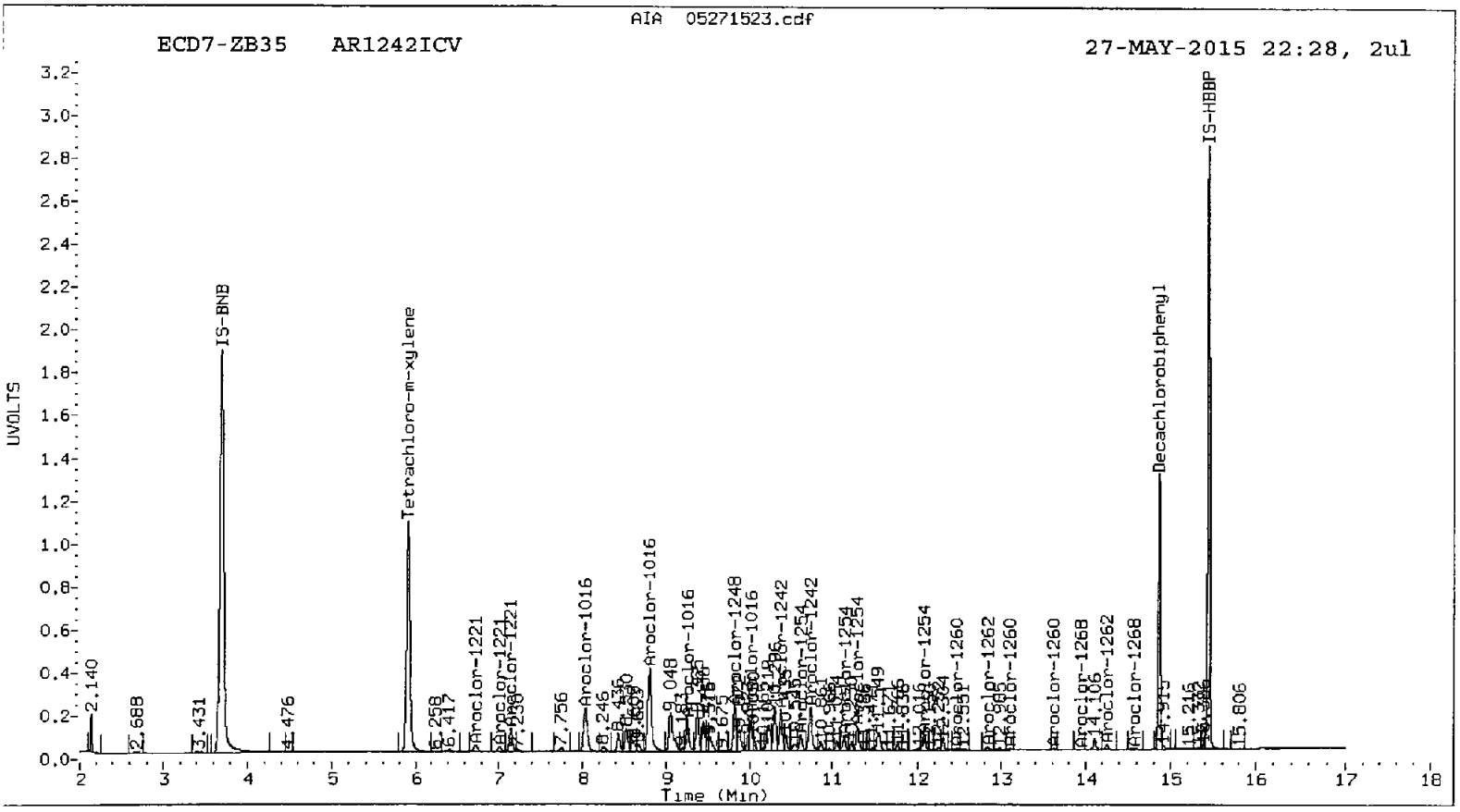
Total PCB Area Col2 (6.008 - 14.762) = 21531185 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

AGAS 2861T


ECD7-ZB5 AR1242ICV
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268


AIA 05271523.cdf
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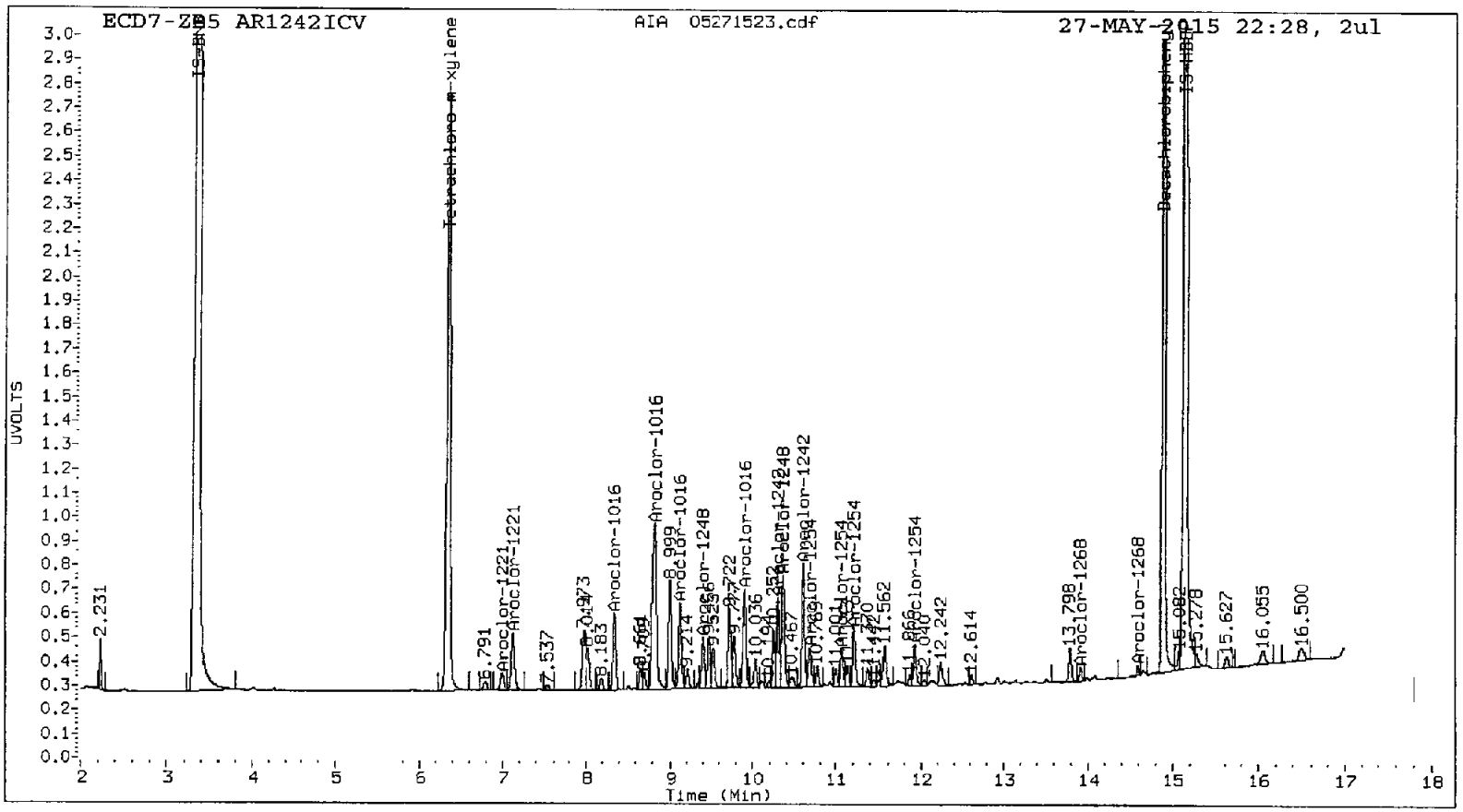
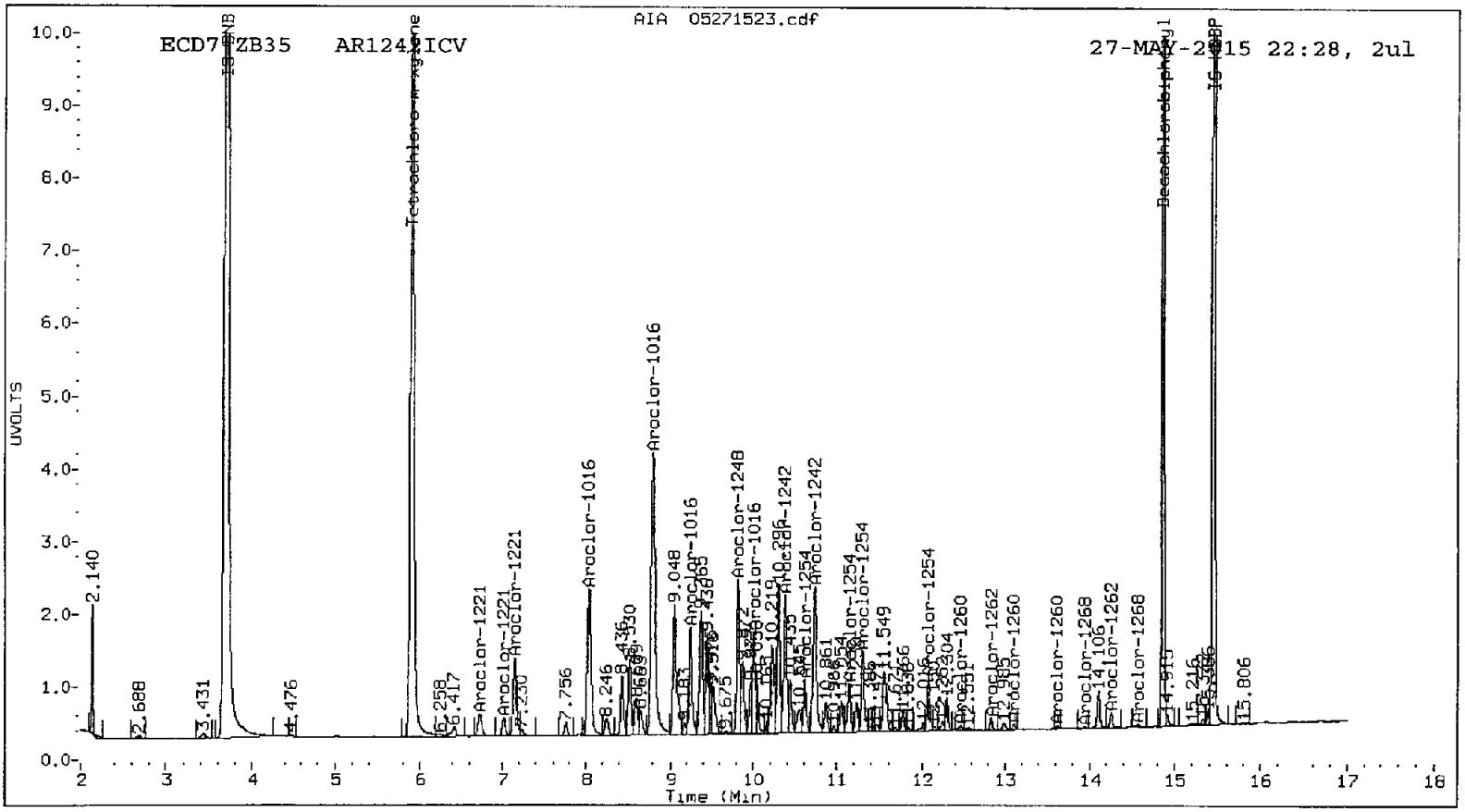
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268


ECD7-ZB35 AR1242ICV
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1268


ECD7-ZB35 AR1242ICV
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271524.d
Data file 2: 20150527.b/ical-2.b/05271524.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 27-MAY-2015 22:49
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.001	1372749	5.908	0.000	6495842	38.3	37.6	1.9	Tetrachloro-m-xylene
14.890	0.000	2782245	14.862	0.000	4405933	39.8	37.7	5.4	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.8	94.0
Decachlorobiphenyl	99.4	94.2

1m 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5283025	-3.1
Hexabromobiphenyl	5633814	5563146	-1.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12806439	-1.9
Hexabromobiphenyl	8980422	9699512	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.345	-0.002	83806	98.6	1	8.028	-0.003	731380	104.2
Aroclor-1016	2	8.828	-0.003	334047	128.3	2	8.805	-0.003	1917899	128.7
Aroclor-1016	3	9.127	-0.002	105954	118.9	3	9.247	0.000	428522	111.4
Aroclor-1016	4	9.911	-0.001	328510	347.5	4	10.009	-0.001	1307433	481.3
Total Col1Ave (4 peaks):					173.3	Total Col2Ave (4 peaks):				206.4 RPD = 17
Corrected Ave (3 peaks):					115.3	Corrected Ave (3 peaks):				114.8 RPD = 0
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.986	-0.013	24669	73.3	2	6.739	0.020	109652	49.3
Aroclor-1221	3	7.127	0.004	27566	29.0	3	7.019	0.004	26120	20.8
Aroclor-1221	NS	---			----	4	7.154	0.003	162372	42.3
Col1Ave: <3 Quant Peaks						Col2Ave:				37.4
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.986	-0.014	24669	106.2	2	7.154	0.001	162372	59.8
Aroclor-1232	3	7.127	0.001	27566	43.5	3	8.028	-0.001	731380	229.9
Aroclor-1232	4	8.828	-0.002	334047	315.2	4	9.247	0.000	428522	262.5
Total Col1Ave (3 peaks):					154.9	Total Col2Ave (3 peaks):				184.1 RPD = 17
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.828	-0.001	334047	175.3	1	8.028	-0.001	731380	142.0
Aroclor-1242	2	9.127	0.000	105954	155.3	2	8.805	-0.003	1917899	176.4
Aroclor-1242	3	10.303	0.001	284558	447.6	3	10.373	-0.001	1469700	388.0
Aroclor-1242	4	10.606	0.000	377646	396.5	4	10.730	-0.002	1905061	413.5
Total Col1Ave (4 peaks):					293.6	Total Col2Ave (4 peaks):				280.0 RPD = 5
Corrected Ave (3 peaks):					242.3	Corrected Ave (3 peaks):				235.5 RPD = 3
Aroclor-1248	1	9.395	0.000	159302	262.5	1	8.805	0.002	1917899	271.7
Aroclor-1248	2	9.911	0.000	328510	254.6	2	9.814	-0.001	1440471	255.4
Aroclor-1248	3	10.361	0.000	378534	252.5	3	10.373	0.000	1469700	245.9
Aroclor-1248	4	10.606	0.000	377646	249.0	4	10.730	0.000	1905061	246.9
Total Col1Ave (4 peaks):					254.6	Total Col2Ave (4 peaks):				255.0 RPD = 0
Corrected Ave (3 peaks):					252.0	Corrected Ave (3 peaks):				249.4 RPD = 1
Aroclor-1254	1	10.361	-0.007	378534	392.3	1	10.617	0.002	622883	92.3
Aroclor-1254	2	10.688	0.000	163701	118.7	2	10.730	0.020	1905061	595.9
Aroclor-1254	3	11.071	0.001	138140	123.5	3	11.147	0.001	640322	121.5
Aroclor-1254	4	11.209	0.001	215720	102.2	4	11.297	0.000	1053092	93.6
Aroclor-1254	5	11.928	0.005	170898	112.9	5	12.075	-0.004	751458	111.9
Total Col1Ave (5 peaks):					169.9	Total Col2Ave (5 peaks):				203.0 RPD = 18
Corrected Ave (4 peaks):					114.3	Corrected Ave (4 peaks):				104.8 RPD = 9
Aroclor-1260	1	---			0.0	1	12.395	0.000	35747	4.1
Aroclor-1260	2	13.144	0.000	15836	2.7	2	13.103	0.001	71803	3.5
Aroclor-1260	3	---			0.0	3	13.571	-0.001	29190	4.7
Aroclor-1260	4	---			0.0	4	13.626	0.002	49852	3.7
Aroclor-1260	5	13.917	-0.094	19639	21.7	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:				4.0
Aroclor-1262	1	---			0.0	1	12.395	0.001	35747	2.3
Aroclor-1262	2	---			0.0	2	12.835	-0.001	96707	6.7
Aroclor-1262	3	---			0.0	3	13.103	0.003	71803	2.4
Aroclor-1262	4	---			0.0	4	13.571	0.001	29190	2.3
Aroclor-1262	5	---			0.0	5	14.215	0.003	19226	1.9
Col1Ave: <3 Quant Peaks						Col2Ave:				3.1

AGAS 20851

Aroclor-1268 1	---	0.0	1	13.571	0.002	29190	1.3
Aroclor-1268 2	---	0.0	2	13.626	-0.003	49852	2.3
Aroclor-1268 3	---	0.0	3	13.953	0.000	11731	0.7
Aroclor-1268 4	---	0.0	4	14.573	0.000	19293	0.4

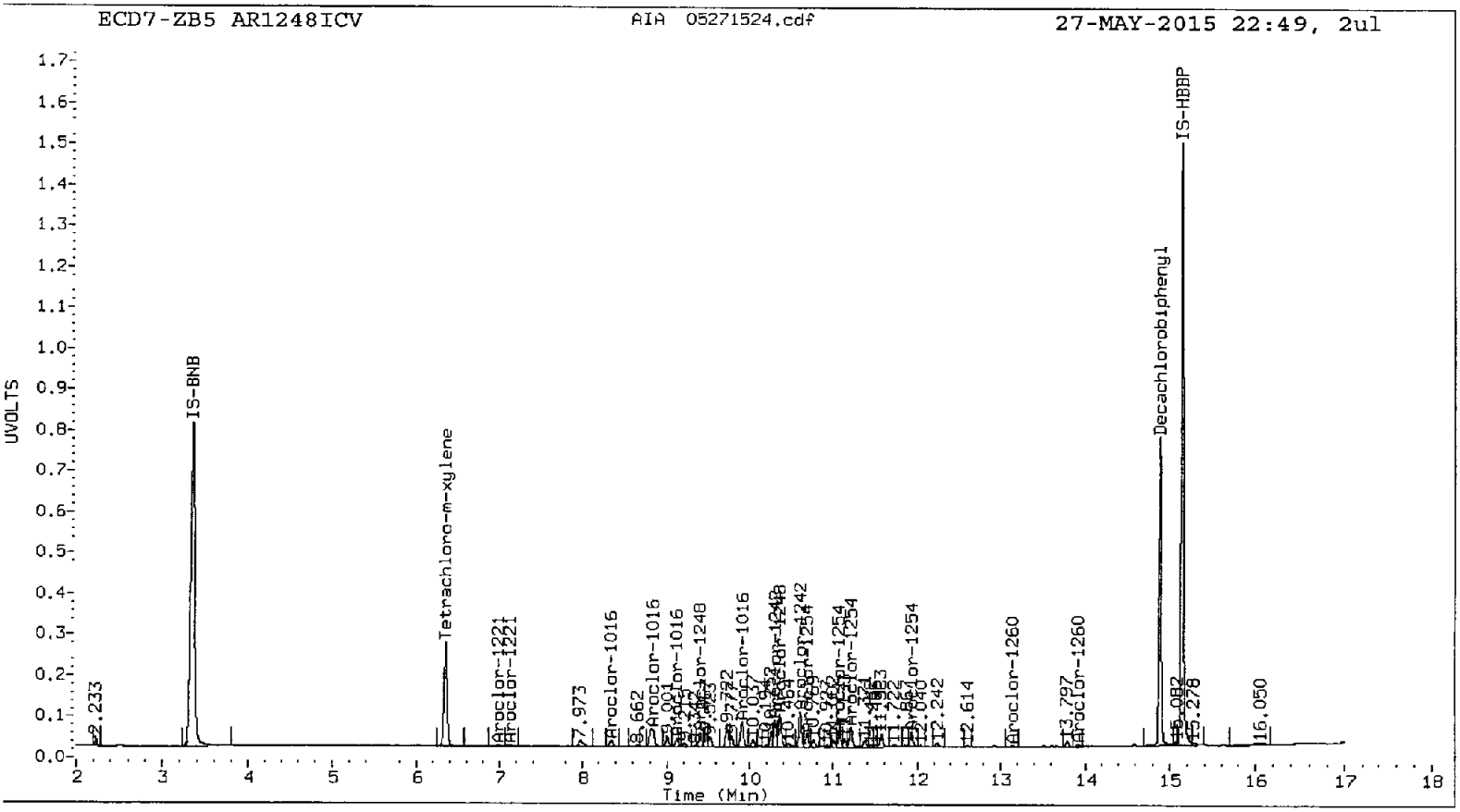
Col1Ave: <3 Quant Peaks Col2Ave: 1.2

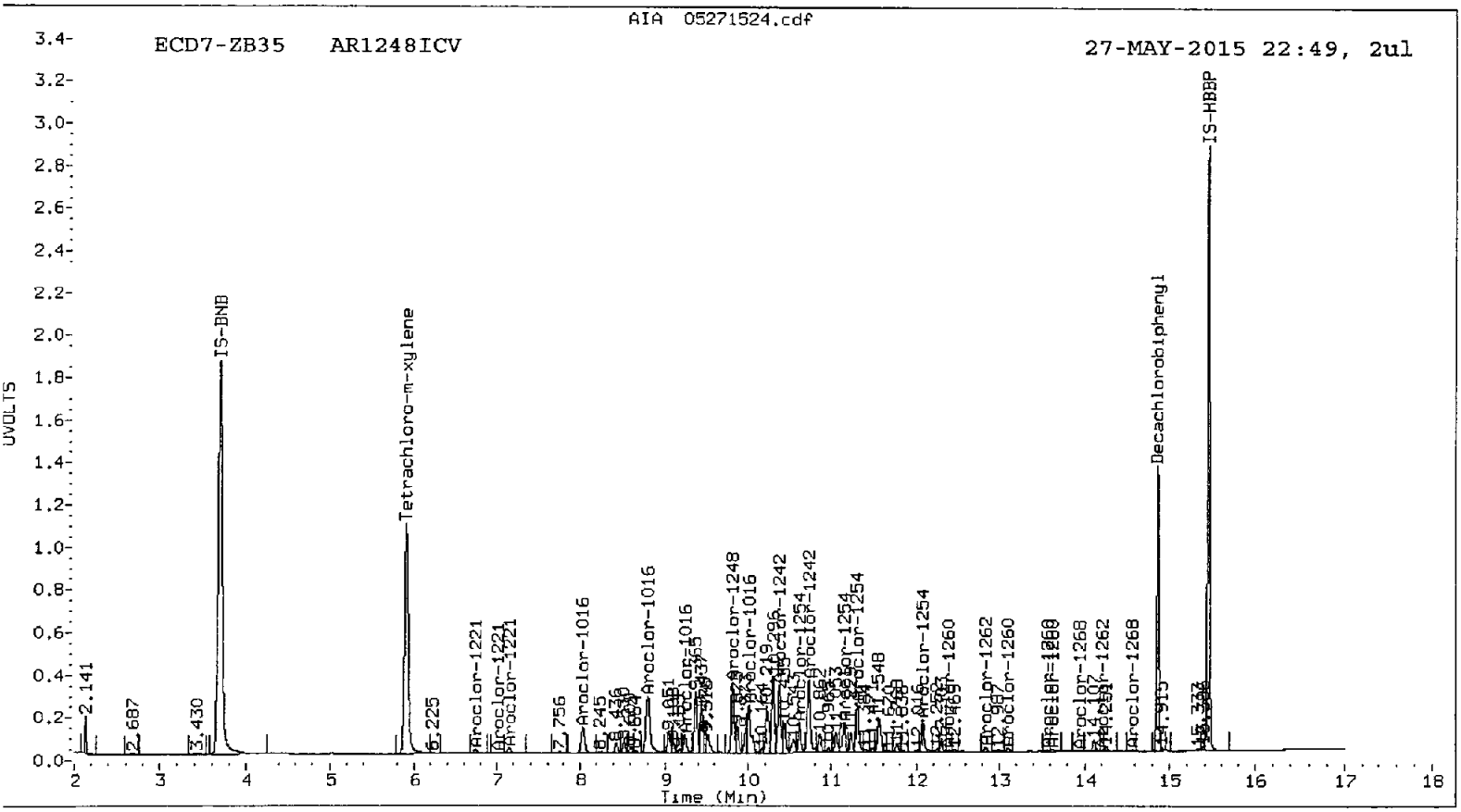
Total PCB Area Col1 (6.443 - 14.789) = 4802811 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 25794953 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1248ICV
AIA 05271524.cdf
27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1268
2.233
7.973
16.050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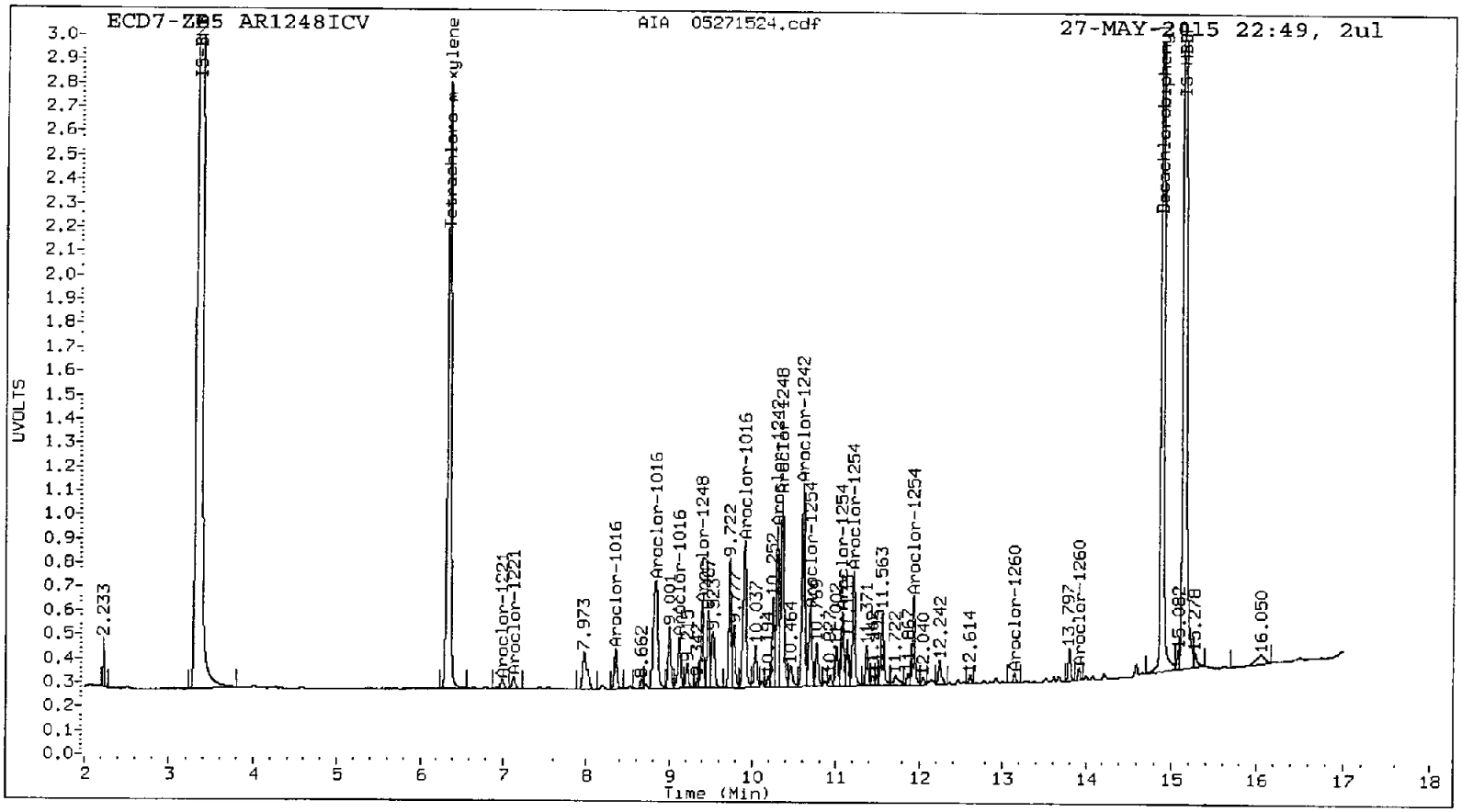
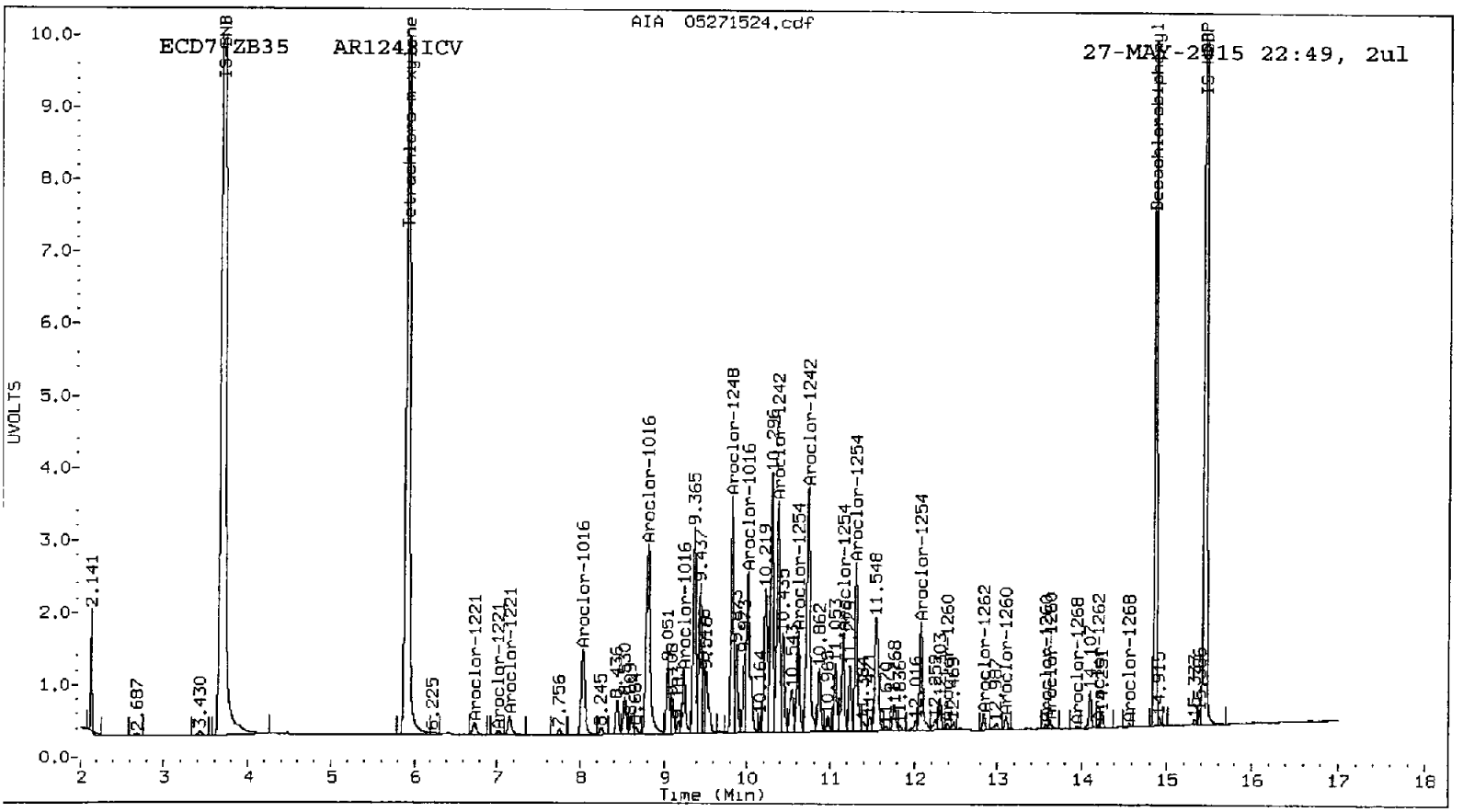
ECD7-ZB35 AR1248ICV
27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.141
2.687
3.430
6.225
7.756


ECD7-ZB5 AR1248ICV
AIA 05271524.cdf
27-MAY-2015 22:49, 2ul
IS-DCB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBB
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
UVOLTS
Time (Min)


ECD7-ZB35 AR1248ICV
AIA 05271524.cdf
27-MAY-2015 22:49, 2ul
IS-DCB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBB
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271525.d
Data file 2: 20150527.b/ical-2.b/05271525.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 27-MAY-2015 23:11
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.344	0.001	1320945	5.909	0.001	6287870	37.3	36.7	1.6	Tetrachloro-m-xylene
14.889	0.000	2629296	14.862	-0.001	4291412	38.2	37.3	2.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.3	91.8
Decachlorobiphenyl	95.5	93.2

A 05/20/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5217434	-4.3
Hexabromobiphenyl	5633814	5473683	-2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12694649	-2.8
Hexabromobiphenyl	8980422	9548705	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGAB 39555

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	8.029	-0.002	22476	3.2
Aroclor-1016	2	---			0.0	2	8.804	-0.004	66635	4.5
Aroclor-1016	3	---			0.0	3	9.249	0.002	9392	2.5
Aroclor-1016	4	---			0.0	4	10.010	0.000	262158	97.4
		Col1Ave: <3 Quant Peaks					Col2Ave:	26.9		
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.741	0.022	87190	39.5
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.157	0.007	24081	6.3
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.157	0.004	24081	9.0
Aroclor-1232	3	---			0.0	3	8.029	-0.001	22476	7.1
Aroclor-1232	4	---			0.0	4	9.249	0.002	9392	5.8
		Col1Ave: <3 Quant Peaks					Col2Ave:	7.3		
Aroclor-1242	1	---			0.0	1	8.029	0.000	22476	4.4
Aroclor-1242	2	---			0.0	2	8.804	-0.004	66635	6.2
Aroclor-1242	3	10.303	0.001	137350	218.8	3	10.373	-0.001	280722	74.8
Aroclor-1242	4	10.609	0.002	104658	111.3	4	10.711	-0.022	1001083	219.2
		Col1Ave: <3 Quant Peaks					Col2Ave:	76.1		
Aroclor-1248	1	9.395	0.000	110618	184.5	1	8.804	0.001	66635	9.5
Aroclor-1248	2	9.911	0.000	45926	36.0	2	9.816	0.001	508784	91.0
Aroclor-1248	3	10.368	0.008	275981	186.4	3	10.373	-0.001	280722	47.4
Aroclor-1248	4	10.609	0.003	104658	69.9	4	10.711	-0.019	1001083	130.9
		Total Col1Ave (4 peaks):			119.2		Total Col2Ave (4 peaks):			69.7 RPD = 52*
		Corrected Ave (3 peaks):			96.8		Corrected Ave (3 peaks):			49.3 RPD = 65*
Aroclor-1254	1	10.368	0.000	275981	289.6	1	10.616	0.001	1899574	284.1
Aroclor-1254	2	10.690	0.001	392347	288.1	2	10.711	0.001	1001083	315.9
Aroclor-1254	3	11.070	0.000	331868	300.5	3	11.146	0.001	1535885	293.9
Aroclor-1254	4	11.208	0.000	591784	283.9	4	11.298	0.001	3094756	277.6
Aroclor-1254	5	11.923	0.001	451454	302.1	5	12.079	0.000	1943546	291.8
		Total Col1Ave (5 peaks):			292.8		Total Col2Ave (5 peaks):			292.7 RPD = 0
		Corrected Ave (4 peaks):			290.5		Corrected Ave (4 peaks):			286.9 RPD = 1
Aroclor-1260	1	12.466	-0.002	34513	19.3	1	12.395	0.000	148371	17.3
Aroclor-1260	2	13.143	-0.001	97879	16.9	2	13.102	0.000	492592	24.7
Aroclor-1260	3	13.513	-0.002	93396	34.8	3	13.575	0.003	64475	10.6
Aroclor-1260	4	---			0.0	4	13.622	-0.002	342216	26.0
Aroclor-1260	5	13.916	-0.095	18875	21.2	NS	---			----
		Total Col1Ave (4 peaks):			23.1		Total Col2Ave (4 peaks):			19.7 RPD = 16
		Corrected Ave (3 peaks):			19.2		Corrected Ave (3 peaks):			17.6 RPD = 9
Aroclor-1262	1	12.466	-0.001	34513	10.7	1	12.395	0.000	148371	9.8
Aroclor-1262	2	13.143	0.000	97879	10.9	2	12.833	-0.003	897076	63.1
Aroclor-1262	3	13.513	-0.001	93396	33.0	3	13.102	0.002	492592	16.9
Aroclor-1262	4	---			0.0	4	13.575	0.004	64475	5.1
Aroclor-1262	5	---			0.0	5	14.251	0.038	90228	9.1
		Total Col1Ave (3 peaks):			18.2		Total Col2Ave (5 peaks):			20.8 RPD = 13
		Corrected Ave: < 3 Peaks					Corrected Ave (4 peaks):			10.2
Aroclor-1268	1	13.513	-0.099	93396	11.0	1	13.575	0.006	64475	2.9

Aroclor-1268	2	---		0.0	2	13.622	-0.007	342216	16.2
Aroclor-1268	3	13.916	-0.080	18875	2.1	3	13.953	0.001	10086	0.6
Aroclor-1268	4	---		0.0	4	14.572	-0.001	10949	0.2

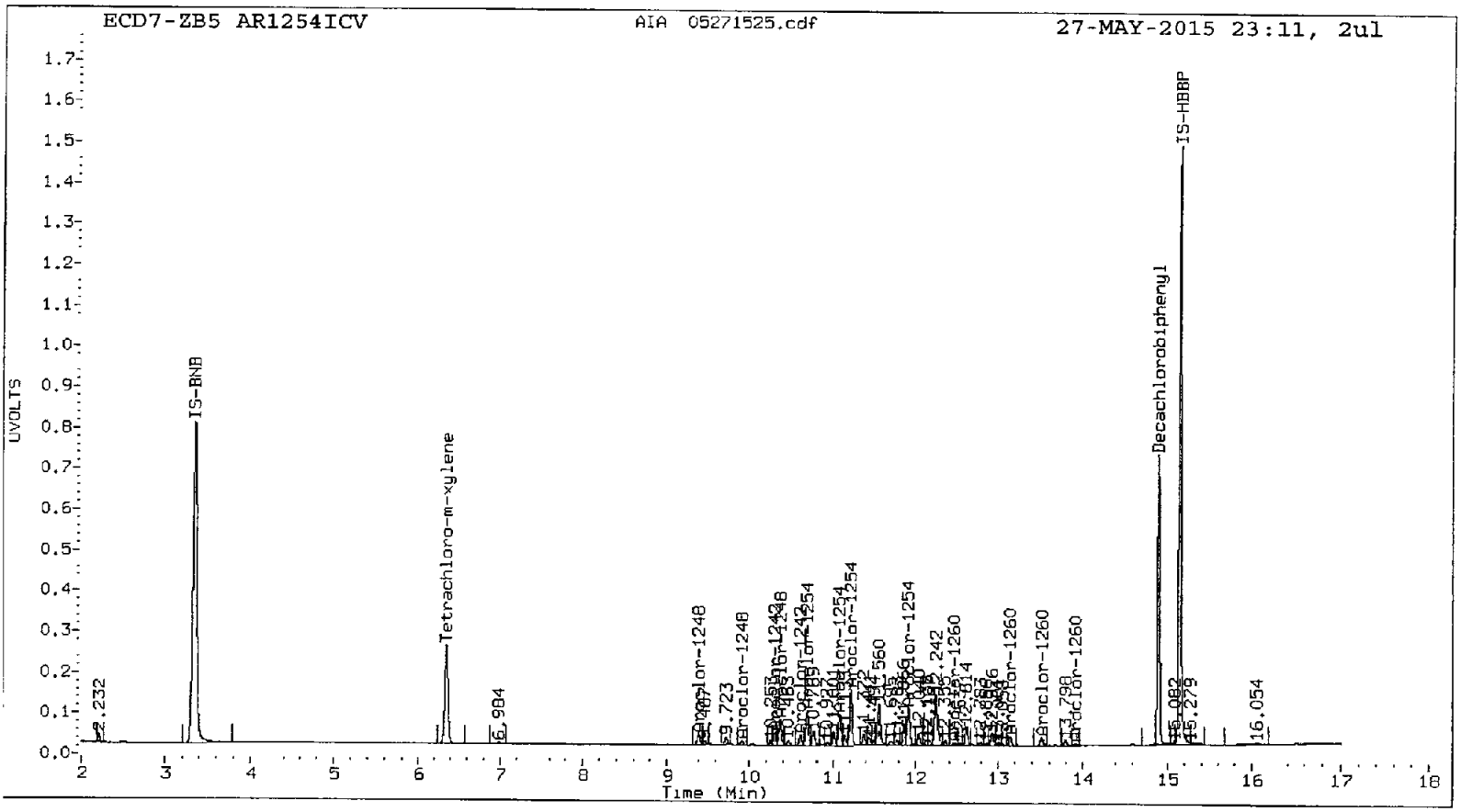
Col1Ave: <3 Quant Peaks Col2Ave: 5.0

Total PCB Area Col1 (6.443 - 14.789) = 5975320 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 31021818 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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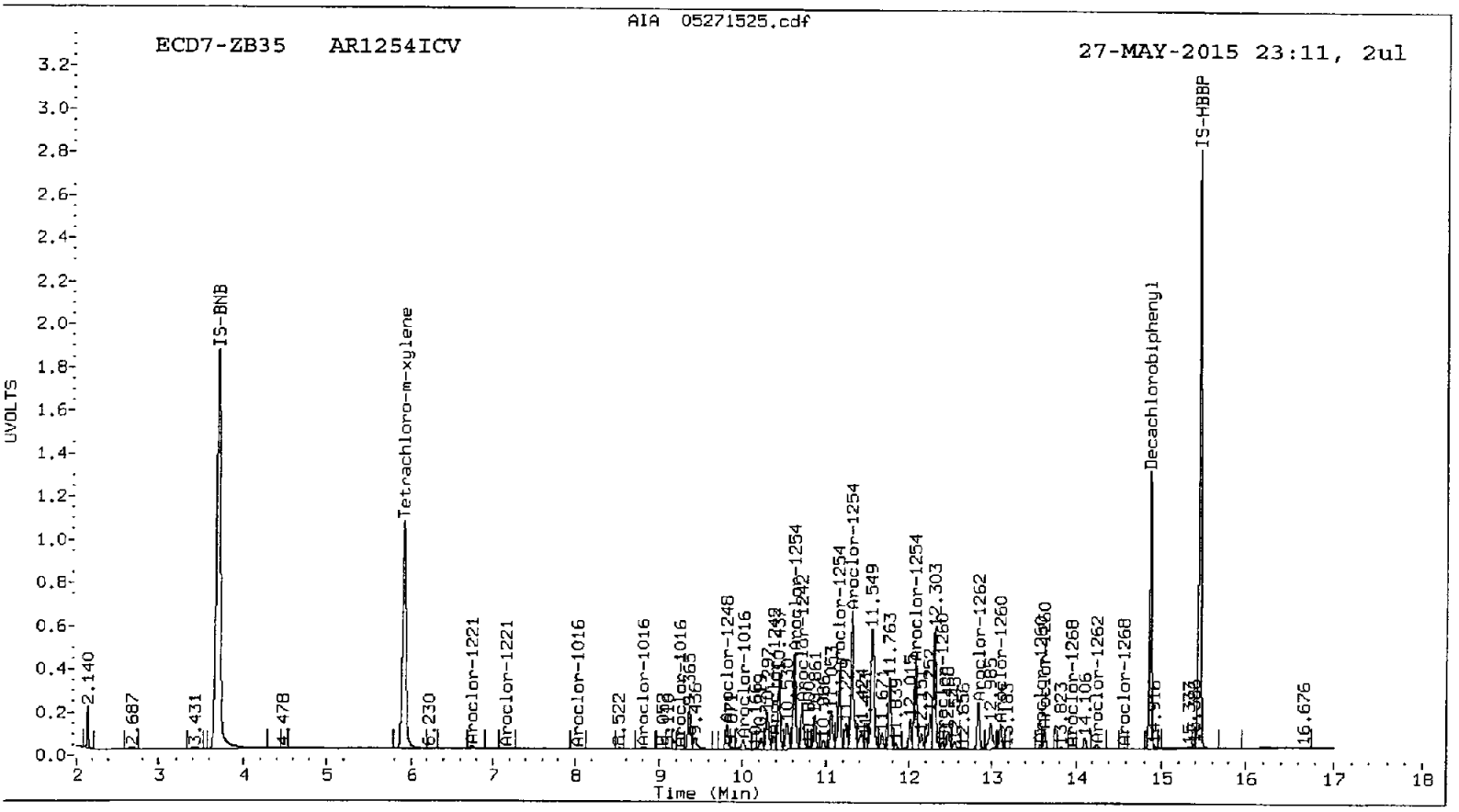
AIA 05271525.cdf
27-MAY-2015 23:11, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1248
Aroclor-1254
Aroclor-1260
2.232
6.984
9.723
16.054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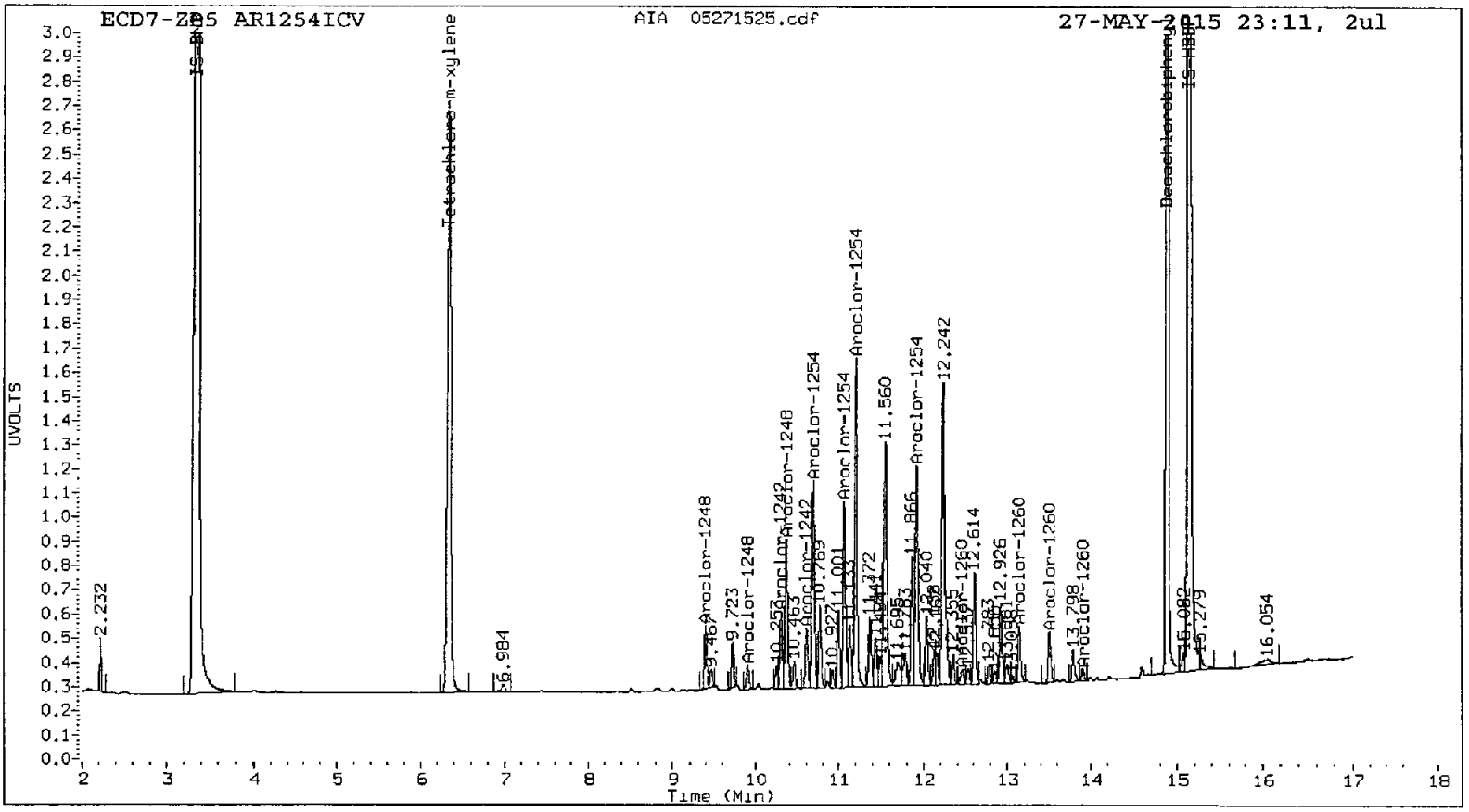
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.140
2.687
3.431
4.478
6.230
11.549
11.763
16.676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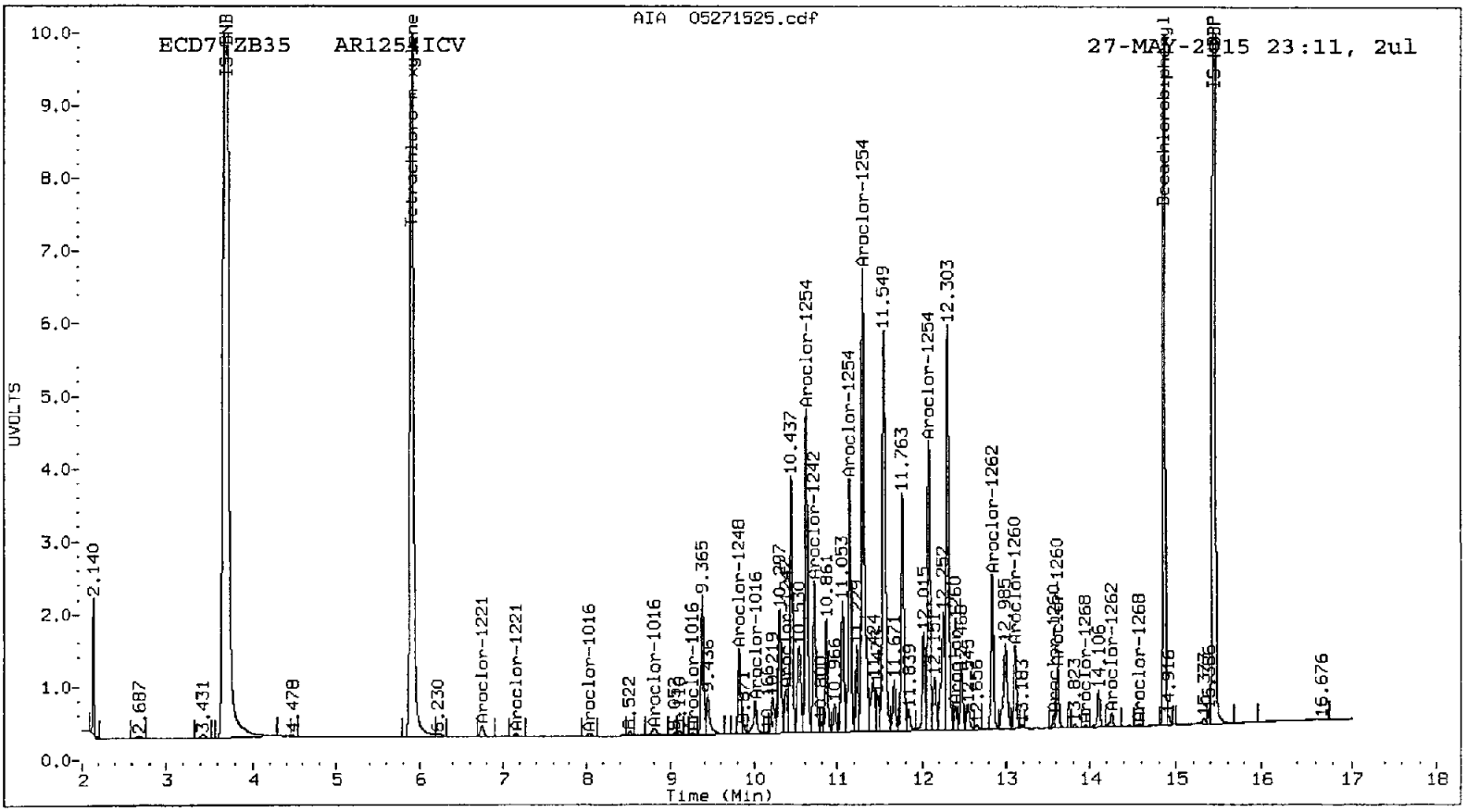
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
Aroclor-1254
Aroclor-1260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27-MAY-2015 23:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271526.d
Data file 2: 20150527.b/ical-2.b/05271526.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-MAY-2015 23:32
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.344	0.000	1382746	5.908	0.000	6443536	38.3	37.4	2.3	Tetrachloro-m-xylene
14.889	0.000	2692283	14.862	-0.001	4385330	38.8	37.7	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	93.6
Decachlorobiphenyl	97.1	94.4

JL 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5327597	-2.2
Hexabromobiphenyl	5633814	5510995	-2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12767315	-2.2
Hexabromobiphenyl	8980422	9637779	7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

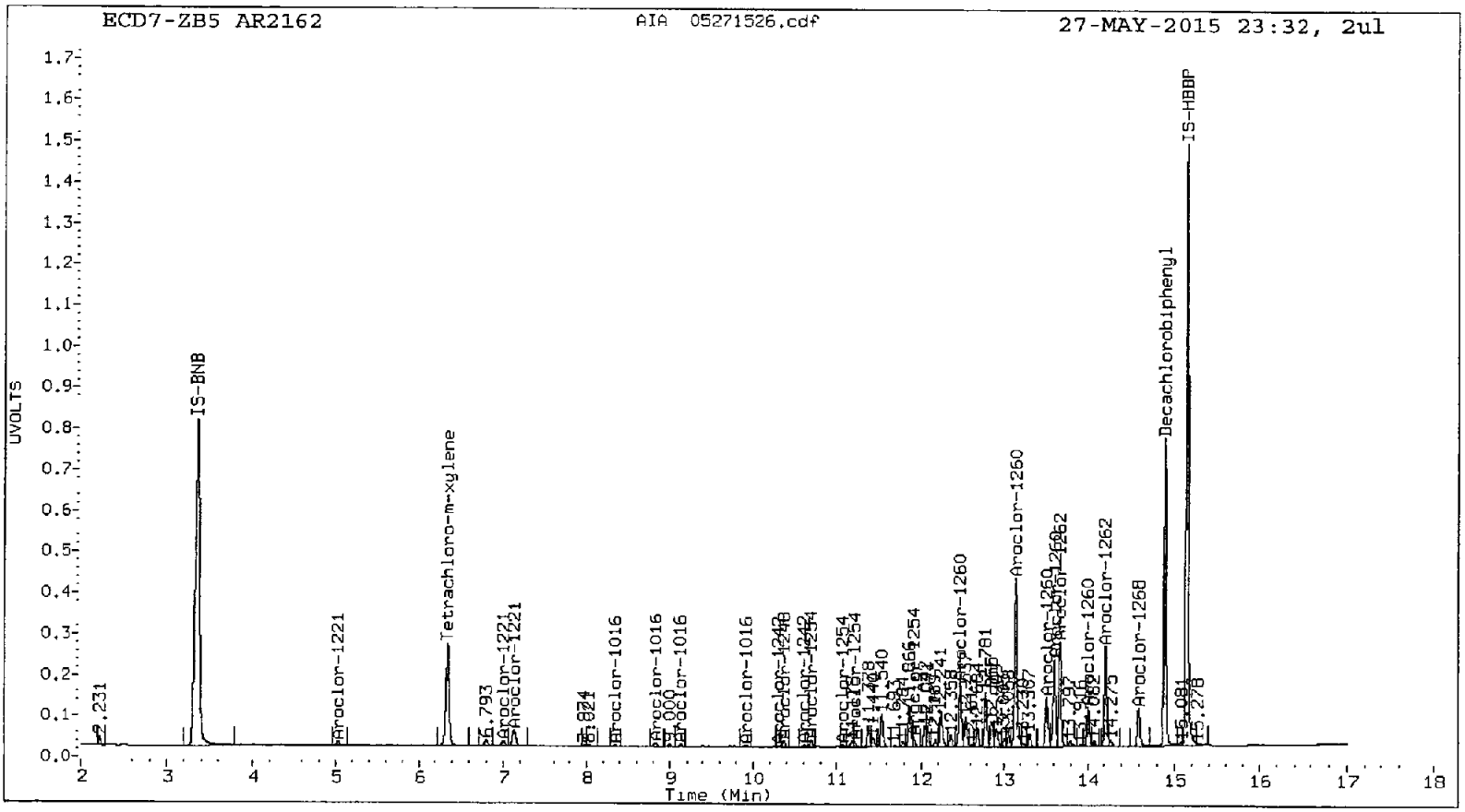
Aroclor	Peak#	RT	Shift	ZB5 Col Area	Amount	Peak#	RT	Shift	ZB35 Col Area	Amount	
Aroclor-1016	1	8.346	-0.001	20219	23.6	1	8.045	0.014	337516	48.2	
Aroclor-1016	2	8.832	0.000	56437	21.5	2	8.808	0.000	348325	23.4	
Aroclor-1016	3	9.128	-0.001	19204	21.4	3	9.248	0.000	99666	26.0	
Aroclor-1016	4	9.911	-0.001	11804	12.4	4	10.010	0.000	73498	27.1	
Total Col1Ave (4 peaks):					19.7	Total Col2Ave (4 peaks):				31.2	RPD = 45*
Corrected Ave (3 peaks):					18.4	Corrected Ave (3 peaks):				25.5	RPD = 32
Aroclor-1221	1	5.027	0.004	54107	249.5	1	5.021	0.003	329530	248.6	
Aroclor-1221	2	7.002	0.003	84140	248.0	2	6.722	0.003	548041	247.1	
Aroclor-1221	3	7.127	0.004	235925	246.4	3	7.019	0.004	308355	246.3	
Aroclor-1221	NS	---			----	4	7.153	0.003	936478	244.4	
Total Col1Ave (3 peaks):					248.0	Total Col2Ave (4 peaks):				246.6	RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				245.9	
Aroclor-1232	1	5.027	0.001	54107	438.6	1	5.021	0.001	329530	408.5	
Aroclor-1232	2	7.002	0.003	84140	359.1	2	7.153	0.000	936478	346.2	
Aroclor-1232	3	7.127	0.001	235925	368.9	3	8.045	0.016	337516	106.4	
Aroclor-1232	4	8.832	0.001	56437	52.8	4	9.248	0.001	99666	61.2	
Total Col1Ave (4 peaks):					304.9	Total Col2Ave (4 peaks):				230.6	RPD = 28
Corrected Ave (3 peaks):					260.3	Corrected Ave (3 peaks):				171.3	RPD = 41*
Aroclor-1242	1	8.832	0.002	56437	29.4	1	8.045	0.016	337516	65.7	
Aroclor-1242	2	9.128	0.001	19204	27.9	2	8.808	0.000	348325	32.1	
Aroclor-1242	3	10.303	0.001	13822	21.6	3	10.376	0.002	61775	16.4	
Aroclor-1242	4	10.608	0.002	18445	19.2	4	10.724	-0.008	126821	27.6	
Total Col1Ave (4 peaks):					24.5	Total Col2Ave (4 peaks):				35.5	RPD = 37
Corrected Ave (3 peaks):					22.9	Corrected Ave (3 peaks):				25.4	RPD = 10
Aroclor-1248	1	---			0.0	1	8.808	0.005	348325	49.5	
Aroclor-1248	2	9.911	0.000	11804	9.1	2	9.816	0.001	82118	14.6	
Aroclor-1248	3	10.369	0.008	62019	41.0	3	10.376	0.003	61775	10.4	
Aroclor-1248	4	10.608	0.002	18445	12.1	4	10.724	-0.006	126821	16.5	
Total Col1Ave (3 peaks):					20.7	Total Col2Ave (4 peaks):				22.7	RPD = 9
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				13.8	
Aroclor-1254	1	10.369	0.001	62019	63.7	1	10.616	0.001	409946	61.0	
Aroclor-1254	2	10.691	0.002	66732	48.0	2	10.724	0.014	126821	39.8	
Aroclor-1254	3	11.070	0.000	20800	18.4	3	11.147	0.001	106664	20.3	
Aroclor-1254	4	11.205	-0.002	44296	20.8	4	11.337	0.039	1671829	149.1	
Aroclor-1254	5	11.912	-0.010	91535	60.0	5	12.084	0.005	429209	64.1	
Total Col1Ave (5 peaks):					42.2	Total Col2Ave (5 peaks):				66.8	RPD = 45*
Corrected Ave (4 peaks):					36.8	Corrected Ave (4 peaks):				46.3	RPD = 23
Aroclor-1260	1	12.468	-0.001	678613	377.4	1	12.394	-0.001	3063987	354.6	
Aroclor-1260	2	13.143	-0.001	1817124	312.3	2	13.101	-0.001	5826325	289.4	
Aroclor-1260	3	13.514	-0.001	579044	214.2	3	13.571	-0.001	2631515	430.6	
Aroclor-1260	4	13.612	-0.001	892097	546.9	4	13.625	0.001	3976008	299.8	
Aroclor-1260	5	14.010	-0.002	399684	445.8	NS	---			----	
Total Col1Ave (5 peaks):					379.3	Total Col2Ave (4 peaks):				343.6	RPD = 10
Corrected Ave (4 peaks):					337.4	Corrected Ave (3 peaks):				314.6	RPD = 7
Aroclor-1262	1	12.468	0.001	678613	208.9	1	12.394	0.000	3063987	200.6	
Aroclor-1262	2	13.143	0.000	1817124	201.0	2	12.837	0.000	2980147	207.6	
Aroclor-1262	3	13.514	0.000	579044	203.2	3	13.101	0.001	5826325	197.7	
Aroclor-1262	4	13.675	0.000	1030376	208.4	4	13.571	0.000	2631515	207.1	
Aroclor-1262	5	14.216	0.000	894994	202.3	5	14.213	0.000	2107678	211.0	

Total Col1Ave (5 peaks):			204.8		Total Col2Ave (5 peaks):			204.8	RPD = 0	
Corrected Ave (4 peaks):			203.7		Corrected Ave (4 peaks):			203.2	RPD = 0	
Aroclor-1268 1	13.612	0.000	892097	104.4	1	13.571	0.002	2631515	116.5	
Aroclor-1268 2	13.675	0.001	1030376	102.9	2	13.625	-0.003	3976008	186.3	
Aroclor-1268 3	14.010	0.013	399684	44.6	3	13.952	-0.001	180307	10.5	
Aroclor-1268 4	14.596	-0.001	357240	11.4	4	14.572	0.000	685627	14.1	
Total Col1Ave (4 peaks):			65.8		Total Col2Ave (4 peaks):			81.9	RPD = 22	
Corrected Ave (3 peaks):			53.0		Corrected Ave (3 peaks):			47.0	RPD = 12	

Total PCB Area Col1 (6.443 - 14.789) = 11814979 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 45029798 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical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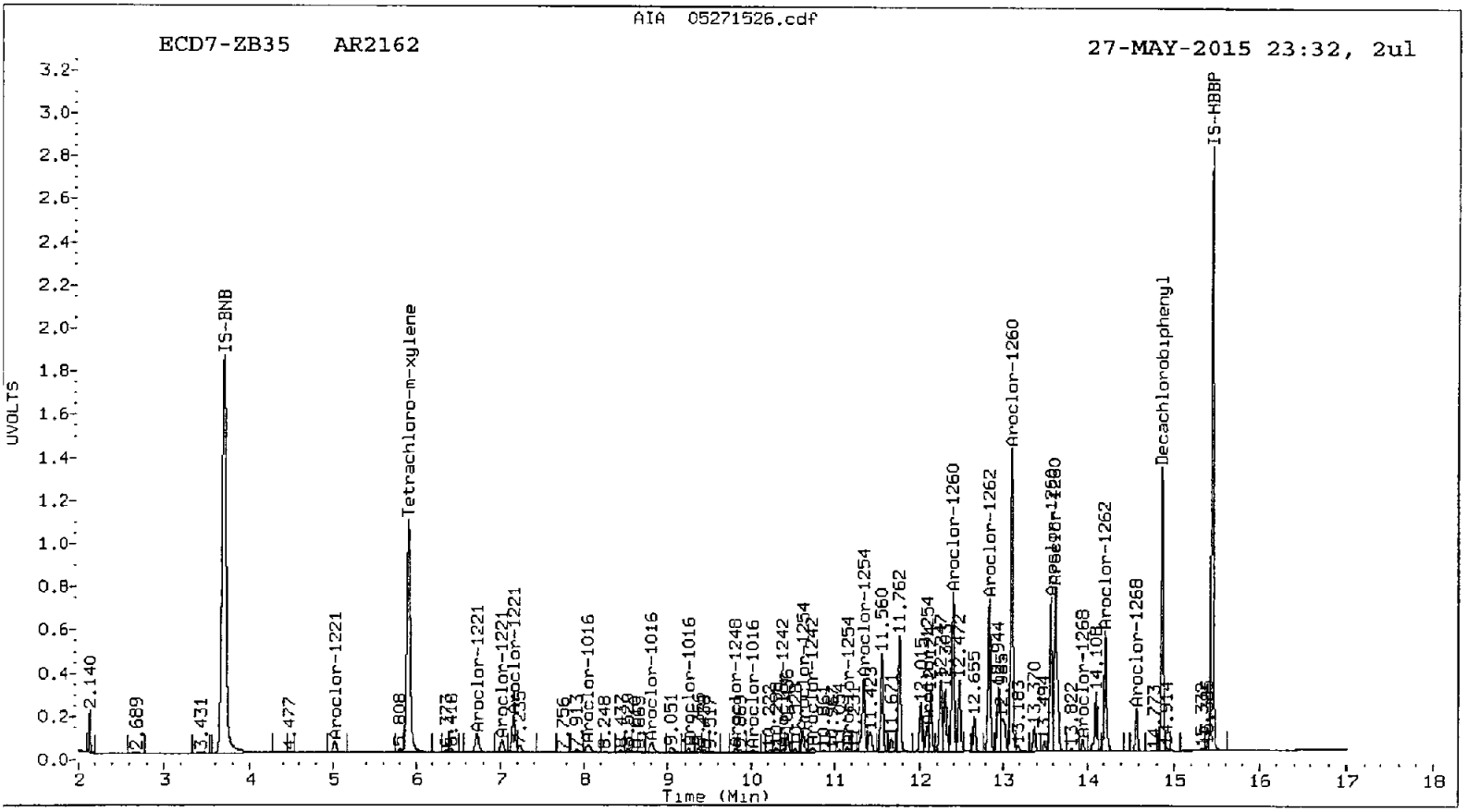
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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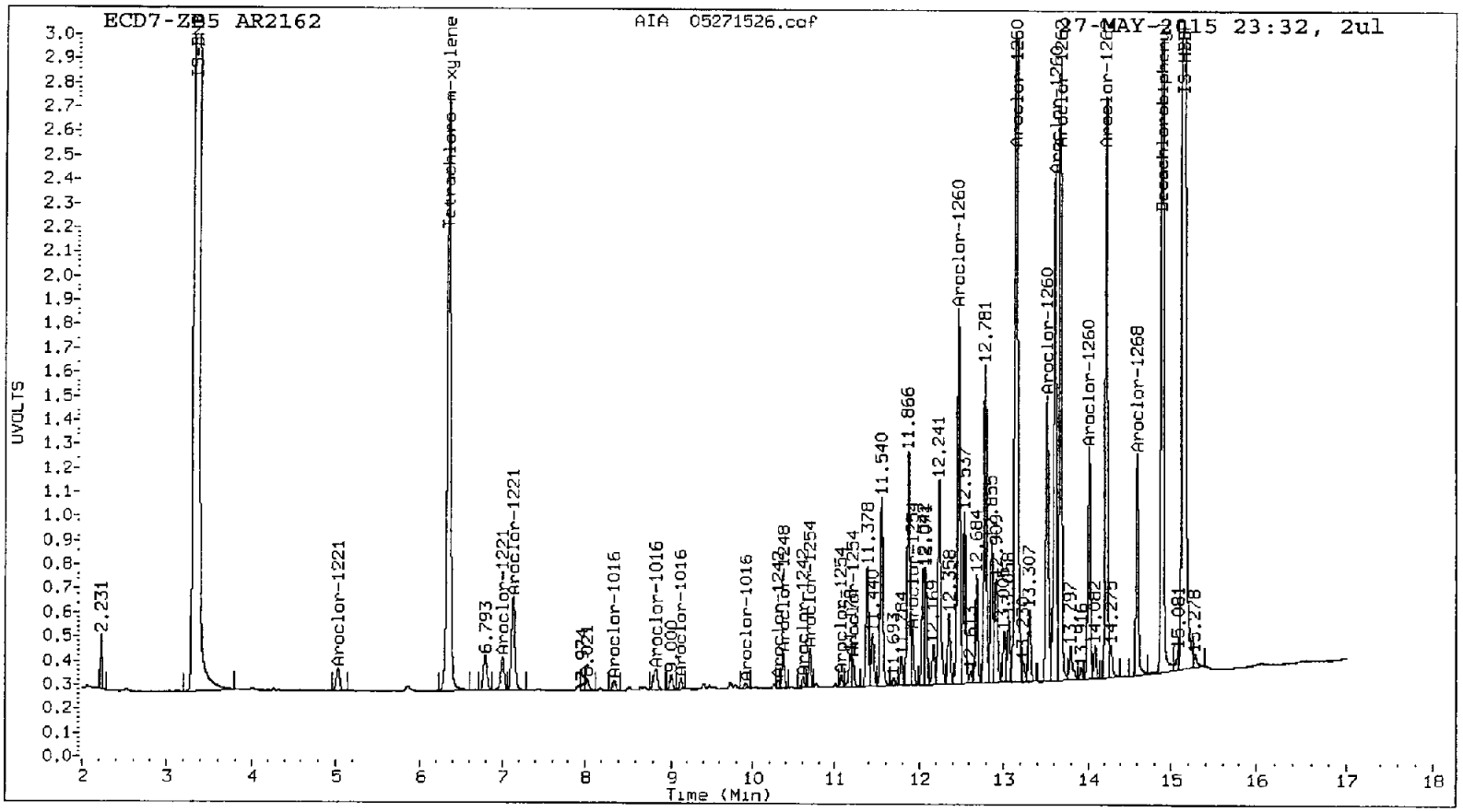
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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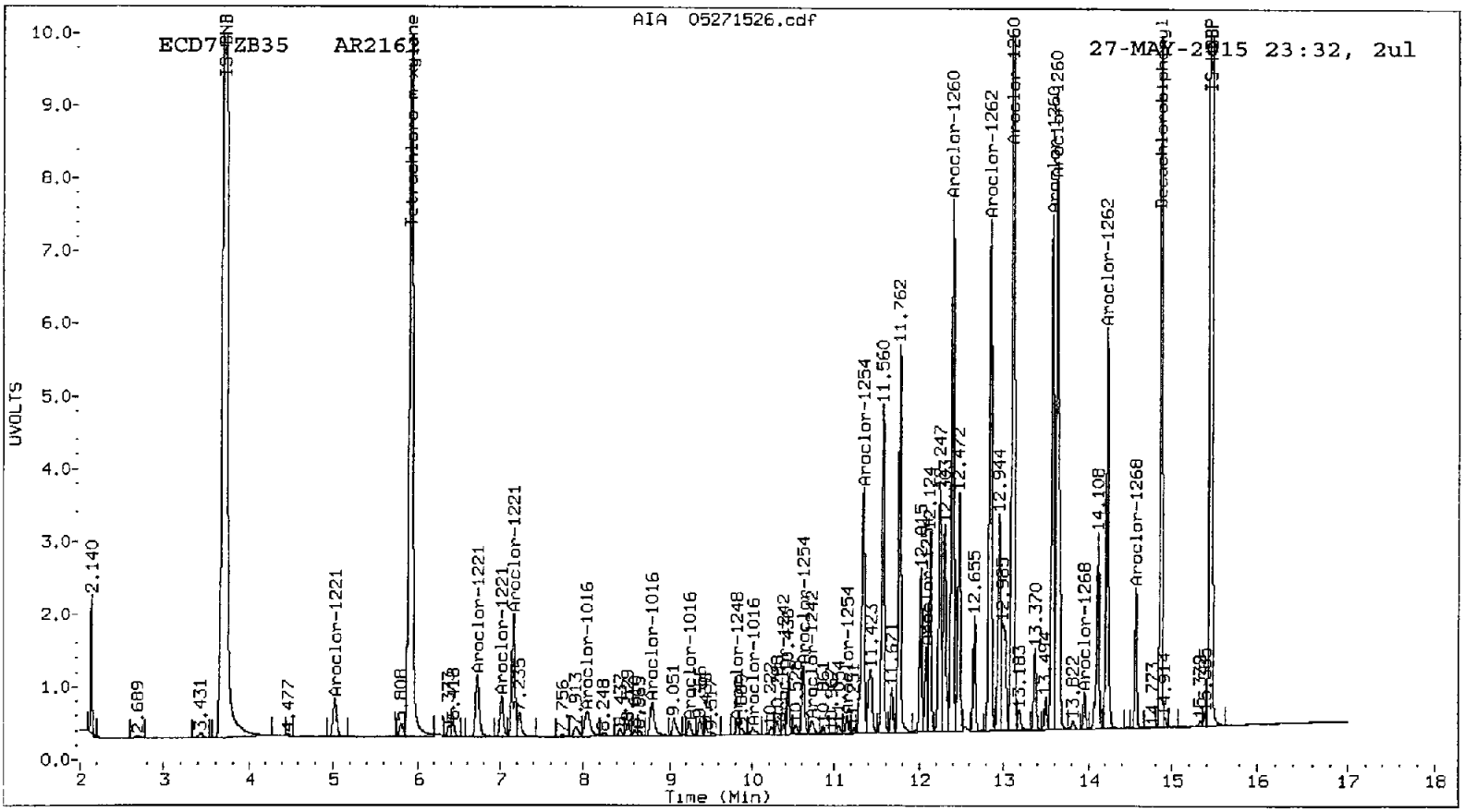
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271527.d
Data file 2: 20150527.b/ical-2.b/05271527.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-MAY-2015 23:54
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.343	-0.001	1373585	5.907	-0.001	6451755	38.3	37.4	2.2	Tetrachloro-m-xylene
14.889	-0.001	3809967	14.861	-0.001	6207583	55.3	53.2	3.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	93.6
Decachlorobiphenyl	138.3	133.1

JM 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

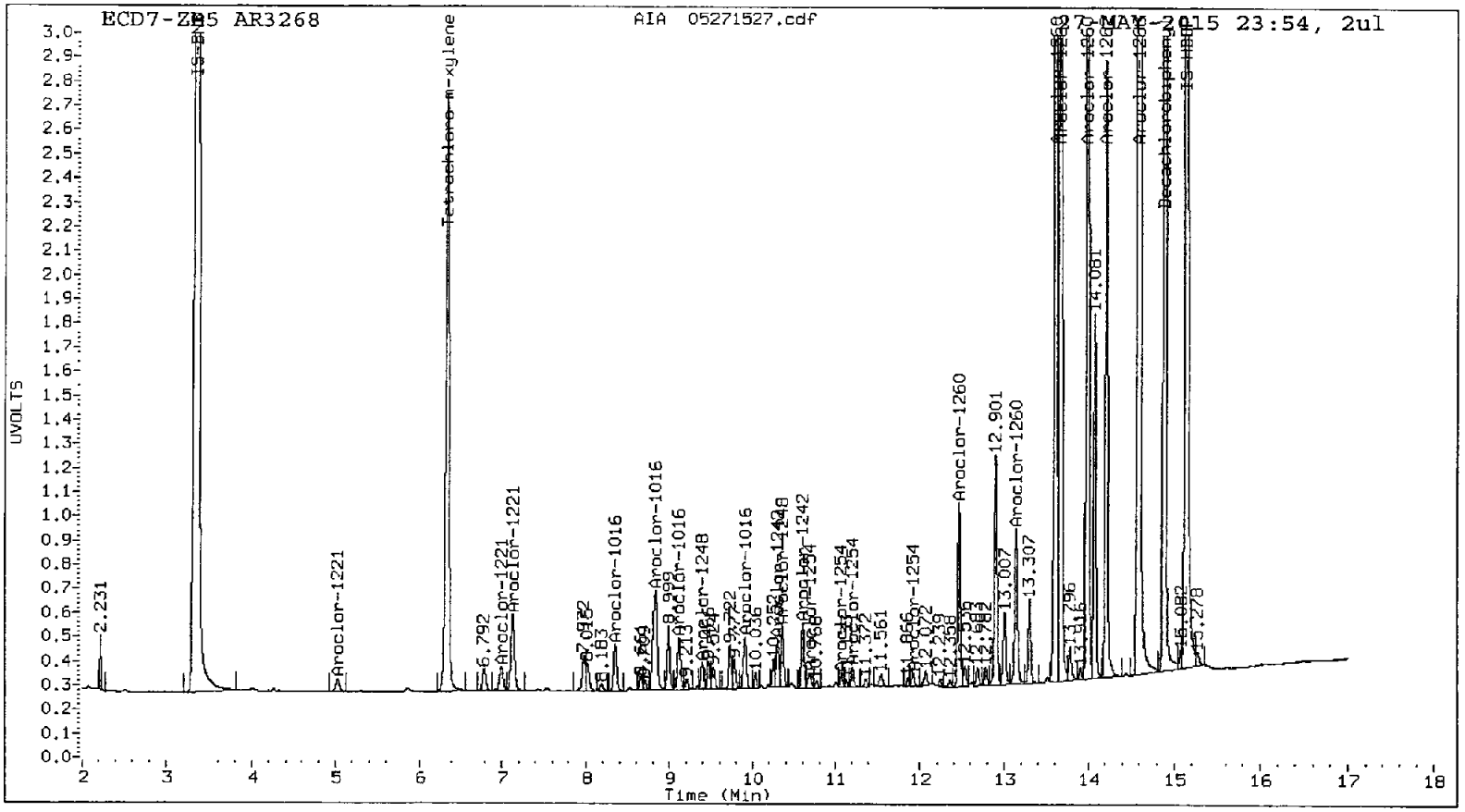
Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5291377	-2.9
Hexabromobiphenyl	5633814	5478047	-2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12775400	-2.2
Hexabromobiphenyl	8980422	9670669	7.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col			
RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
8.345	-0.002	97763	114.9	1	8.030	-0.001	868019	124.0
8.831	-0.001	287339	110.2	2	8.807	0.000	1651626	111.1
9.126	-0.002	102629	115.0	3	9.246	-0.001	445873	116.2
9.910	-0.002	113422	119.8	4	10.009	-0.001	336874	124.3
LAve (4 peaks):		115.0		Total Col2Ave (4 peaks):			118.9	RPD = 3
Ave (3 peaks):		113.4		Corrected Ave (3 peaks):			117.1	RPD = 3
5.025	0.002	30557	141.9	1	5.020	0.002	204357	154.1
6.999	0.001	63850	189.5	2	6.723	0.004	377335	170.0
7.125	0.002	187458	197.1	3	7.018	0.003	219699	175.4
---			----	4	7.152	0.002	788493	205.7
LAve (3 peaks):		176.1		Total Col2Ave (4 peaks):			176.3	RPD = 0
Ave: < 3 Peaks				Corrected Ave (3 peaks):			166.5	
5.025	0.000	30557	249.4	1	5.020	-0.001	204357	253.2
6.999	0.000	63850	274.4	2	7.152	-0.001	788493	291.3
7.125	-0.001	187458	295.2	3	8.030	0.000	868019	273.5
8.831	0.000	287339	270.7	4	9.246	-0.001	445873	273.8
LAve (4 peaks):		272.4		Total Col2Ave (4 peaks):			273.0	RPD = 0
Ave (3 peaks):		264.8		Corrected Ave (3 peaks):			266.8	RPD = 1
8.831	0.001	287339	150.5	1	8.030	0.001	868019	168.9
9.126	0.000	102629	150.1	2	8.807	0.000	1651626	152.3
10.302	0.001	83038	130.4	3	10.374	0.001	514854	136.2
10.606	-0.001	122978	128.9	4	10.732	-0.001	615063	133.8
LAve (4 peaks):		140.0		Total Col2Ave (4 peaks):			147.8	RPD = 5
Ave (3 peaks):		136.5		Corrected Ave (3 peaks):			140.8	RPD = 3
9.394	-0.001	47205	77.6	1	8.807	0.004	1651626	234.6
9.910	-0.001	113422	87.7	2	9.814	-0.001	518251	92.1
10.359	-0.002	109807	73.1	3	10.374	0.001	514854	86.3
10.606	0.000	122978	81.0	4	10.732	0.001	615063	79.9
LAve (4 peaks):		79.9		Total Col2Ave (4 peaks):			123.2	RPD = 43*
Ave (3 peaks):		77.2		Corrected Ave (3 peaks):			86.1	RPD = 11
10.359	-0.009	109807	113.6	1	10.616	0.001	135006	20.1
10.688	-0.001	30767	22.3	2	10.732	0.021	615063	192.9
11.070	0.000	23630	21.1	3	11.146	0.000	121301	23.1
11.209	0.001	36712	17.4	4	11.300	0.002	235541	21.0
11.926	0.004	24011	15.8	5	12.077	-0.001	106039	15.8
Ave (5 peaks):		38.0		Total Col2Ave (5 peaks):			54.6	RPD = 36
Ave (4 peaks):		19.1		Corrected Ave (4 peaks):			20.0	RPD = 4
12.467	-0.002	331568	185.5	1	12.395	-0.001	1494740	172.4
13.142	-0.002	288852	49.9	2	13.100	-0.002	1013508	50.2
13.611	0.097	2356554	876.9	3	13.569	-0.003	6054415	987.2
---			0.0	4	13.628	0.004	6340962	476.5
13.996	-0.016	2185566	2452.6	NS	---			----
Ave (4 peaks):		891.3		Total Col2Ave (4 peaks):			421.6	RPD = 72*
Ave (3 peaks):		370.8		Corrected Ave (3 peaks):			233.0	RPD = 46*
12.467	0.000	331568	102.7	1	12.395	0.000	1494740	97.5
13.142	-0.001	288852	32.1	2	12.834	-0.002	1679120	116.6
13.611	0.098	2356554	832.1	3	13.100	0.000	1013508	34.3
13.674	-0.001	3071285	624.9	4	13.569	-0.001	6054415	474.9
14.216	0.000	967420	220.0	5	14.212	-0.001	2135592	213.1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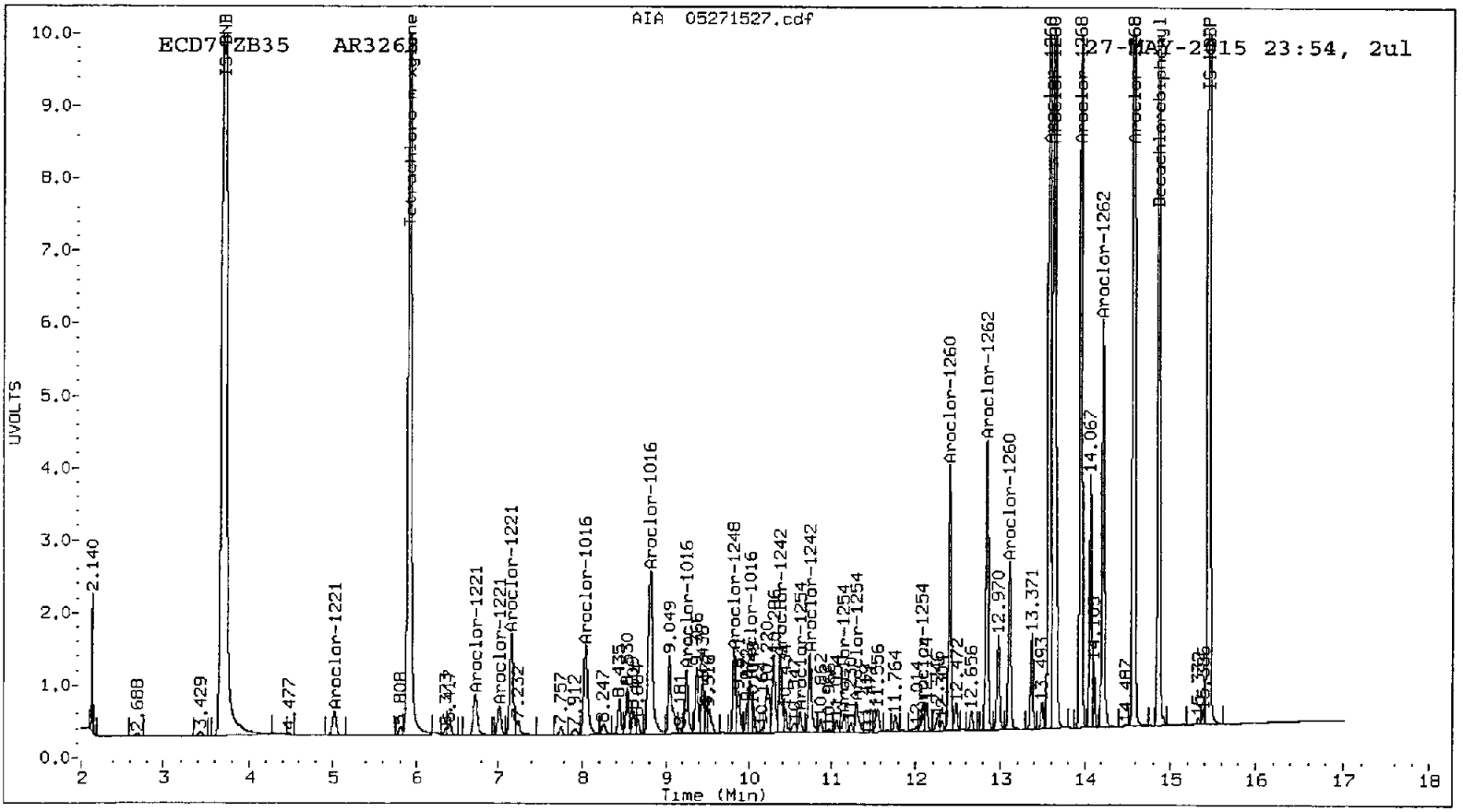
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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AIA 05271527.cdf
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150527.b/ddt-1.b/05271528.d ARI ID: 0.1 PPM DDT

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.653	0.000	3634692	10.701	0.000	9112156	0.100	0.100	0.0	2,4-DDE
11.212	0.000	3536757	11.090	0.000	14216632	0.100	0.100	0.0	2,4-DDD
11.721	0.000	4611378	11.849	0.000	21253119	0.100	0.200#	66.7*	2,4-DDT
11.089	0.000	6669098	11.391	0.000	8572434	0.100	0.100	0.0	4,4-DDE
11.664	0.000	5389895	11.849	0.000	21253119	0.100	0.200#	66.7*	4,4-DDD
12.177	0.000	5527060	12.280	0.000	12284932	0.100	0.100	0.0	4,4-DDT

jk 05/28/15

\# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150527.b/ddt-1.b/05271529.d ARI ID: DDT BD

RT	ZB5 Col Shift	ZB5 Col Response	RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.651	-0.001	44200	10.701	0.000	45772	0.001	0.001	82.5*	2,4-DDE
11.211	-0.001	20081	11.090	0.001	297169	0.001	0.002	115.0*	2,4-DDD
11.720	-0.001	62197	11.856	0.007	1445156	0.001	0.014#	164.1*	2,4-DDT
11.088	-0.001	109222	11.392	0.001	135426	0.002	0.002	3.0	4,4-DDE
11.667	0.002	239295	11.856	0.007	1445156	0.004	0.014#	102.0*	4,4-DDD
12.177	0.000	5522384	12.281	0.001	14452257	0.100	0.119	16.9	4,4-DDT

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

05/29/15

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code Comments: *YD00030*	YES	JGR	04/28/2015
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	04/28/2015
3	Manual integrations include before/after pictures	NA	JGR	04/28/2015
4	Internal Standard areas within 50-200% from reference	YES	JGR	04/28/2015
5	All SCV within +/- 20% (DOD)	YES	JGR	04/28/2015
6	All SCV within +/- 30%	YES	JGR	04/28/2015
7	NO Linear or Quadratic Fits Used	YES	JGR	04/28/2015
8	NO Calibration points dropped	YES	JGR	04/28/2015
9	Additional Notes	NA	BB	04/29/2015
10	Reviewer Approval (Reviewer)	YES	BB	04/29/2015

* = Indicates Automated Response from Element DataSyst

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ical-1.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	27-APR-2015 16:47	04271509.d	1	IB	
2	27-APR-2015 17:08	04271510.d	1	0.25PPMAR1660	
3	27-APR-2015 17:29	04271511.d	1	0.02PPMAR1660	
4	27-APR-2015 17:51	04271512.d	1	0.05PPMAR1660	
5	27-APR-2015 18:12	04271513.d	1	1PPMAR1660	
6	27-APR-2015 18:34	04271514.d	1	0.1PPMAR1660	
7	27-APR-2015 18:55	04271515.d	1	0.5PPMAR1660	
8	27-APR-2015 19:17	04271516.d	1	AR1242	
9	27-APR-2015 19:38	04271517.d	1	AR1248	
10	27-APR-2015 20:00	04271518.d	1	AR1254	
11	27-APR-2015 20:21	04271519.d	1	AR2162	
12	27-APR-2015 20:42	04271520.d	1	AR3268	
13	27-APR-2015 21:04	04271521.d	1	AR1660ICV	
14	27-APR-2015 21:25	04271522.d	1	AR1242ICV	
15	27-APR-2015 21:47	04271523.d	1	AR1248ICV	
16	27-APR-2015 22:08	04271524.d	1	AR1254ICV	
17	27-APR-2015 22:29	04271525.d	1	AR2162ICV	
18	27-APR-2015 22:51	04271526.d	1	AR3268ICV	
19	27-APR-2015 23:12	04271527.d	1	0.1 PPM DDT	
20	27-APR-2015 23:34	04271528.d	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ddt-1.b

ARI Job No.: 0.1 Method: PCB1.m Instrument: ecd7.i Date: 27-APR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2312	04271527.d	0.1 PPM DDT		1	NO MANUAL INTEGRATION
2334	04271528.d	DDT BD		1	NO MANUAL INTEGRATION
1647	04271509.d	IB		1	NO MANUAL INTEGRATION
1708	04271510.d	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1729	04271511.d	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1751	04271512.d	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1812	04271513.d	1PPMAR1660		1	NO MANUAL INTEGRATION
1834	04271514.d	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1855	04271515.d	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1917	04271516.d	AR1242		1	NO MANUAL INTEGRATION
1938	04271517.d	AR1248		1	NO MANUAL INTEGRATION
2000	04271518.d	AR1254		1	NO MANUAL INTEGRATION
2021	04271519.d	AR2162		1	NO MANUAL INTEGRATION
2042	04271520.d	AR3268		1	NO MANUAL INTEGRATION
2104	04271521.d	AR1660ICV		1	NO MANUAL INTEGRATION
2125	04271522.d	AR1242ICV		1	NO MANUAL INTEGRATION
2147	04271523.d	AR1248ICV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ical-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2208	04271524.d	AR1254ICV		1	NO MANUAL INTEGRATION
2229	04271525.d	AR2162ICV		1	NO MANUAL INTEGRATION
2251	04271526.d	AR3268ICV		1	NO MANUAL INTEGRATION

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB1.m
Batch File: /chem2/ecd7.i/20150427.b/ical-1.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	04271510	04271511	04271512	04271513	04271514	04271515
INJ.DATE:	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015
INJ.TIME:	17:08	17:29	17:51	18:12	18:34	18:55

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.375	3.370	3.377	3.376	3.376	3.378	3.377	3.277-3.477	3.375	0.003
$ 1 Tetrachloro-m-xylene	6.368	6.371	6.375	6.374	6.373	6.372	6.372	6.272-6.472	6.372	0.003
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.055	4.955-5.155	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.851	8.751-8.951	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.055	4.955-5.155	+++++	+++++
7 Aroclor-1016	8.366	8.370	8.372	8.371	8.371	8.370	8.370	8.270-8.470	8.370	0.002
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	9.415	9.315-9.515	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.386	10.286-10.486	+++++	+++++
9 Aroclor-1260	12.479	12.481	12.481	12.480	12.481	12.480	12.480	12.380-12.580	12.481	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.479	12.380-12.579	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.621	13.521-13.721	+++++	+++++
$ 13 Decachlorobiphenyl	14.896	14.896	14.896	14.897	14.896	14.897	14.897	14.797-14.997	14.896	0.000
* 12 IS-HBBP	15.149	15.149	15.149	15.149	15.149	15.149	15.148	15.048-15.248	15.149	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.668	10.618-10.718	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.226	11.176-11.276	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.733	11.683-11.783	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.103	11.003-11.203	+++++	+++++

Reviewer 1 _____ Date: 4/29/15
Reviewer 2 _____ Date: 4/29/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB1.m
Batch File: /chem2/ecd7.i/20150427.b/ical-1.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.677	11.577-11.777	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.188	12.088-12.288	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB2.m
Batch File: /chem2/ecd7.i/20150427.b/ical-2.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	04271510	04271511	04271512	04271513	04271514	04271515
INJ.DATE:	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015
INJ.TIME:	17:08	17:29	17:51	18:12	18:34	18:55

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	3.716	3.713	3.720	3.719	3.719	3.720	3.719	3.619-3.819	3.718	0.003
$ 2 Tetrachloro-m-xylene	5.925	5.928	5.932	5.932	5.932	5.931	5.930	5.830-6.030	5.930	0.003
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.042	4.942-5.142	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.042	4.942-5.142	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.047	7.947-8.147	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.819	8.719-8.919	+++++	+++++
7 Aroclor-1016	8.043	8.047	8.049	8.049	8.049	8.047	8.047	7.947-8.147	8.047	0.002
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.627	10.527-10.727	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.402	12.302-12.502	+++++	+++++
9 Aroclor-1260	12.401	12.403	12.403	12.402	12.403	12.403	12.403	12.303-12.503	12.402	0.001
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.576	13.476-13.676	+++++	+++++
$ 13 Decachlorobiphenyl	14.867	14.868	14.868	14.868	14.868	14.867	14.866	14.766-14.966	14.867	0.001
* 12 IS-HBBP	15.450	15.450	15.450	15.449	15.450	15.450	15.449	15.349-15.549	15.450	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.711	10.661-10.761	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.100	11.050-11.150	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.400	11.300-11.500	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.861	11.761-11.961	+++++	+++++

Reviewer 1 _____ Date: 04/23/15
Reviewer 2 _____ Date: 4/29/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB2.m
Batch File: /chem2/ecd7.i/20150427.b/ical-2.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.288	12.188-12.388	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.117	7.017-7.217	+++++	+++++

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

VD 00030

SDD0056

Calibration File Names:
Level 1: /chem2/ecd7.i/20150427.b/ical-1.b/04271511.d
Level 2: /chem2/ecd7.i/20150427.b/ical-1.b/04271512.d
Level 3: /chem2/ecd7.i/20150427.b/ical-1.b/04271514.d
Level 4: /chem2/ecd7.i/20150427.b/ical-1.b/04271510.d
Level 5: /chem2/ecd7.i/20150427.b/ical-1.b/04271515.d
Level 6: /chem2/ecd7.i/20150427.b/ical-1.b/04271513.d
Level 7: /chem2/ecd7.i/20150427.b/ical-1.b/04271520.d
Level 8: /chem2/ecd7.i/20150427.b/ddt-1.b/04271527.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00344	+++++	0.00344	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.00513	+++++	0.00513	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01478	+++++	0.01478	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03020	+++++	0.03020	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01091	+++++	0.01091	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01022	+++++	0.01022	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01545	+++++							0.01545	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00197	+++++							0.00197	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00350	+++++							0.00350	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.00991	+++++							0.00991	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01645	+++++							0.01645	0.000
7 Aroclor-1016(1)	0.01430	0.01377	0.01480	0.01294	0.01245	0.01176				
	+++++	+++++							0.01334	8.687
(2)	0.04296	0.04136	0.04381	0.03906	0.03832	0.03755				
	+++++	+++++							0.04051	6.363
(3)	0.01309	0.01423	0.01539	0.01383	0.01363	0.01327				
	+++++	+++++							0.01391	5.981
(4)	0.01535	0.01572	0.01660	0.01475	0.01433	0.01389				
	+++++	+++++							0.01511	6.530

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01051	+++++					0.01051	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02062	+++++					0.02062	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02370	+++++					0.02370	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02427	+++++					0.02427	0.000
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01499	+++++					0.01499	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02157	+++++					0.02157	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01766	+++++					0.01766	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03305	+++++					0.03305	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02415	+++++					0.02415	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
9 Aroclor-1260(1)	0.03998	0.03694	0.03880	0.03558	0.03256	0.03069		
	+++++	+++++					0.03576	10.039
(2)	0.12457	0.11342	0.11916	0.11649	0.11410	0.11316		
	+++++	+++++					0.11682	3.789
(3)	0.05222	0.05202	0.05681	0.05479	0.05268	0.05222		
	+++++	+++++					0.05346	3.619
(4)	0.03212	0.03162	0.03462	0.03280	0.03090	0.02963		
	+++++	+++++					0.03195	5.324
(5)	0.01572	0.01587	0.01905	0.01825	0.01748	0.01712		
	+++++	+++++					0.01725	7.579
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06292	+++++					0.06292	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.17097	+++++					0.17097	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05543	+++++					0.05543	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09437	+++++					0.09437	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08054	+++++					0.08054	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.15620	+++++					0.15620	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.18684	+++++					0.18684	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.16612	+++++					0.16612	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.54220	+++++					0.54220	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	779					779	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	864					864	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	370					370	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1421					1421	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1453					1453	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	291					291	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 1 Tetrachloro-m-xylene	0.55658	0.53237	0.58521	0.54551	0.55700	0.56458		
	+++++	+++++					0.55688	3.204
$ 13 Decachlorobiphenyl	1.29982	1.17313	1.27272	1.17332	1.18208	1.17857		
	+++++	+++++					1.21327	4.722

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Calibration File Names:
Level 1: /chem2/ecd7.i/20150427.b/ical-2.b/04271511.d
Level 2: /chem2/ecd7.i/20150427.b/ical-2.b/04271512.d
Level 3: /chem2/ecd7.i/20150427.b/ical-2.b/04271514.d
Level 4: /chem2/ecd7.i/20150427.b/ical-2.b/04271510.d
Level 5: /chem2/ecd7.i/20150427.b/ical-2.b/04271515.d
Level 6: /chem2/ecd7.i/20150427.b/ical-2.b/04271513.d
Level 7: /chem2/ecd7.i/20150427.b/ical-2.b/04271520.d
Level 8: /chem2/ecd7.i/20150427.b/ddt-2.b/04271527.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
1 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00875	+++++	0.00875	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01422	+++++	0.01422	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00814	+++++	0.00814	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02423	+++++	0.02423	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00535	+++++	0.00535	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01730	+++++	0.01730	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02020	+++++	0.02020	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.01046	+++++	0.01046	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03310	+++++	0.03310	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.06906	+++++	0.06906	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02430	+++++	0.02430	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02953	+++++	0.02953	0.000
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04536	+++++	0.04536	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.03622	+++++	0.03622	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03807	+++++	0.03807	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04914	+++++	0.04914	0.000
7 Aroclor-1016(1)	0.05509	0.04904	0.04987	0.04266	0.03976	0.03657	+++++	+++++	0.04550	15.363
(2)	0.11347	0.09950	0.10221	0.08929	0.08533	0.08053	+++++	+++++	0.09505	12.873
(3)	0.02999	0.02680	0.02730	0.02384	0.02256	0.02101	+++++	+++++	0.02525	13.280
(4)	0.02124	0.01884	0.01933	0.01668	0.01583	0.01488	+++++	+++++	0.01780	13.524
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04189	+++++	0.04189	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02010	+++++	0.02010	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03291	+++++	0.03291	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.07016	+++++	0.07016	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04262	+++++					0.04262	0.000
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14805	+++++					0.14805	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14007	+++++					0.14007	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.28348	+++++					0.28348	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12337	+++++					0.12337	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09633	+++++					0.09633	0.000
9 Aroclor-1260(1)	0.09778	0.09052	0.09146	0.08109	0.07430	0.06968		
	+++++	+++++					0.08414	12.973
(2)	0.20658	0.20164	0.20863	0.19137	0.18134	0.17464		
	+++++	+++++					0.19403	7.187
(3)	0.07418	0.06729	0.06695	0.05894	0.05666	0.05163		
	+++++	+++++					0.06261	13.251

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	0.14699	0.13781	0.14319	0.12696	0.12005	0.11410		
	+++++	+++++					0.13152	10.033
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.21210	+++++					0.21210	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.20009	+++++					0.20009	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.16377	+++++					0.16377	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.44872	+++++					0.44872	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	722					722	0.000
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1192					1192	0.000
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	860					860	0.000
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	824					824	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	286					286	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 2 Tetrachloro-m-xylene	1.17808	1.07819	1.15100	1.04797	1.04194	1.01047		
	+++++	+++++					1.08461	6.094
$ 13 Decachlorobiphenyl	1.24646	1.16244	1.20801	1.08278	1.03581	0.98916		
	+++++	+++++					1.12078	9.022

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271509.d
Data file 2: 20150427.b/ical-2.b/04271509.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 27-APR-2015 16:47
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.360	-0.012	789605	5.918	-0.012	3279365	21.5	19.6	9.4	Tetrachloro-m-xylene
14.896	-0.001	2957109	14.865	-0.001	4641766	49.2	45.2	8.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	53.8	48.9
Decachlorobiphenyl	122.9	113.0

04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5272828	1.5
Hexabromobiphenyl	3879663	3965772	2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12357625	0.4
Hexabromobiphenyl	7233601	7327952	1.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

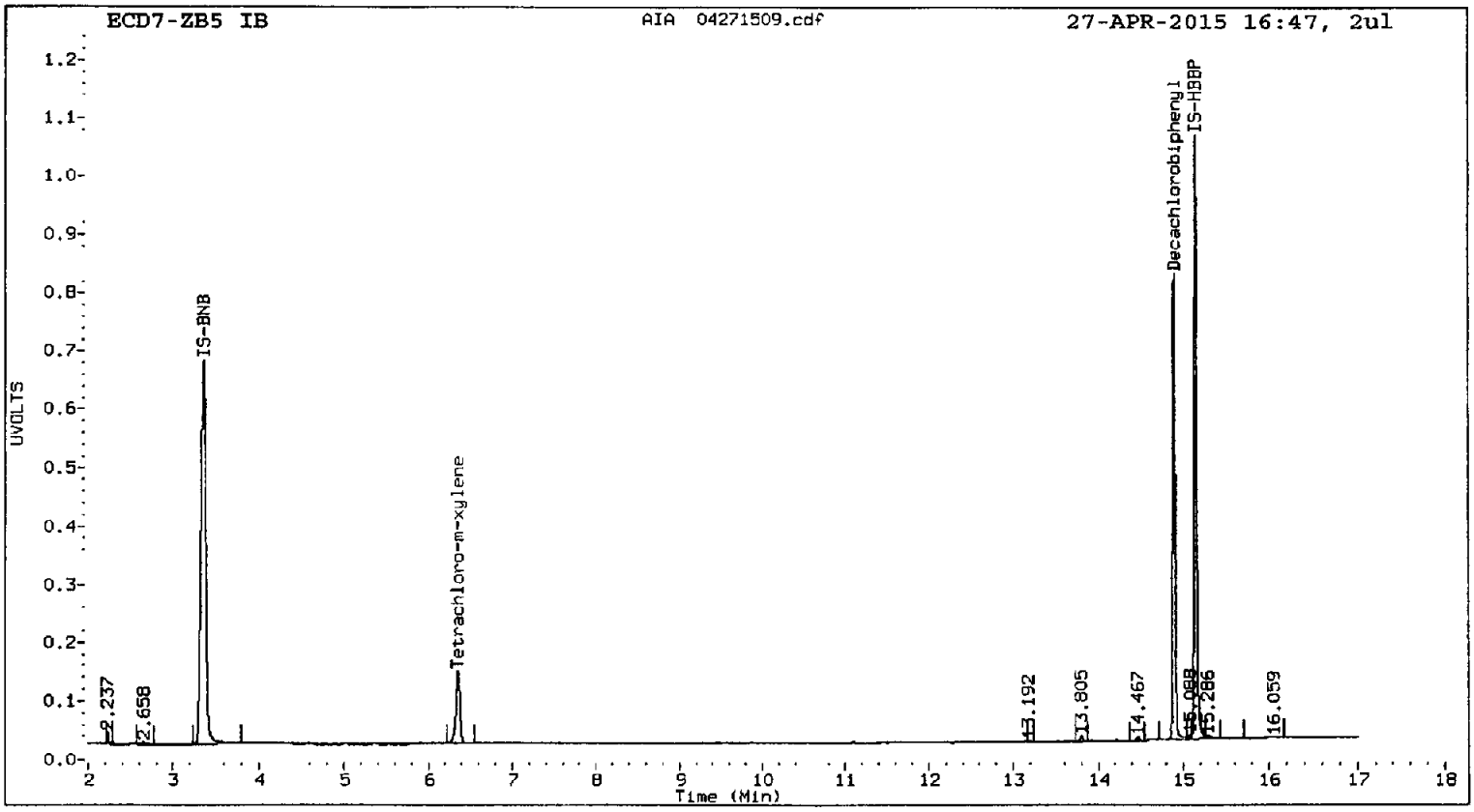
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	12.428	0.025	30175	3.9
Aroclor-1260	2	---			0.0	2	13.106	-0.002	21410	1.2
Aroclor-1260	3	---			0.0	3	13.537	-0.041	55832	9.7
Aroclor-1260	4	---			0.0	4	13.626	-0.002	15421	1.3
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: 4.0				
Aroclor-1262	1	---			0.0	1	12.428	0.026	30175	2.2
Aroclor-1262	2	---			0.0	2	12.843	-0.001	13535	1.1
Aroclor-1262	3	---			0.0	3	13.106	-0.002	21410	0.8
Aroclor-1262	4	---			0.0	4	13.537	-0.041	55832	4.9
Aroclor-1262	5	---			0.0	5	14.254	0.036	33000	3.7
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.6				
Aroclor-1268	1	---			0.0	1	13.537	-0.039	55832	2.9
Aroclor-1268	2	---			0.0	2	13.626	-0.007	15421	0.8
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	14.532	-0.045	18595	0.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.4				

Total PCB Area Col1 (6.472 - 14.797) = 74491 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 708443 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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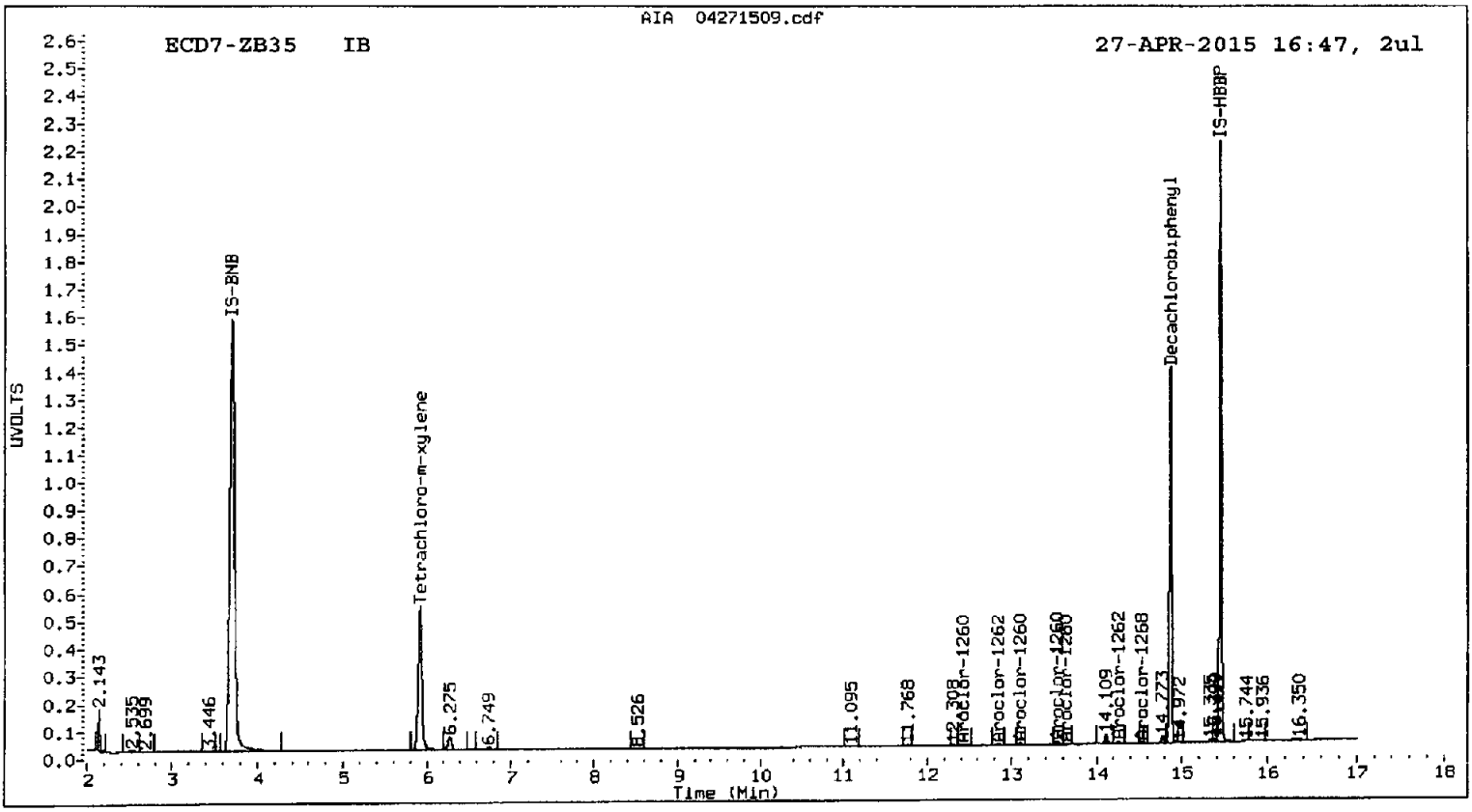
AIA 04271509.cdf
27-APR-2015 16:47, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.237
2.658
13.192
13.805
14.467
16.059
Time (Min)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ECD7-ZB35 IB
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IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.143
3.446
6.275
6.749
8.526
11.095
11.768
Aroclor-1260
Aroclor-1262
Aroclor-1260
Aroclor-1260
Aroclor-1262
Aroclor-1268
14.109
14.773
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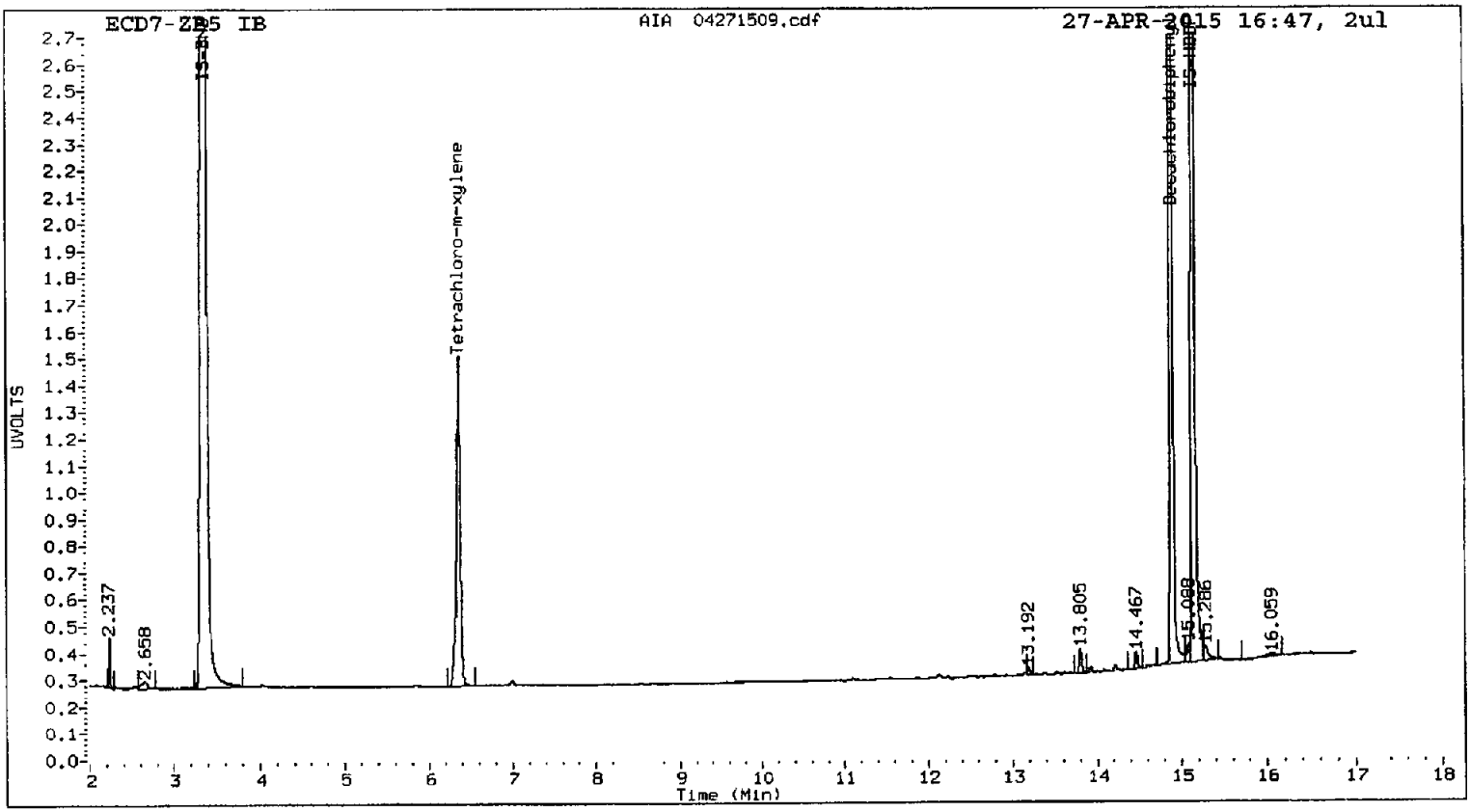
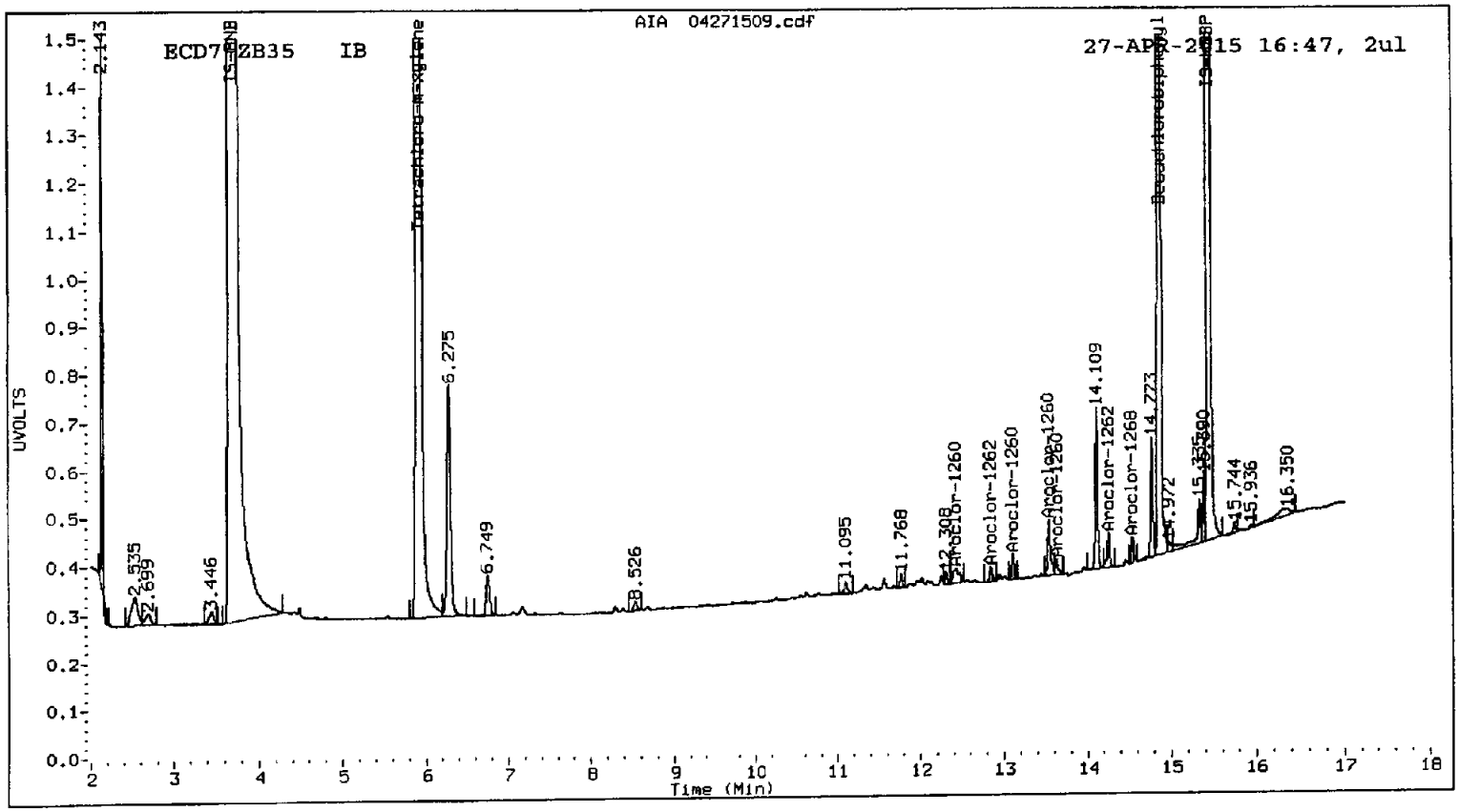
15.744
15.936
16.350
Time (Min)


ECD7-ZB5 IB
AIA 04271509.cdf
27-APR-2015 16:47, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
2.237
2.658
3.192
13.805
14.467
16.059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UVOLTS
Time (Min)
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6.749
8.526
11.095
11.768
12.308
14.109
14.723
14.972
15.744
15.936
16.350

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271510.d
Data file 2: 20150427.b/ical-2.b/04271510.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:08
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.368	-0.004	708585	5.925	-0.005	3223365	19.6	19.3	1.4	Tetrachloro-m-xylene
14.896	0.000	1138023	14.867	0.001	1958100	19.3	19.3	0.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.0	48.3
Decachlorobiphenyl	48.4	48.3

4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5195722	0.0
Hexabromobiphenyl	3879663	3879663	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12303253	0.0
Hexabromobiphenyl	7233601	7233601	0.0

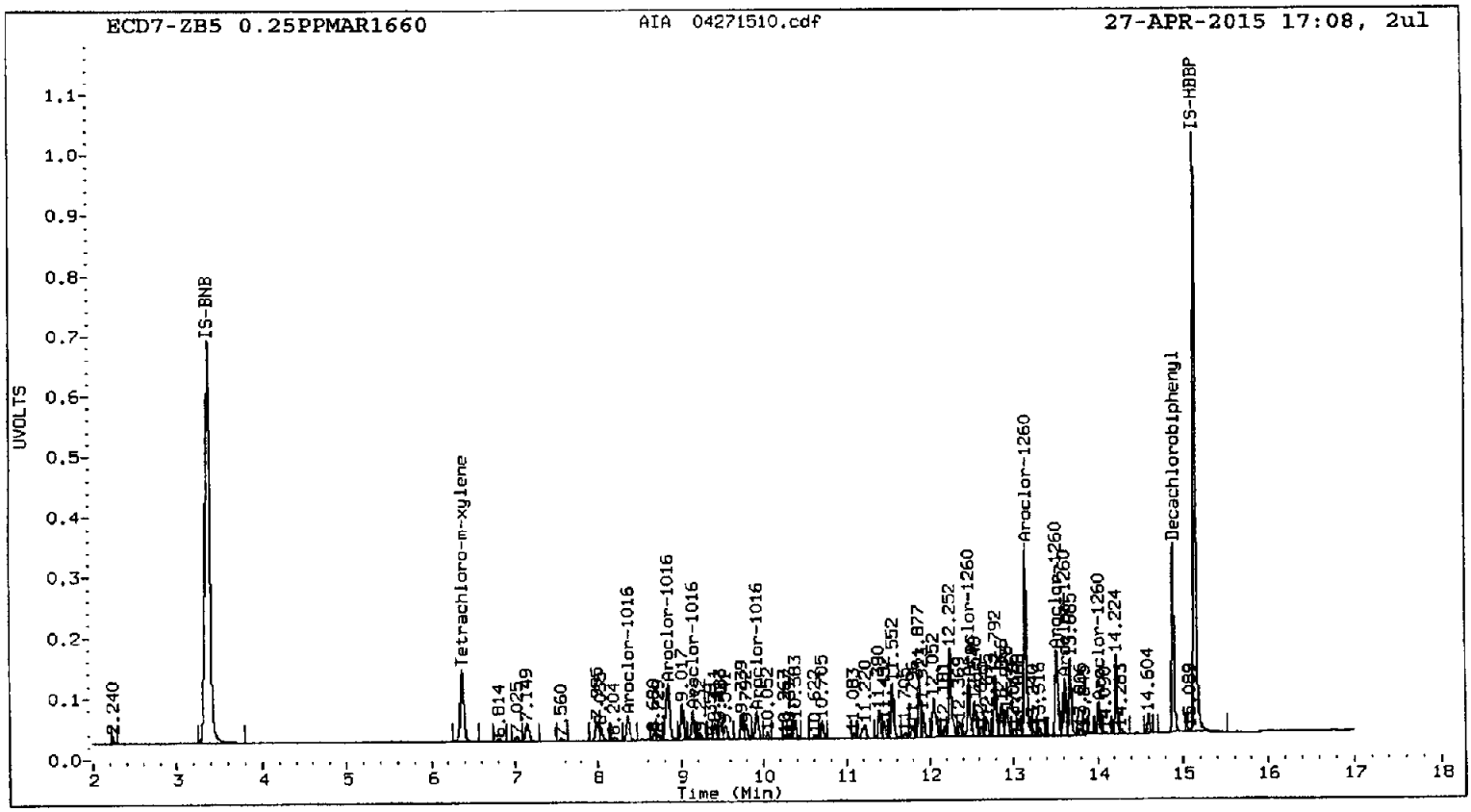
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.366	-0.004	210144	242.6	1	8.043	-0.004	1640344	234.4
Aroclor-1016	2	8.849	-0.004	634152	241.0	2	8.818	-0.005	3433141	234.8
Aroclor-1016	3	9.144	-0.004	224494	248.5	3	9.256	-0.004	916458	236.0
Aroclor-1016	4	9.927	-0.003	239556	244.2	4	10.018	-0.002	641343	234.3
Total Col1Ave (4 peaks):					244.1	Total Col2Ave (4 peaks):				234.9 RPD = 4
Corrected Ave (3 peaks):					242.6	Corrected Ave (3 peaks):				234.5 RPD = 3
CalAmt %D:					-2.4	CalAmt %D:				-6.0
Aroclor-1260	1	12.479	-0.001	431425	248.8	1	12.401	-0.002	1833042	240.9
Aroclor-1260	2	13.153	-0.001	1412301	249.3	2	13.107	0.000	4326022	246.6
Aroclor-1260	3	13.522	-0.001	664321	256.2	3	13.577	0.000	1332443	235.4
Aroclor-1260	4	13.621	0.000	397627	256.7	4	13.628	0.000	2870012	241.3
Aroclor-1260	5	14.019	-0.001	221203	264.5	NS	---			----
Total Col1Ave (5 peaks):					255.1	Total Col2Ave (4 peaks):				241.1 RPD = 6
Corrected Ave (4 peaks):					252.7	Corrected Ave (3 peaks):				239.2 RPD = 5
CalAmt %D:					2.0	CalAmt %D:				-3.6

Total PCB Area Col1 (6.472 - 14.797) = 12071203 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 51400931 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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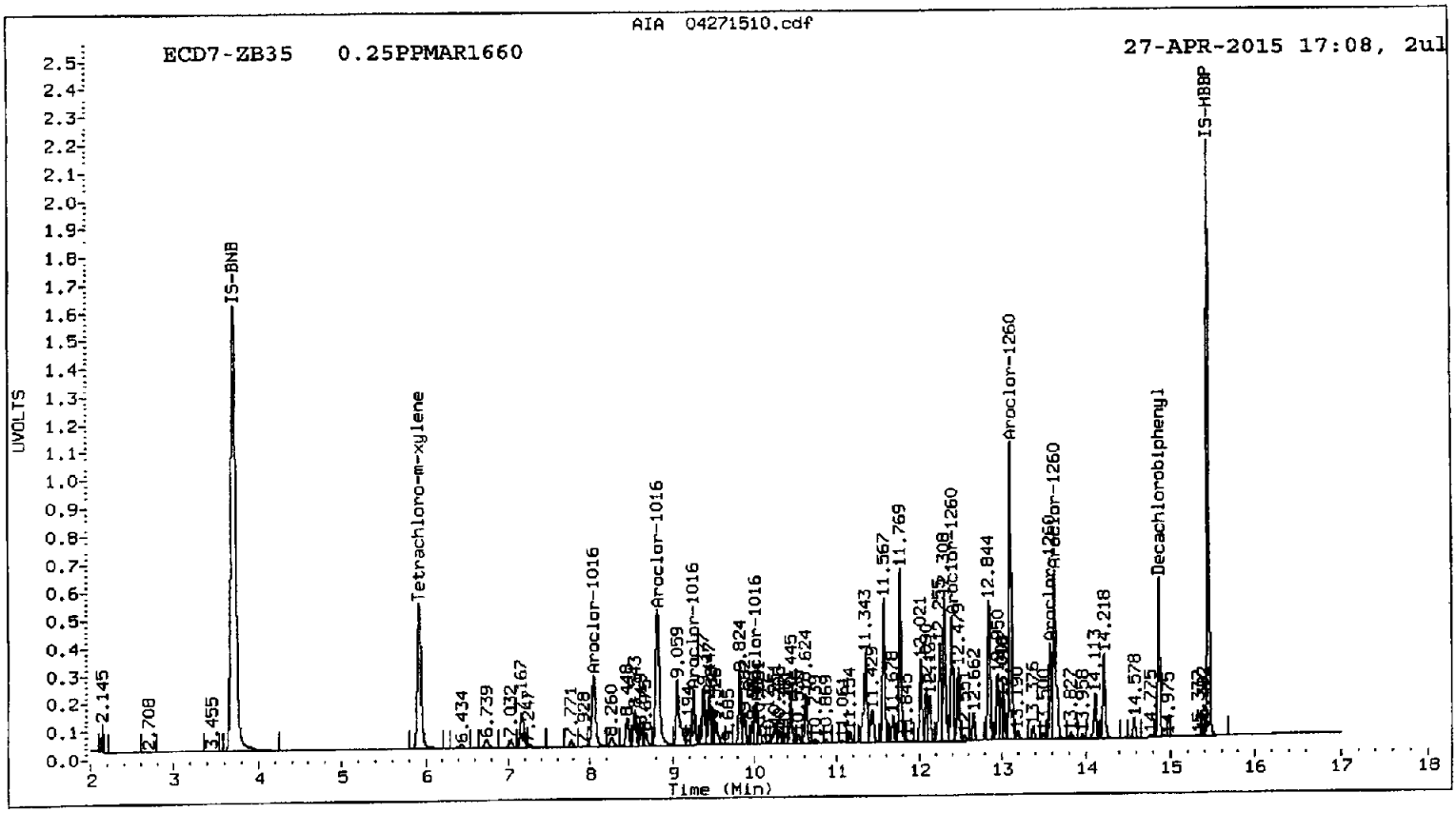
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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UVOLTS
Time (Min)
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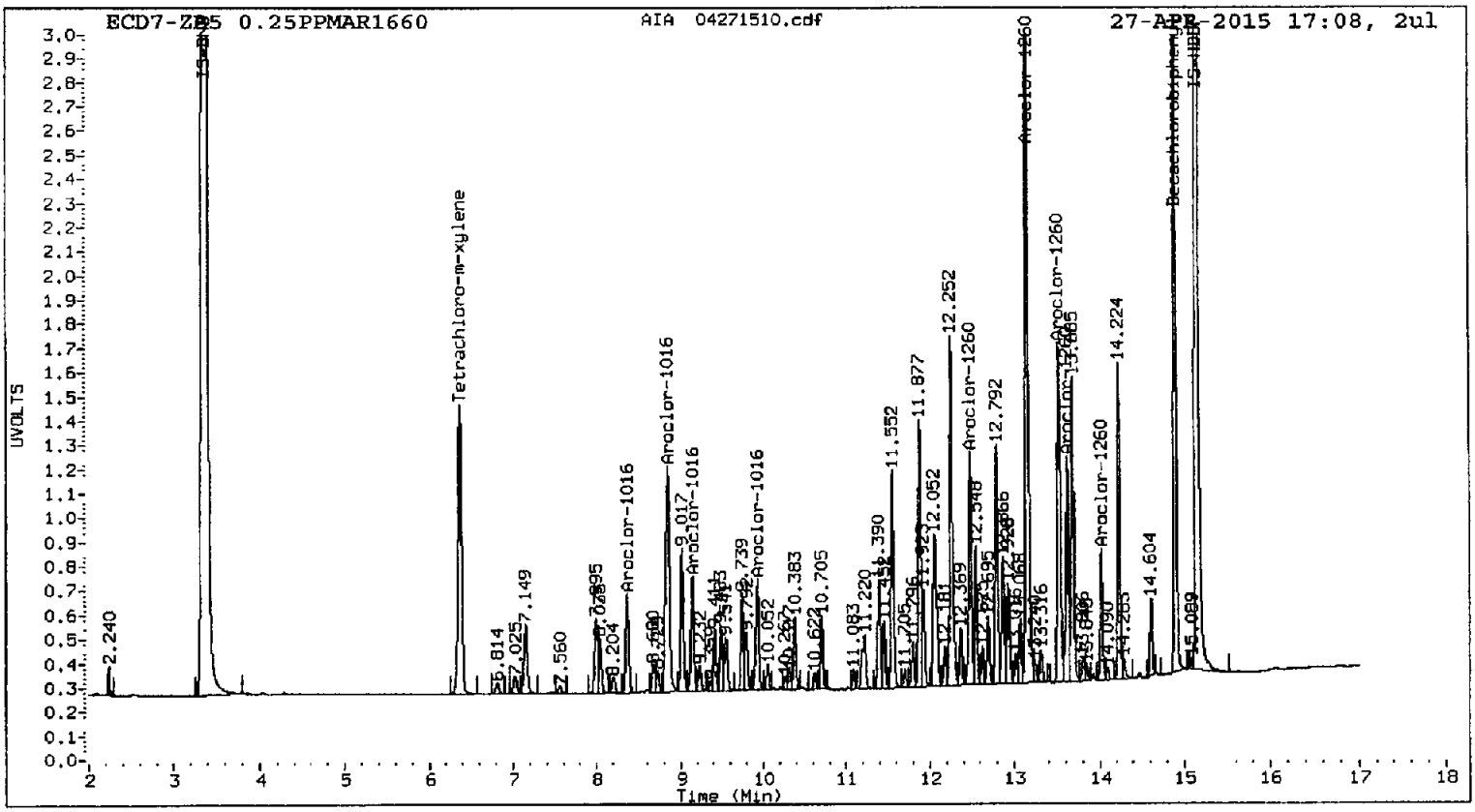
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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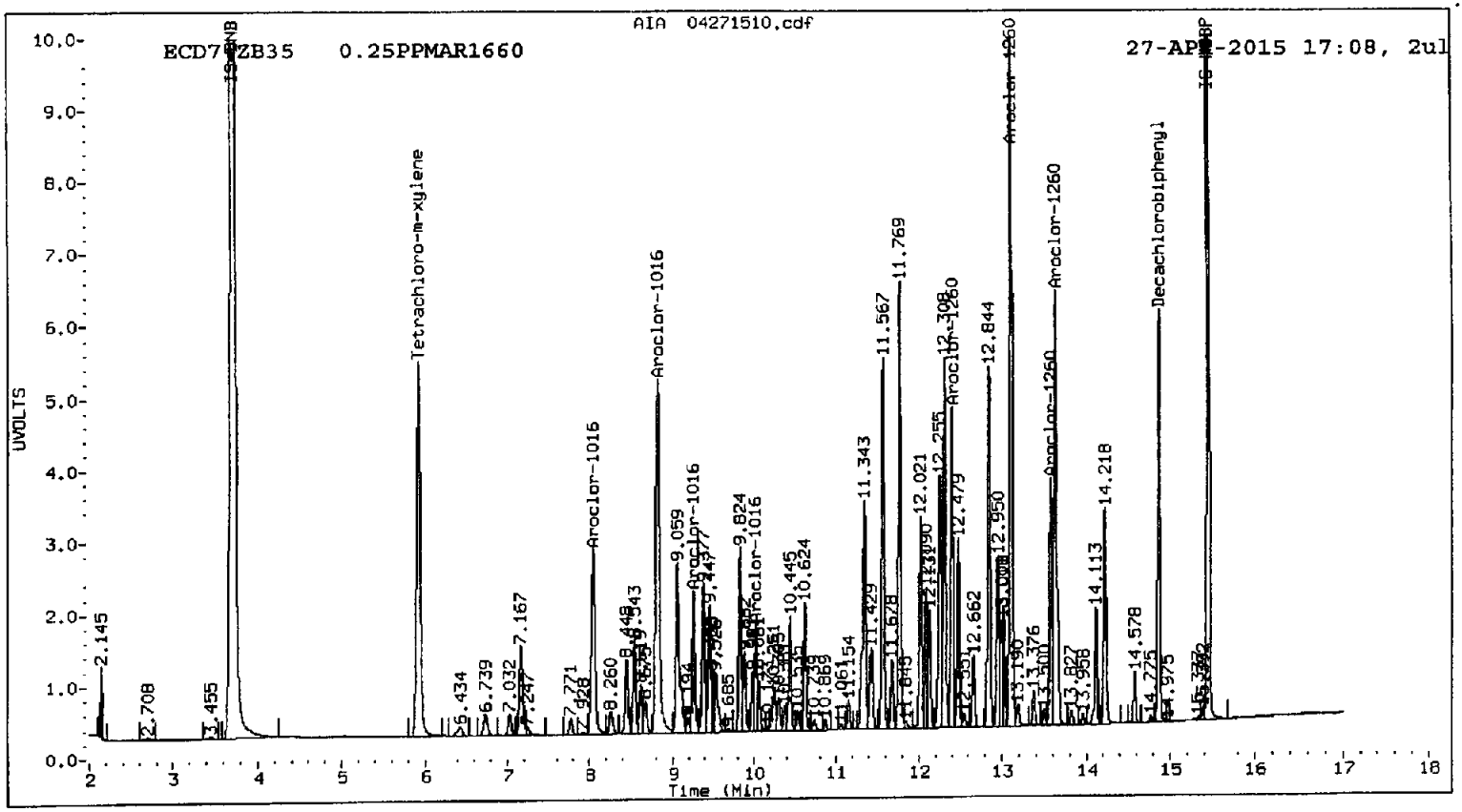
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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ECD7-ZB35 0.25PPMAR1660
27-APR-2015 17:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271511.d
Data file 2: 20150427.b/ical-2.b/04271511.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:29
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.371	-0.002	58074	5.928	-0.002	291095	1.6	1.7	8.3	Tetrachloro-m-xylene
14.896	0.000	111497	14.868	0.001	197717	1.7	1.8	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	4.0	4.3
Decachlorobiphenyl	4.3	4.4

4/13/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5217021	0.4
Hexabromobiphenyl	3879663	4288955	10.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12354652	0.4
Hexabromobiphenyl	7233601	7931151	9.6

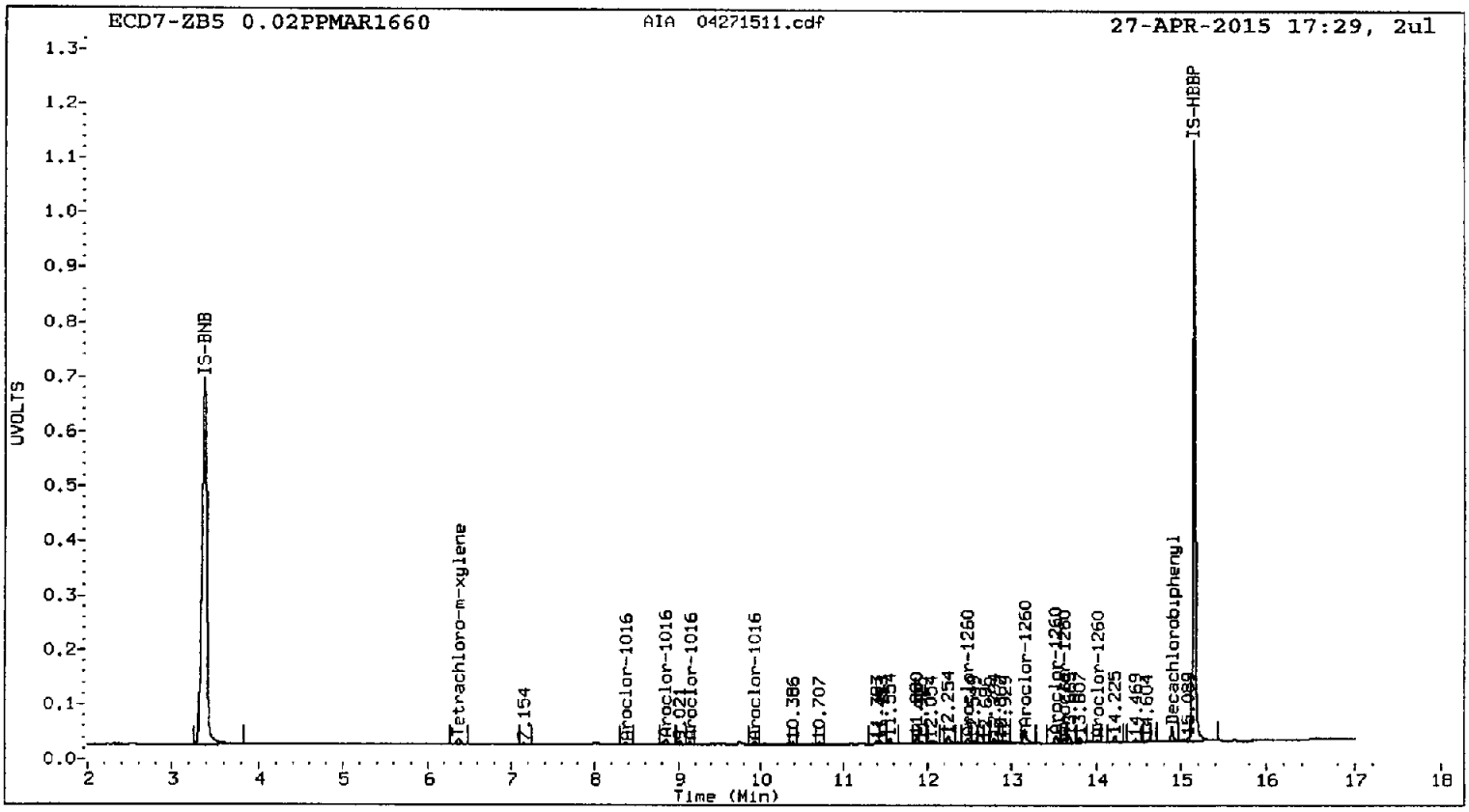
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.370	0.000	18653	21.4	1	8.047	0.000	170141	24.2
Aroclor-1016	2	8.853	0.000	56025	21.2	2	8.822	-0.001	350464	23.9
Aroclor-1016	3	9.148	0.000	17074	18.8	3	9.260	0.000	92627	23.8
Aroclor-1016	4	9.929	0.000	20015	20.3	4	10.021	0.000	65602	23.9
Total Col1Ave (4 peaks):					20.4	Total Col2Ave (4 peaks):			23.9	RPD = 16
Corrected Ave (3 peaks):					20.1	Corrected Ave (3 peaks):			23.8	RPD = 17
CalAmt %D:					2.2	CalAmt %D:			19.6	
Aroclor-1260	1	12.481	0.001	42871	22.4	1	12.403	0.000	193886	23.2
Aroclor-1260	2	13.155	0.000	133564	21.3	2	13.110	0.002	409602	21.3
Aroclor-1260	3	13.523	0.000	55991	19.5	3	13.579	0.001	147081	23.7
Aroclor-1260	4	13.622	0.000	34436	20.1	4	13.630	0.002	291450	22.4
Aroclor-1260	5	14.020	0.001	16852	18.2	NS	---			----
Total Col1Ave (5 peaks):					20.3	Total Col2Ave (4 peaks):			22.6	RPD = 11
Corrected Ave (4 peaks):					19.8	Corrected Ave (3 peaks):			22.3	RPD = 12
CalAmt %D:					1.6	CalAmt %D:			13.2	

Total PCB Area Col1 (6.472 - 14.797) = 962296 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 5328740 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical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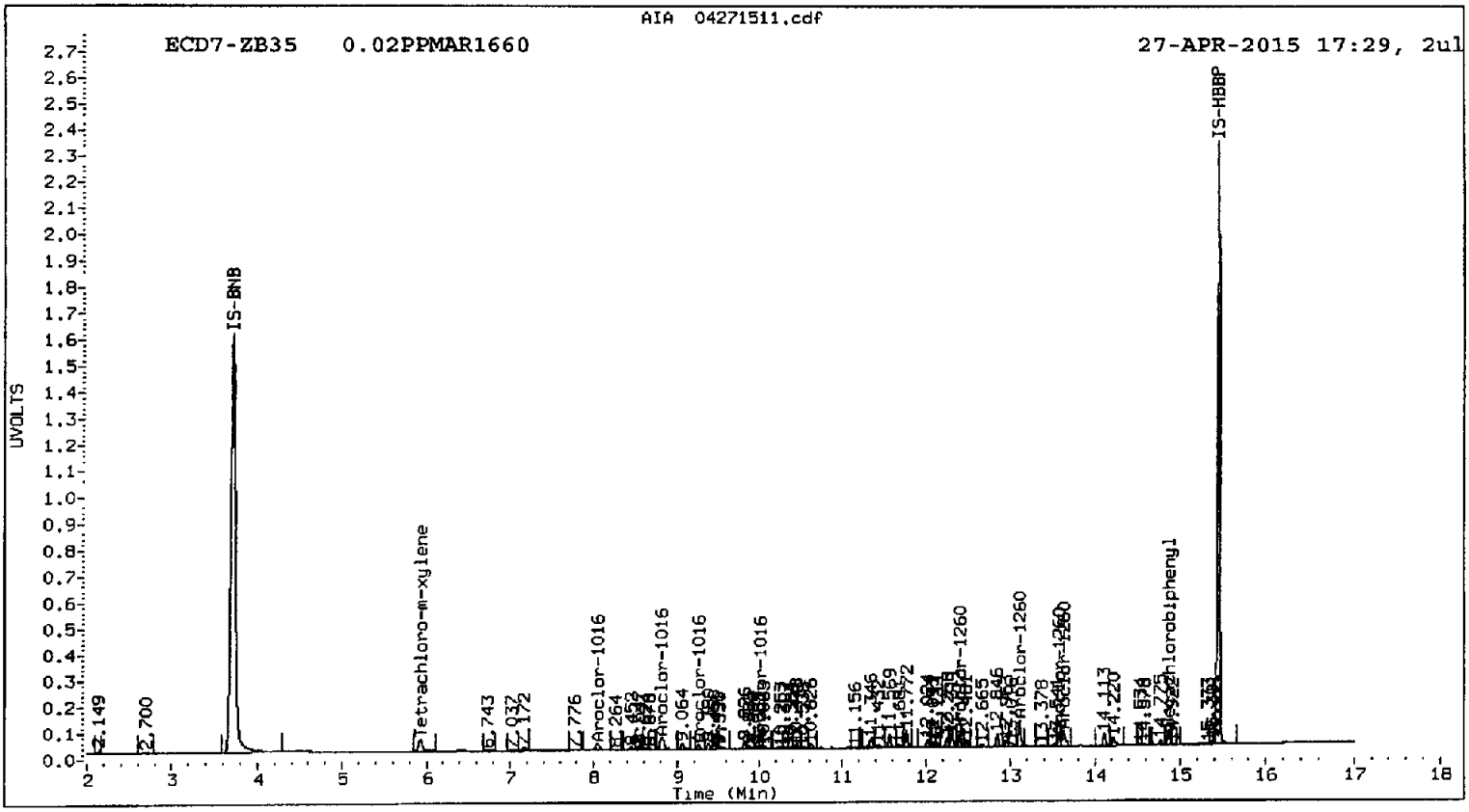
27-APR-2015 17:29, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl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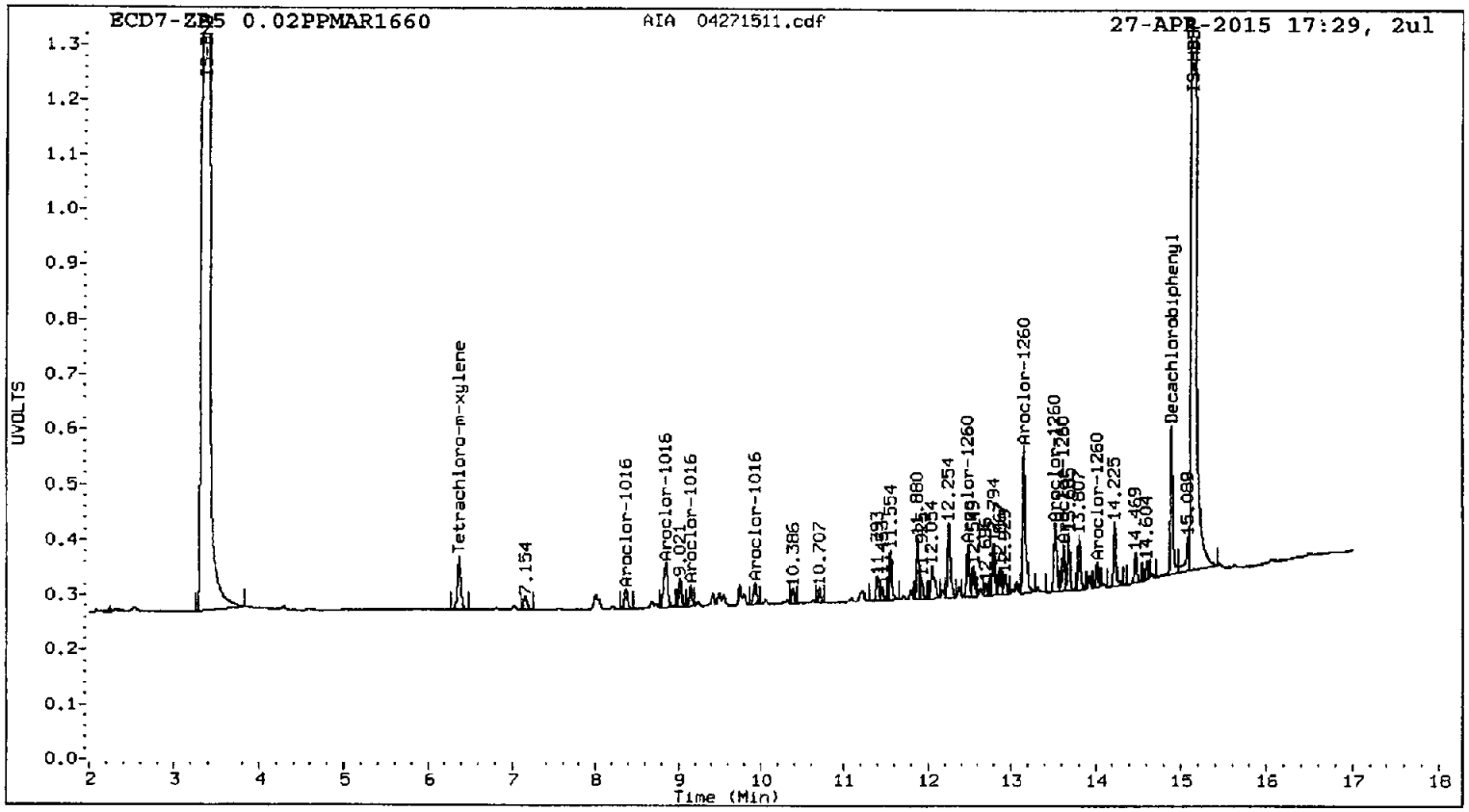
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl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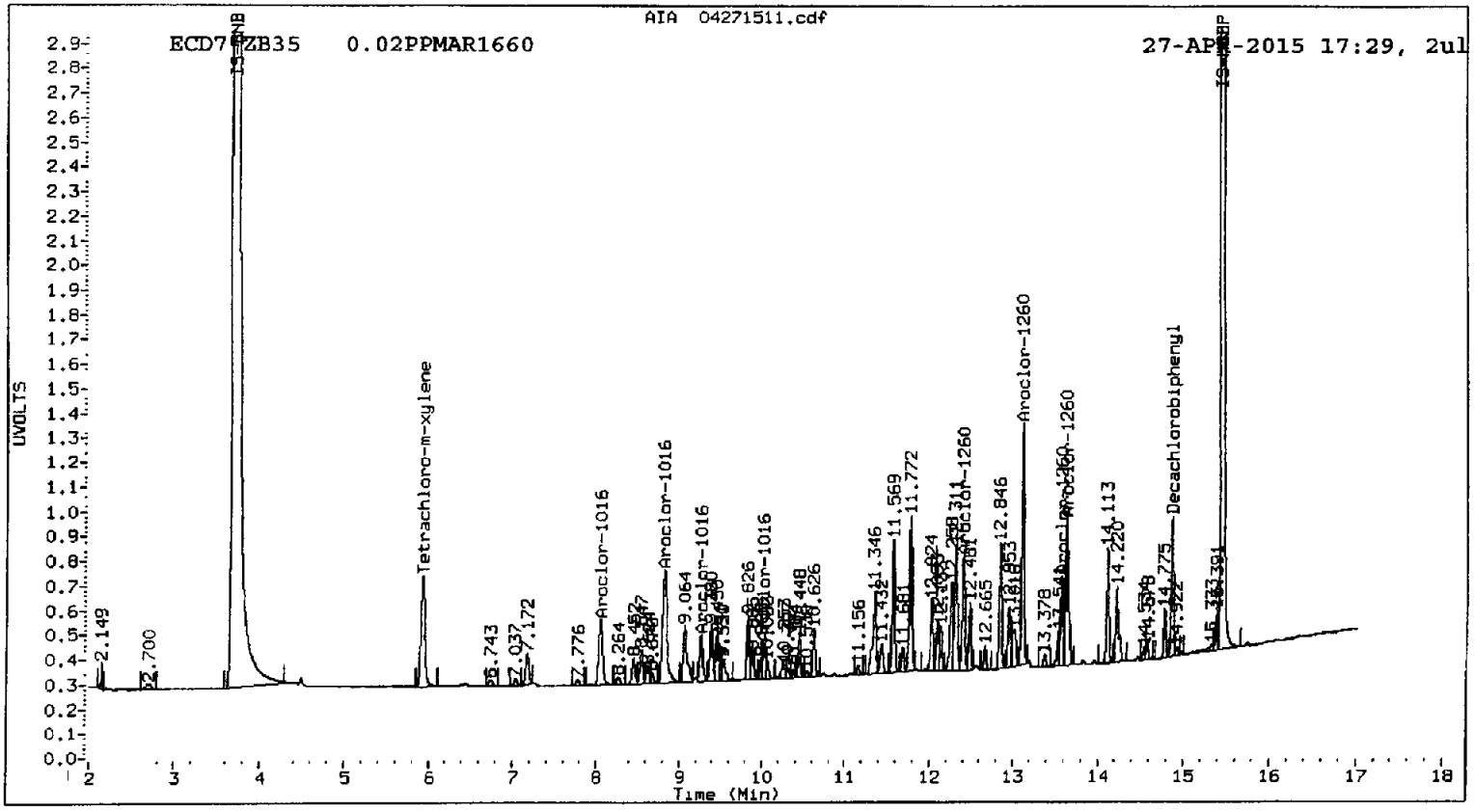
27-APR-2015 17:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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27-APR-2015 17:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271512.d
Data file 2: 20150427.b/ical-2.b/04271512.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:51
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.375	0.003	141314	5.932	0.002	682562	3.8	4.0	3.9	Tetrachloro-m-xylene
14.896	0.000	251070	14.868	0.002	450422	3.9	4.1	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.6	9.9
Decachlorobiphenyl	9.7	10.4

4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5308836	2.2
Hexabromobiphenyl	3879663	4280352	10.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12661301	2.9
Hexabromobiphenyl	7233601	7749625	7.1

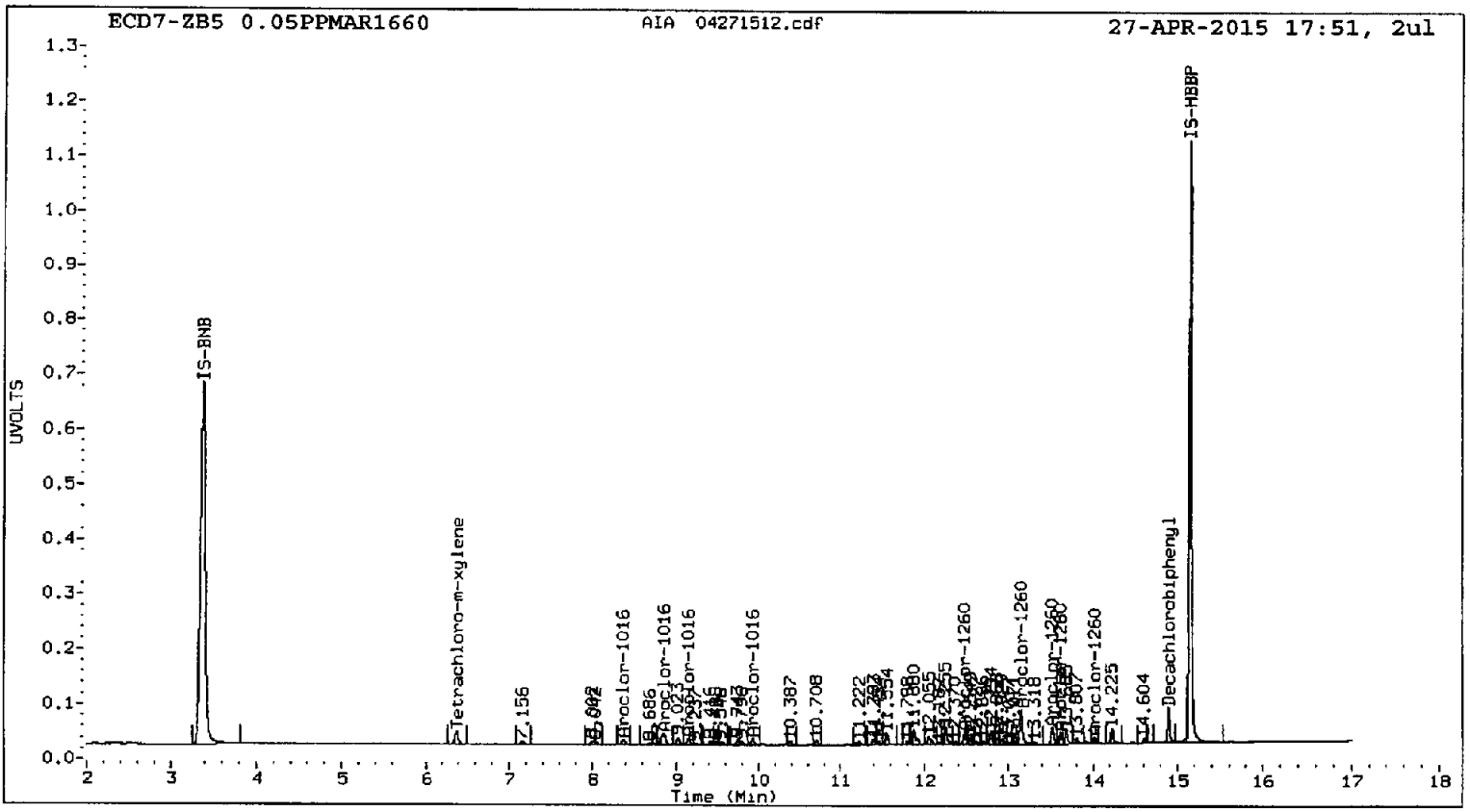
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.372	0.002	45698	51.6	1	8.049	0.002	388069	53.9
Aroclor-1016	2	8.855	0.002	137231	51.1	2	8.824	0.000	787373	52.3
Aroclor-1016	3	9.150	0.002	47213	51.2	3	9.262	0.002	212042	53.1
Aroclor-1016	4	9.930	0.001	52143	52.0	4	10.022	0.001	149123	52.9
Total Col1Ave (4 peaks):					51.5	Total Col2Ave (4 peaks):				53.1 RPD = 3
Corrected Ave (3 peaks):					51.3	Corrected Ave (3 peaks):				52.8 RPD = 3
CalAmt %D:					2.9	CalAmt %D:				6.1
Aroclor-1260	1	12.481	0.001	98821	51.6	1	12.403	0.000	438452	53.8
Aroclor-1260	2	13.155	0.000	303418	48.5	2	13.109	0.002	976632	52.0
Aroclor-1260	3	13.524	0.001	139178	48.7	3	13.578	0.001	325939	53.7
Aroclor-1260	4	13.622	0.000	84585	49.5	4	13.630	0.002	667474	52.4
Aroclor-1260	5	14.020	0.000	42462	46.0	NS	---			----
Total Col1Ave (5 peaks):					48.9	Total Col2Ave (4 peaks):				53.0 RPD = 8
Corrected Ave (4 peaks):					48.2	Corrected Ave (3 peaks):				52.7 RPD = 9
CalAmt %D:					-2.3	CalAmt %D:				5.9

Total PCB Area Col1 (6.472 - 14.797) = 2569804 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 12131112 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical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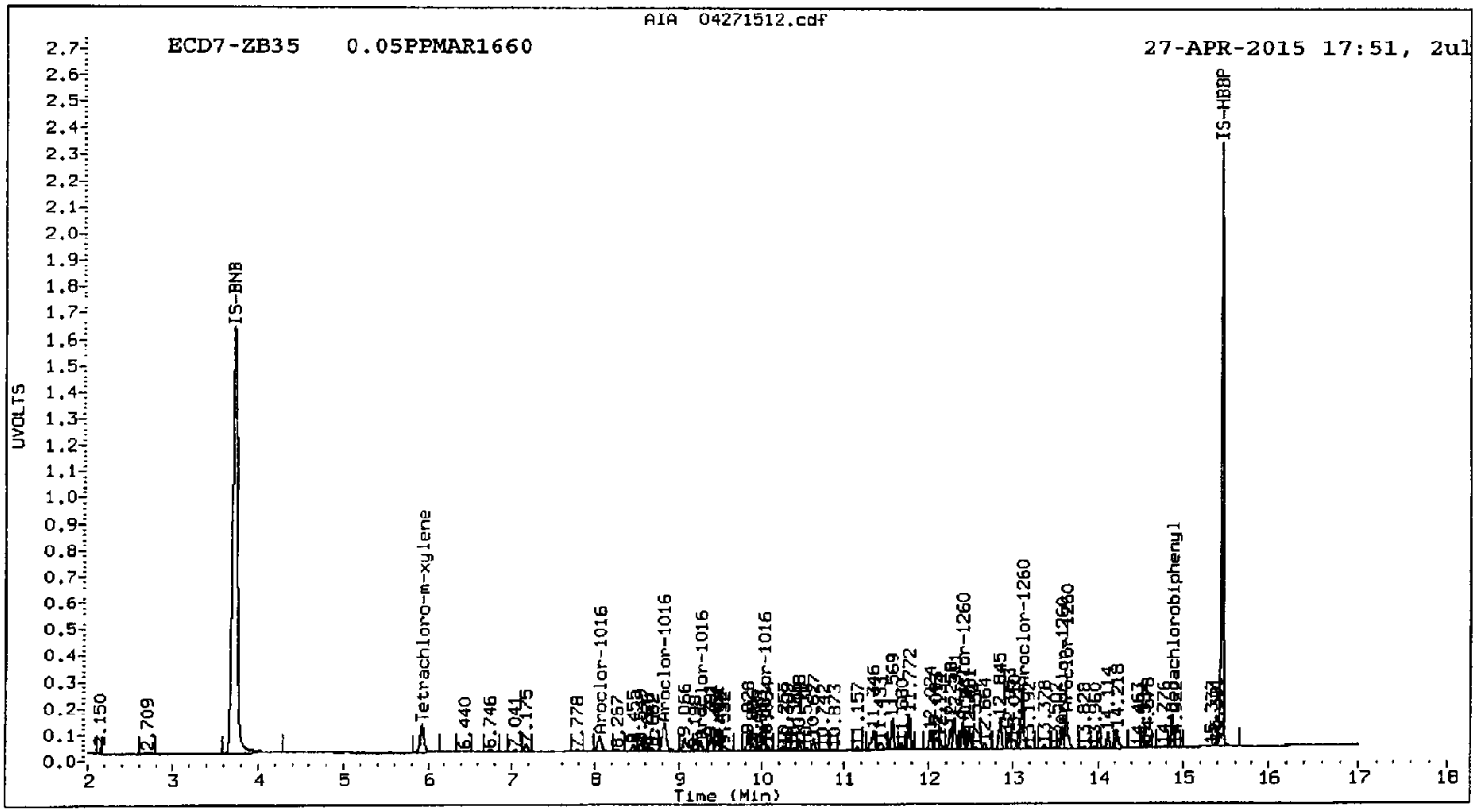
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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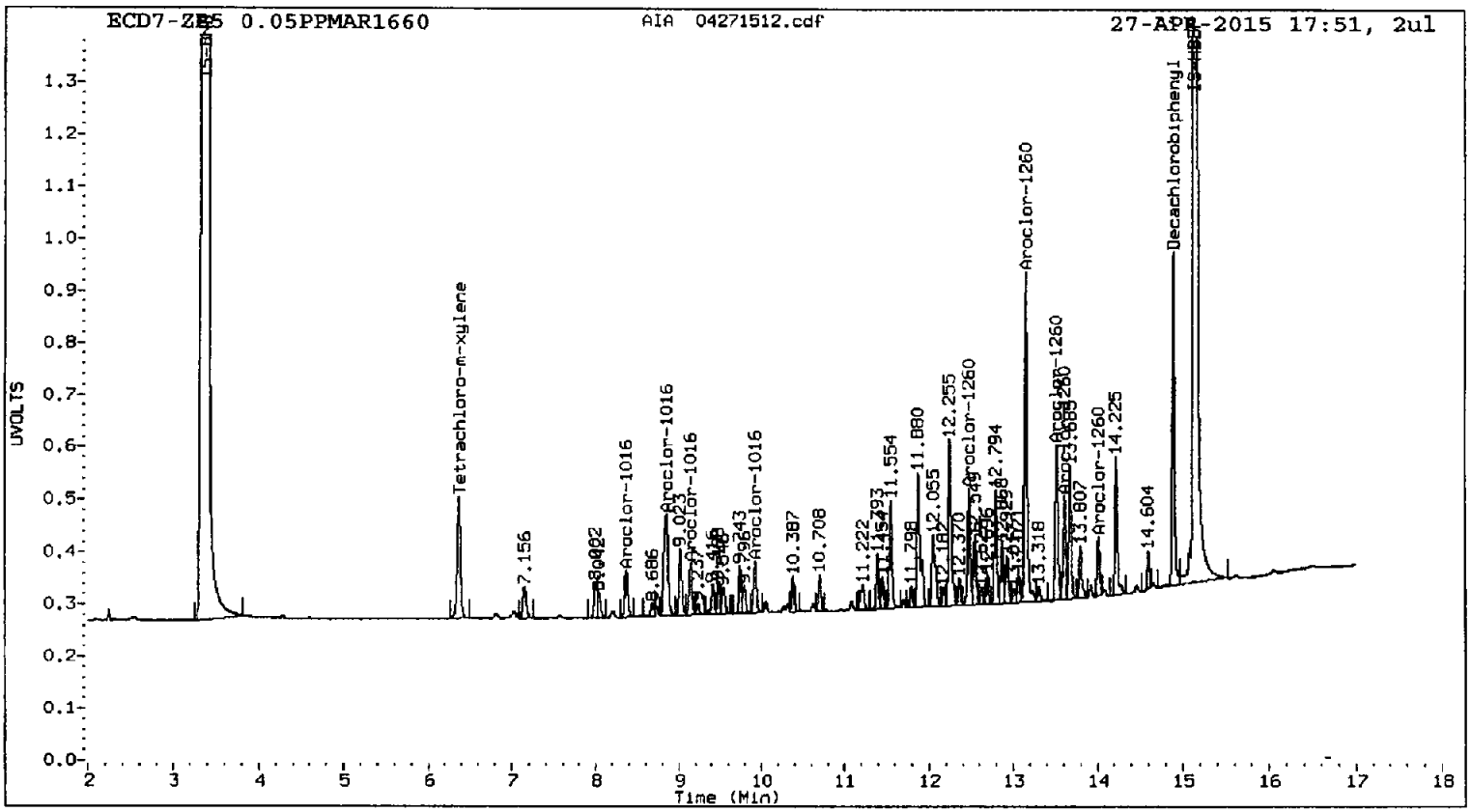
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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Aroclor-1016
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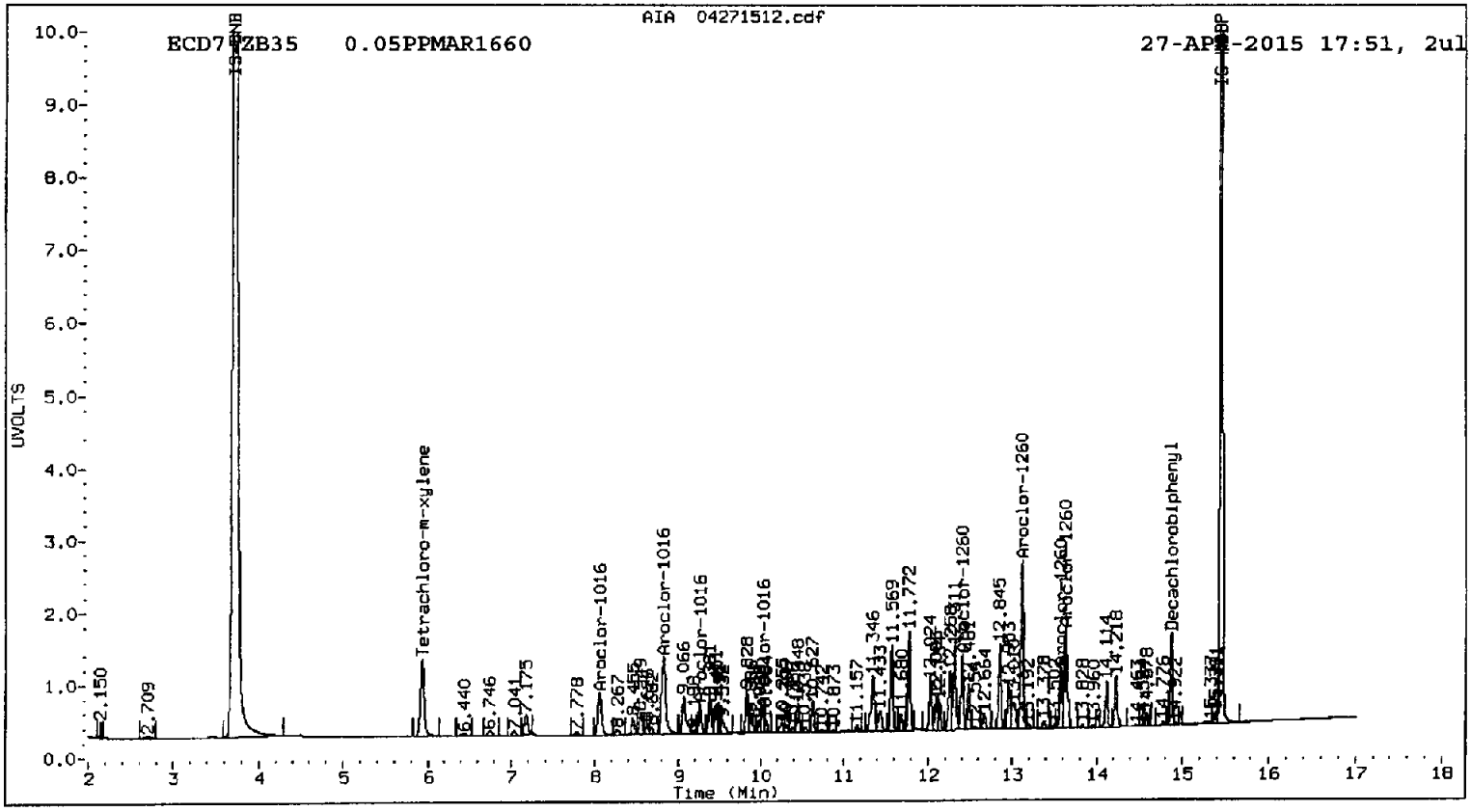
Decachlorobiphenyl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27-APR-2015 17:51, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271513.d
Data file 2: 20150427.b/ical-2.b/04271513.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:12
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.374	0.001	2827092	5.932	0.002	12107698	81.1	74.5	8.4	Tetrachloro-m-xylene
14.897	0.000	4705250	14.868	0.002	7328492	77.7	70.6	9.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	202.8	186.3
Decachlorobiphenyl	194.3	176.5

04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5007410	-3.6
Hexabromobiphenyl	3879663	3992327	2.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	11982299	-2.6
Hexabromobiphenyl	7233601	7408818	2.4

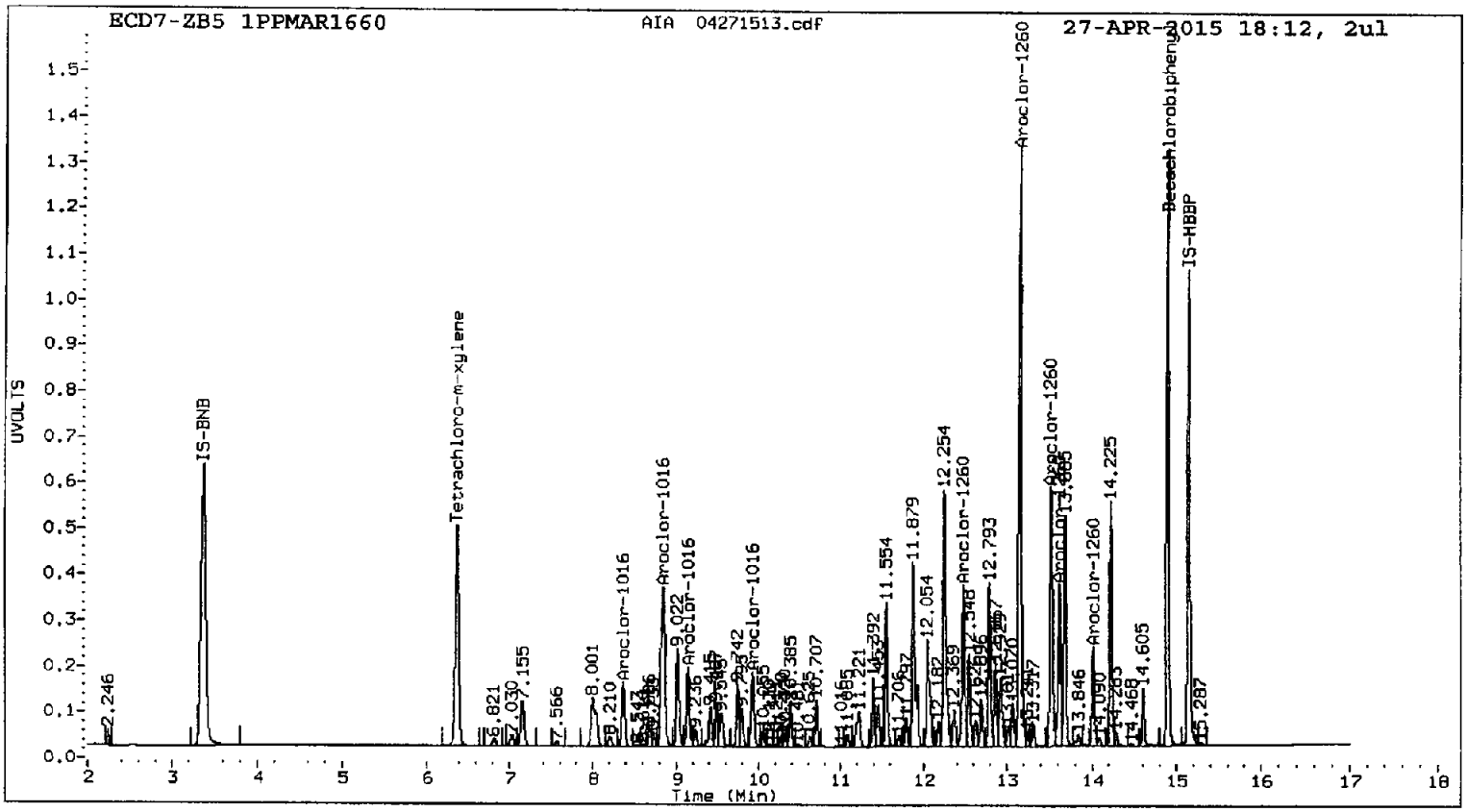
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	8.371	0.001	735912	881.5	1	8.049	0.002	5476771	803.7	
Aroclor-1016	2	8.853	0.000	2350515	927.0	2	8.823	-0.001	12062193	847.2	
Aroclor-1016	3	9.149	0.001	830801	954.4	3	9.260	0.000	3147313	832.2	
Aroclor-1016	4	9.930	0.000	869548	919.6	4	10.021	0.001	2228009	835.7	
Total Col1Ave (4 peaks):					920.6	Total Col2Ave (4 peaks):				829.7	RPD = 10
Corrected Ave (3 peaks):					909.4	Corrected Ave (3 peaks):				823.9	RPD = 10
CalAmt %D:					-7.9	CalAmt %D:				-17.0	
Aroclor-1260	1	12.480	0.000	1531628	858.2	1	12.402	0.000	6453289	828.2	
Aroclor-1260	2	13.154	0.000	5647146	968.7	2	13.107	0.000	16173567	900.1	
Aroclor-1260	3	13.523	0.000	2605977	976.8	3	13.578	0.001	4781067	824.6	
Aroclor-1260	4	13.622	0.000	1478537	927.4	4	13.629	0.001	10567228	867.6	
Aroclor-1260	5	14.019	0.000	854414	992.7	NS	---			----	
Total Col1Ave (5 peaks):					944.8	Total Col2Ave (4 peaks):				855.1	RPD = 10
Corrected Ave (4 peaks):					932.8	Corrected Ave (3 peaks):				840.1	RPD = 10
CalAmt %D:					-5.5	CalAmt %D:				-14.5	

Total PCB Area Col1 (6.472 - 14.797) = 44631808 Col1 Total PCB = 1.9 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 178830029 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical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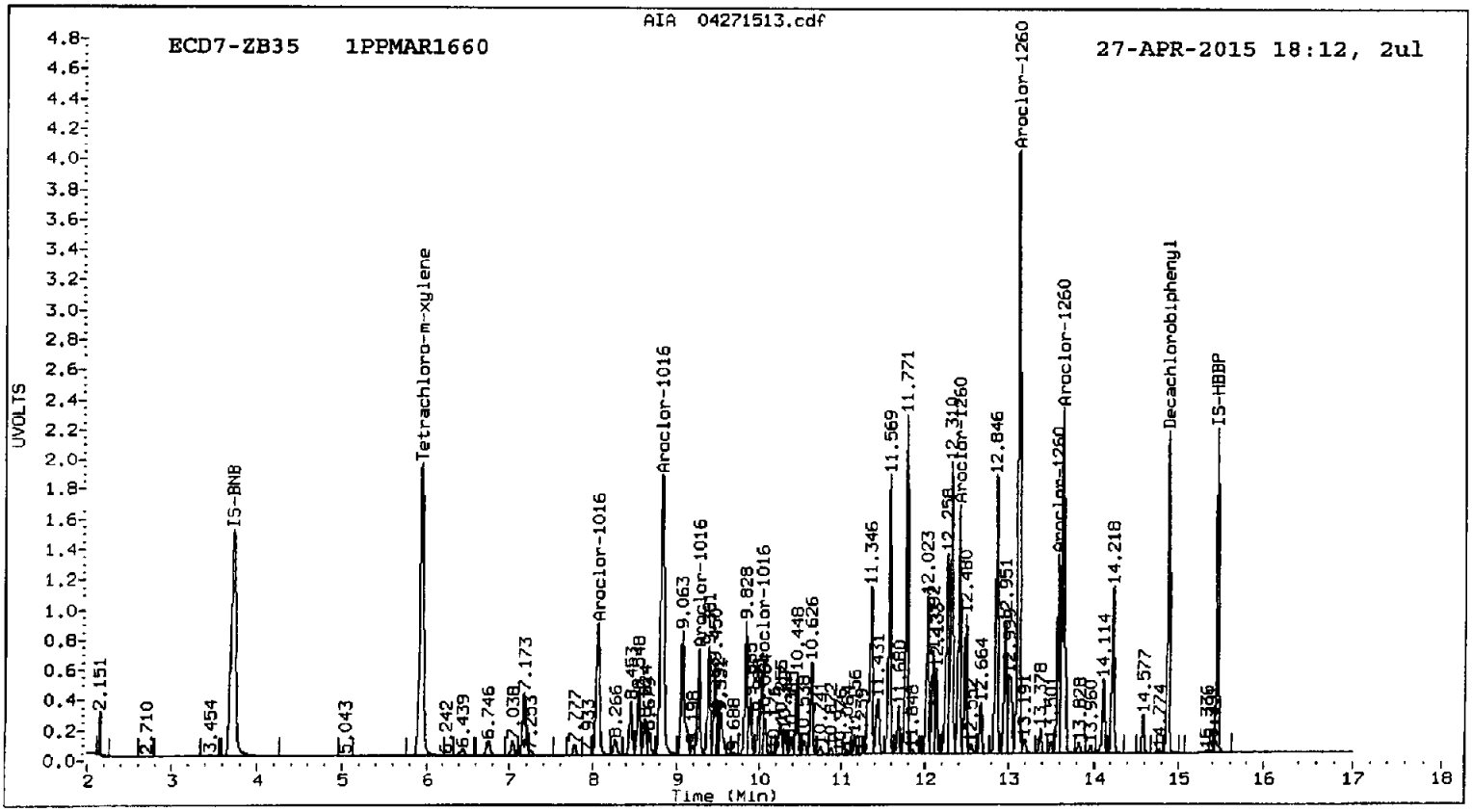
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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UVOLTS
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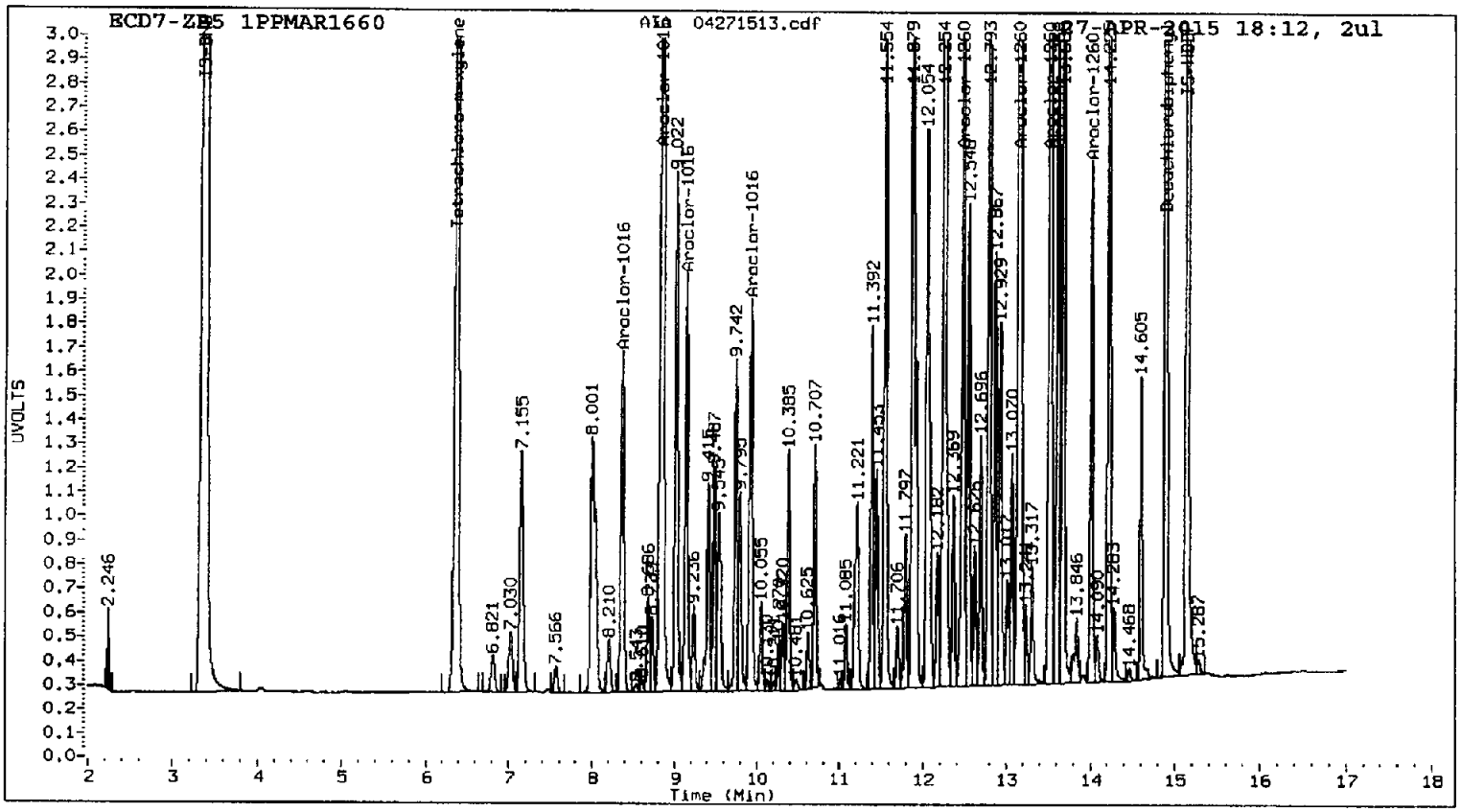
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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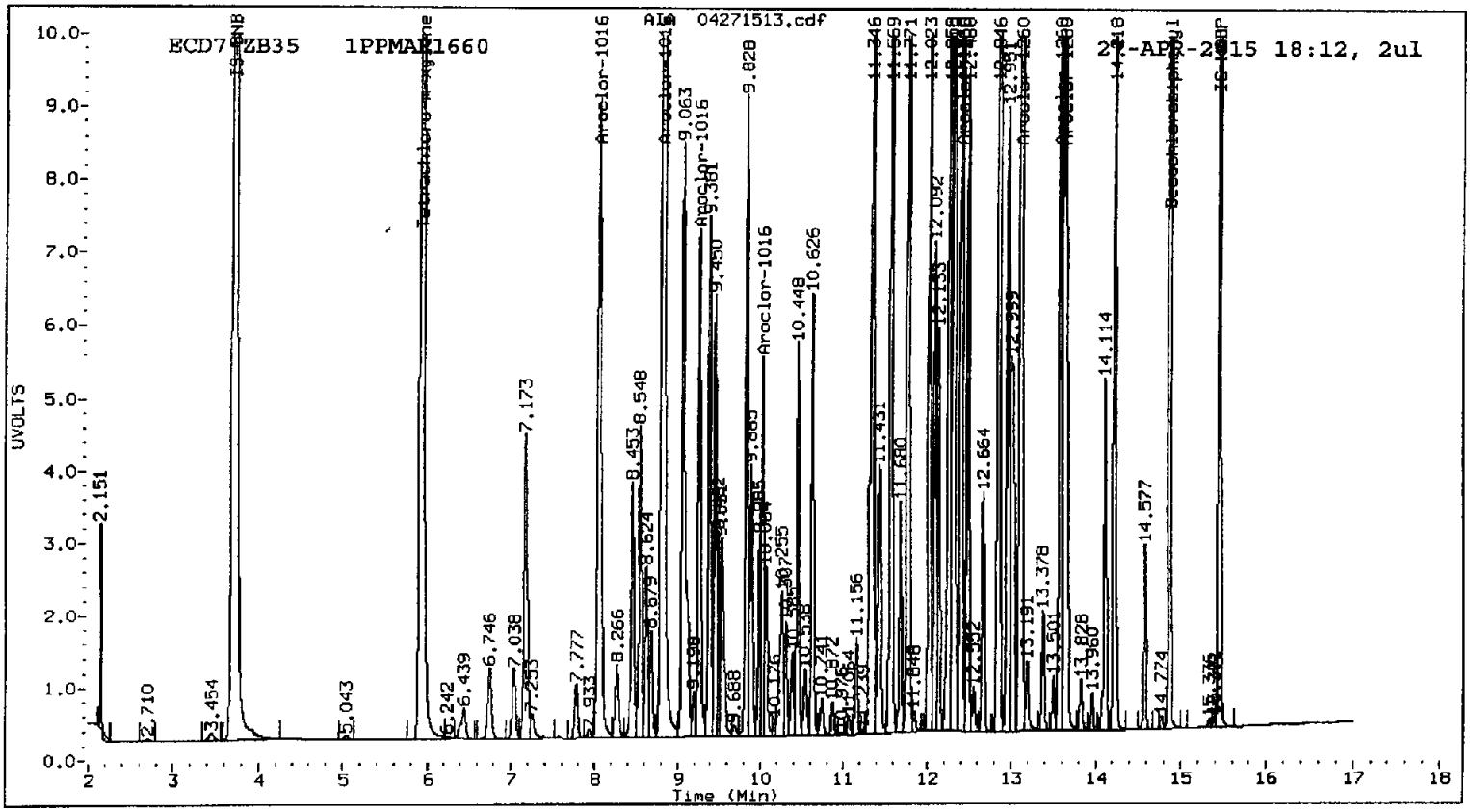
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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27-APR-2015 18:12, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271514.d
Data file 2: 20150427.b/ical-2.b/04271514.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:34
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.373	0.001	285896	5.932	0.002	1343154	8.4	8.5	1.0	Tetrachloro-m-xylene
14.896	0.000	493872	14.868	0.002	873326	8.4	8.6	2.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	21.0	21.2
Decachlorobiphenyl	21.0	21.6

M 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	4885318	-6.0
Hexabromobiphenyl	3879663	3880445	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	11669466	-5.2
Hexabromobiphenyl	7233601	7229444	-0.1

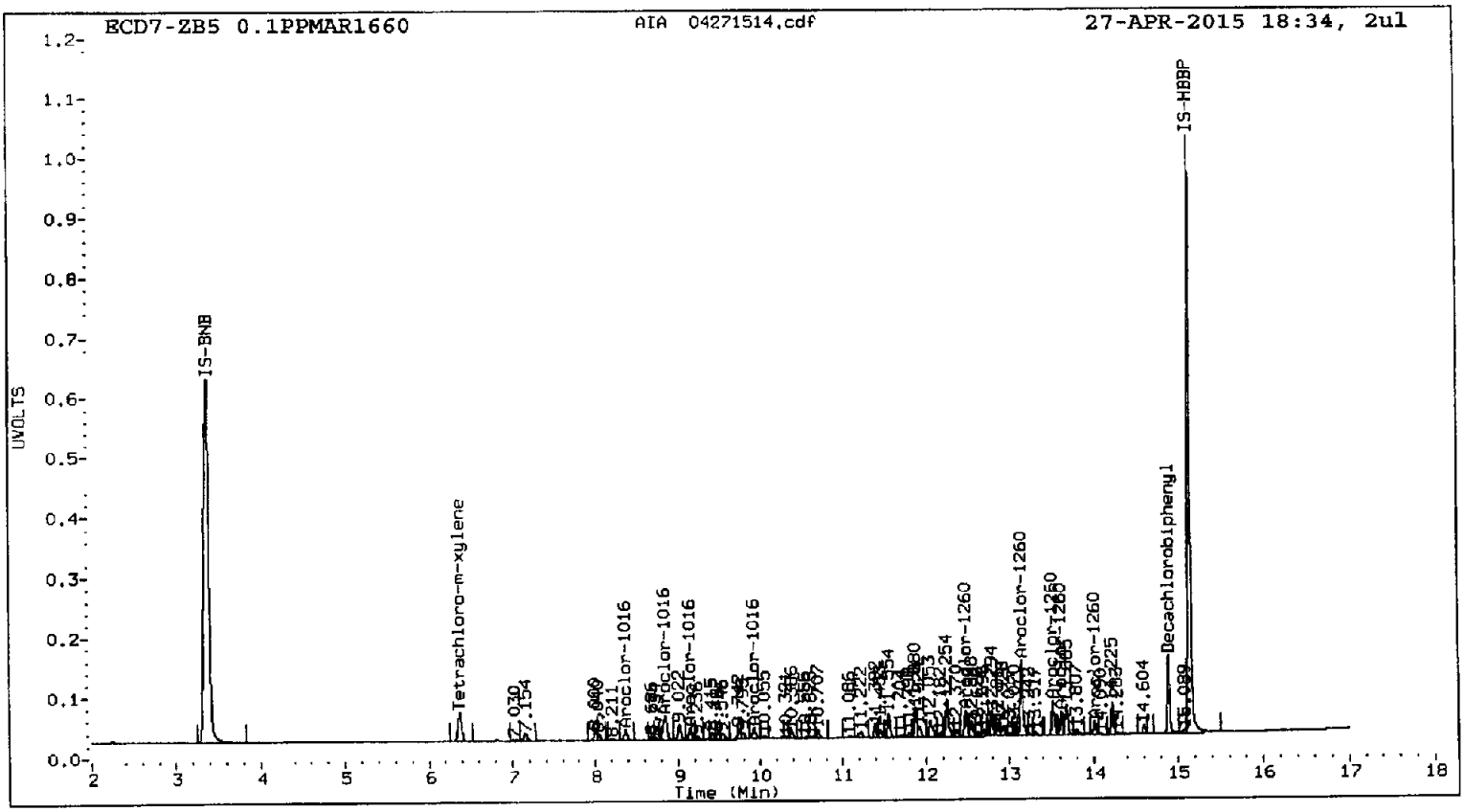
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.371	0.001	90406	111.0	1	8.049	0.002	727379	109.6
Aroclor-1016	2	8.853	0.001	267509	108.1	2	8.825	0.001	1490877	107.5
Aroclor-1016	3	9.149	0.002	93998	110.7	3	9.262	0.002	398245	108.1
Aroclor-1016	4	9.929	0.000	101382	109.9	4	10.022	0.001	281977	108.6
Total Col1Ave (4 peaks):					109.9	Total Col2Ave (4 peaks):				108.5 RPD = 1
Corrected Ave (3 peaks):					109.6	Corrected Ave (3 peaks):				108.1 RPD = 1
CalAmt %D:					9.9	CalAmt %D:				8.5
Aroclor-1260	1	12.481	0.000	188223	108.5	1	12.403	0.000	826494	108.7
Aroclor-1260	2	13.155	0.000	577992	102.0	2	13.109	0.002	1885337	107.5
Aroclor-1260	3	13.523	0.000	275543	106.3	3	13.579	0.001	605036	106.9
Aroclor-1260	4	13.622	0.000	167905	108.4	4	13.630	0.002	1293953	108.9
Aroclor-1260	5	14.020	0.000	92396	110.4	NS	---			----
Total Col1Ave (5 peaks):					107.1	Total Col2Ave (4 peaks):				108.0 RPD = 1
Corrected Ave (4 peaks):					106.3	Corrected Ave (3 peaks):				107.7 RPD = 1
CalAmt %D:					7.1	CalAmt %D:				8.0

Total PCB Area Col1 (6.472 - 14.797) = 5151080 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 22982872 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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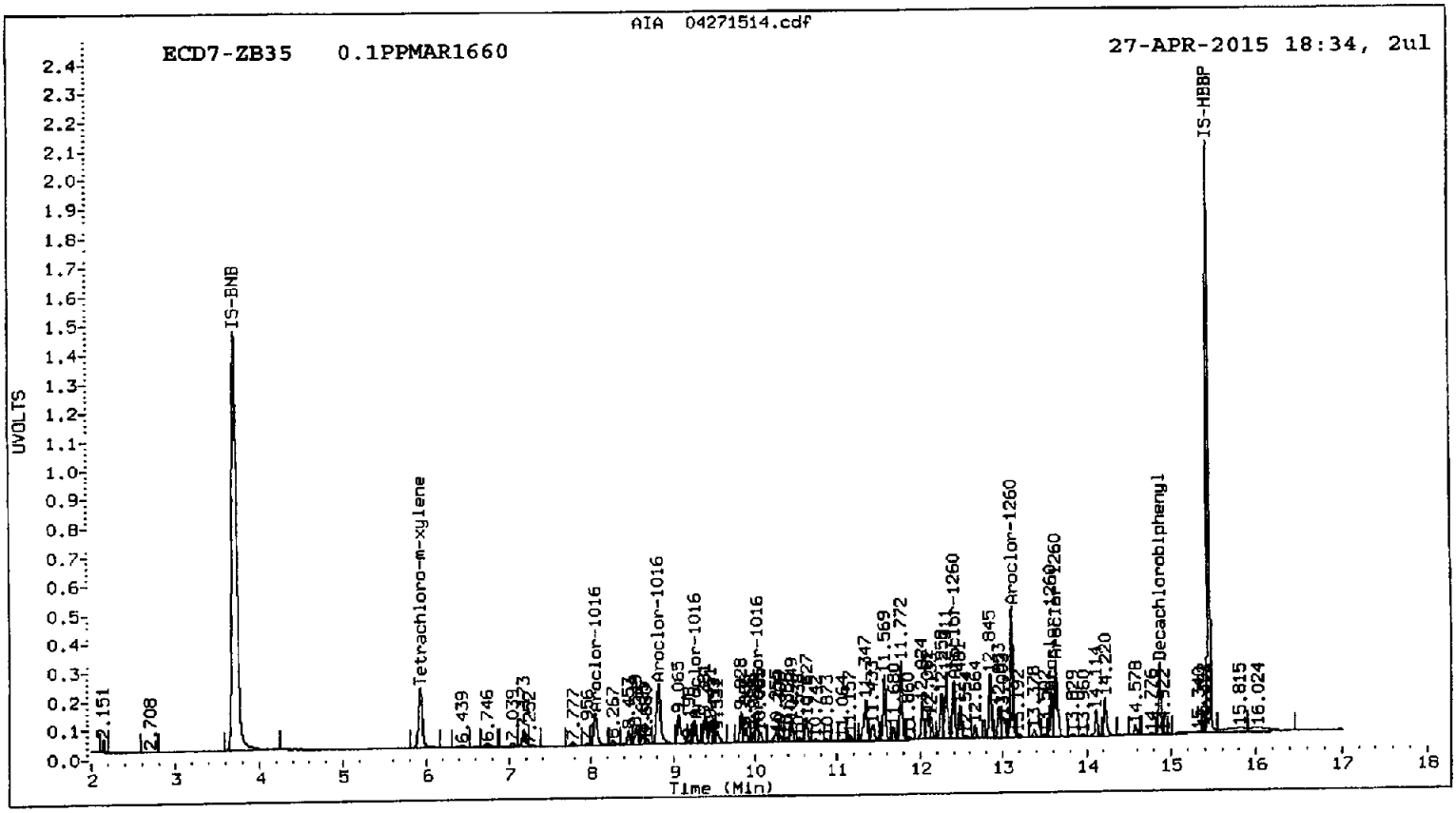
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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UVOLTS
Time (Min)
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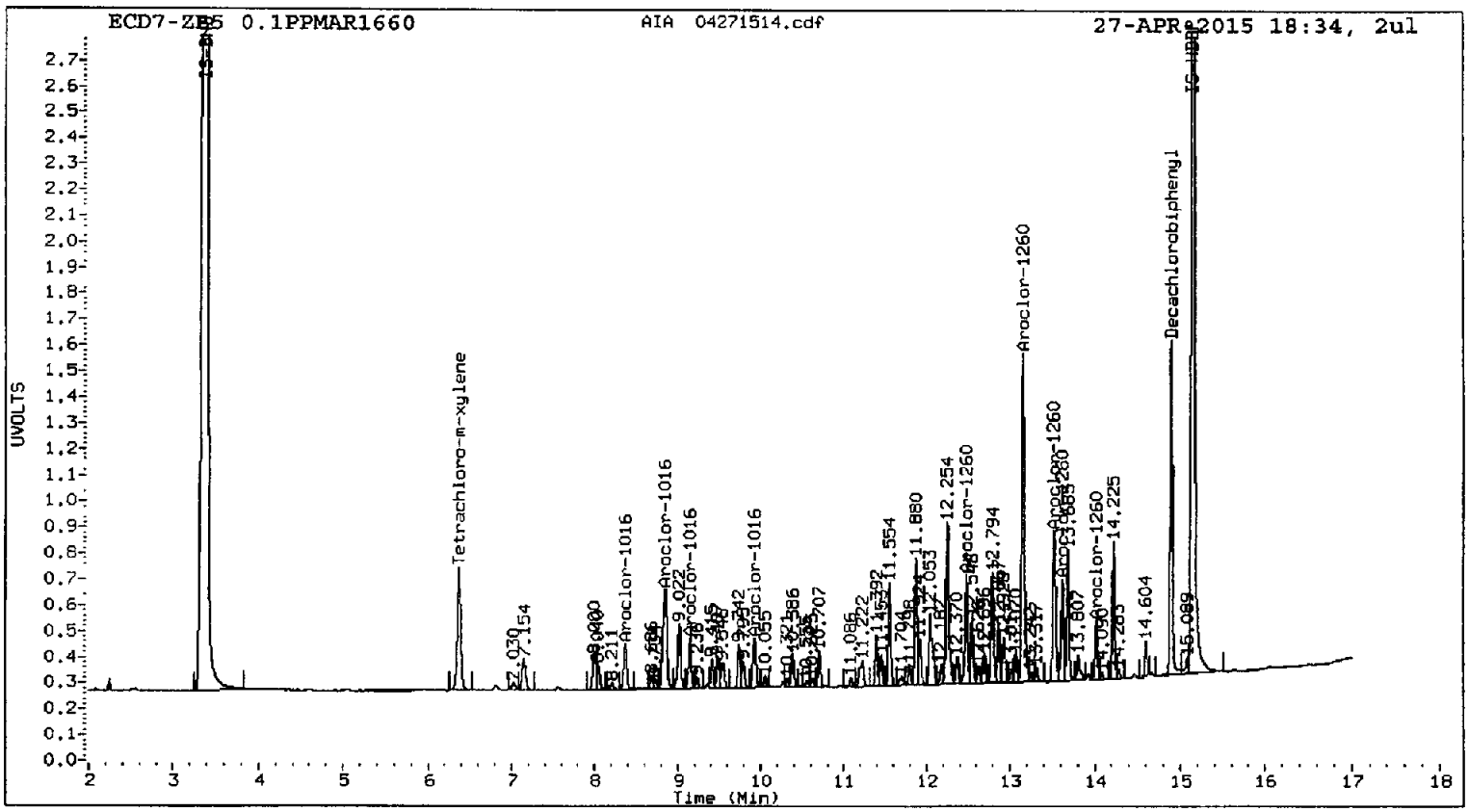
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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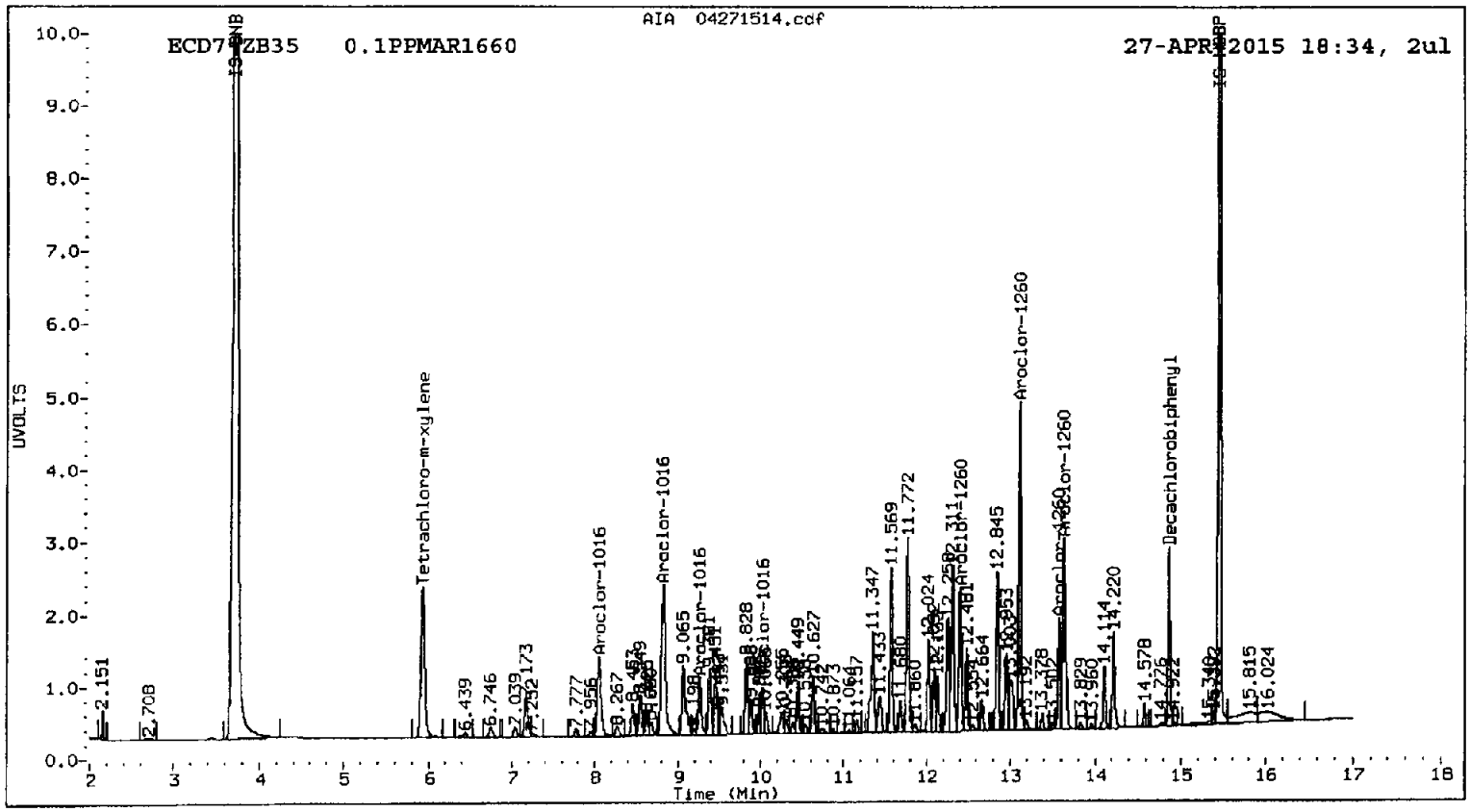
AIA 04271514.cdf
27-APR-2015 18:34, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


AIA 04271514.cdf
ECD7-ZB35 0.1PPMAR1660
27-APR-2015 18:34, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271515.d
Data file 2: 20150427.b/ical-2.b/04271515.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:55
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1411333	5.931	0.001	6308520	40.0	38.4	4.0	Tetrachloro-m-xylene
14.897	0.000	2360029	14.867	0.000	3892470	39.0	37.0	5.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.0	96.1
Decachlorobiphenyl	97.4	92.4

A 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5067653	-2.5
Hexabromobiphenyl	3879663	3993020	2.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12109167	-1.6
Hexabromobiphenyl	7233601	7515798	3.9

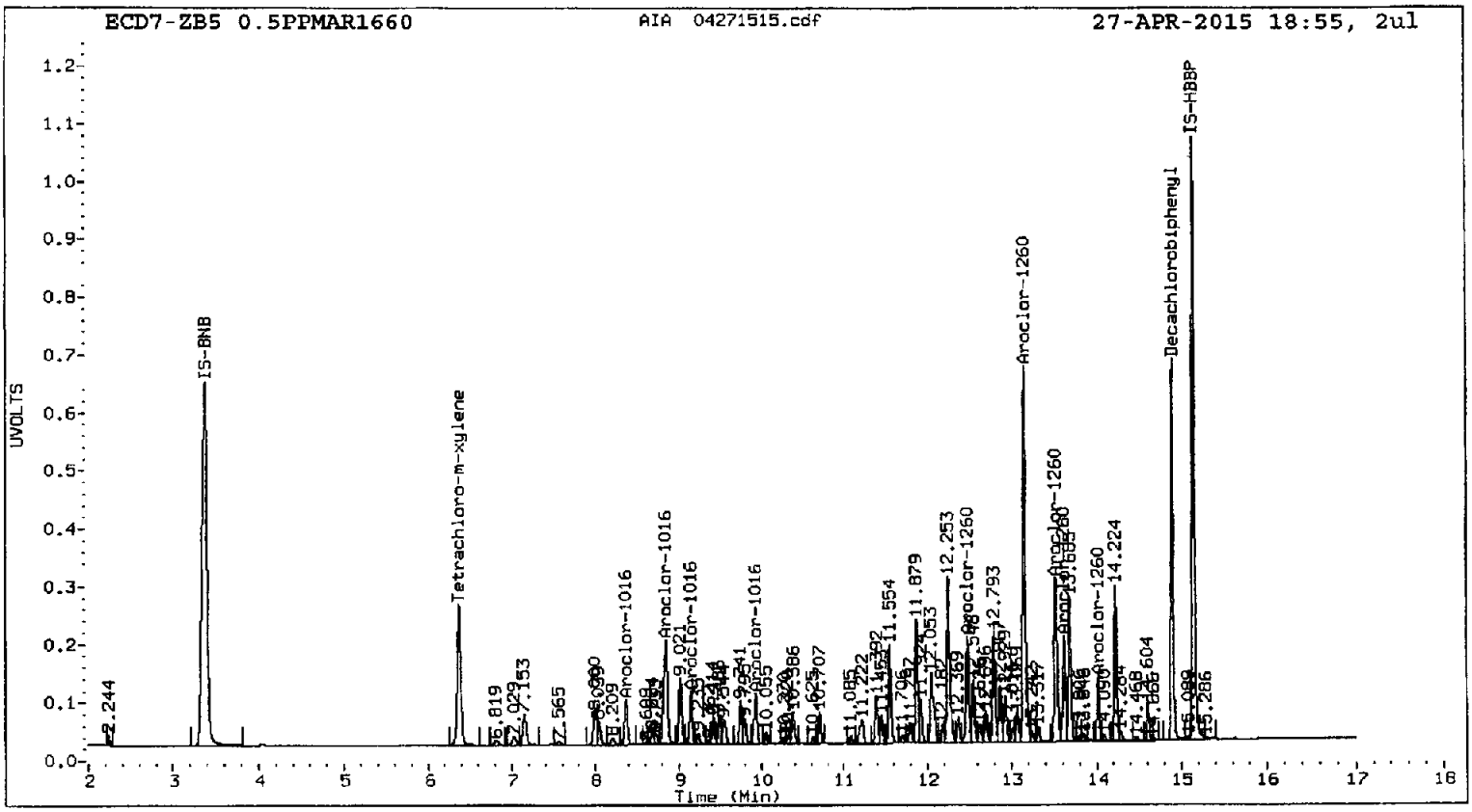
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.370	0.000	394310	466.7	1	8.047	0.000	3009229	437.0
Aroclor-1016	2	8.853	0.000	1213732	473.0	2	8.823	0.000	6457653	448.8
Aroclor-1016	3	9.148	0.000	431816	490.1	3	9.260	0.000	1707713	446.8
Aroclor-1016	4	9.929	0.000	453873	474.3	4	10.021	0.000	1197689	444.5
Total Col1Ave (4 peaks):				476.0		Total Col2Ave (4 peaks):			444.3	RPD = 7
Corrected Ave (3 peaks):				471.3		Corrected Ave (3 peaks):			442.8	RPD = 6
CalAmt %D:				-4.8		CalAmt %D:			-11.1	
Aroclor-1260	1	12.480	0.000	812618	455.3	1	12.403	0.000	3489945	441.5
Aroclor-1260	2	13.155	0.000	2847542	488.4	2	13.108	0.000	8518379	467.3
Aroclor-1260	3	13.523	0.000	1314826	492.8	3	13.577	0.000	2661403	452.5
Aroclor-1260	4	13.622	0.000	771104	483.6	4	13.628	0.000	5639426	456.4
Aroclor-1260	5	14.019	0.000	436271	506.8	NS	---			----
Total Col1Ave (5 peaks):				485.4		Total Col2Ave (4 peaks):			454.4	RPD = 7
Corrected Ave (4 peaks):				480.0		Corrected Ave (3 peaks):			450.1	RPD = 6
CalAmt %D:				-2.9		CalAmt %D:			-9.1	

Total PCB Area Col1 (6.472 - 14.797) = 23295047 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 97106239 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical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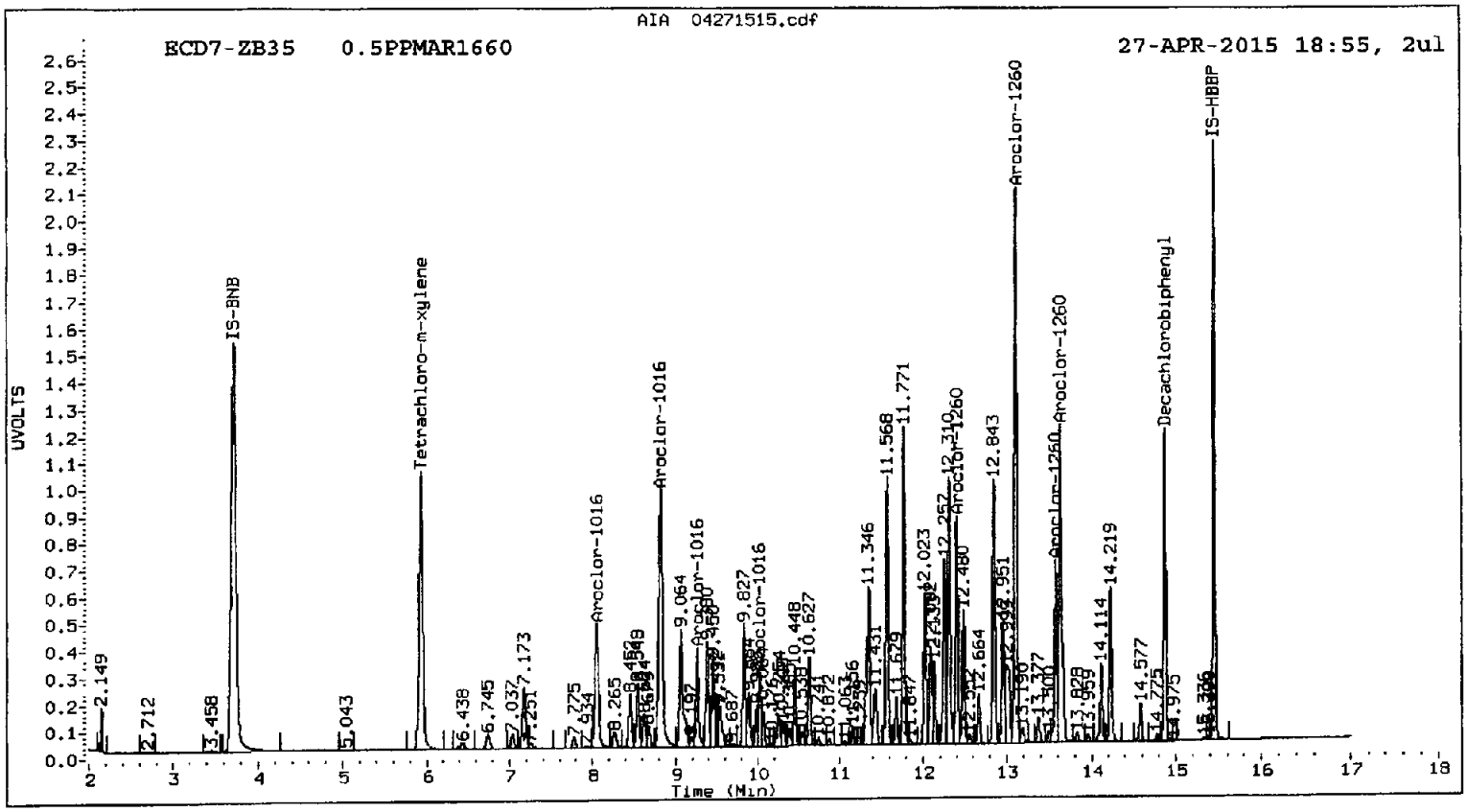
27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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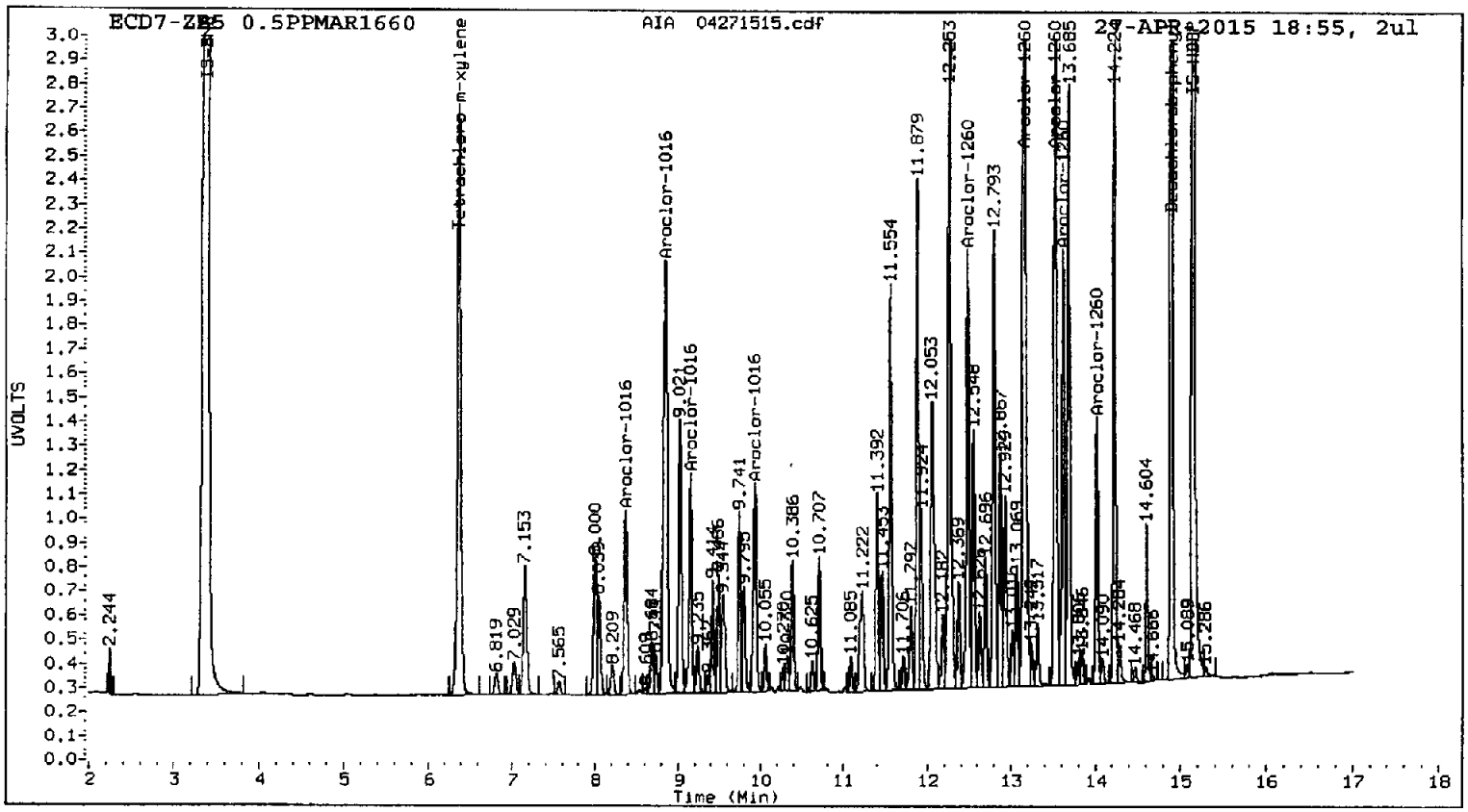
27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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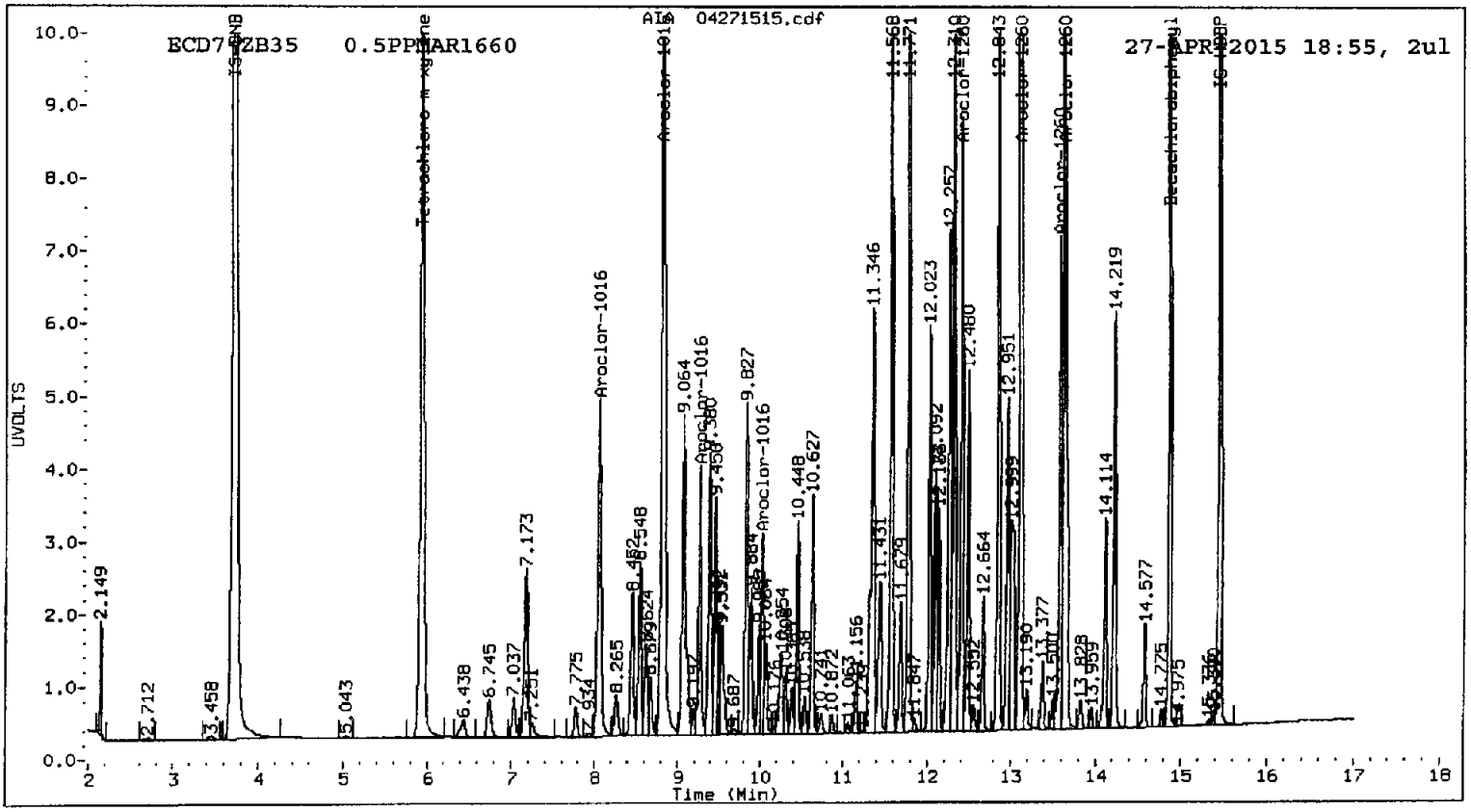
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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AIA 04271515.cdf
27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271516.d
Data file 2: 20150427.b/ical-2.b/04271516.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 27-APR-2015 19:17
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.371	-0.001	1339821	5.929	-0.001	6093731	37.6	36.6	2.7	Tetrachloro-m-xylene
14.896	0.000	2423893	14.867	0.001	4026203	37.6	36.7	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.1	91.5
Decachlorobiphenyl	94.0	91.8

M 04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5115818	-1.5
Hexabromobiphenyl	3879663	4250356	9.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12274107	-0.2
Hexabromobiphenyl	7233601	7823510	8.2

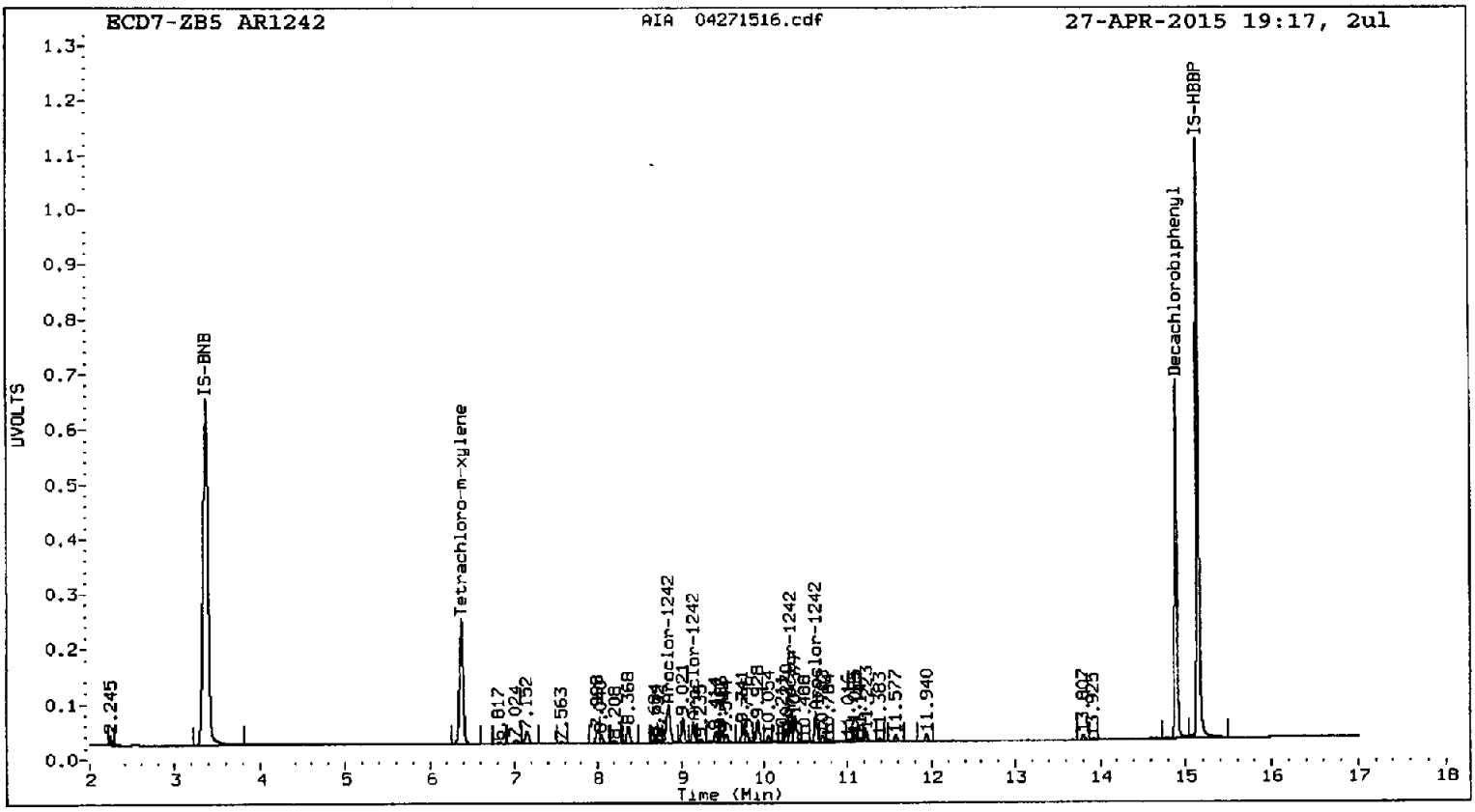
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	8.851	0.000	482876	250.0	1	8.047	0.000	1269737	250.0
Aroclor-1242	2	9.148	0.000	174468	250.0	2	8.823	0.000	2648853	250.0
Aroclor-1242	3	10.319	0.000	163352	250.0	3	10.384	0.000	932201	250.0
Aroclor-1242	4	10.622	0.000	246972	250.0	4	10.742	0.000	1132566	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 3622286 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 19827909 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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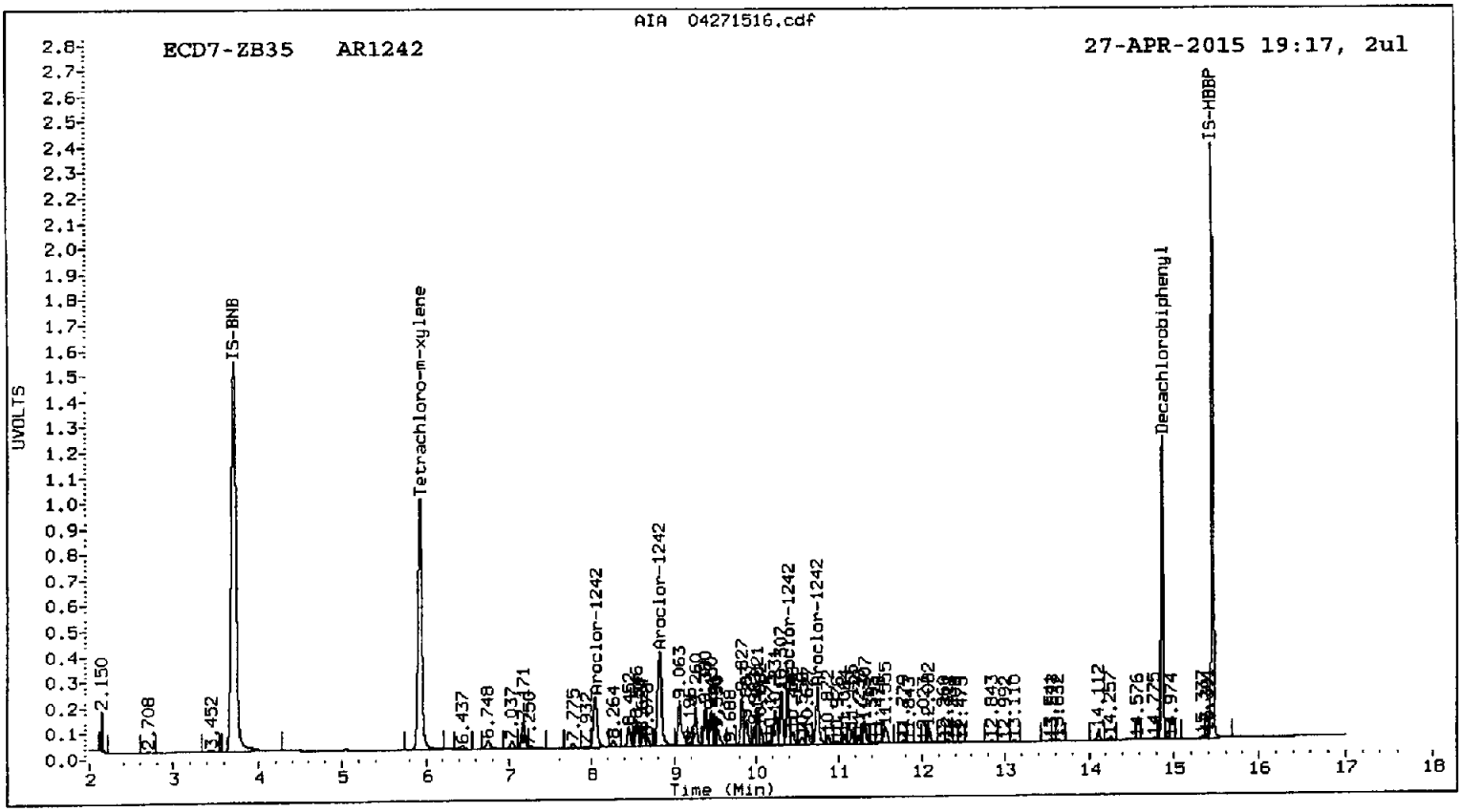
27-APR-2015 19:17, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1242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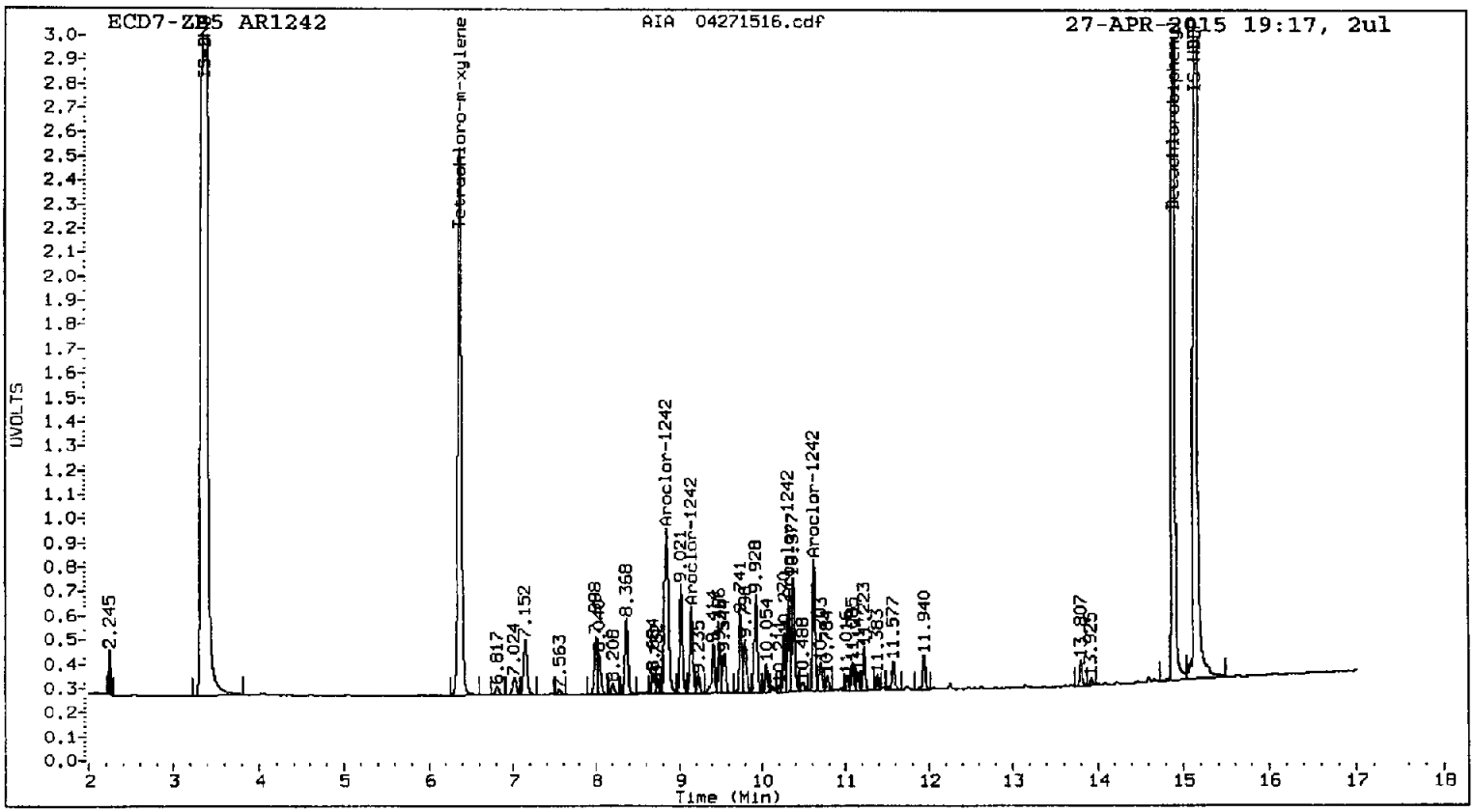
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1242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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1242
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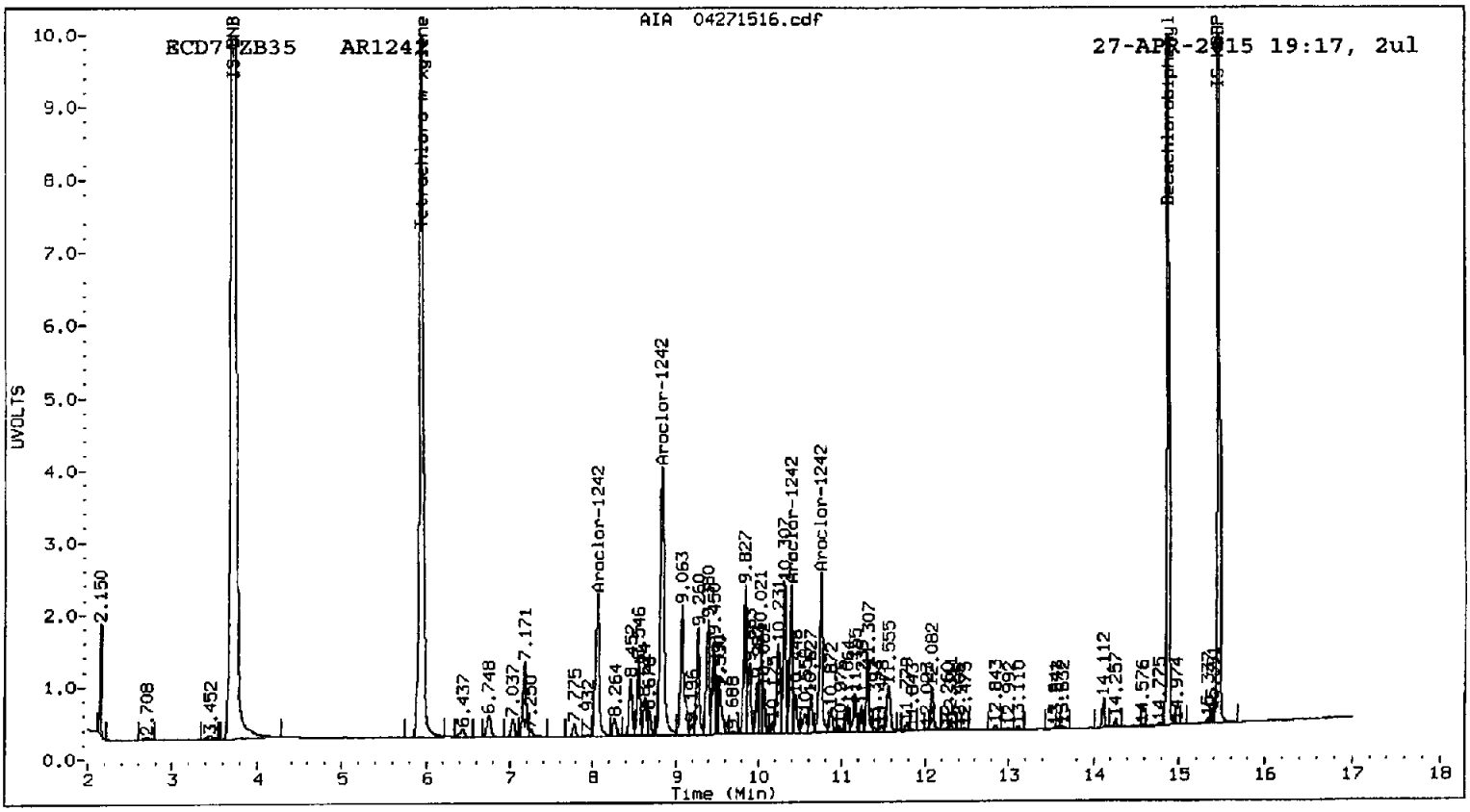
9.021
9.928
11.577
11.940
13.807
13.925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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1242
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6.748
7.037
7.171
7.775
8.264
9.063
9.827
10.307
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14.112
14.257
14.576
14.725
14.974

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271517.d
Data file 2: 20150427.b/ical-2.b/04271517.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 27-APR-2015 19:38
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.374	0.001	1341704	5.932	0.002	6150543	37.8	37.0	2.2	Tetrachloro-m-xylene
14.897	0.000	2363201	14.867	0.001	3888600	37.3	36.0	3.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.6	92.5
Decachlorobiphenyl	93.2	90.0

JK 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5095789	-1.9
Hexabromobiphenyl	3879663	4179102	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12259029	-0.4
Hexabromobiphenyl	7233601	7714095	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	9.415	0.000	167416	250.0	1	8.819	0.000	1737887	250.0
Aroclor-1248	2	9.929	0.000	328380	250.0	2	9.828	0.000	1387523	250.0
Aroclor-1248	3	10.378	0.000	377337	250.0	3	10.385	0.000	1458440	250.0
Aroclor-1248	4	10.622	0.000	386494	250.0	4	10.741	0.000	1882393	250.0

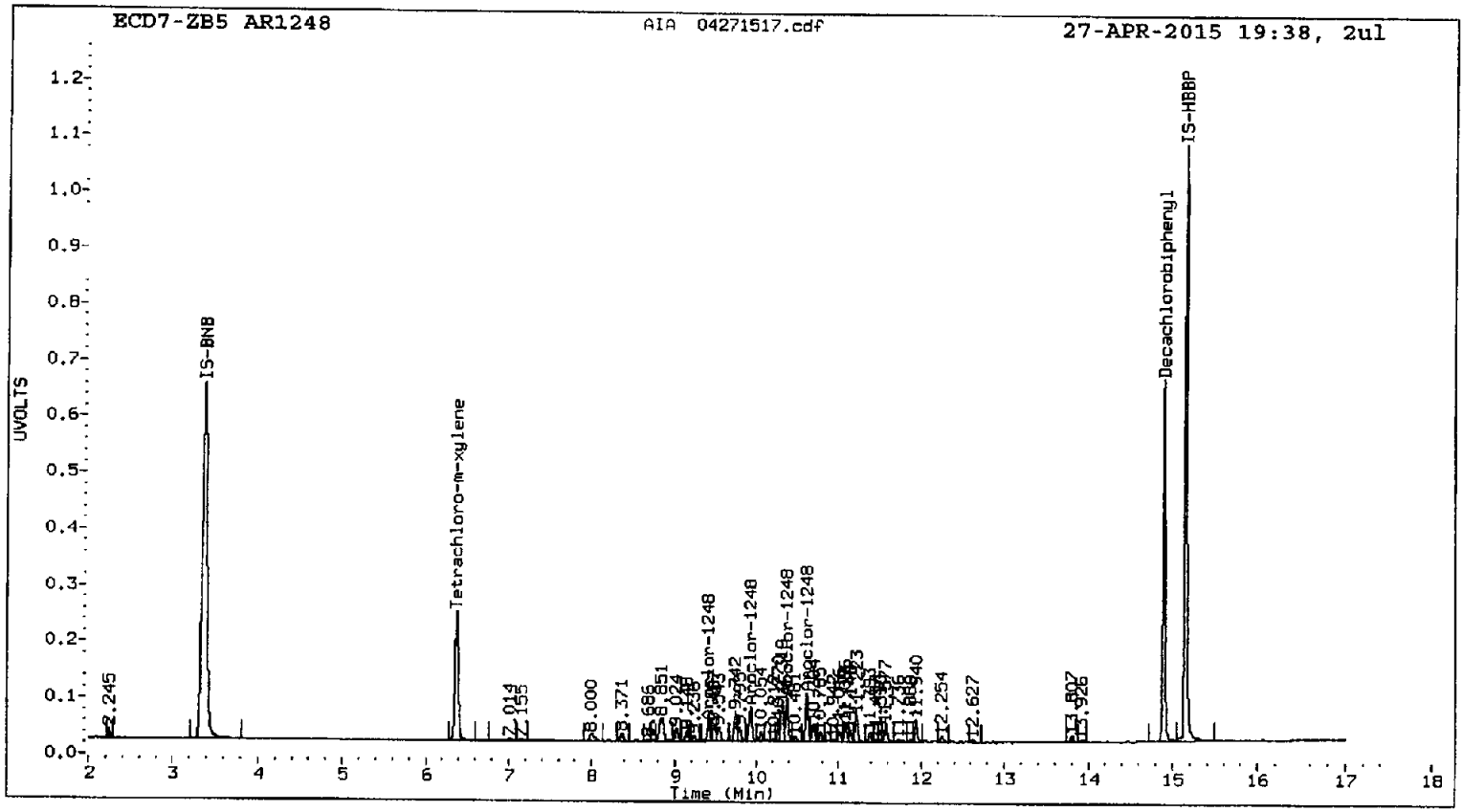
Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 4591461 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 24608858 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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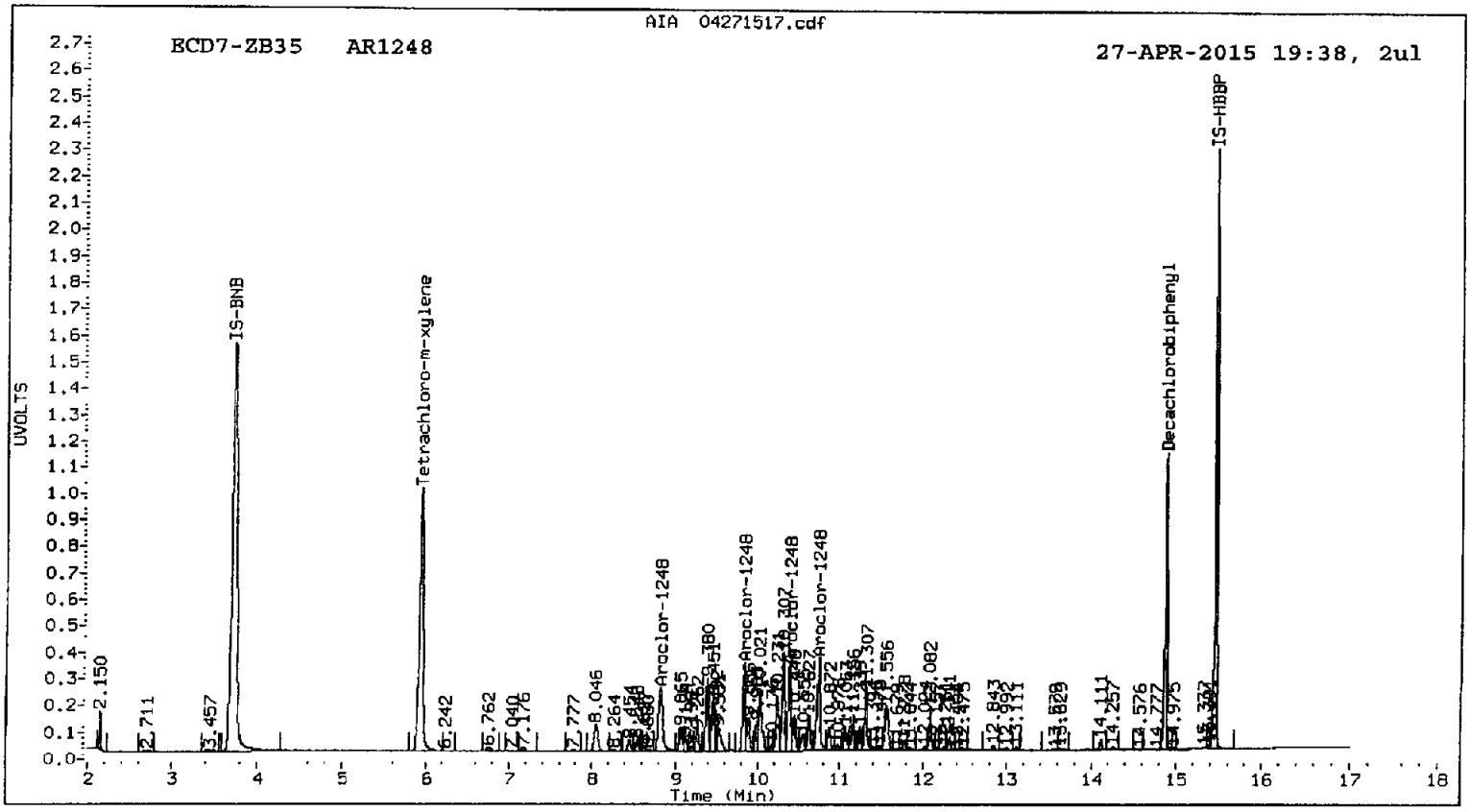
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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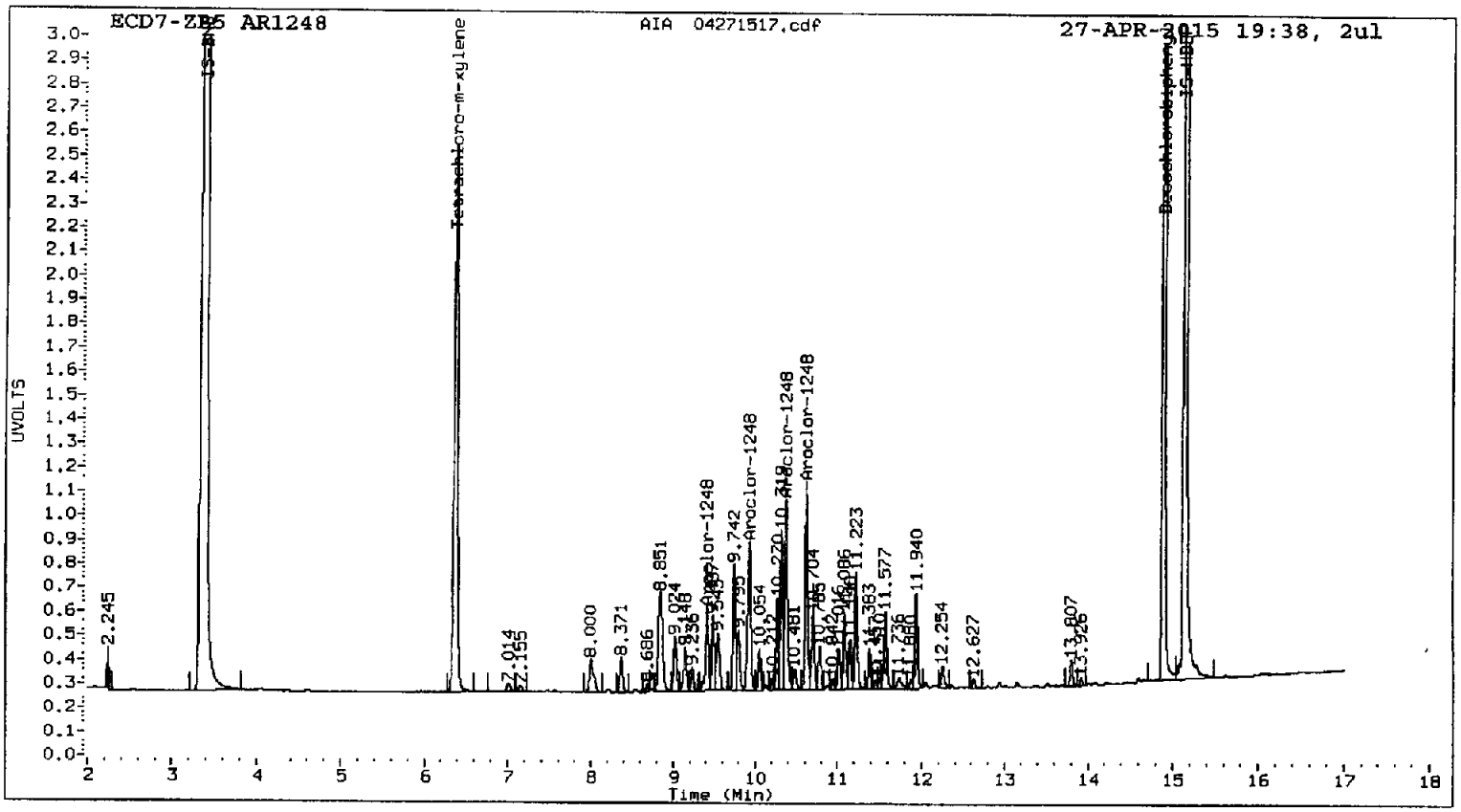
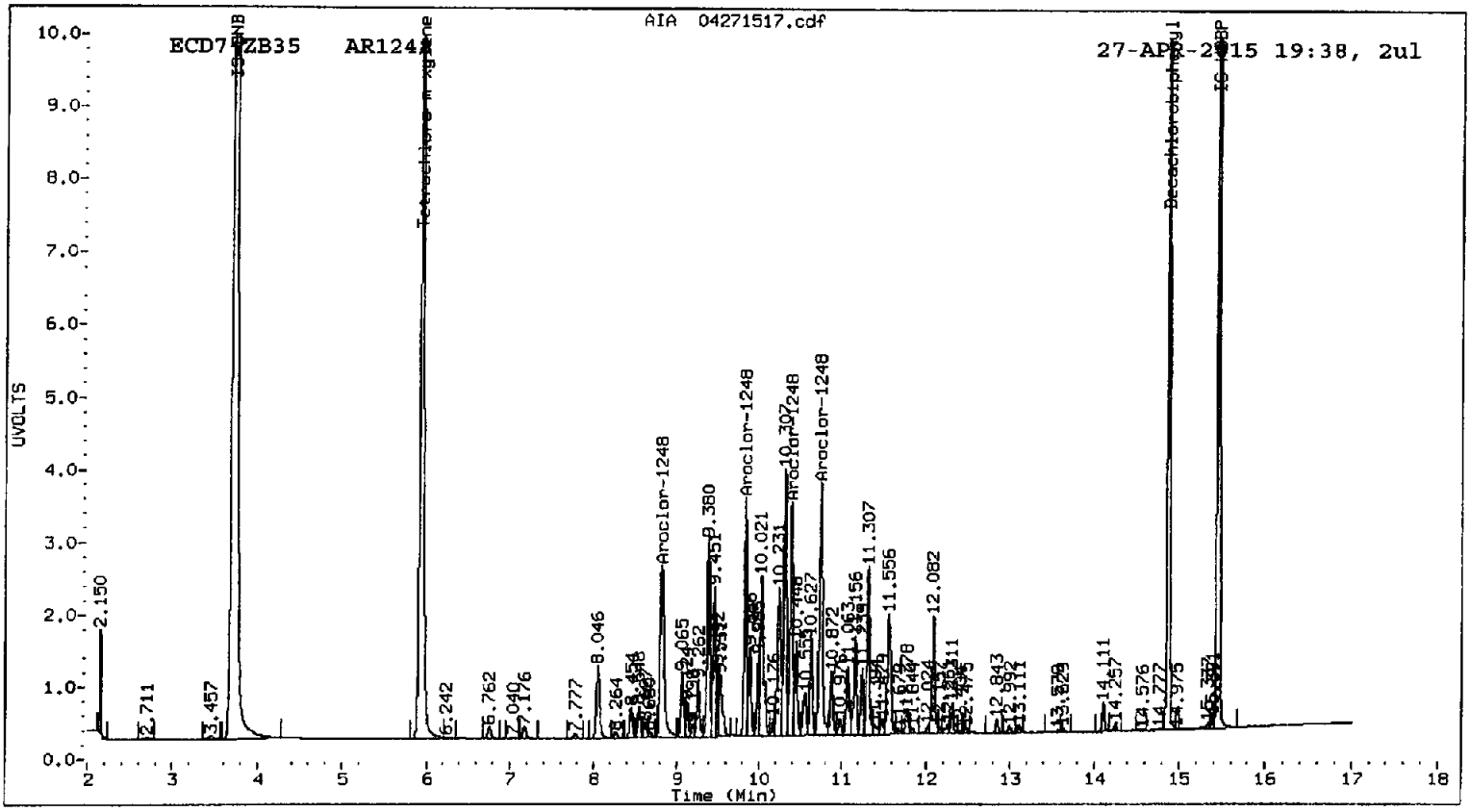
ECD7-ZB35 AR1248
27-APR-2015 19:38, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB35 AR1248
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)


ECD7-ZB35 AR1248
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271518.d
Data file 2: 20150427.b/ical-2.b/04271518.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 27-APR-2015 20:00
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.374	0.001	1322985	5.932	0.001	6057991	37.2	36.5	1.9	Tetrachloro-m-xylene
14.896	0.000	2345268	14.867	0.001	3913370	38.7	37.2	4.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.0	91.2
Decachlorobiphenyl	96.7	93.0

JK 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5110771	-1.6
Hexabromobiphenyl	3879663	3997604	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12249361	-0.4
Hexabromobiphenyl	7233601	7512512	3.9

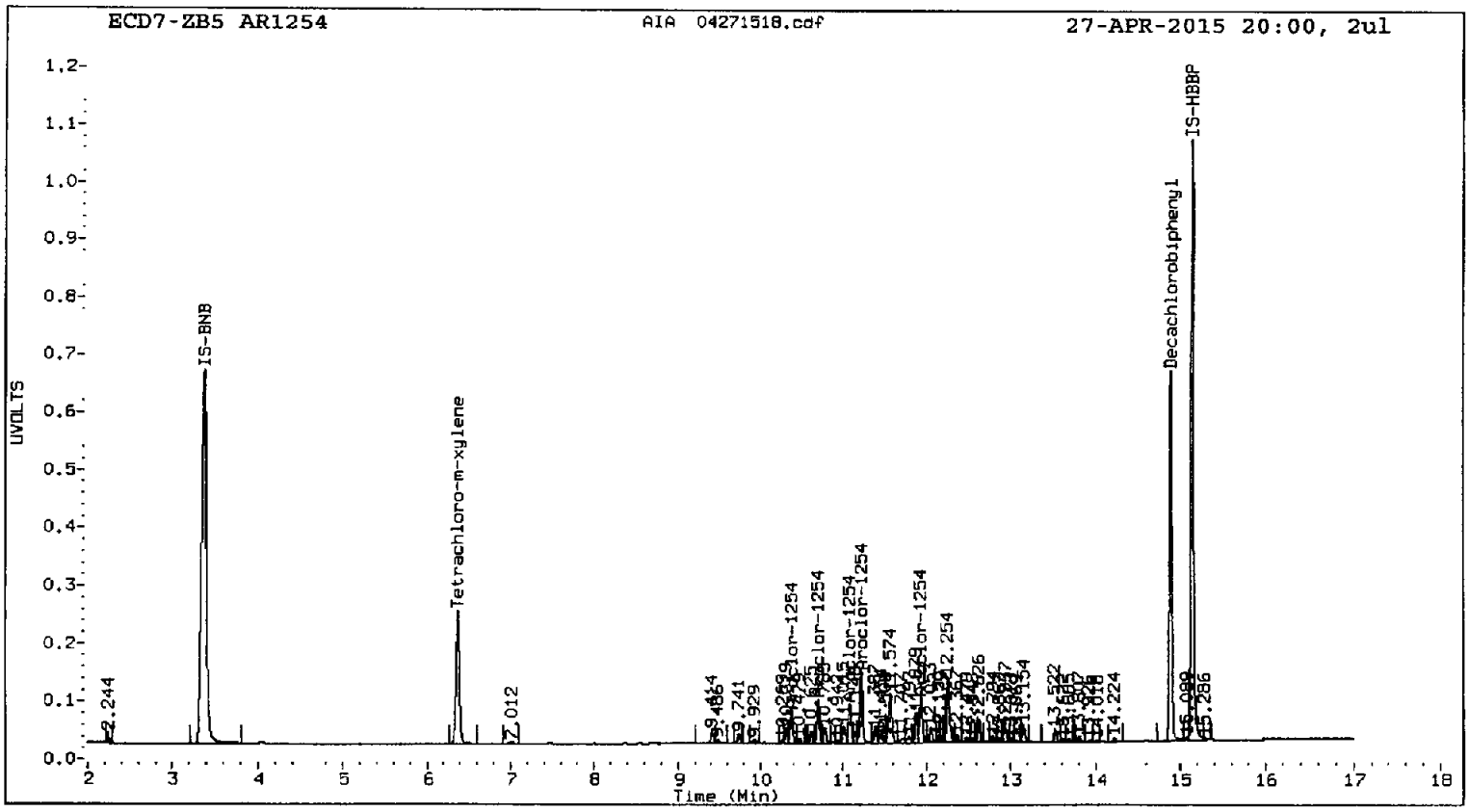
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1254	1	10.386	0.000	239483	250.0	1	10.627	0.000	1603627	250.0
Aroclor-1254	2	10.705	0.000	344479	250.0	2	10.721	0.000	769477	250.0
Aroclor-1254	3	11.085	0.000	282128	250.0	3	11.156	0.000	1259809	250.0
Aroclor-1254	4	11.222	0.000	527795	250.0	4	11.306	0.000	2685615	250.0
Aroclor-1254	5	11.936	0.000	385641	250.0	5	12.086	0.000	1631630	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):				250.0 RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 5383948 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 26873825 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical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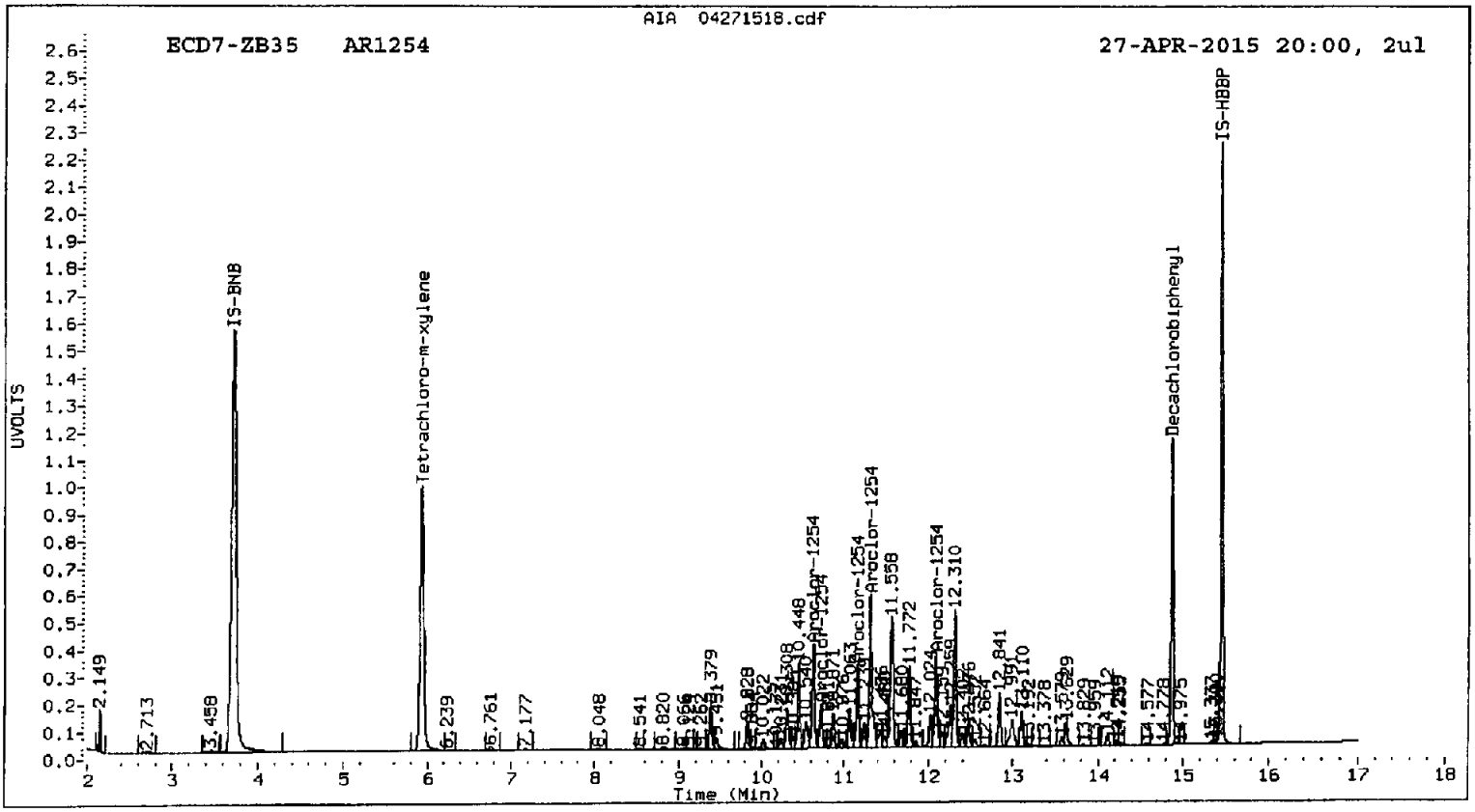
AIA 04271518.cdf
27-APR-2015 20:00, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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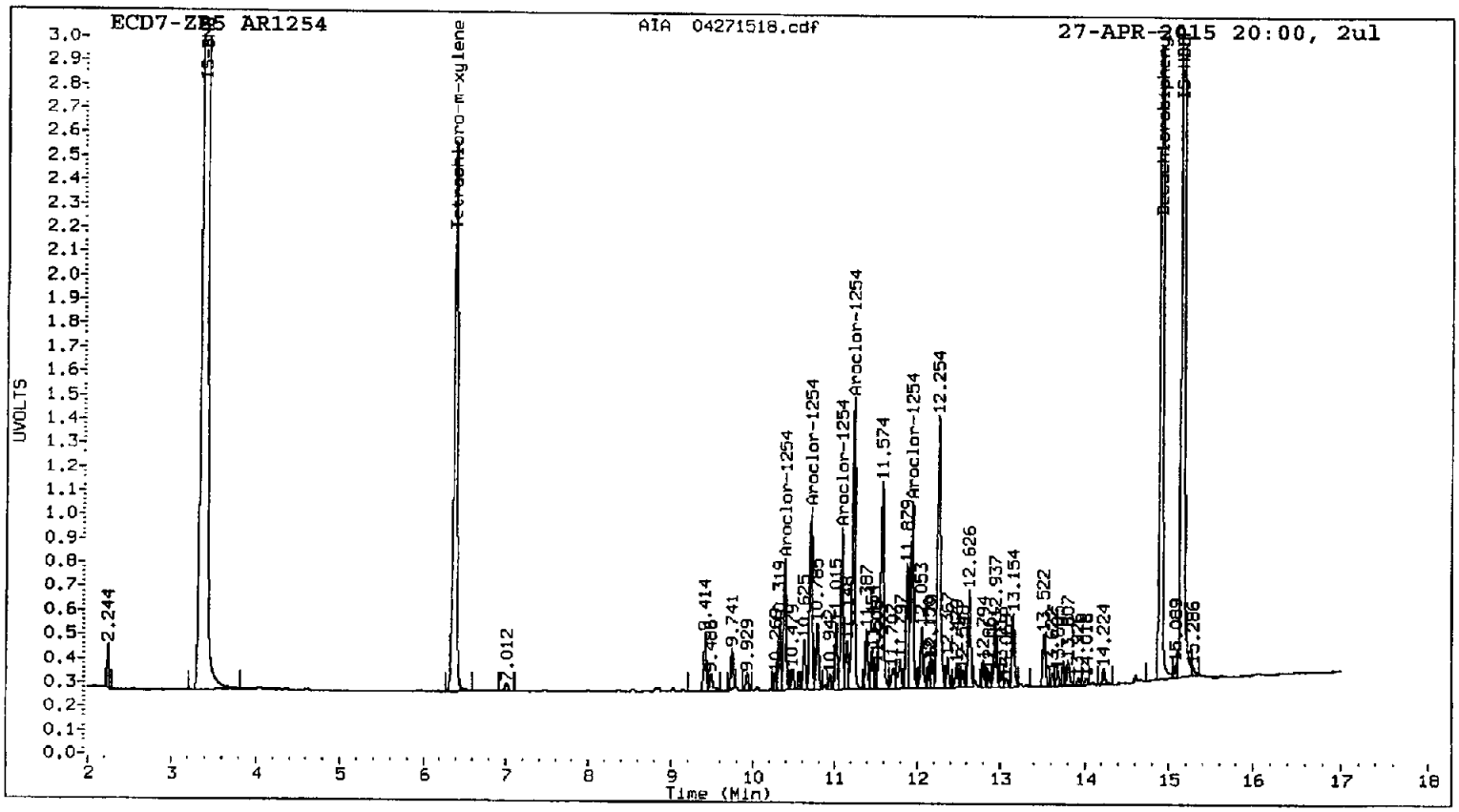
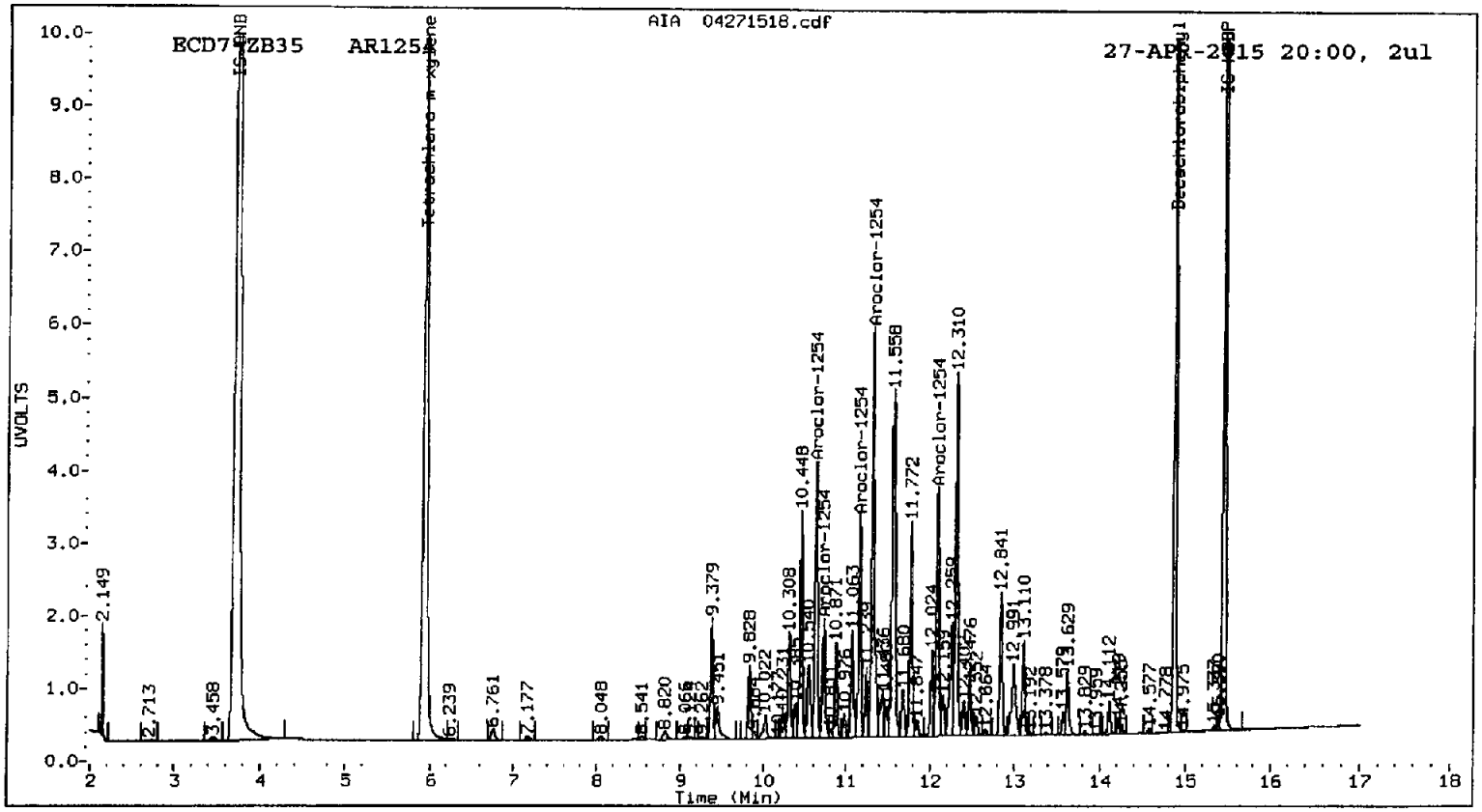
ECD7-ZB35 AR1254
27-APR-2015 20:00, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB35 AR1254
AIA 04271518.cdf
27-APR-2015 20:00, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
2.244
2.012
9.414
9.741
9.929
10.319
10.479
10.625
10.785
10.961
11.015
11.148
11.387
11.574
11.829
12.053
12.254
12.626
12.794
12.937
13.154
13.522
14.224
15.089
15.286


ECD7-ZB35 AR1254
AIA 04271518.cdf
27-APR-2015 20:00, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
2.149
2.713
3.458
6.239
6.761
7.177
8.048
8.541
8.820
9.379
9.451
9.828
10.308
10.448
10.540
10.871
11.063
11.558
11.772
12.024
12.259
12.310
12.841
12.991
13.110
13.629
14.577
14.778
15.975

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271519.d
Data file 2: 20150427.b/ical-2.b/04271519.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-APR-2015 20:21
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.371	-0.001	1363691	5.930	0.000	6117184	37.9	36.9	2.7	Tetrachloro-m-xylene
14.897	0.000	2372009	14.867	0.001	3930701	37.5	36.1	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

4/28/15

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.7	92.2
Decachlorobiphenyl	93.8	90.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5172082	-0.5
Hexabromobiphenyl	3879663	4170256	7.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12240043	-0.5
Hexabromobiphenyl	7233601	7766117	7.4

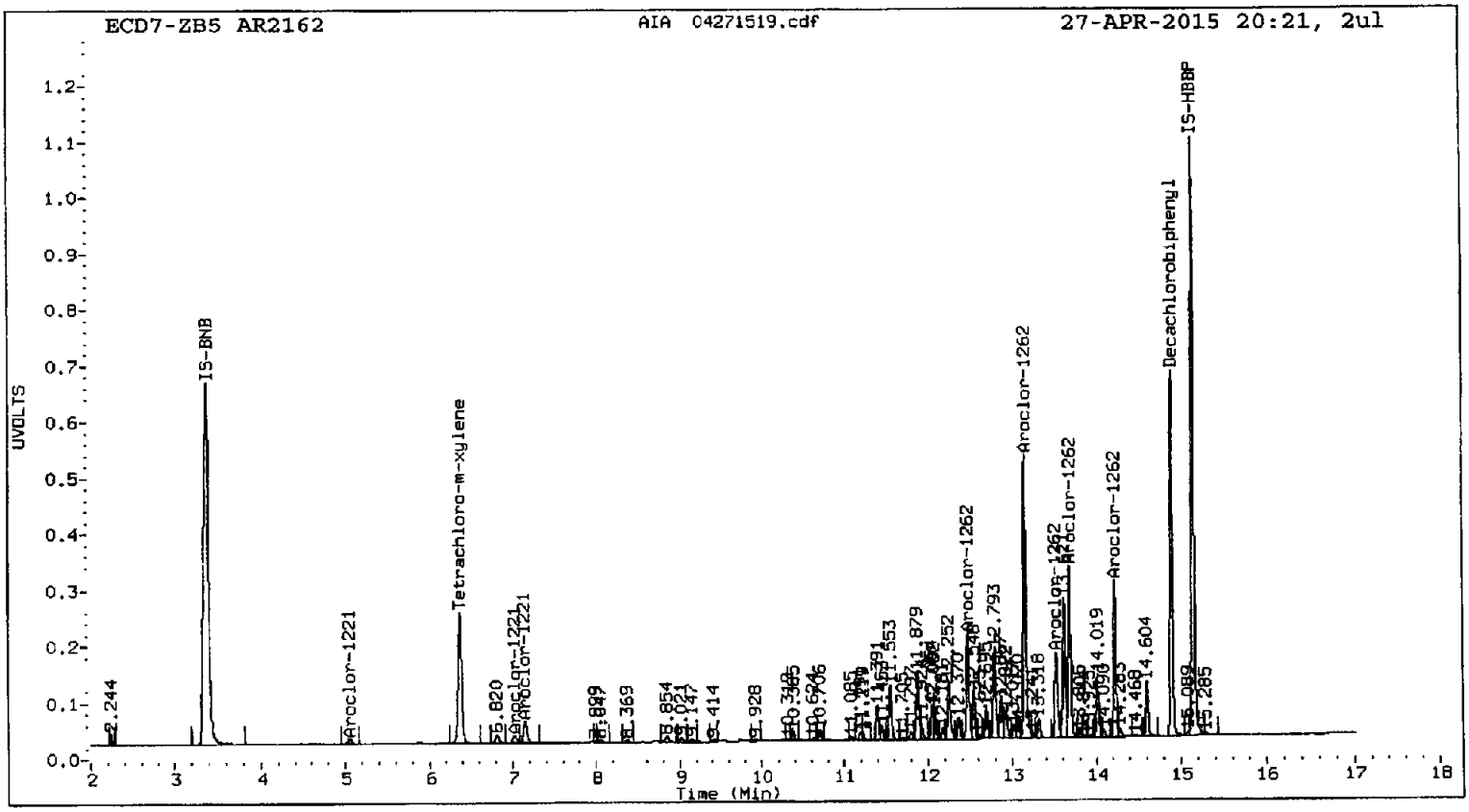
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

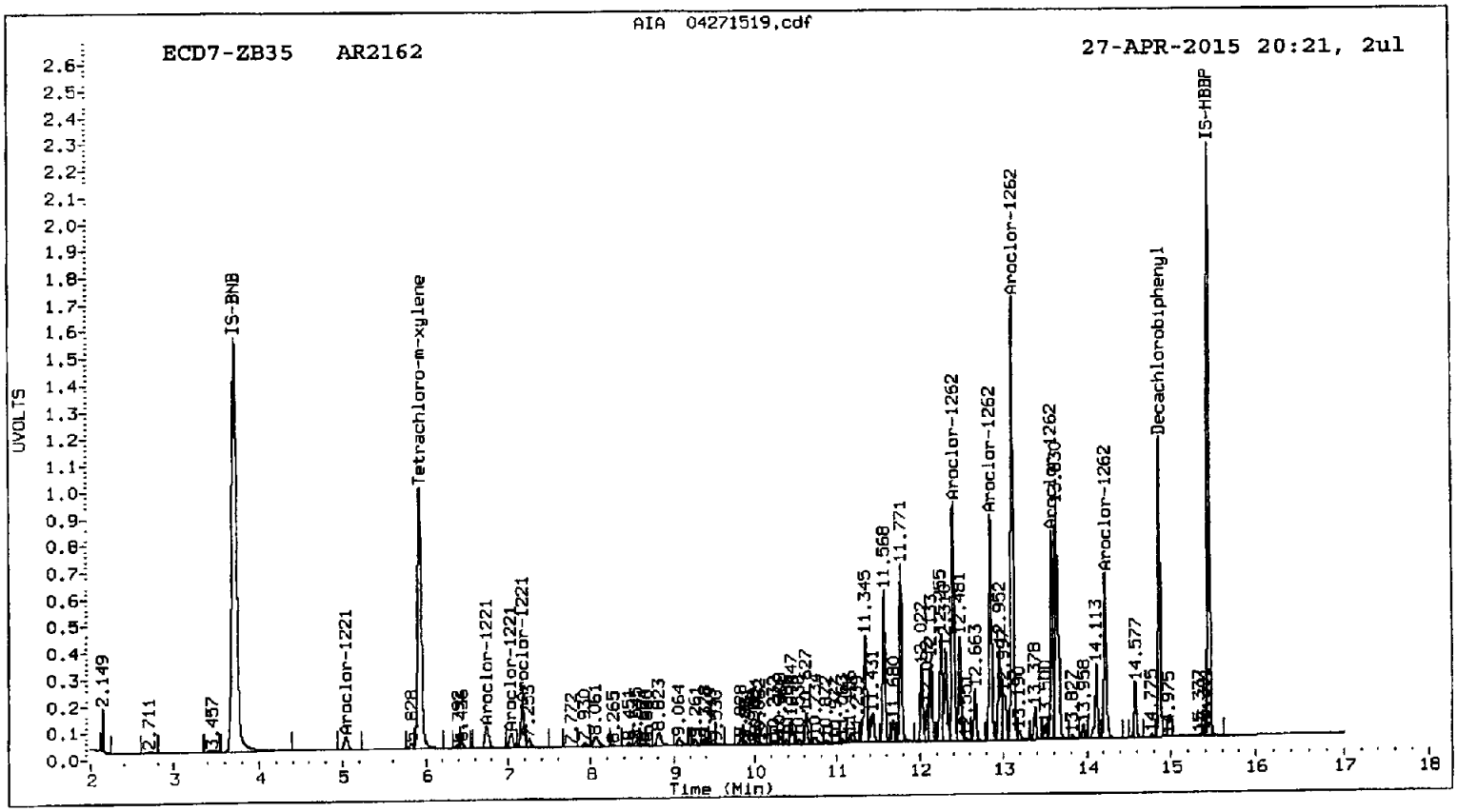
		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	5.055	0.000	55573	250.0	1	5.042	0.000	334577	250.0
Aroclor-1221	2	7.027	0.000	82910	250.0	2	6.741	0.000	544007	250.0
Aroclor-1221	3	7.153	0.000	238932	250.0	3	7.037	0.000	311222	250.0
Aroclor-1221	NS	---			----	4	7.172	0.000	926809	250.0
Total Col1Ave (3 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				250.0
Aroclor-1262	1	12.479	0.000	820020	250.0	1	12.402	0.000	3592932	250.0
Aroclor-1262	2	13.153	0.000	2228129	250.0	2	12.844	0.000	3399265	250.0
Aroclor-1262	3	13.523	0.000	722419	250.0	3	13.108	0.000	6879866	250.0
Aroclor-1262	4	13.684	0.000	1229849	250.0	4	13.578	0.000	2993978	250.0
Aroclor-1262	5	14.225	0.000	1049539	250.0	5	14.218	0.000	2337926	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):				250.0 RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):				250.0 RPD = 0

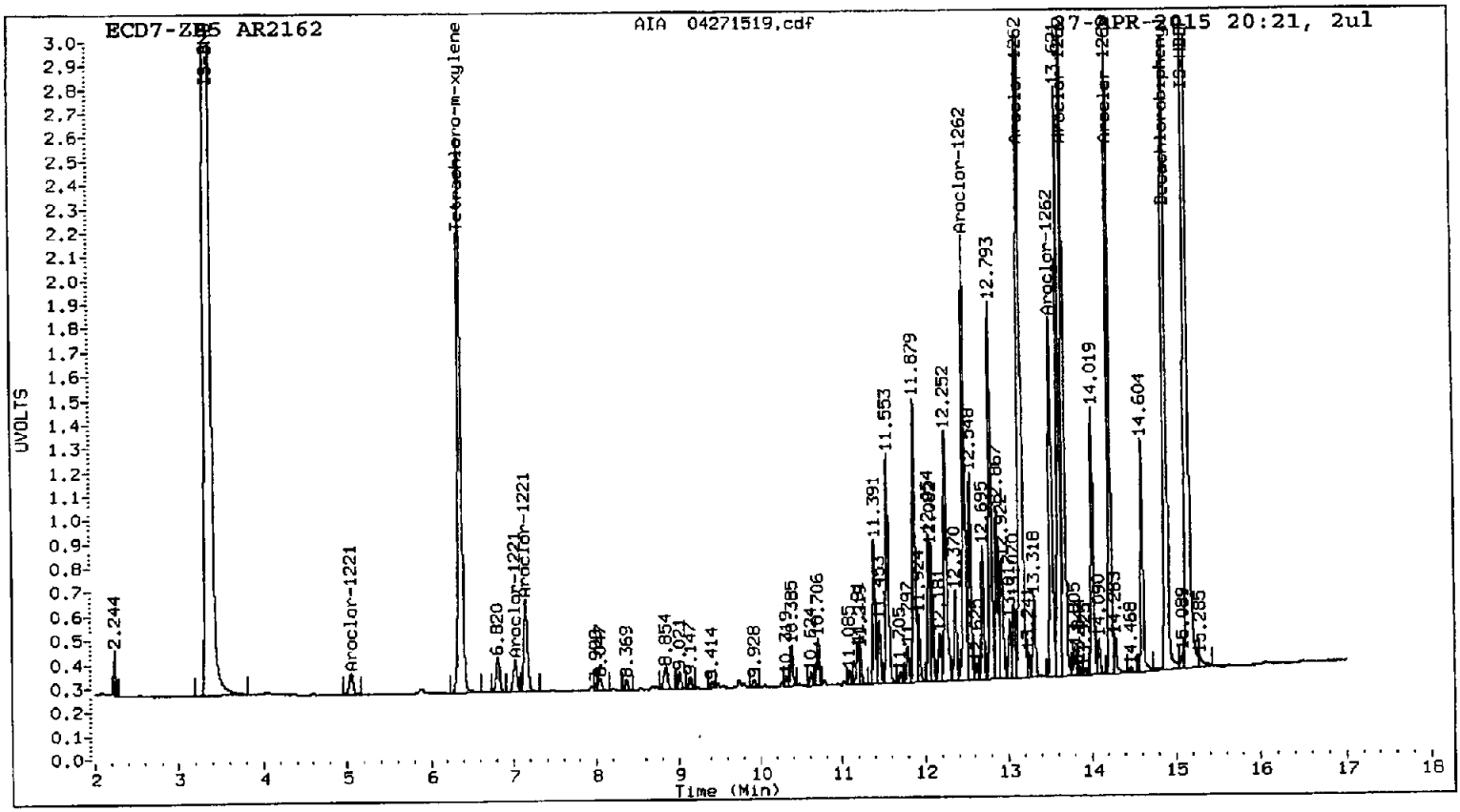
Total PCB Area Col1 (6.472 - 14.797) = 14103265 Col1 Total PCB = 0.6 ppm*

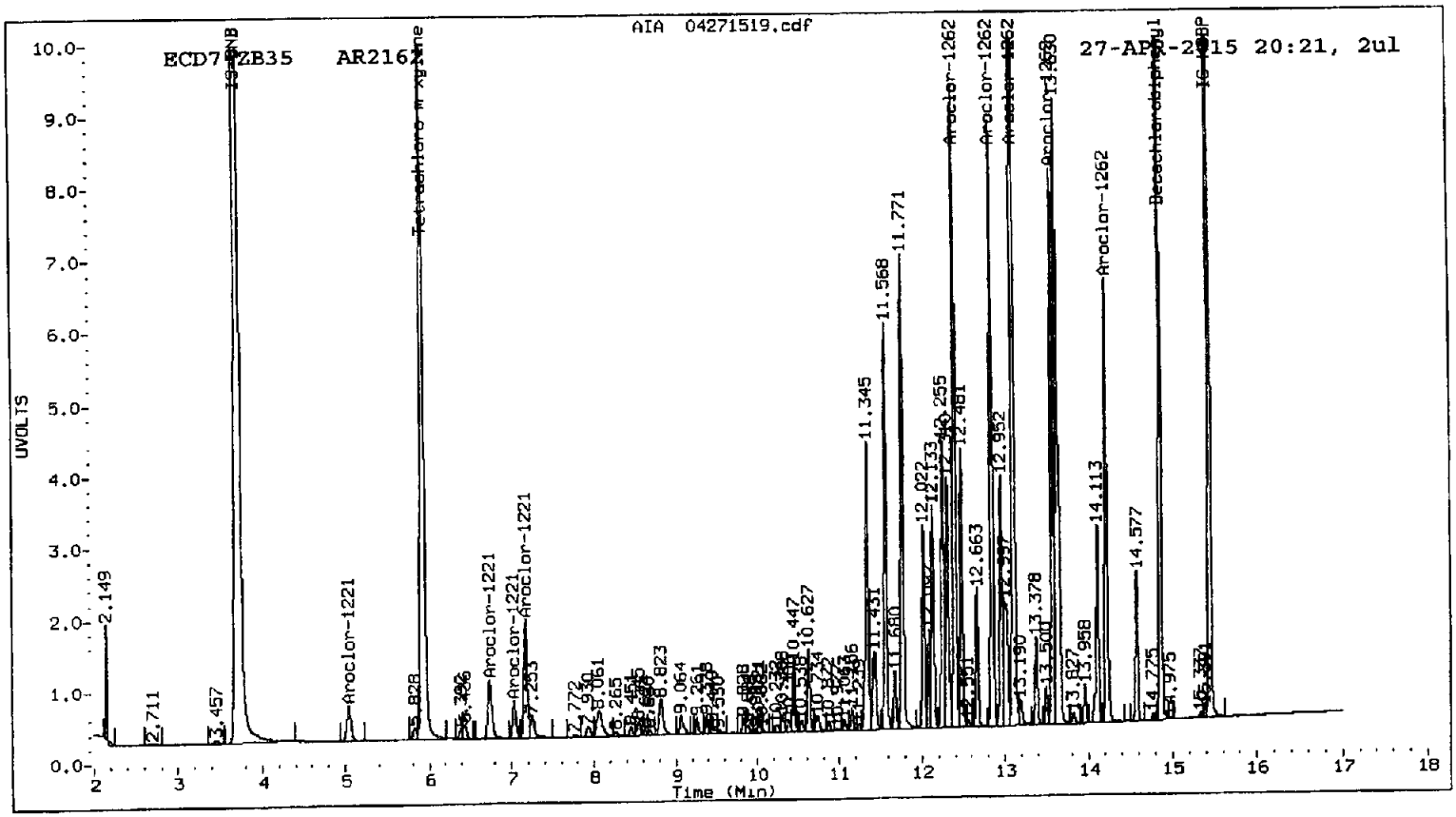
Total PCB Area Col2 (6.030 - 14.766) = 52054342 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR2162
AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1221
Aroclor-1262
Aroclor-1262
Aroclor-1262
Aroclor-1262
Decachlorobiphenyl
IS-HBBF
Time (Min)


AIA 04271519.cdf
ECD7-ZB35 AR2162
27-APR-2015 20:21, 2ul
UVOLTS
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1221
Aroclor-1262
Aroclor-1262
Aroclor-1262
Aroclor-1262
Decachlorobiphenyl
IS-HBBF
Time (Min)


ECD7-ZB5 AR2162
AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1262
Decachlorobiphenyl


AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271520.d
Data file 2: 20150427.b/ical-2.b/04271520.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-APR-2015 20:42
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1361921	5.930	0.000	6158473	37.7	36.8	2.3	Tetrachloro-m-xylene
14.897	0.000	3629100	14.866	0.000	5917904	56.4	53.2	5.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.1	92.0
Decachlorobiphenyl	141.1	133.1

4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5195753	0.0
Hexabromobiphenyl	3879663	4240267	9.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12347807	0.4
Hexabromobiphenyl	7233601	7935328	9.7

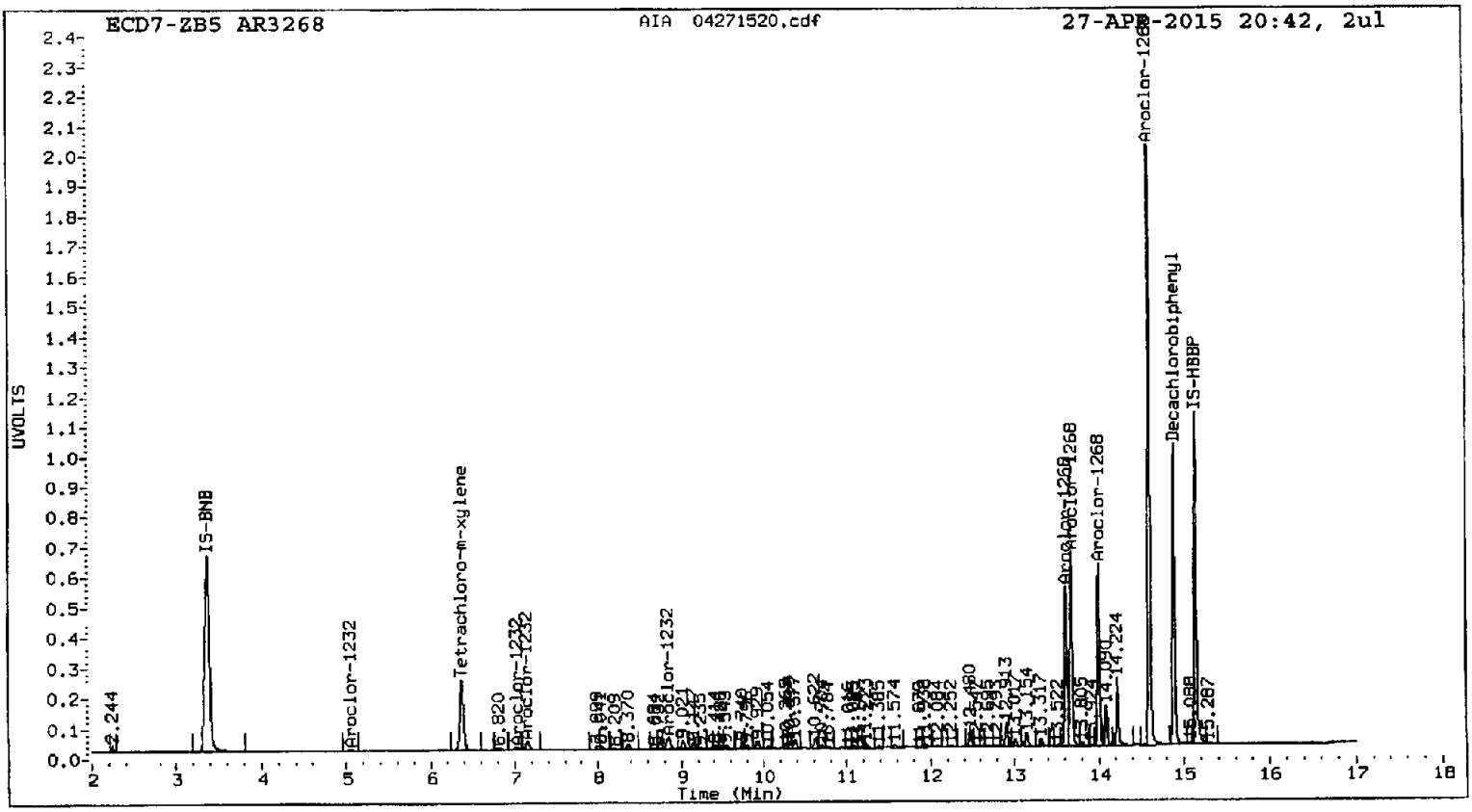
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

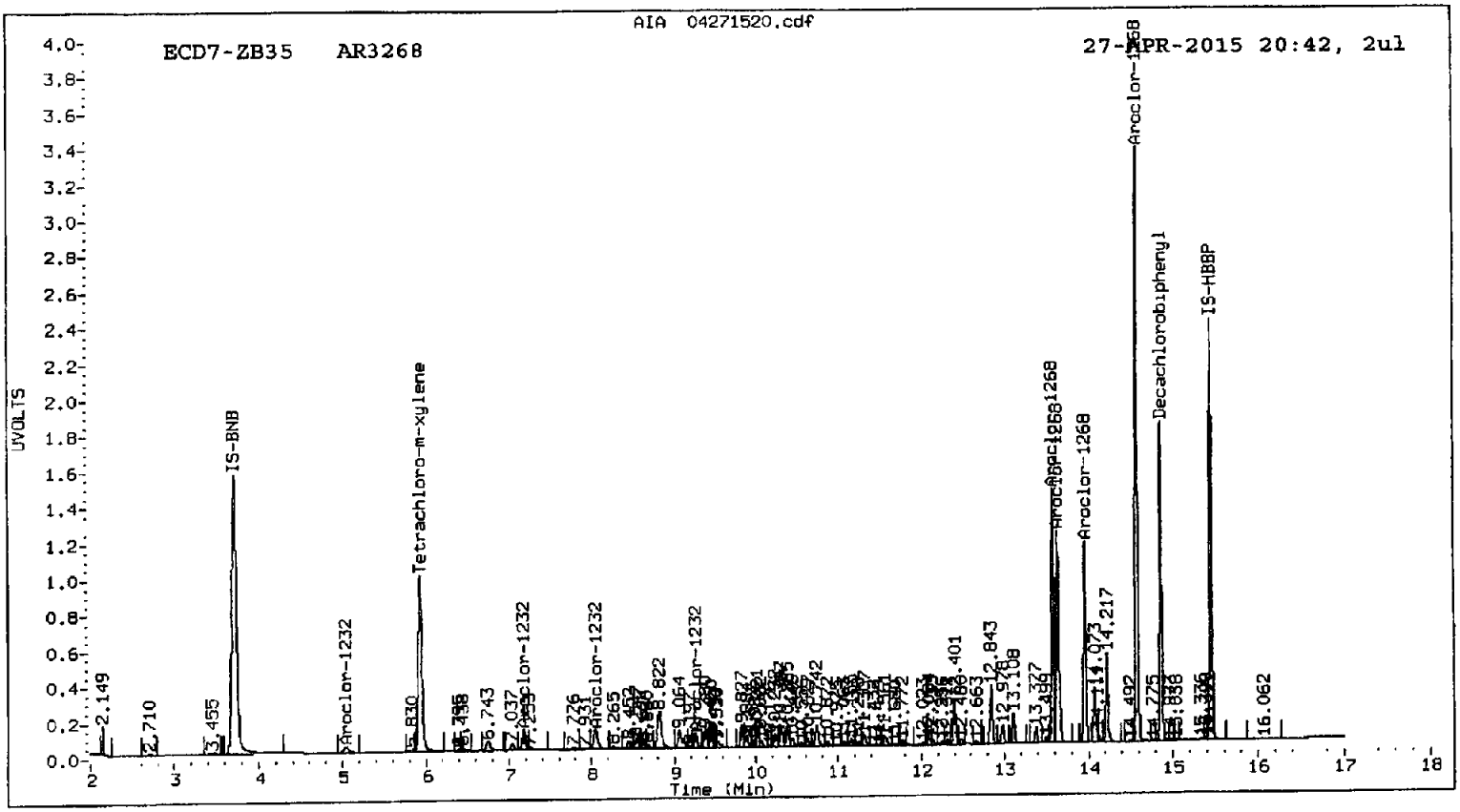
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	5.055	0.000	31926	250.0	1	5.042	0.000	206327	250.0
Aroclor-1232	2	7.026	0.000	56876	250.0	2	7.173	0.000	667509	250.0
Aroclor-1232	3	7.154	0.000	160958	250.0	3	8.049	0.000	779604	250.0
Aroclor-1232	4	8.852	0.000	267091	250.0	4	9.261	0.000	403766	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	13.621	0.000	2069726	250.0	1	13.576	0.000	5259678	250.0
Aroclor-1268	2	13.683	0.000	2475772	250.0	2	13.633	0.000	4961915	250.0
Aroclor-1268	3	14.004	0.000	2201173	250.0	3	13.958	0.000	4061116	250.0
Aroclor-1268	4	14.605	0.000	7184649	250.0	4	14.577	0.000	11127247	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 18677342 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 45660661 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR3268
AIA 04271520.cdf
27-APR-2015 20:42, 2ul
UVOLTS
IS-BNB
Aroclor-1232
Tetrachloro-m-xylene
Aroclor-1268
Decachlorobiphenyl
IS-HBBP
Time (Min)


AIA 04271520.cdf
ECD7-ZB35 AR3268
27-APR-2015 20:42, 2ul
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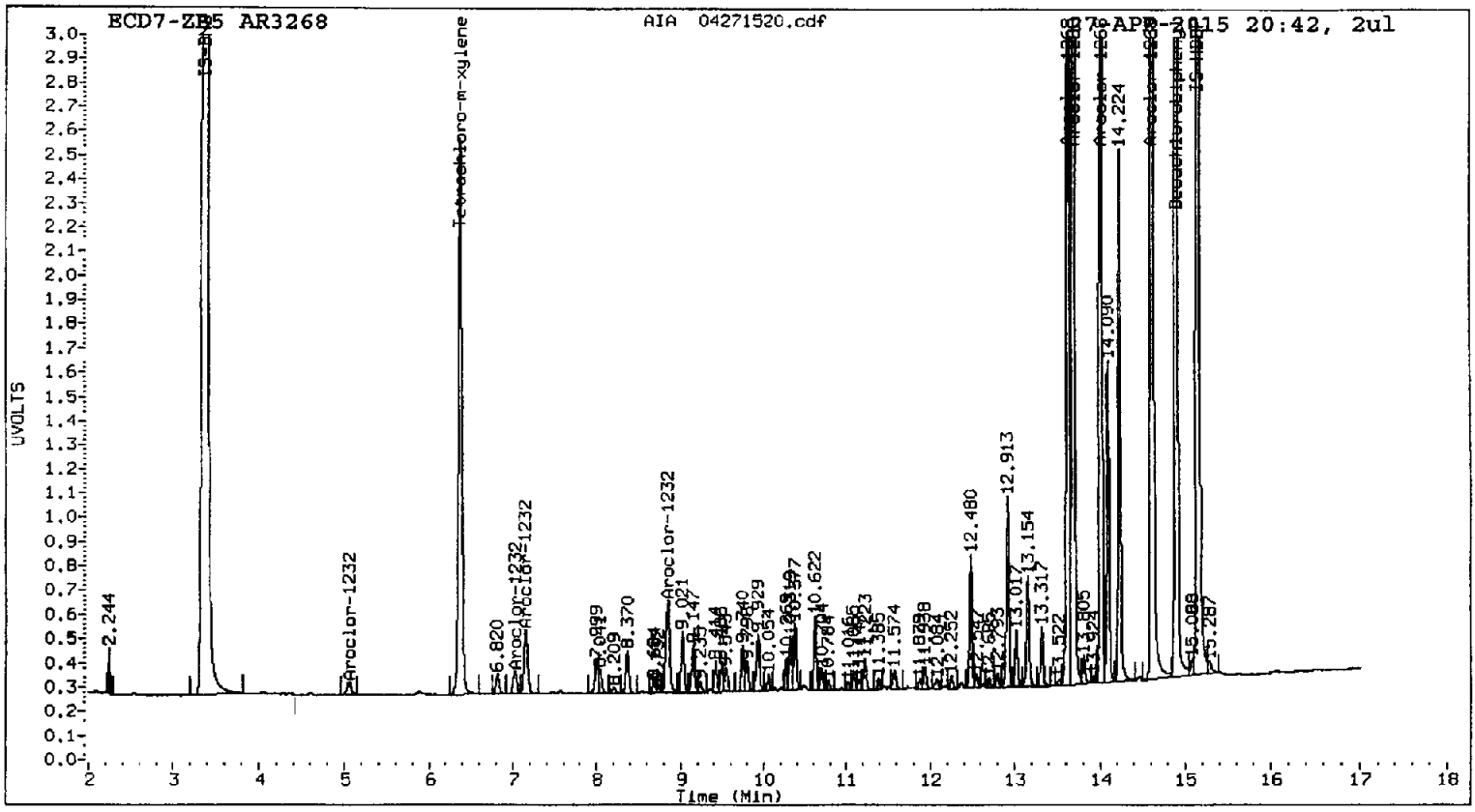
IS-BNB
Aroclor-1232
Tetrachloro-m-xylene
Aroclor-1268
Decachlorobiphenyl
IS-HBBP
Time (Min)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27-APR-2015 20:42, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
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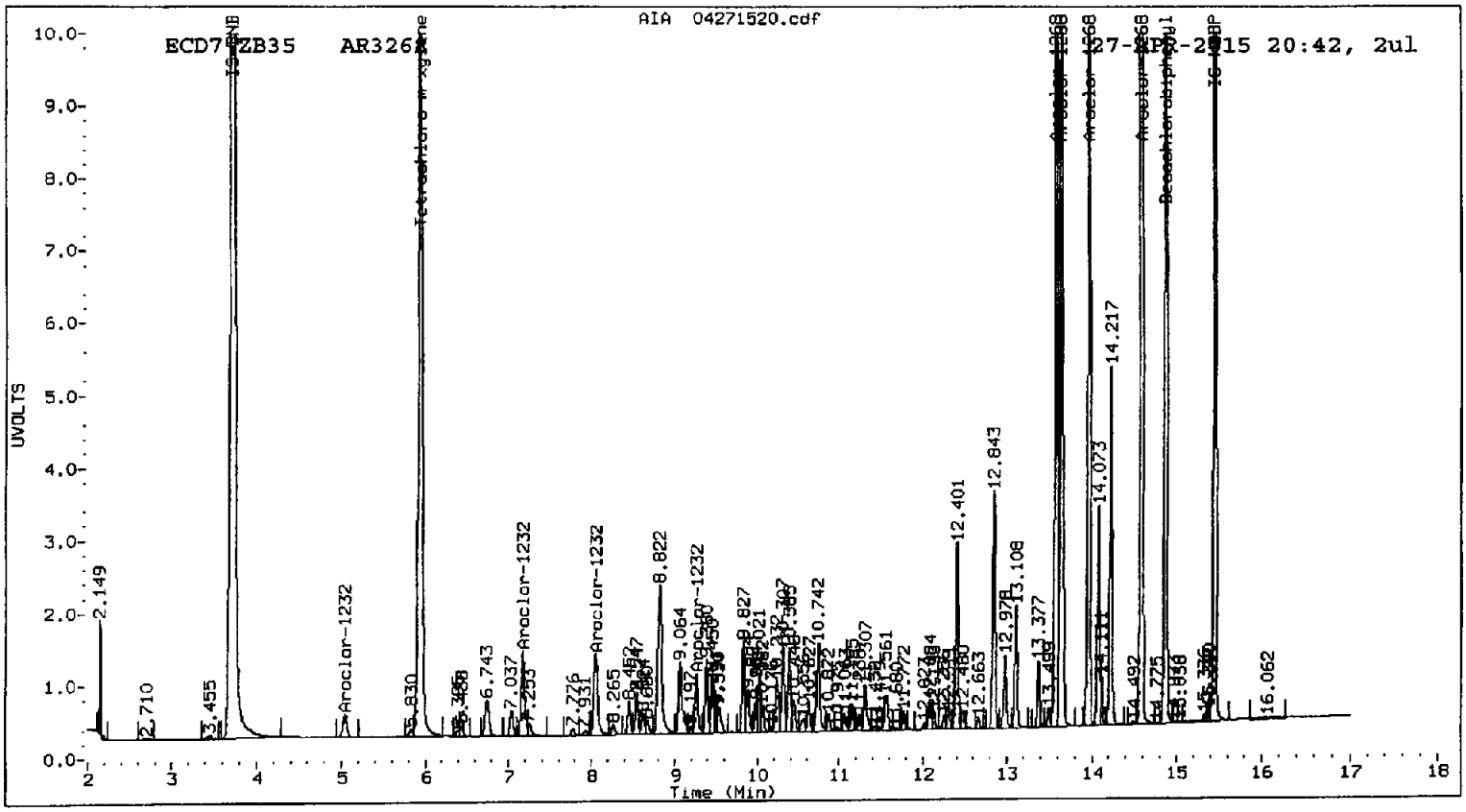
12.913
13.154
13.317
14.090
14.224
15.008
15.287


ECD7-ZB35 AR3268
AIA 04271520.cdf
27-APR-2015 20:42, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
2.149
2.710
3.455
5.830
6.743
7.037
8.822
9.064
12.401
12.843
13.108
13.377
14.073
14.217
14.492
14.725
16.062

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271521.d
Data file 2: 20150427.b/ical-2.b/04271521.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV
Client ID:
Injection Date: 27-APR-2015 21:04
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.004	1374878	5.927	-0.003	6261833	38.3	37.1	3.2	Tetrachloro-m-xylene
14.895	-0.001	2455155	14.867	0.001	4141325	37.6	37.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.8	92.8
Decachlorobiphenyl	93.9	92.8

K 04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5155821	-0.8
Hexabromobiphenyl	3879663	4308520	11.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12444267	1.1
Hexabromobiphenyl	7233601	7963073	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

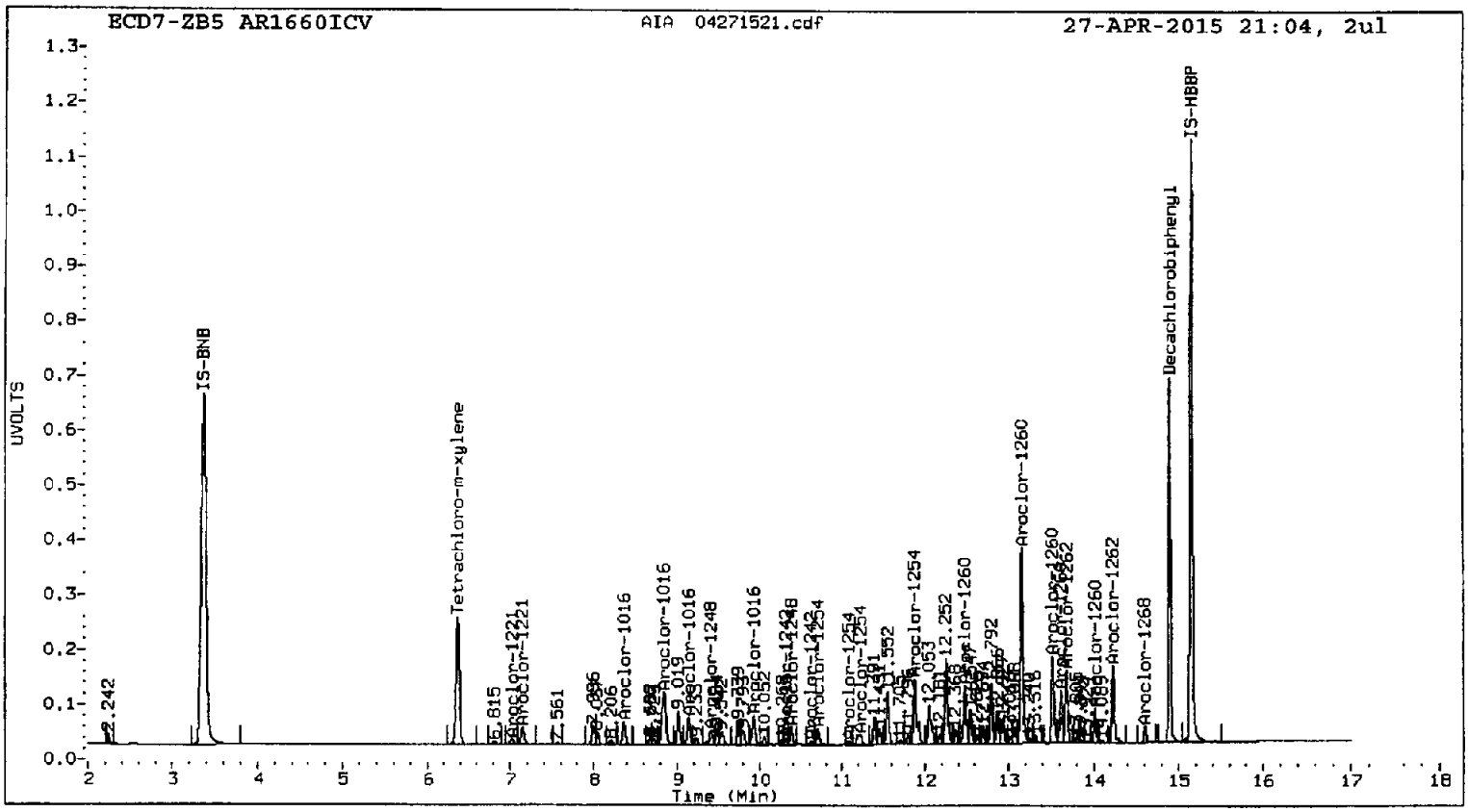
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.367	-0.003	220411	256.4	1	8.045	-0.002	1752572	247.6
Aroclor-1016	2	8.850	-0.003	661927	253.5	2	8.821	-0.002	3625715	245.2
Aroclor-1016	3	9.146	-0.002	236650	264.0	3	9.258	-0.002	974410	248.1
Aroclor-1016	4	9.927	-0.003	281516	289.2	4	10.019	-0.002	786045	283.9
	Total Col1Ave (4 peaks):				265.8		Total Col2Ave (4 peaks):			256.2 RPD = 4
	Corrected Ave (3 peaks):				258.0		Corrected Ave (3 peaks):			247.0 RPD = 4
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.024	-0.004	54237	164.1	2	6.745	0.004	261371	118.1
Aroclor-1221	3	7.150	-0.003	184699	193.9	3	7.034	-0.002	191895	151.6
Aroclor-1221	NS	---			----	4	7.170	-0.002	806713	214.0
	Col1Ave: <3 Quant Peaks						Col2Ave: 161.3			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.024	-0.003	54237	240.2	2	7.170	-0.003	806713	299.8
Aroclor-1232	3	7.150	-0.004	184699	289.1	3	8.045	-0.003	1752572	557.7
Aroclor-1232	4	8.850	-0.002	661927	624.4	4	9.258	-0.003	974410	598.6
	Total Col1Ave (3 peaks):				384.6		Total Col2Ave (3 peaks):			485.4 RPD = 23
	Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks			
Aroclor-1242	1	8.850	-0.001	661927	340.0	1	8.045	-0.002	1752572	340.3
Aroclor-1242	2	9.146	-0.002	236650	336.5	2	8.821	-0.002	3625715	337.5
Aroclor-1242	3	10.318	-0.001	38764	58.9	3	10.384	0.000	177451	46.9
Aroclor-1242	4	10.623	0.001	24972	25.1	4	10.739	-0.003	73811	16.1
	Total Col1Ave (4 peaks):				190.1		Total Col2Ave (4 peaks):			185.2 RPD = 3
	Corrected Ave (3 peaks):				140.1		Corrected Ave (3 peaks):			133.5 RPD = 5
Aroclor-1248	1	9.412	-0.003	132697	195.8	1	8.821	0.002	3625715	513.8
Aroclor-1248	2	9.927	-0.002	281516	211.8	2	9.825	-0.003	1207744	214.4
Aroclor-1248	3	10.383	0.006	135633	88.8	3	10.384	-0.001	177451	30.0
Aroclor-1248	4	10.623	0.001	24972	16.0	4	10.739	-0.002	73811	9.7
	Total Col1Ave (4 peaks):				128.1		Total Col2Ave (4 peaks):			191.9 RPD = 40
	Corrected Ave (3 peaks):				100.2		Corrected Ave (3 peaks):			84.7 RPD = 17
Aroclor-1254	1	10.383	-0.002	135633	140.4	1	10.625	-0.002	731469	112.2
Aroclor-1254	2	10.705	0.000	128364	92.3	2	10.739	0.018	73811	23.6
Aroclor-1254	3	11.084	-0.001	25009	22.0	3	11.155	-0.001	131534	25.7
Aroclor-1254	4	11.219	-0.003	142925	67.1	4	11.344	0.038	1829430	167.6
Aroclor-1254	5	11.878	-0.058	666865	428.5	5	12.091	0.005	826947	124.7
	Total Col1Ave (5 peaks):				150.1		Total Col2Ave (5 peaks):			90.8 RPD = 49*
	Corrected Ave (4 peaks):				80.4		Corrected Ave (4 peaks):			71.6 RPD = 12
Aroclor-1260	1	12.479	-0.001	472565	245.4	1	12.401	-0.002	2083232	248.7
Aroclor-1260	2	13.153	-0.001	1575523	250.4	2	13.106	-0.001	5086299	263.4
Aroclor-1260	3	13.522	-0.001	759131	263.7	3	13.577	0.000	1477723	237.1
Aroclor-1260	4	13.620	-0.001	407778	237.0	4	13.628	0.000	3373698	257.7
Aroclor-1260	5	14.019	0.000	243659	262.3	NS	---			----
	Total Col1Ave (5 peaks):				251.8		Total Col2Ave (4 peaks):			251.7 RPD = 0
	Corrected Ave (4 peaks):				248.8		Corrected Ave (3 peaks):			247.9 RPD = 0
Aroclor-1262	1	12.479	0.000	472565	139.4	1	12.401	-0.001	2083232	141.4
Aroclor-1262	2	13.153	0.000	1575523	171.1	2	12.843	-0.001	2408319	172.7
Aroclor-1262	3	13.522	-0.001	759131	254.3	3	13.106	-0.002	5086299	180.3
Aroclor-1262	4	13.684	0.000	544620	107.2	4	13.577	0.000	1477723	120.3
Aroclor-1262	5	14.224	-0.001	566669	130.6	5	14.218	0.000	1318754	137.5
	Total Col1Ave (5 peaks):				160.5		Total Col2Ave (5 peaks):			150.4 RPD = 6

Corrected Ave (4 peaks):			137.1		Corrected Ave (4 peaks):			143.0	RPD = 4
Aroclor-1268 1	13.620	-0.001	407778	48.5	1	13.577	0.002	1477723	70.0
Aroclor-1268 2	13.684	0.001	544620	54.1	2	13.628	-0.005	3373698	169.4
Aroclor-1268 3	14.019	0.014	243659	27.2	3	13.957	-0.001	53431	3.3
Aroclor-1268 4	14.603	-0.002	118993	4.1	4	14.576	-0.001	247660	5.5
Total Col1Ave (4 peaks):			33.5		Total Col2Ave (4 peaks):			62.1	RPD = 60*
Corrected Ave (3 peaks):			26.6		Corrected Ave (3 peaks):			26.3	RPD = 1

Total PCB Area Col1 (6.472 - 14.797) = 13100190 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 57200502 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical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UVOLTS
Time (Min)
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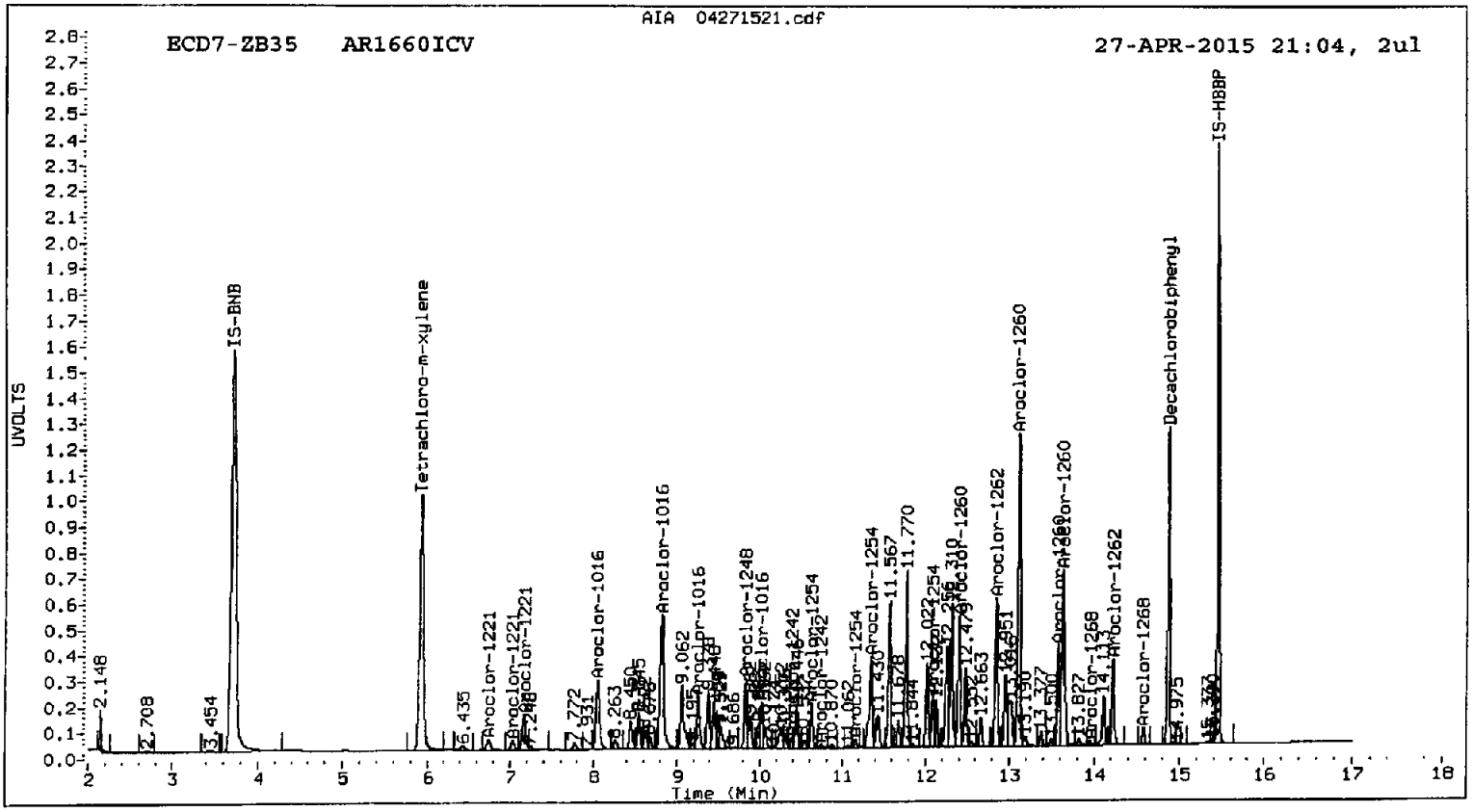
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
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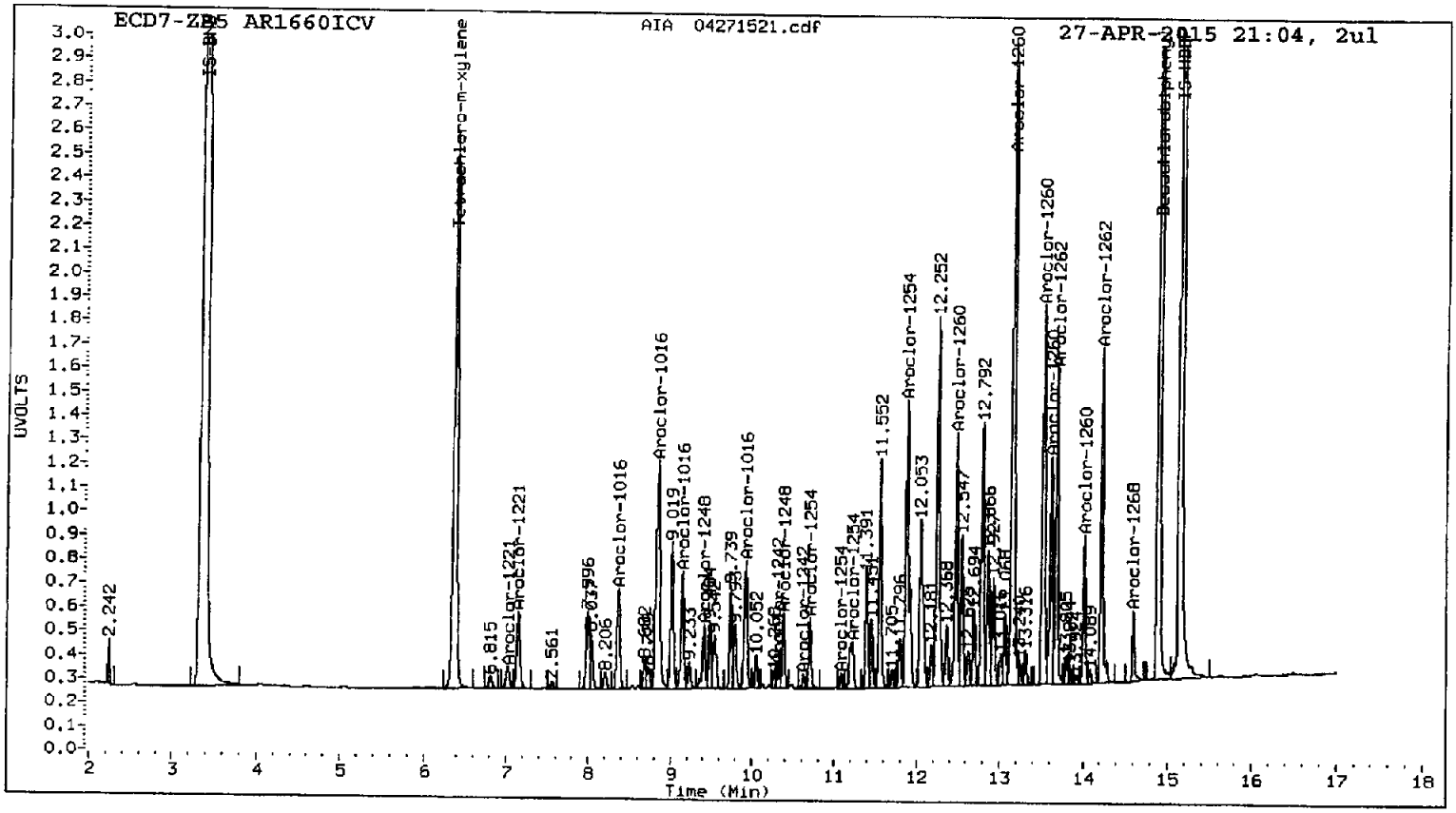
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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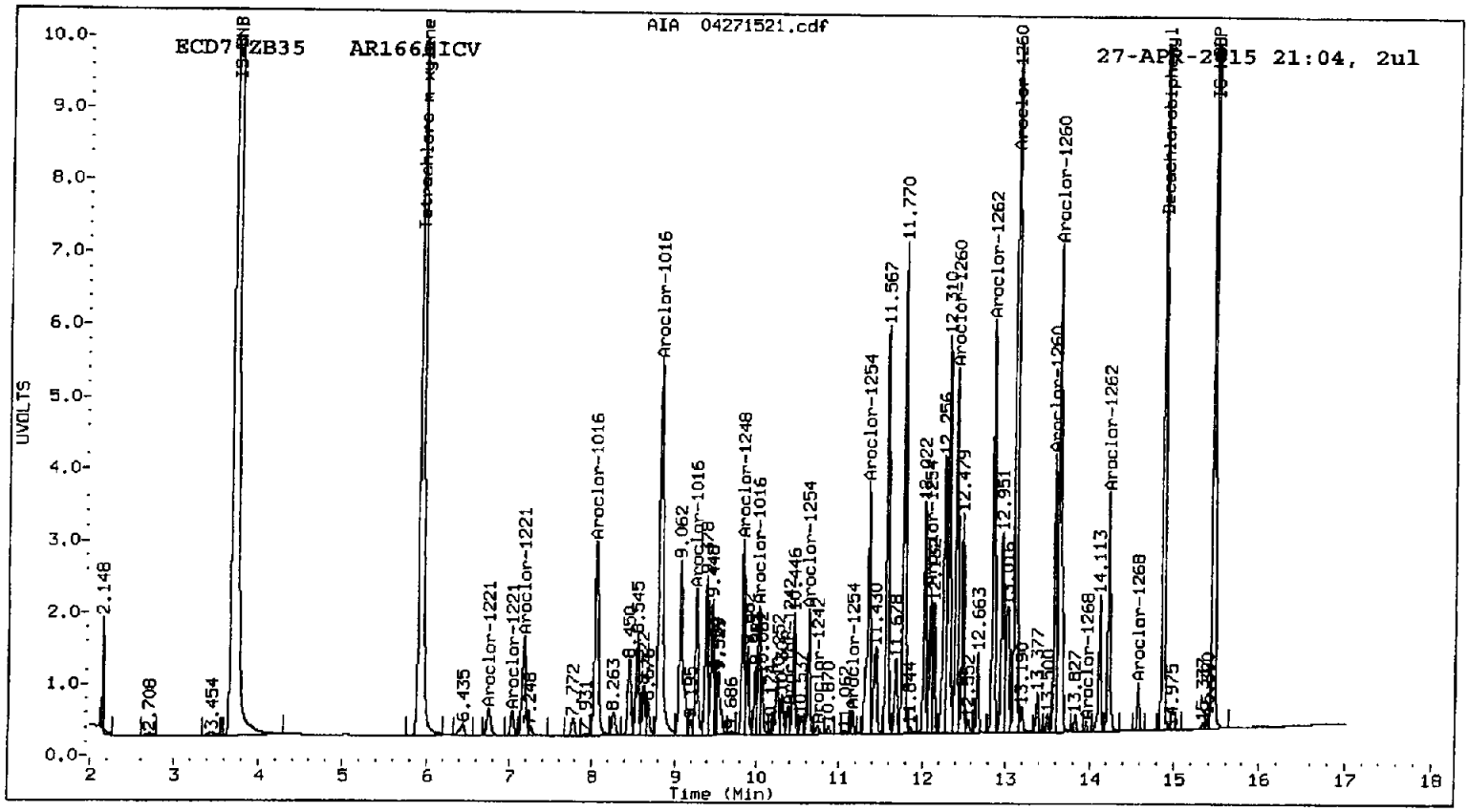
UVOLTS
Time (Min)
Tetrachloro-m-Xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
Tetrachloro-m-Xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271522.d
Data file 2: 20150427.b/ical-2.b/04271522.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 27-APR-2015 21:25
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.003	1367058	5.927	-0.003	6230161	38.0	36.8	3.1	Tetrachloro-m-xylene
14.895	-0.001	2468970	14.866	0.000	4106512	37.3	36.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.0	92.1
Decachlorobiphenyl	93.3	90.9

JR 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5167901	-0.5
Hexabromobiphenyl	3879663	4361176	12.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12477584	1.4
Hexabromobiphenyl	7233601	8063672	11.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.367	-0.002	164261	190.6	1	8.045	-0.002	1312084	184.9
Aroclor-1016	2	8.851	-0.002	487328	186.2	2	8.822	-0.001	2685616	181.1
Aroclor-1016	3	9.145	-0.003	173328	192.9	3	9.259	-0.001	721402	183.2
Aroclor-1016	4	9.927	-0.003	222266	227.8	4	10.020	-0.001	631732	227.6
Total Col1Ave (4 peaks):					199.4	Total Col2Ave (4 peaks):				194.2 RPD = 3
Corrected Ave (3 peaks):					189.9	Corrected Ave (3 peaks):				183.1 RPD = 4
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.022	-0.005	44269	133.6	2	6.746	0.006	216973	97.8
Aroclor-1221	3	7.150	-0.003	135003	141.4	3	7.035	-0.002	141758	111.7
Aroclor-1221	NS	---			----	4	7.170	-0.002	605002	160.1
Col1Ave: <3 Quant Peaks						Col2Ave: 123.2				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.022	-0.004	44269	195.6	2	7.170	-0.003	605002	224.2
Aroclor-1232	3	7.150	-0.003	135003	210.8	3	8.045	-0.004	1312084	416.4
Aroclor-1232	4	8.851	-0.002	487328	458.6	4	9.259	-0.002	721402	442.0
Total Col1Ave (3 peaks):					288.4	Total Col2Ave (3 peaks):				360.9 RPD = 22
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.851	-0.001	487328	249.8	1	8.045	-0.002	1312084	254.1
Aroclor-1242	2	9.145	-0.002	173328	245.9	2	8.822	-0.001	2685616	249.3
Aroclor-1242	3	10.318	-0.001	160897	243.8	3	10.383	-0.001	888143	234.3
Aroclor-1242	4	10.621	-0.001	234958	235.4	4	10.739	-0.002	1123383	243.9
Total Col1Ave (4 peaks):					243.7	Total Col2Ave (4 peaks):				245.4 RPD = 1
Corrected Ave (3 peaks):					241.7	Corrected Ave (3 peaks):				242.5 RPD = 0
Aroclor-1248	1	9.412	-0.003	102832	151.4	1	8.822	0.003	2685616	379.6
Aroclor-1248	2	9.927	-0.002	222266	166.9	2	9.825	-0.003	941449	166.7
Aroclor-1248	3	10.375	-0.002	223180	145.8	3	10.383	-0.002	888143	149.6
Aroclor-1248	4	10.621	-0.001	234958	149.9	4	10.739	-0.002	1123383	146.6
Total Col1Ave (4 peaks):					153.5	Total Col2Ave (4 peaks):				210.6 RPD = 31
Corrected Ave (3 peaks):					149.0	Corrected Ave (3 peaks):				154.3 RPD = 3
Aroclor-1254	1	10.375	-0.010	223180	230.4	1	10.625	-0.002	338339	51.8
Aroclor-1254	2	10.703	-0.002	83335	59.8	2	10.739	0.018	1123383	358.3
Aroclor-1254	3	11.084	-0.001	68721	60.2	3	11.154	-0.002	326019	63.5
Aroclor-1254	4	11.222	-0.001	105594	49.5	4	11.305	-0.001	541280	49.5
Aroclor-1254	5	11.938	0.002	82174	52.7	5	12.082	-0.004	358156	53.9
Total Col1Ave (5 peaks):					90.5	Total Col2Ave (5 peaks):				115.4 RPD = 24
Corrected Ave (4 peaks):					55.5	Corrected Ave (4 peaks):				54.7 RPD = 2
Aroclor-1260	1	---			0.0	1	12.474	0.071	31683	3.7
Aroclor-1260	2	---			0.0	2	13.108	0.000	40301	2.1
Aroclor-1260	3	---			0.0	3	13.627	0.050	24816	3.9
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.2				
Aroclor-1262	1	---			0.0	1	12.474	0.071	31683	2.1
Aroclor-1262	2	---			0.0	2	12.840	-0.004	78631	5.6
Aroclor-1262	3	---			0.0	3	13.108	0.000	40301	1.4
Aroclor-1262	4	---			0.0	4	13.627	0.049	24816	2.0
Aroclor-1262	5	---			0.0	5	14.255	0.037	46846	4.8
Col1Ave: <3 Quant Peaks						Col2Ave: 3.2				

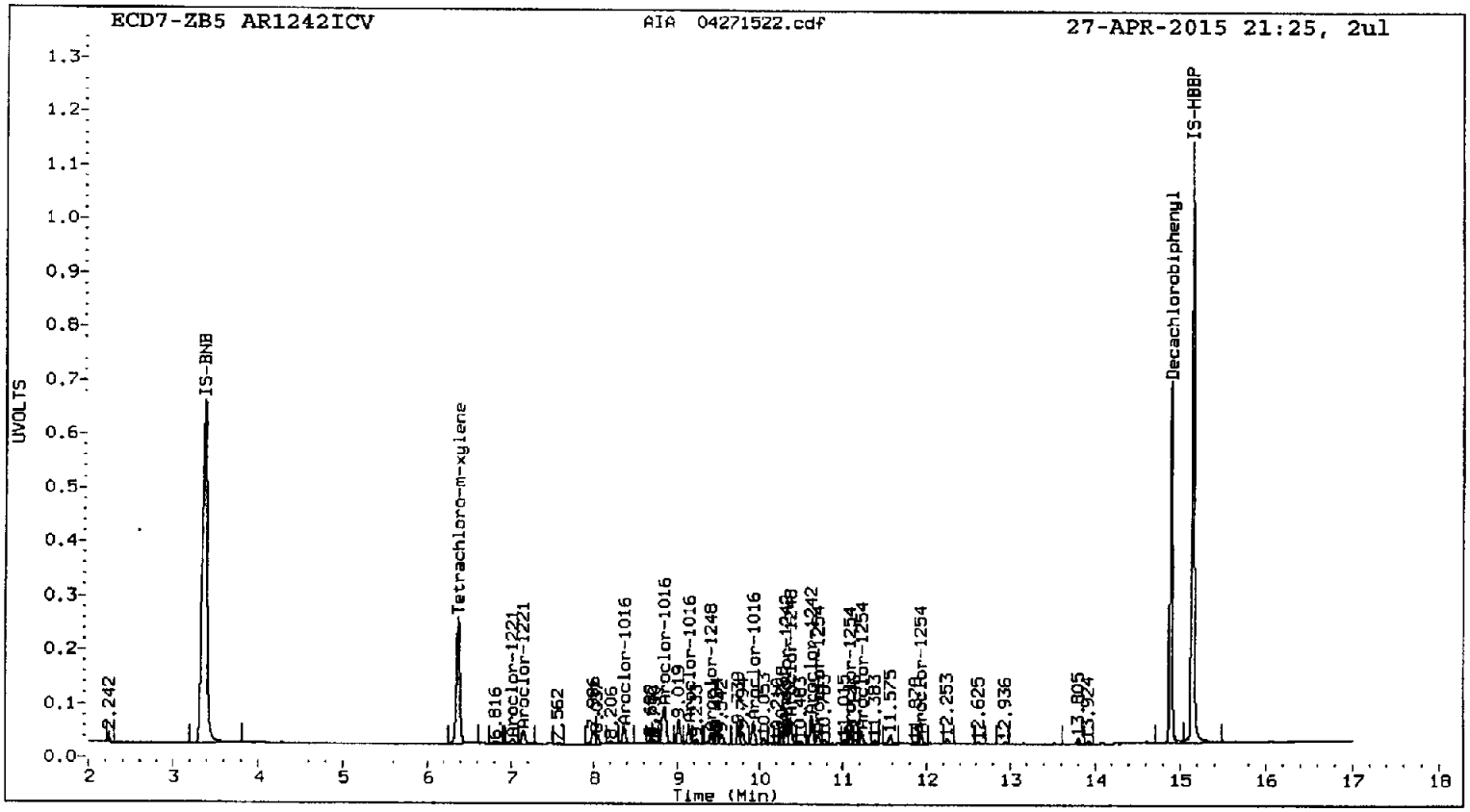
Aroclor-1268 1	---	0.0	1	---	0.0
Aroclor-1268 2	---	0.0	2	---	0.0
Aroclor-1268 3	---	0.0	3	---	0.0
Aroclor-1268 4	---	0.0	4	---	0.0

Col1Ave: <3 Quant Peaks Col2Ave: <3 Quant Peaks

Total PCB Area Col1 (6.472 - 14.797) = 3886633 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 21443237 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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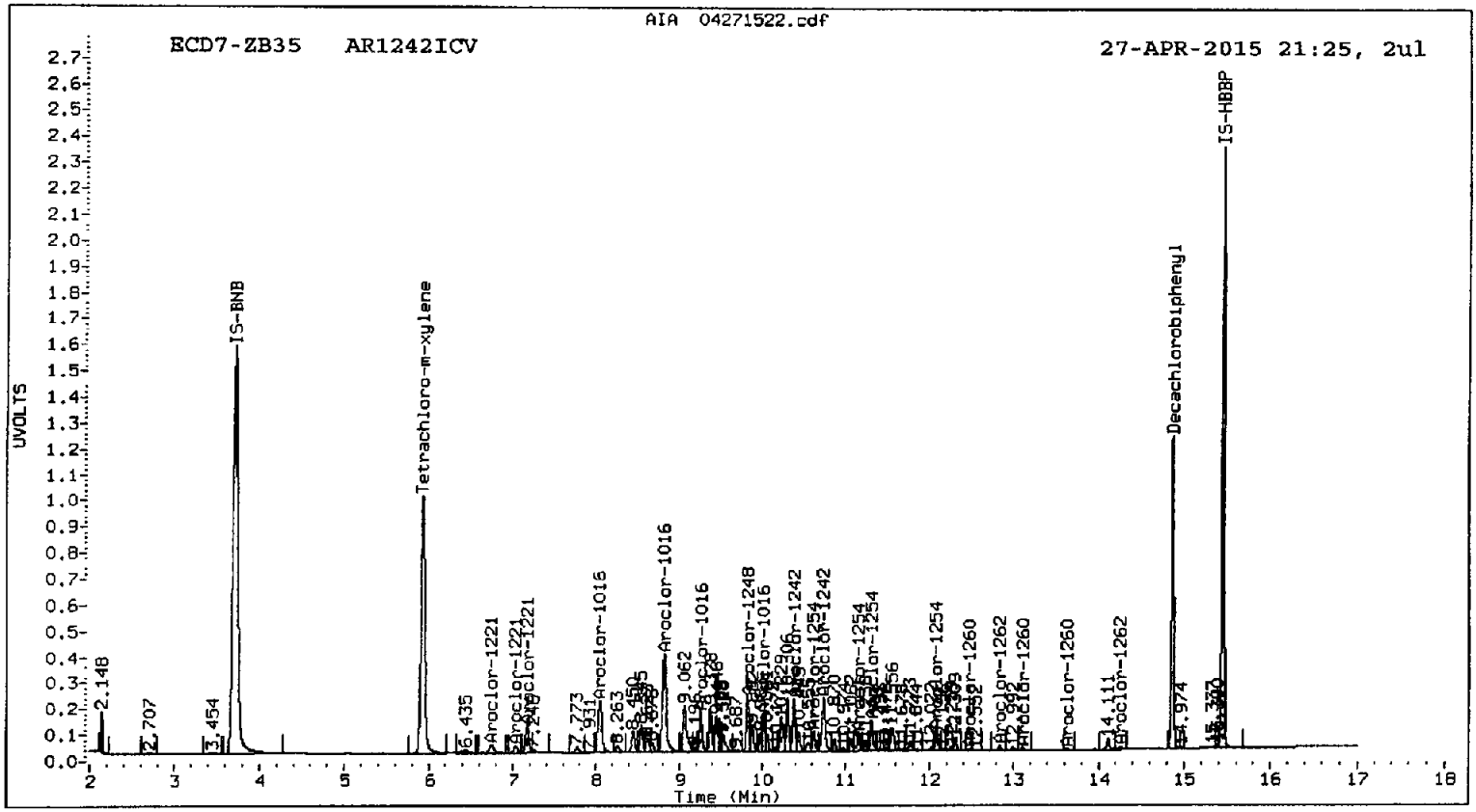
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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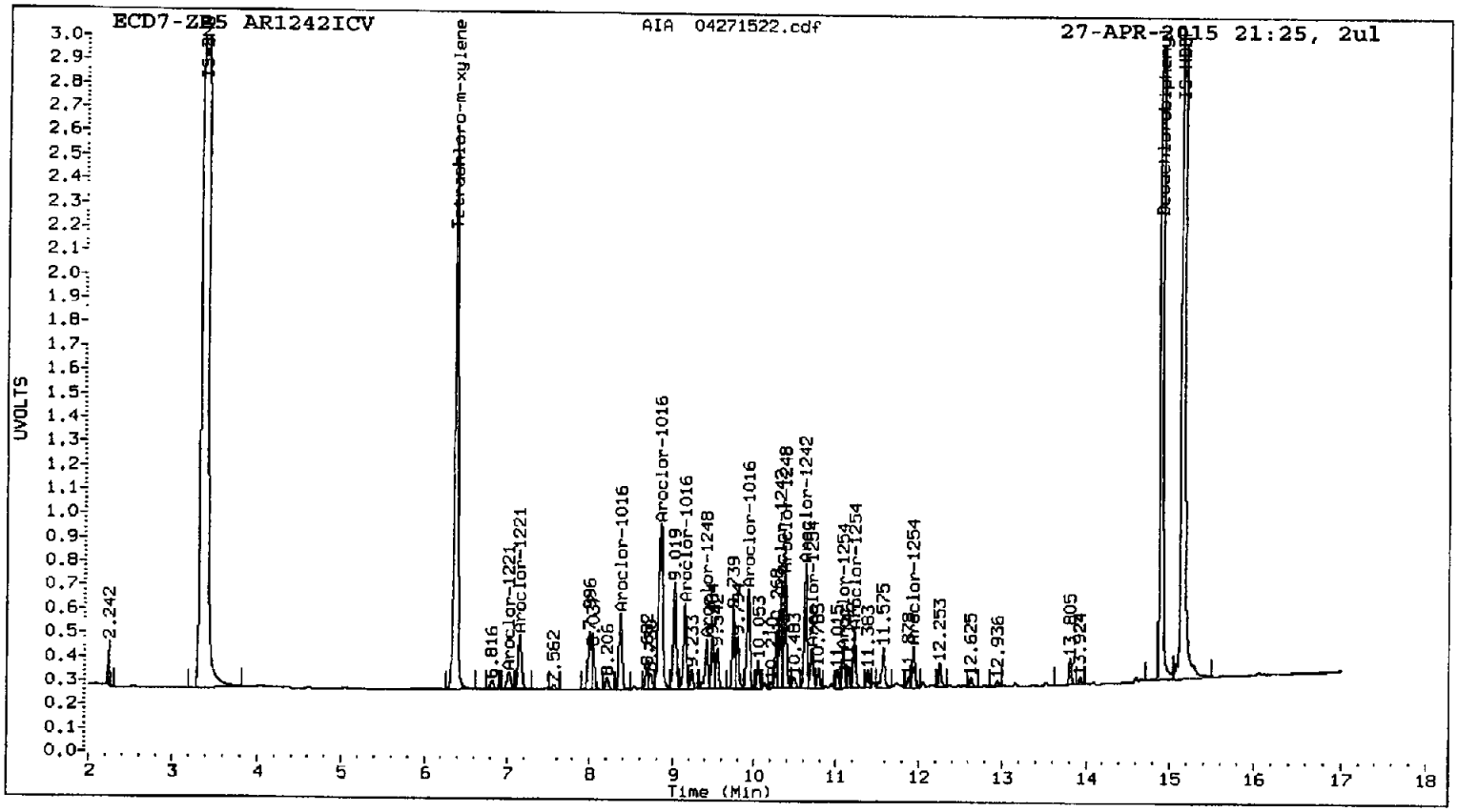
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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27-APR-2015 21:25, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
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IS-HBB
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
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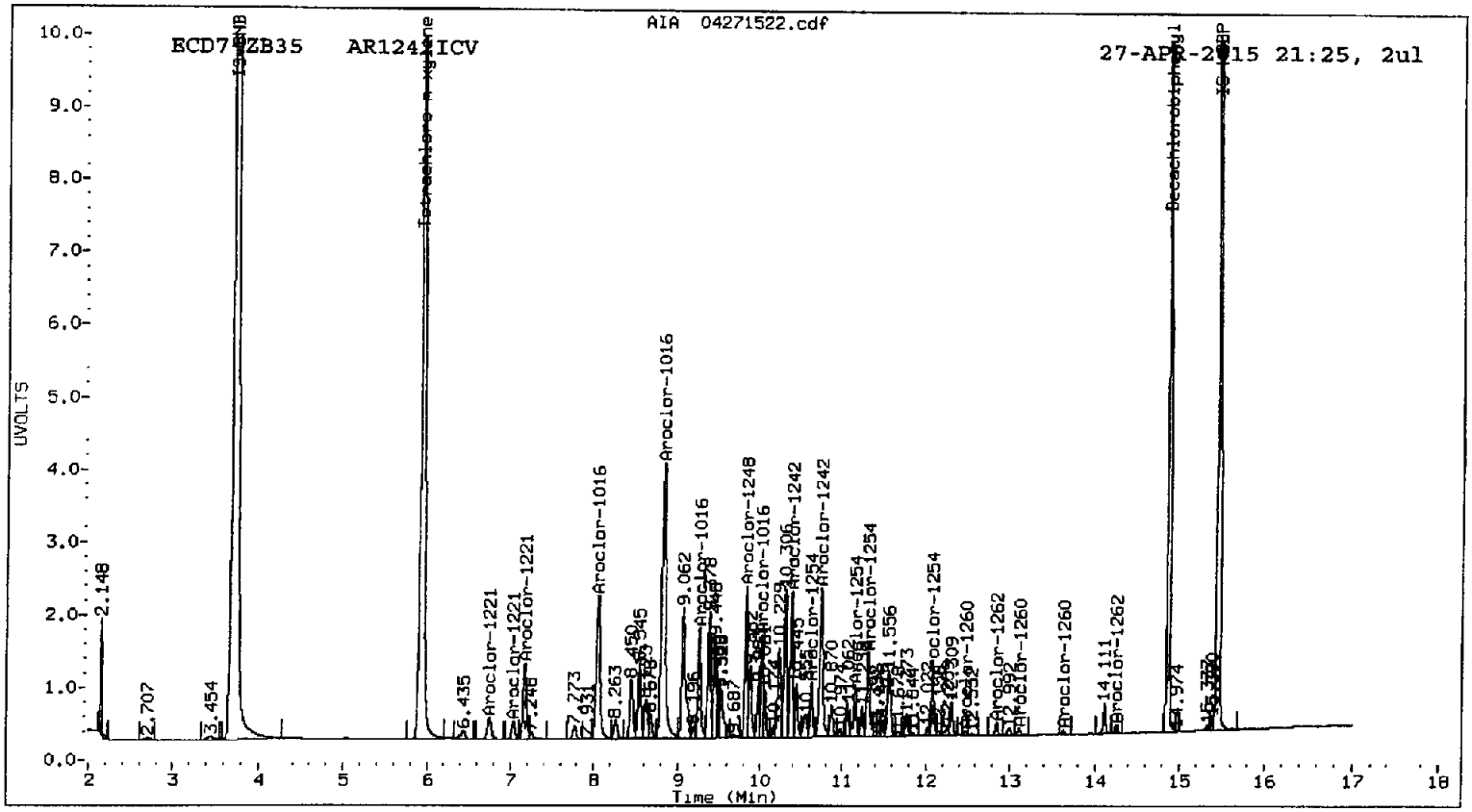
Aroclor-1260
Aroclor-1262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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271523.d
Data file 2: 20150427.b/ical-2.b/04271523.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 27-APR-2015 21:47
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.004	1362698	5.927	-0.003	6246831	38.1	37.3	2.1	Tetrachloro-m-xylene
14.895	-0.001	2458167	14.866	0.000	4111005	38.5	37.4	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.2	93.2
Decachlorobiphenyl	96.2	93.4

JK 4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5142539	-1.0
Hexabromobiphenyl	3879663	4214075	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12364470	0.5
Hexabromobiphenyl	7233601	7852456	8.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.366	-0.003	84004	98.0	1	8.042	-0.005	723454	102.9
Aroclor-1016	2	8.847	-0.006	331508	127.3	2	8.817	-0.006	1865390	127.0
Aroclor-1016	3	9.145	-0.003	104069	116.4	3	9.259	-0.002	427336	109.5
Aroclor-1016	4	9.926	-0.004	326875	336.6	4	10.019	-0.001	1266908	460.5
Total Col1Ave (4 peaks):		169.6				Total Col2Ave (4 peaks):			200.0	RPD = 16
Corrected Ave (3 peaks):		113.9				Corrected Ave (3 peaks):			113.1	RPD = 1
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.010	-0.018	22831	69.2	2	6.755	0.014	113025	51.4
Aroclor-1221	3	7.149	-0.003	28015	29.5	3	7.035	-0.001	26756	21.3
Aroclor-1221	NS	---			----	4	7.169	-0.002	163612	43.7
Col1Ave: <3 Quant Peaks						Col2Ave:			38.8	
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.010	-0.016	22831	101.4	2	7.169	-0.003	163612	61.2
Aroclor-1232	3	7.149	-0.004	28015	44.0	3	8.042	-0.007	723454	231.7
Aroclor-1232	4	8.847	-0.005	331508	313.5	4	9.259	-0.002	427336	264.2
Total Col1Ave (3 peaks):		153.0				Total Col2Ave (3 peaks):			185.7	RPD = 19
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.847	-0.004	331508	170.7	1	8.042	-0.005	723454	141.4
Aroclor-1242	2	9.145	-0.003	104069	148.3	2	8.817	-0.005	1865390	174.8
Aroclor-1242	3	10.317	-0.002	285514	434.7	3	10.382	-0.001	1434231	381.8
Aroclor-1242	4	10.620	-0.002	379668	382.3	4	10.740	-0.002	1854830	406.4
Total Col1Ave (4 peaks):		284.0				Total Col2Ave (4 peaks):			276.1	RPD = 3
Corrected Ave (3 peaks):		233.8				Corrected Ave (3 peaks):			232.7	RPD = 0
Aroclor-1248	1	9.412	-0.003	171293	253.5	1	8.817	-0.001	1865390	266.1
Aroclor-1248	2	9.926	-0.003	326875	246.6	2	9.825	-0.003	1410897	252.0
Aroclor-1248	3	10.375	-0.002	374300	245.7	3	10.382	-0.002	1434231	243.8
Aroclor-1248	4	10.620	-0.002	379668	243.4	4	10.740	-0.002	1854830	244.2
Total Col1Ave (4 peaks):		247.3				Total Col2Ave (4 peaks):			251.5	RPD = 2
Corrected Ave (3 peaks):		245.2				Corrected Ave (3 peaks):			246.7	RPD = 1
Aroclor-1254	1	10.375	-0.010	374300	388.3	1	10.624	-0.002	609050	94.1
Aroclor-1254	2	10.702	-0.003	162654	117.3	2	10.740	0.018	1854830	597.0
Aroclor-1254	3	11.083	-0.002	138933	122.4	3	11.154	-0.002	634015	124.6
Aroclor-1254	4	11.221	-0.002	212618	100.1	4	11.305	-0.001	1031442	95.1
Aroclor-1254	5	11.938	0.002	172292	111.0	5	12.081	-0.005	752189	114.2
Total Col1Ave (5 peaks):		167.8				Total Col2Ave (5 peaks):			205.0	RPD = 20
Corrected Ave (4 peaks):		112.7				Corrected Ave (4 peaks):			107.0	RPD = 5
Aroclor-1260	1	---			0.0	1	12.402	-0.001	36402	4.4
Aroclor-1260	2	13.153	-0.002	16411	2.7	2	13.109	0.001	82282	4.3
Aroclor-1260	3	---			0.0	3	13.576	-0.001	30201	4.9
Aroclor-1260	4	---			0.0	4	13.630	0.001	52655	4.1
Aroclor-1260	5	13.924	-0.095	12336	13.6	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:			4.4	
Aroclor-1262	1	---			0.0	1	12.402	-0.001	36402	2.5
Aroclor-1262	2	---			0.0	2	12.841	-0.003	99979	7.3
Aroclor-1262	3	---			0.0	3	13.109	0.001	82282	3.0
Aroclor-1262	4	---			0.0	4	13.576	-0.001	30201	2.5
Aroclor-1262	5	---			0.0	5	14.218	0.001	19623	2.1
Col1Ave: <3 Quant Peaks						Col2Ave:			3.5	

Aroclor-1268 1	---	0.0	1	13.576	0.000	30201	1.5
Aroclor-1268 2	---	0.0	2	13.630	-0.004	52655	2.7
Aroclor-1268 3	---	0.0	3	13.958	0.000	6613	0.4
Aroclor-1268 4	---	0.0	4	14.575	-0.002	13497	0.3

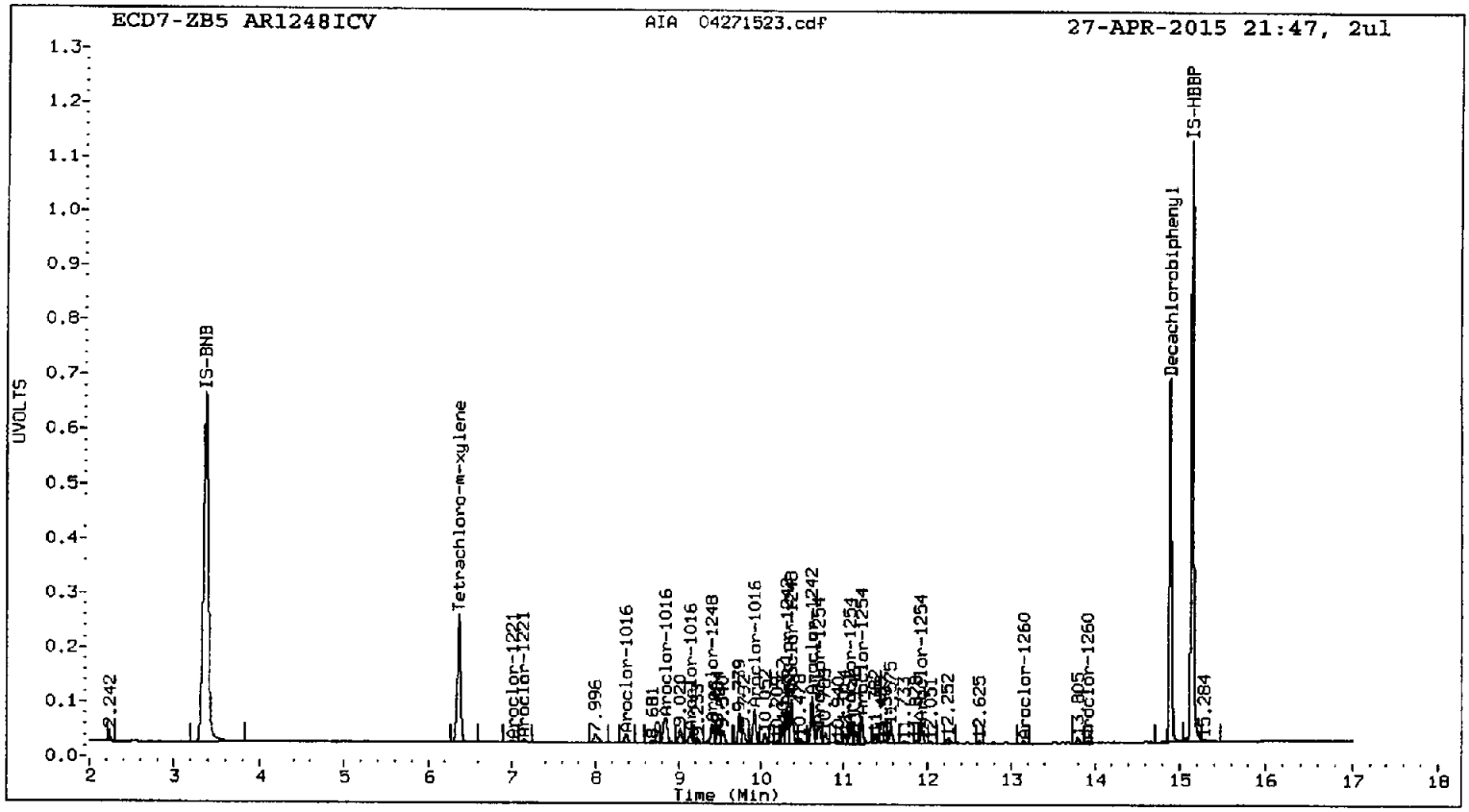
Col1Ave: <3 Quant Peaks Col2Ave: 1.2

Total PCB Area Col1 (6.472 - 14.797) = 4717192 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 25377758 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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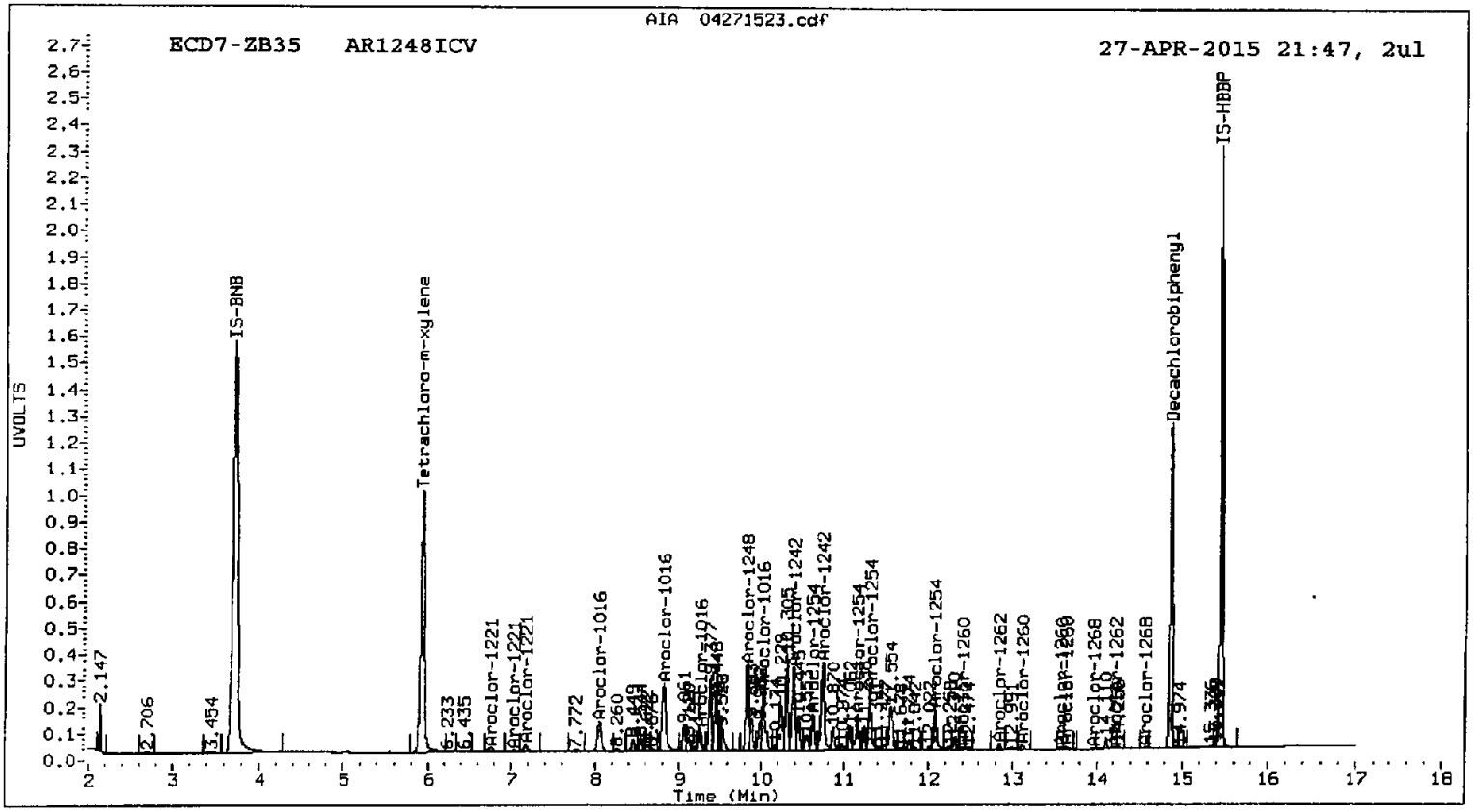
27-APR-2015 21:47, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Time (Min)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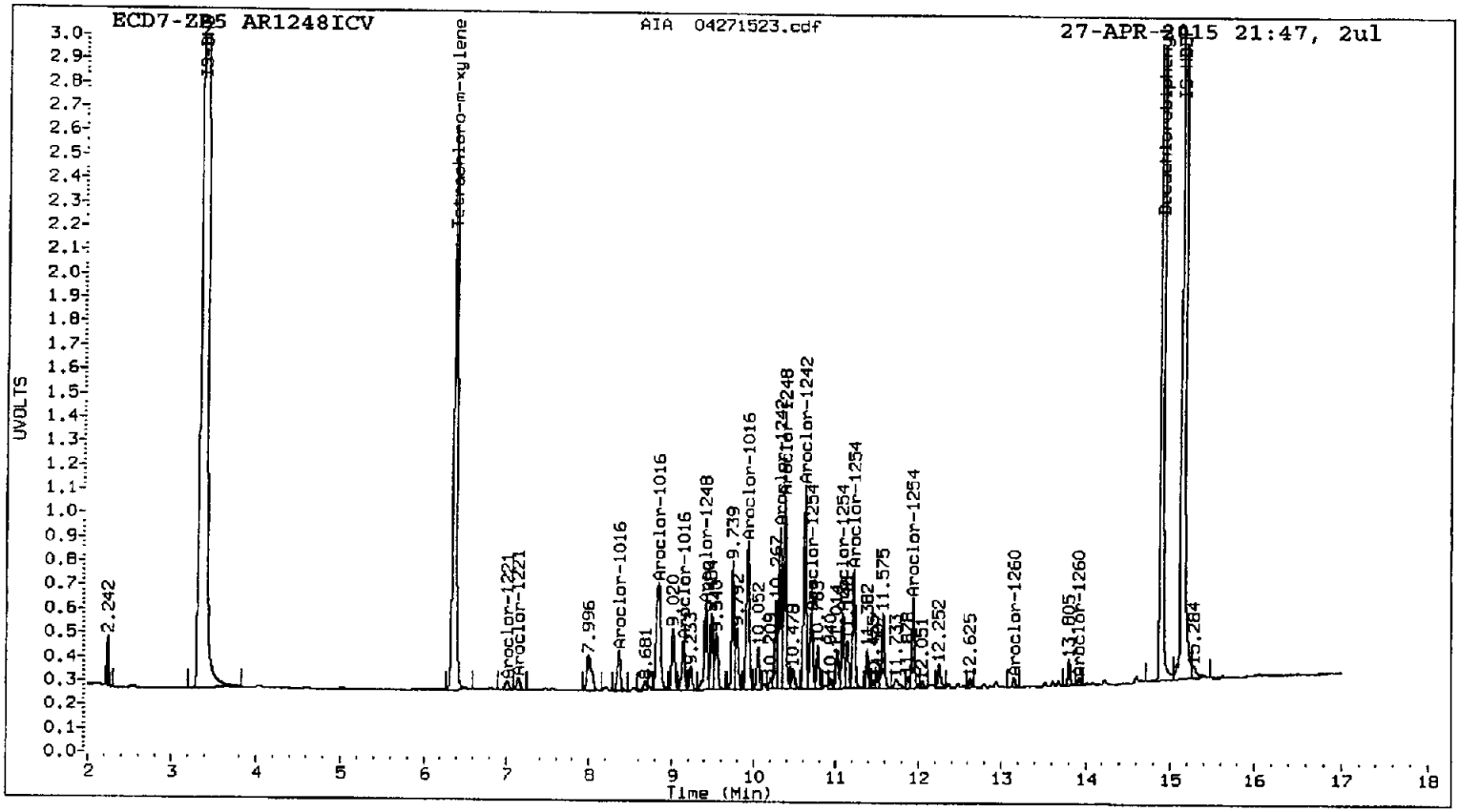
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Time (Min)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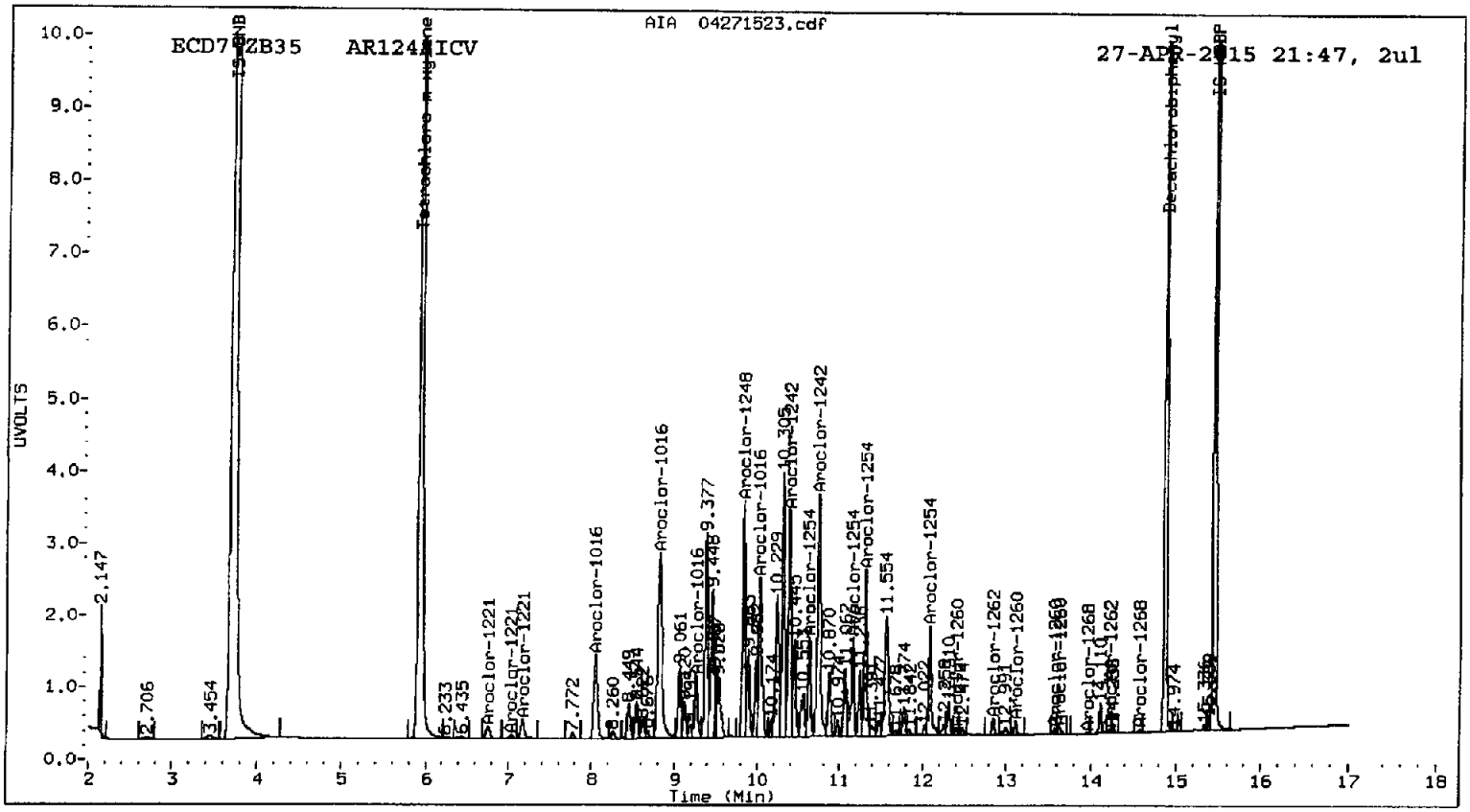
27-APR-2015 21:47, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
UVOLTS
Time (Min)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Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271524.d
Data file 2: 20150427.b/ical-2.b/04271524.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 27-APR-2015 22:08
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.003	1319977	5.928	-0.003	6024840	36.8	36.0	2.2	Tetrachloro-m-xylene
14.895	-0.001	2369574	14.866	-0.001	3971983	37.6	36.3	3.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

JK 04/28/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	92.1	90.1
Decachlorobiphenyl	94.1	90.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5146912	-0.9
Hexabromobiphenyl	3879663	4152288	7.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12332435	0.2
Hexabromobiphenyl	7233601	7808443	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	8.044	-0.003	23715	3.4
Aroclor-1016	2	---			0.0	2	8.810	-0.013	70453	4.8
Aroclor-1016	3	---			0.0	3	9.259	-0.001	10559	2.7
Aroclor-1016	4	---			0.0	4	10.020	-0.001	261102	95.2
		Col1Ave: <3 Quant Peaks					Col2Ave: 26.5			
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.758	0.017	88982	40.6
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.172	0.001	24148	6.5
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.172	0.000	24148	9.1
Aroclor-1232	3	---			0.0	3	8.044	-0.004	23715	7.6
Aroclor-1232	4	---			0.0	4	9.259	-0.001	10559	6.5
		Col1Ave: <3 Quant Peaks					Col2Ave: 7.7			
Aroclor-1242	1	---			0.0	1	8.044	-0.003	23715	4.6
Aroclor-1242	2	---			0.0	2	8.810	-0.012	70453	6.6
Aroclor-1242	3	10.317	-0.002	139624	212.4	3	10.382	-0.001	280900	75.0
Aroclor-1242	4	10.623	0.000	106322	107.0	4	10.719	-0.023	973471	213.9
		Col1Ave: <3 Quant Peaks					Col2Ave: 75.0			
Aroclor-1248	1	9.411	-0.003	109278	161.6	1	8.810	-0.008	70453	10.1
Aroclor-1248	2	9.926	-0.003	46925	35.4	2	9.826	-0.002	499816	89.5
Aroclor-1248	3	10.383	0.005	277305	181.9	3	10.382	-0.003	280900	47.9
Aroclor-1248	4	10.623	0.000	106322	68.1	4	10.719	-0.022	973471	128.5
		Total Col1Ave (4 peaks):			111.7		Total Col2Ave (4 peaks):			69.0 RPD = 47*
		Corrected Ave (3 peaks):			88.3		Corrected Ave (3 peaks):			49.2 RPD = 57*
Aroclor-1254	1	10.383	-0.003	277305	287.5	1	10.625	-0.002	1831710	283.6
Aroclor-1254	2	10.703	-0.002	394873	284.6	2	10.719	-0.002	973471	314.1
Aroclor-1254	3	11.083	-0.002	336621	296.2	3	11.154	-0.002	1451882	286.2
Aroclor-1254	4	11.220	-0.002	597272	280.9	4	11.305	-0.002	2998232	277.2
Aroclor-1254	5	11.935	-0.001	462140	297.5	5	12.084	-0.002	1972585	291.1
		Total Col1Ave (5 peaks):			289.3		Total Col2Ave (5 peaks):			290.4 RPD = 0
		Corrected Ave (4 peaks):			287.3		Corrected Ave (4 peaks):			284.5 RPD = 1
Aroclor-1260	1	12.475	-0.005	36711	19.8	1	12.401	-0.002	148134	18.0
Aroclor-1260	2	13.152	-0.003	100078	16.5	2	13.108	0.001	492854	26.0
Aroclor-1260	3	13.520	-0.003	95190	34.3	3	13.579	0.002	71547	11.7
Aroclor-1260	4	---			0.0	4	13.626	-0.002	349612	27.2
Aroclor-1260	5	13.923	-0.096	12173	13.6	NS	---			----
		Total Col1Ave (4 peaks):			21.0		Total Col2Ave (4 peaks):			20.8 RPD = 1
		Corrected Ave (3 peaks):			16.6		Corrected Ave (3 peaks):			18.6 RPD = 11
Aroclor-1262	1	12.475	-0.005	36711	11.2	1	12.401	-0.001	148134	10.3
Aroclor-1262	2	13.152	-0.001	100078	11.3	2	12.840	-0.004	893004	65.3
Aroclor-1262	3	13.520	-0.003	95190	33.1	3	13.108	0.000	492854	17.8
Aroclor-1262	4	---			0.0	4	13.579	0.002	71547	5.9
Aroclor-1262	5	---			0.0	5	14.218	0.000	14178	1.5
		Total Col1Ave (3 peaks):			18.5		Total Col2Ave (5 peaks):			20.2 RPD = 8
		Corrected Ave: < 3 Peaks					Corrected Ave (4 peaks):			8.9
Aroclor-1268	1	---			0.0	1	13.579	0.003	71547	3.5

Aroclor-1268 2	---	0.0	2	13.626	-0.007	349612	17.9
Aroclor-1268 3	---	0.0	3	---			0.0
Aroclor-1268 4	---	0.0	4	---			0.0

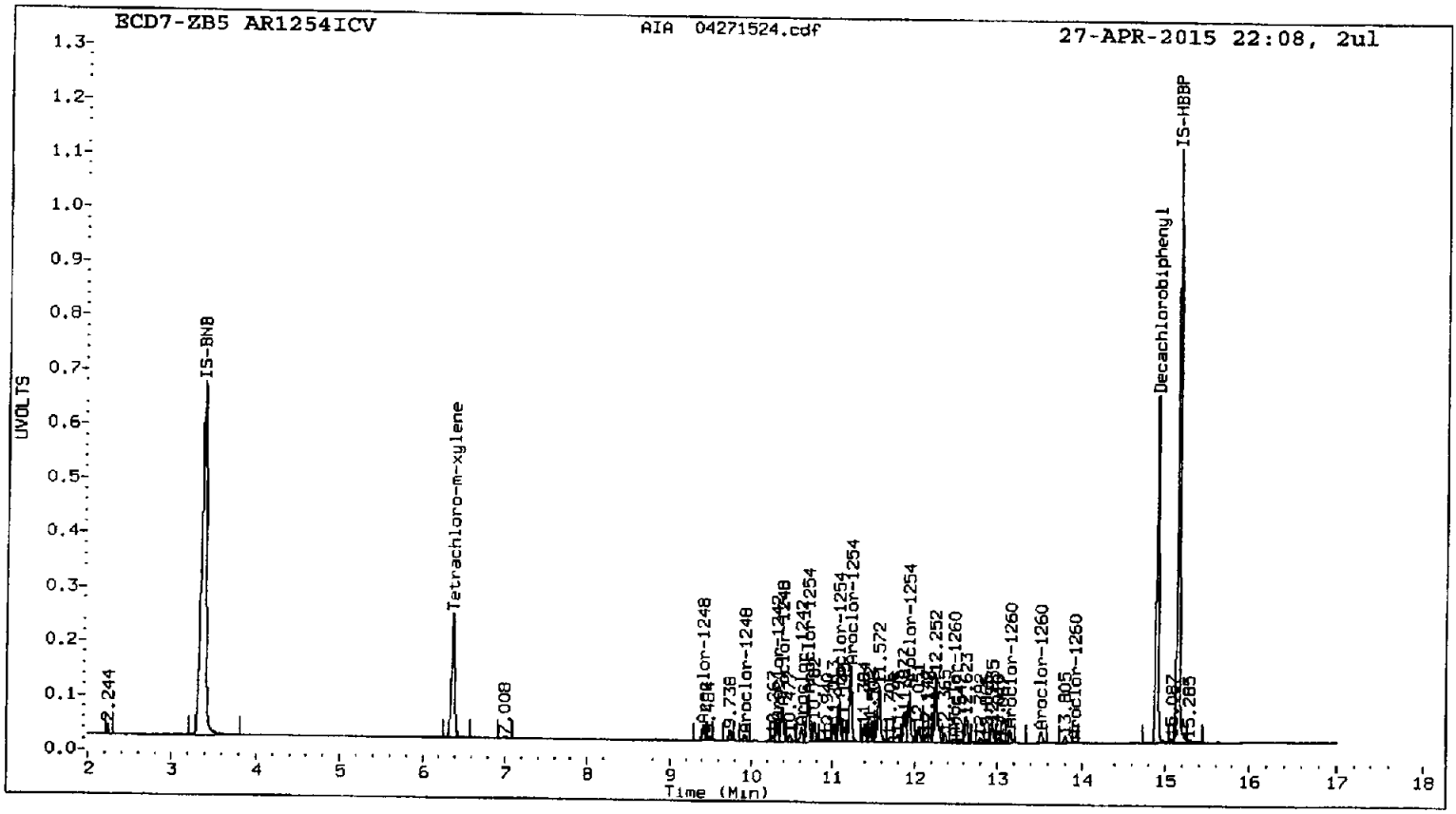
Col1Ave: <3 Quant Peaks Col2Ave: <3 Quant Peaks

Total PCB Area Col1 (6.472 - 14.797) = 6020040 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 30456620 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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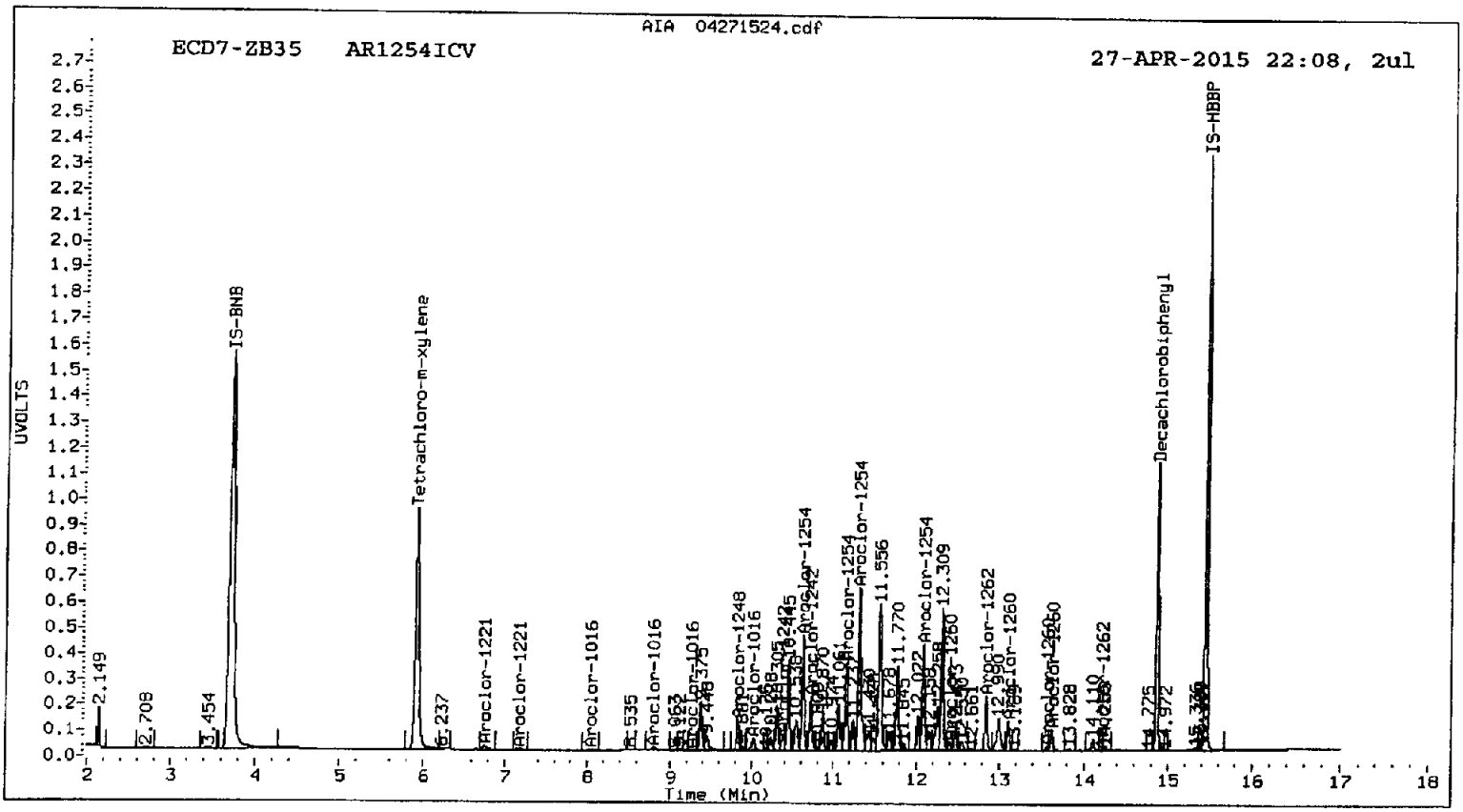
AIA 04271524.cdf
27-APR-2015 22:08, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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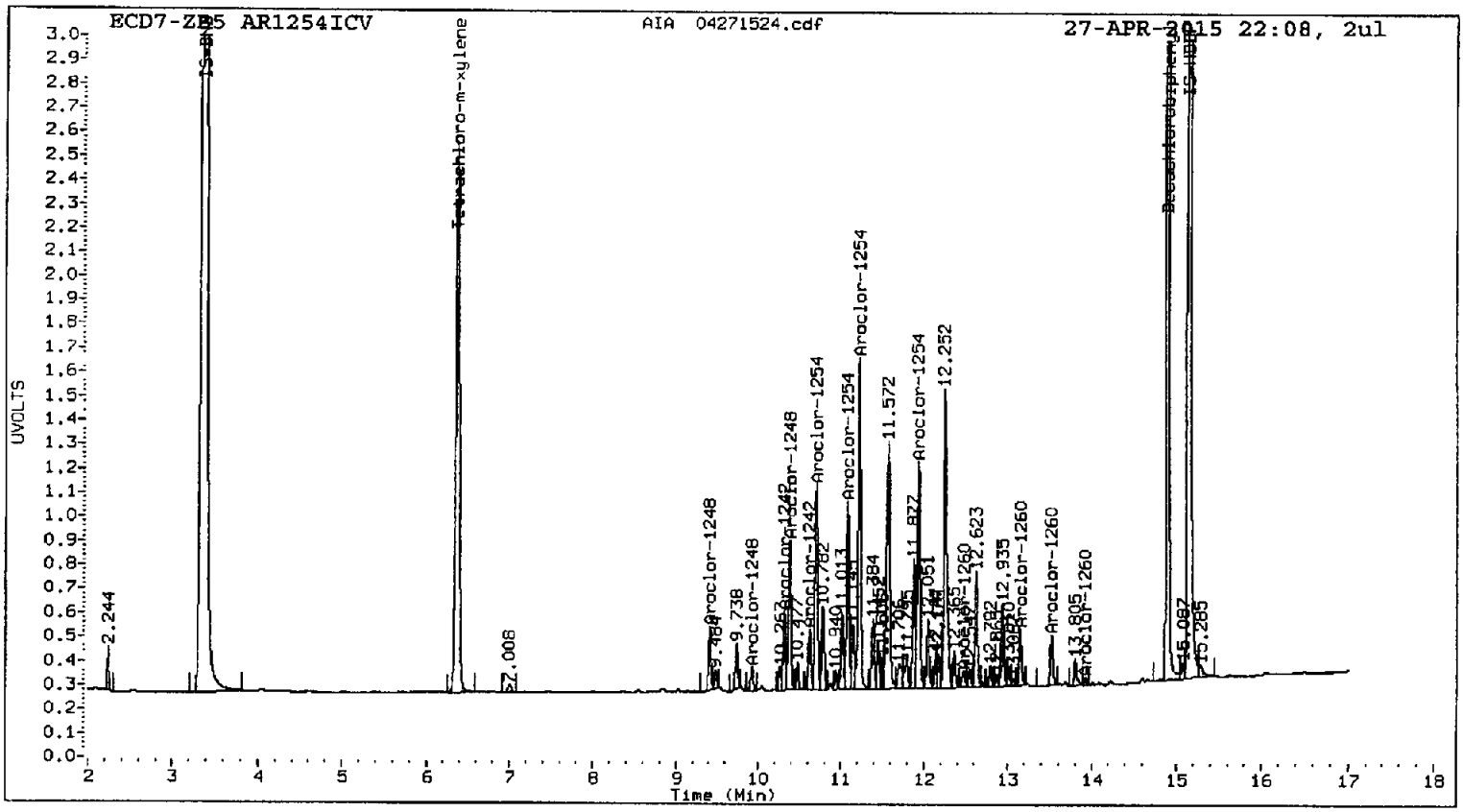
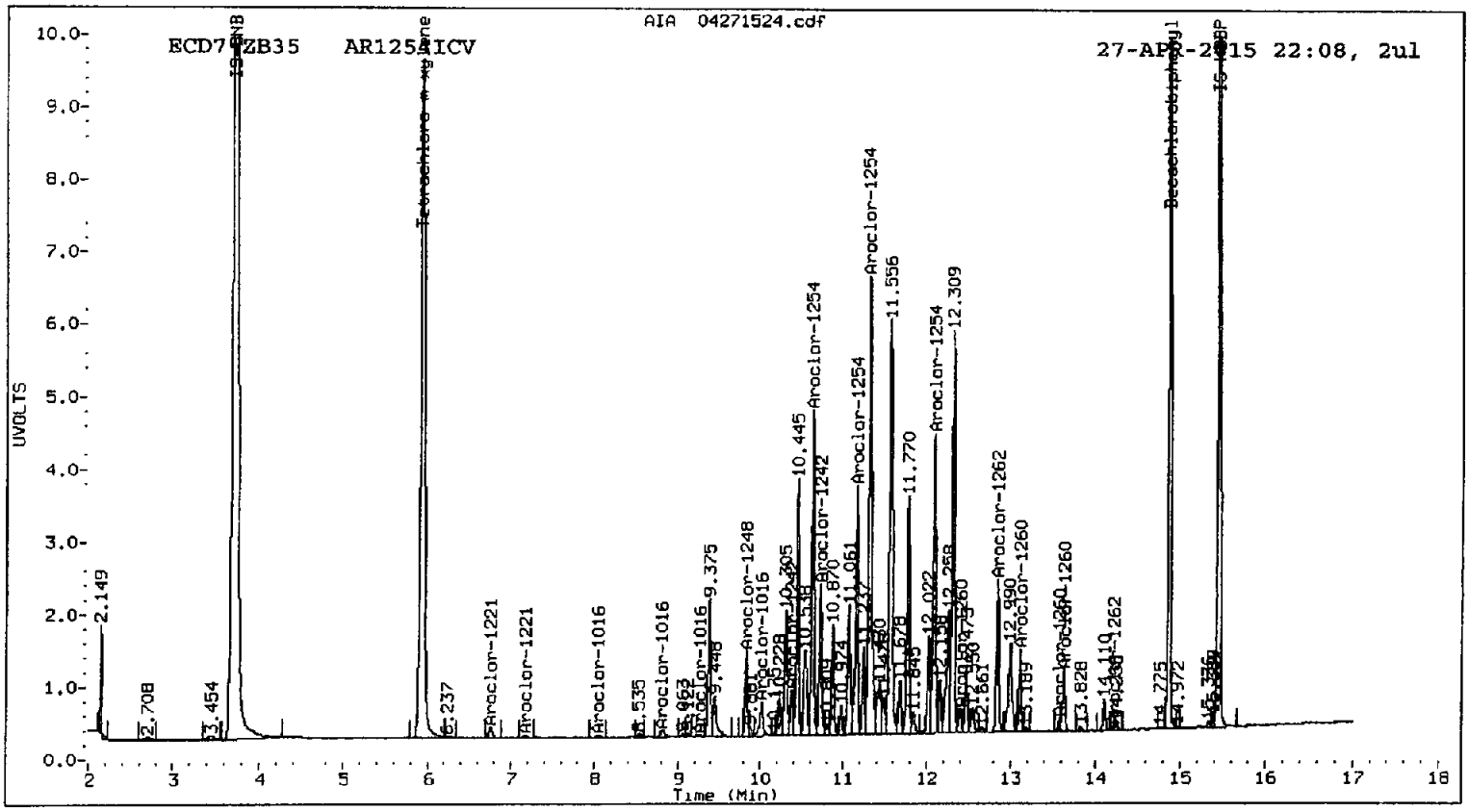
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB5 AR1254ICV
AIA 04271524.cdf
27-APR-2015 22:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
Aroclor-1254
Aroclor-1260
2.244
2.008
9.738
11.572
12.252
12.623
12.935
15.285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AIA 04271524.cdf
27-APR-2015 22:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
2.149
2.708
3.454
6.237
9.375
10.445
11.556
11.770
12.309
12.990

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271525.d
Data file 2: 20150427.b/ical-2.b/04271525.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162ICV
Client ID:
Injection Date: 27-APR-2015 22:29
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.370	-0.002	1373191	5.928	-0.002	6134784	38.2	37.2	2.8	Tetrachloro-m-xylene
14.895	-0.002	2452719	14.865	-0.001	4126252	37.5	36.3	3.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.6	92.9
Decachlorobiphenyl	93.7	90.8

JK 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5161065	-0.7
Hexabromobiphenyl	3879663	4313451	11.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12177692	-1.0
Hexabromobiphenyl	7233601	8108836	12.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

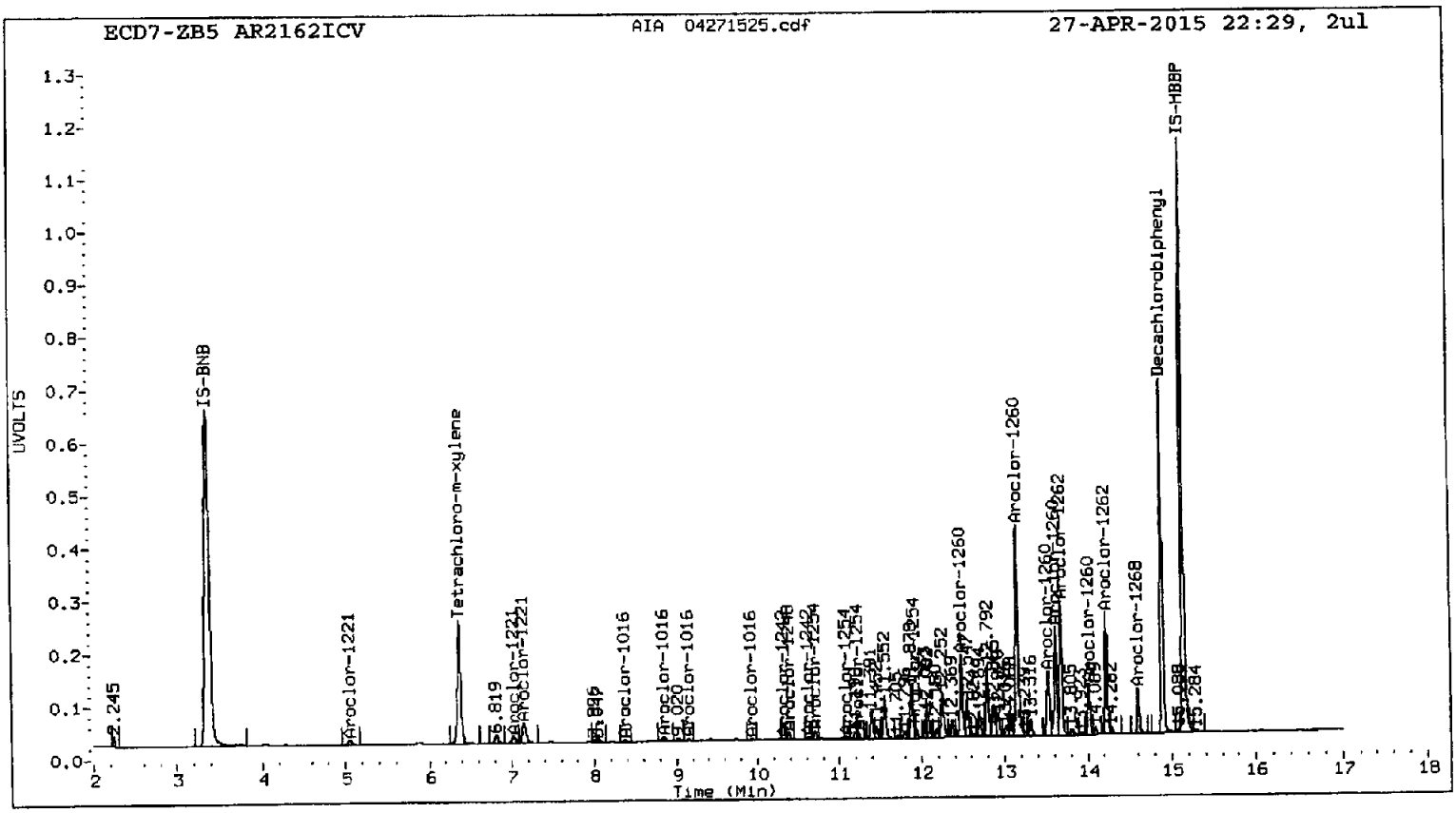
Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.368	-0.001	20938	24.3	1	8.059	0.012	337795	48.8
Aroclor-1016	2	8.852	0.000	57363	22.0	2	8.823	0.000	347181	24.0
Aroclor-1016	3	9.147	-0.001	18986	21.2	3	9.260	0.000	101473	26.4
Aroclor-1016	4	9.928	-0.001	11914	12.2	4	10.020	0.000	77476	28.6
	Total Col1Ave (4 peaks):				19.9	Total Col2Ave (4 peaks):				31.9 RPD = 46*
	Corrected Ave (3 peaks):				18.4	Corrected Ave (3 peaks):				26.3 RPD = 35
Aroclor-1221	1	5.052	-0.003	55291	249.3	1	5.040	-0.002	333769	250.7
Aroclor-1221	2	7.028	0.000	82909	250.5	2	6.739	-0.001	543320	251.0
Aroclor-1221	3	7.152	0.000	237836	249.4	3	7.035	-0.001	309244	249.7
Aroclor-1221	NS	---			----	4	7.170	-0.001	920388	249.5
	Total Col1Ave (3 peaks):				249.7	Total Col2Ave (4 peaks):				250.2 RPD = 0
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				250.0
Aroclor-1232	1	5.052	-0.003	55291	435.9	1	5.040	-0.002	333769	410.1
Aroclor-1232	2	7.028	0.001	82909	366.9	2	7.170	-0.002	920388	349.5
Aroclor-1232	3	7.152	-0.001	237836	371.9	3	8.059	0.010	337795	109.8
Aroclor-1232	4	8.852	0.000	57363	54.1	4	9.260	0.000	101473	63.7
	Total Col1Ave (4 peaks):				307.2	Total Col2Ave (4 peaks):				233.3 RPD = 27
	Corrected Ave (3 peaks):				264.3	Corrected Ave (3 peaks):				174.4 RPD = 41*
Aroclor-1242	1	8.852	0.001	57363	29.4	1	8.059	0.012	337795	67.0
Aroclor-1242	2	9.147	-0.001	18986	27.0	2	8.823	0.000	347181	33.0
Aroclor-1242	3	10.319	0.000	13970	21.2	3	10.384	0.001	65524	17.7
Aroclor-1242	4	10.623	0.001	19030	19.1	4	10.734	-0.008	130050	28.9
	Total Col1Ave (4 peaks):				24.2	Total Col2Ave (4 peaks):				36.7 RPD = 41*
	Corrected Ave (3 peaks):				22.4	Corrected Ave (3 peaks):				26.6 RPD = 17
Aroclor-1248	1	---			0.0	1	8.823	0.004	347181	50.3
Aroclor-1248	2	9.928	-0.001	11914	9.0	2	9.827	-0.001	85454	15.5
Aroclor-1248	3	10.384	0.006	62613	41.0	3	10.384	0.000	65524	11.3
Aroclor-1248	4	10.623	0.001	19030	12.2	4	10.734	-0.008	130050	17.4
	Total Col1Ave (3 peaks):				20.7	Total Col2Ave (4 peaks):				23.6 RPD = 13
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				14.7
Aroclor-1254	1	10.384	-0.001	62613	64.7	1	10.625	-0.002	404336	63.4
Aroclor-1254	2	10.705	0.000	68084	48.9	2	10.734	0.012	130050	42.5
Aroclor-1254	3	11.084	-0.001	21134	18.5	3	11.155	-0.001	108453	21.6
Aroclor-1254	4	11.219	-0.003	45923	21.5	4	11.344	0.038	1642464	153.8
Aroclor-1254	5	11.924	-0.012	94156	60.4	5	12.090	0.004	432535	66.7
	Total Col1Ave (5 peaks):				42.8	Total Col2Ave (5 peaks):				69.6 RPD = 48*
	Corrected Ave (4 peaks):				37.4	Corrected Ave (4 peaks):				48.6 RPD = 26
Aroclor-1260	1	12.479	-0.002	680659	353.0	1	12.400	-0.002	2981312	349.6
Aroclor-1260	2	13.152	-0.002	1786196	283.6	2	13.106	-0.001	5631829	286.4
Aroclor-1260	3	13.523	0.000	589772	204.6	3	13.576	-0.001	2568158	404.7
Aroclor-1260	4	13.620	-0.001	877830	509.6	4	13.629	0.001	3854516	289.1
Aroclor-1260	5	14.017	-0.003	398638	428.7	NS	---			----
	Total Col1Ave (5 peaks):				355.9	Total Col2Ave (4 peaks):				332.4 RPD = 7
	Corrected Ave (4 peaks):				317.5	Corrected Ave (3 peaks):				308.4 RPD = 3
Aroclor-1262	1	12.479	-0.001	680659	200.6	1	12.400	-0.002	2981312	198.7
Aroclor-1262	2	13.152	-0.001	1786196	193.8	2	12.844	0.000	2909923	205.0
Aroclor-1262	3	13.523	0.000	589772	197.3	3	13.106	-0.002	5631829	196.0
Aroclor-1262	4	13.683	-0.001	1028776	202.2	4	13.576	-0.001	2568158	205.4
Aroclor-1262	5	14.223	-0.002	859672	198.0	5	14.218	0.000	1997378	204.6

Total Col1Ave (5 peaks):			198.4		Total Col2Ave (5 peaks):			201.9	RPD = 2
Corrected Ave (4 peaks):			197.4		Corrected Ave (4 peaks):			201.0	RPD = 2
Aroclor-1268 1	13.620	-0.001	877830	104.2	1	13.576	0.000	2568158	119.5
Aroclor-1268 2	13.683	0.000	1028776	102.1	2	13.629	-0.004	3854516	190.0
Aroclor-1268 3	14.017	0.012	398638	44.5	3	13.958	-0.001	178780	10.8
Aroclor-1268 4	14.602	-0.002	328922	11.3	4	14.576	-0.001	653789	14.4
Total Col1Ave (4 peaks):			65.5		Total Col2Ave (4 peaks):			83.7	RPD = 24
Corrected Ave (3 peaks):			52.6		Corrected Ave (3 peaks):			48.2	RPD = 9

Total PCB Area Col1 (6.472 - 14.797) = 11808300 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 44247268 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical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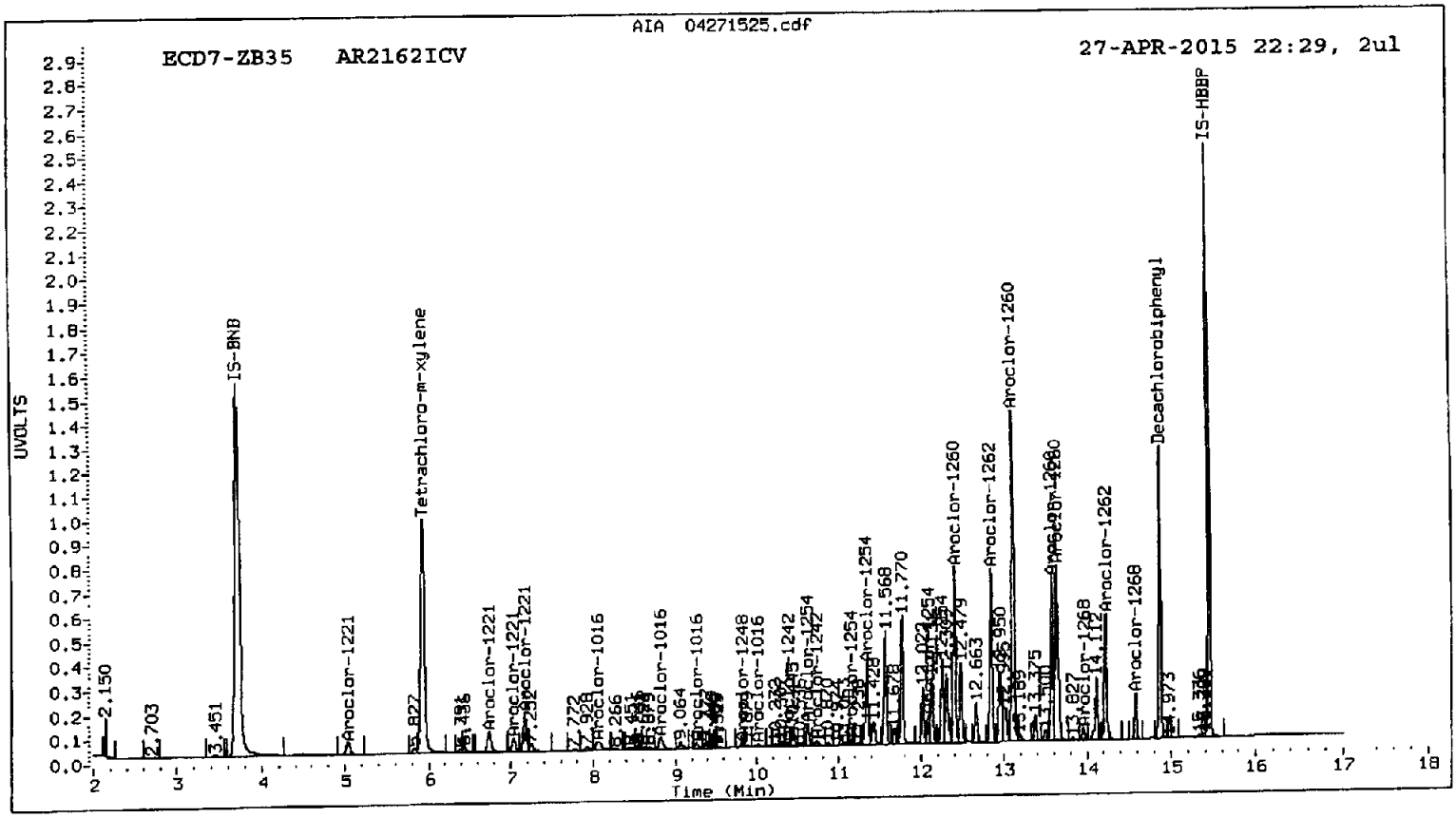
UVOLTS
Time (Min)
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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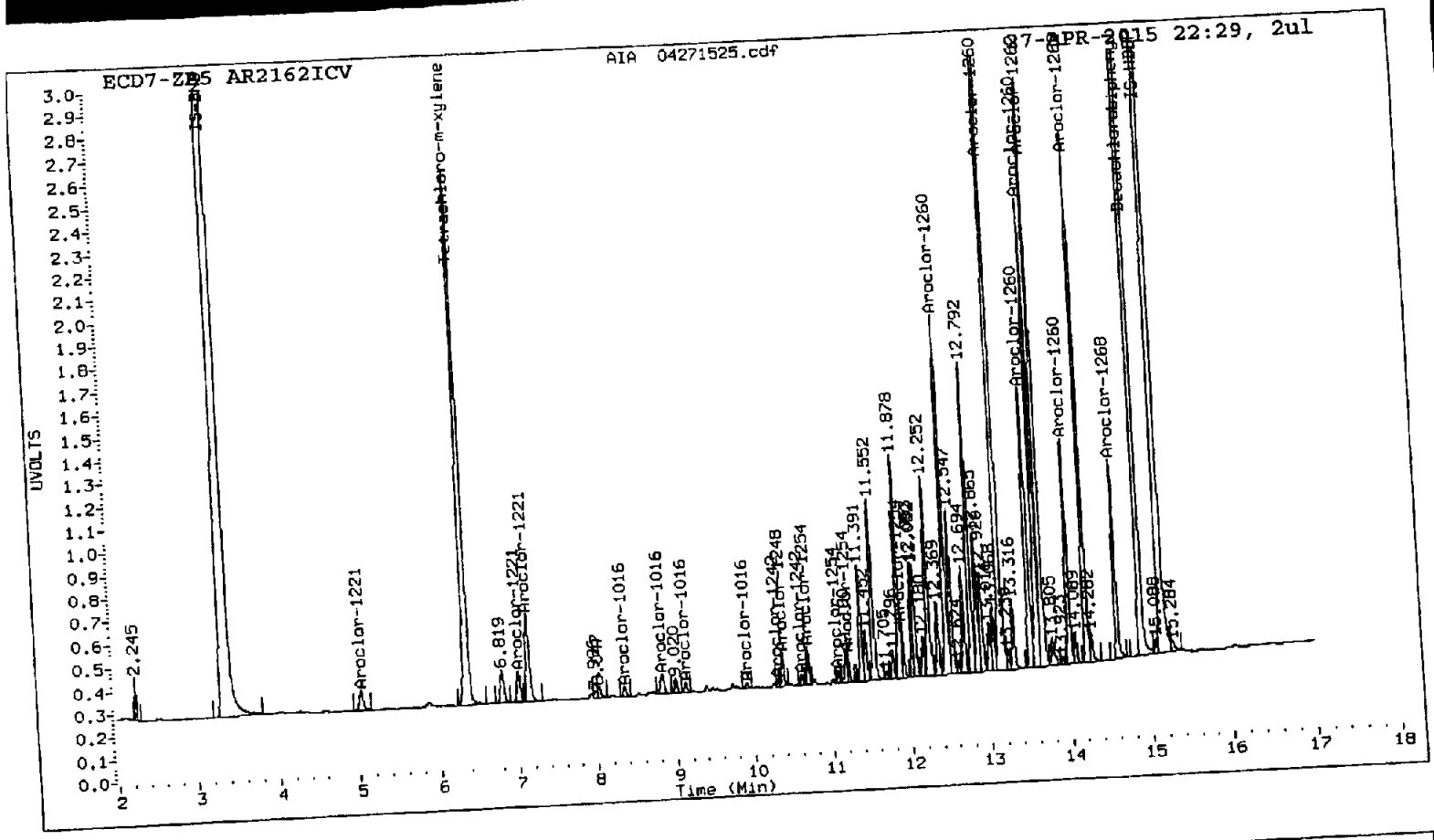
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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27-APR-2015 22:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
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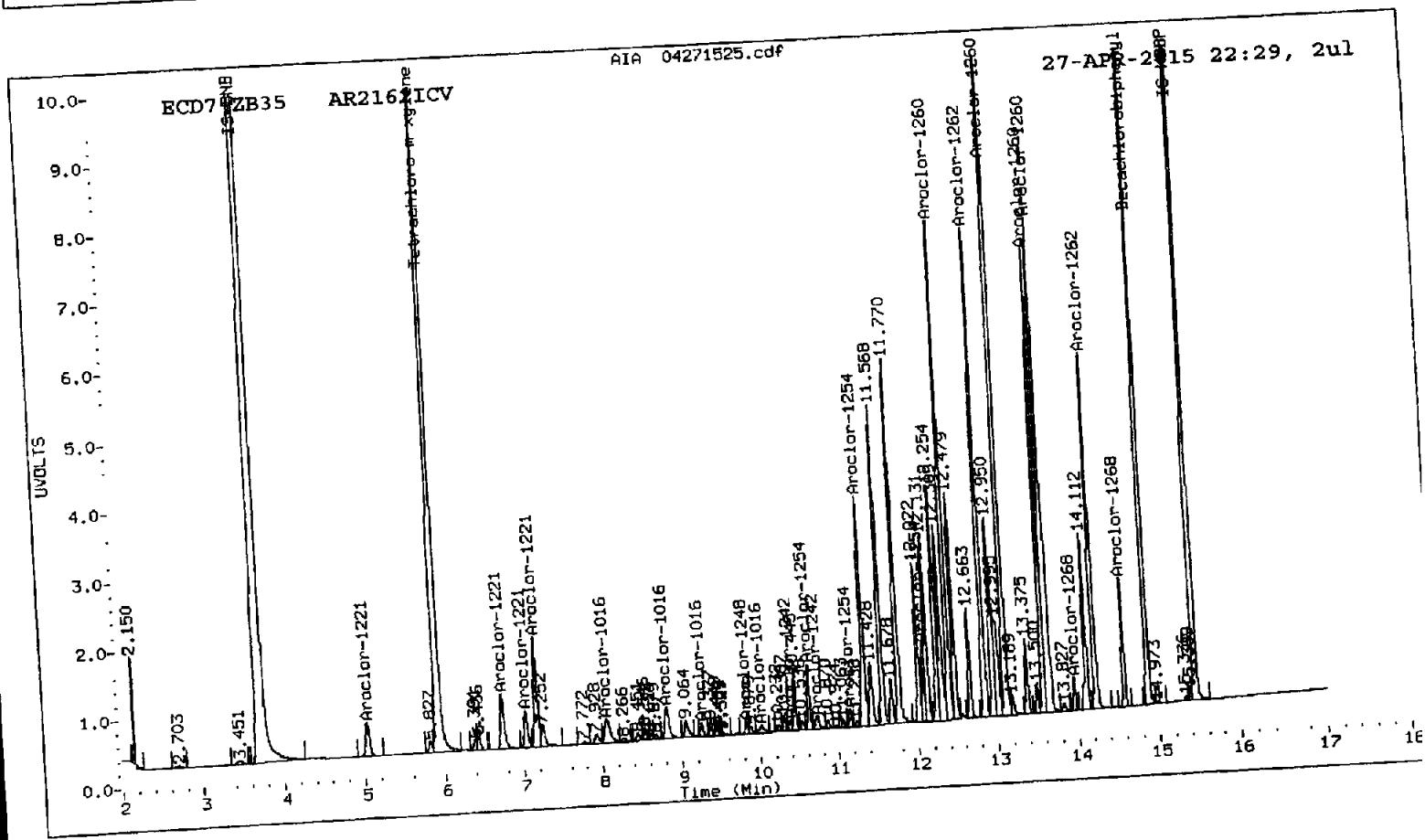
Aroclor-1016
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl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27-APR-2015 22:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271526.d
Data file 2: 20150427.b/ical-2.b/04271526.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268ICV
Client ID:
Injection Date: 27-APR-2015 22:51
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1367646	5.931	0.001	6175053	38.2	37.2	2.6	Tetrachloro-m-xylene
14.896	-0.001	3436634	14.867	0.000	5680040	54.3	51.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.5	93.1
Decachlorobiphenyl	135.7	127.5

4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5142956	-1.0
Hexabromobiphenyl	3879663	4173472	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12234714	-0.6
Hexabromobiphenyl	7233601	7947124	9.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

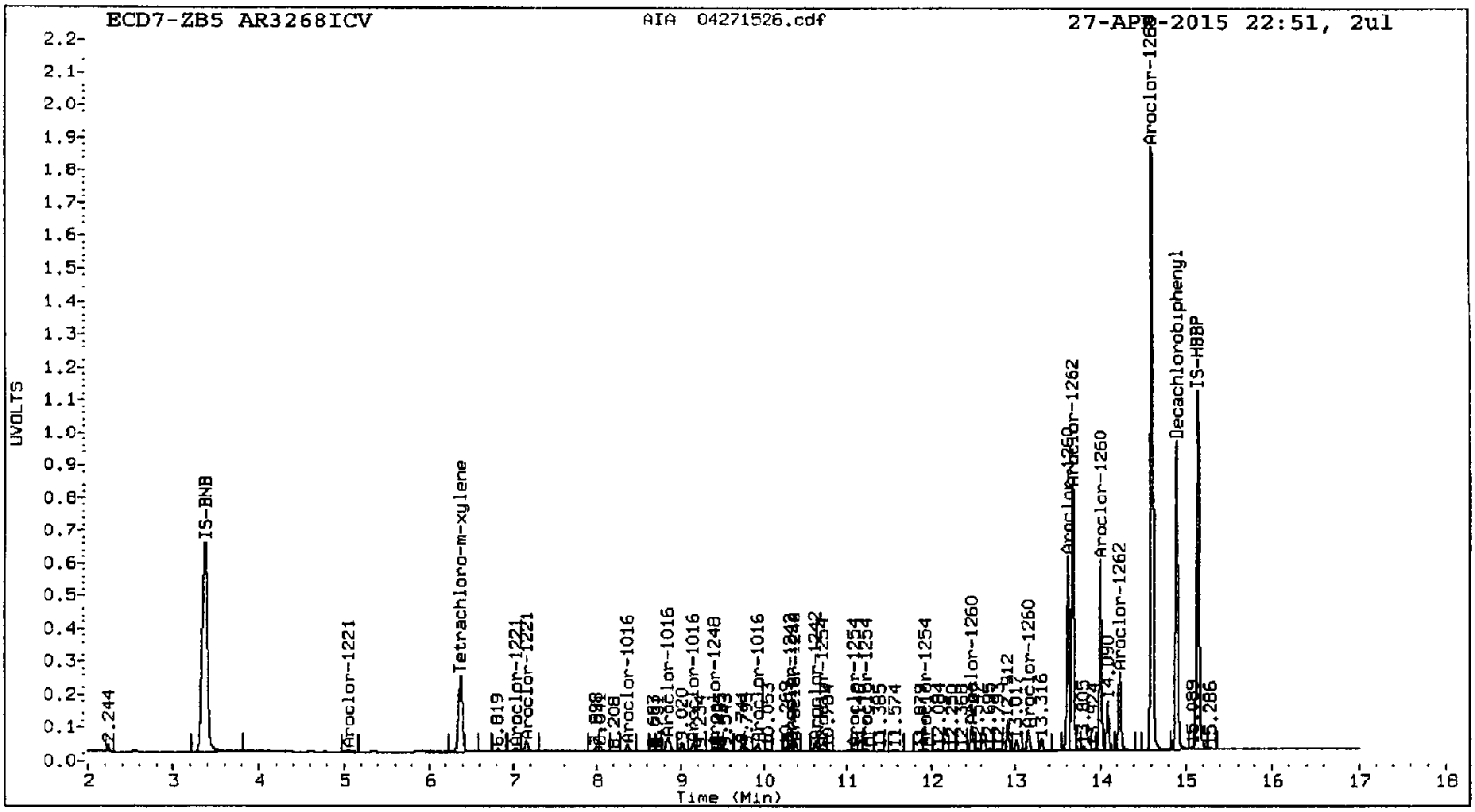
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount	
Aroclor-1016	1	8.369	-0.001	99123	115.6	1	8.047	0.000	856733	123.1	
Aroclor-1016	2	8.851	-0.002	289394	111.1	2	8.821	-0.002	1605379	110.4	
Aroclor-1016	3	9.147	-0.001	103906	116.2	3	9.260	-0.001	441898	114.4	
Aroclor-1016	4	9.927	-0.002	116019	119.5	4	10.020	-0.001	338224	124.2	
Total Col1Ave (4 peaks):					115.6	Total Col2Ave (4 peaks):				118.1	RPD = 2
Corrected Ave (3 peaks):					114.3	Corrected Ave (3 peaks):				116.0	RPD = 1
Aroclor-1221	1	5.056	0.001	31540	142.7	1	5.044	0.001	207245	154.9	
Aroclor-1221	2	7.027	0.000	62287	188.9	2	6.743	0.002	377814	173.7	
Aroclor-1221	3	7.153	0.001	189879	199.8	3	7.037	0.001	221038	177.6	
Aroclor-1221	NS	---			----	4	7.172	0.000	779248	210.3	
Total Col1Ave (3 peaks):					177.1	Total Col2Ave (4 peaks):				179.1	RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				168.8	
Aroclor-1232	1	5.056	0.001	31540	249.5	1	5.044	0.001	207245	253.4	
Aroclor-1232	2	7.027	0.001	62287	276.6	2	7.172	-0.001	779248	294.5	
Aroclor-1232	3	7.153	0.000	189879	297.9	3	8.047	-0.001	856733	277.3	
Aroclor-1232	4	8.851	-0.001	289394	273.7	4	9.260	-0.001	441898	276.1	
Total Col1Ave (4 peaks):					274.4	Total Col2Ave (4 peaks):				275.3	RPD = 0
Corrected Ave (3 peaks):					266.6	Corrected Ave (3 peaks):				268.9	RPD = 1
Aroclor-1242	1	8.851	0.000	289394	149.0	1	8.047	0.000	856733	169.2	
Aroclor-1242	2	9.147	-0.001	103906	148.1	2	8.821	-0.002	1605379	152.0	
Aroclor-1242	3	10.318	-0.001	84517	128.7	3	10.384	0.001	506934	136.4	
Aroclor-1242	4	10.621	-0.001	125931	126.8	4	10.742	0.000	602479	133.4	
Total Col1Ave (4 peaks):					138.2	Total Col2Ave (4 peaks):				147.8	RPD = 7
Corrected Ave (3 peaks):					134.5	Corrected Ave (3 peaks):				140.6	RPD = 4
Aroclor-1248	1	9.413	-0.001	48198	71.3	1	8.821	0.003	1605379	231.4	
Aroclor-1248	2	9.927	-0.002	116019	87.5	2	9.827	-0.002	517823	93.5	
Aroclor-1248	3	10.375	-0.003	111254	73.0	3	10.384	-0.001	506934	87.1	
Aroclor-1248	4	10.621	-0.001	125931	80.7	4	10.742	0.000	602479	80.2	
Total Col1Ave (4 peaks):					78.1	Total Col2Ave (4 peaks):				123.0	RPD = 45*
Corrected Ave (3 peaks):					75.0	Corrected Ave (3 peaks):				86.9	RPD = 15
Aroclor-1254	1	10.375	-0.010	111254	115.4	1	10.626	-0.001	130109	20.3	
Aroclor-1254	2	10.703	-0.002	31059	22.4	2	10.742	0.020	602479	196.0	
Aroclor-1254	3	11.085	0.000	25122	22.1	3	11.155	-0.001	118038	23.5	
Aroclor-1254	4	11.222	0.000	38242	18.0	4	11.307	0.000	236142	22.0	
Aroclor-1254	5	11.938	0.002	26334	17.0	5	12.083	-0.003	109074	16.7	
Total Col1Ave (5 peaks):					39.0	Total Col2Ave (5 peaks):				55.7	RPD = 35
Corrected Ave (4 peaks):					19.9	Corrected Ave (4 peaks):				20.6	RPD = 4
Aroclor-1260	1	12.479	-0.001	334819	179.5	1	12.401	-0.002	1462958	175.0	
Aroclor-1260	2	13.153	-0.001	293059	48.1	2	13.106	-0.001	999516	51.9	
Aroclor-1260	3	13.621	0.098	2308096	827.6	3	13.575	-0.002	5846835	940.1	
Aroclor-1260	4	---			0.0	4	13.633	0.005	6081212	465.5	
Aroclor-1260	5	14.004	-0.015	2170296	2412.0	NS	---			----	
Total Col1Ave (4 peaks):					866.8	Total Col2Ave (4 peaks):				408.1	RPD = 72*
Corrected Ave (3 peaks):					351.7	Corrected Ave (3 peaks):				230.8	RPD = 42*
Aroclor-1262	1	12.479	0.000	334819	102.0	1	12.401	-0.001	1462958	99.5	
Aroclor-1262	2	13.153	0.000	293059	32.9	2	12.841	-0.003	1646616	118.3	
Aroclor-1262	3	13.621	0.098	2308096	798.1	3	13.106	-0.002	999516	35.5	
Aroclor-1262	4	13.682	-0.002	3063015	622.2	4	13.575	-0.002	5846835	477.1	
Aroclor-1262	5	14.224	-0.001	932678	222.0	5	14.218	0.000	2005835	209.6	

Total Col1Ave (5 peaks):			355.4		Total Col2Ave (5 peaks):			188.0	RPD = 62*
Corrected Ave (4 peaks):			244.8		Corrected Ave (4 peaks):			115.7	RPD = 72*
Aroclor-1268 1	13.621	0.000	2308096	283.3	1	13.575	-0.001	5846835	277.5
Aroclor-1268 2	13.682	-0.001	3063015	314.2	2	13.633	0.000	6081212	305.9
Aroclor-1268 3	14.004	-0.001	2170296	250.4	3	13.958	0.000	4012458	246.6
Aroclor-1268 4	14.604	-0.001	6542022	231.3	4	14.576	-0.001	10299747	231.1
Total Col1Ave (4 peaks):			269.8		Total Col2Ave (4 peaks):			265.3	RPD = 2
Corrected Ave (3 peaks):			255.0		Corrected Ave (3 peaks):			251.7	RPD = 1

Total PCB Area Col1 (6.472 - 14.797) = 19346264 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 48048525 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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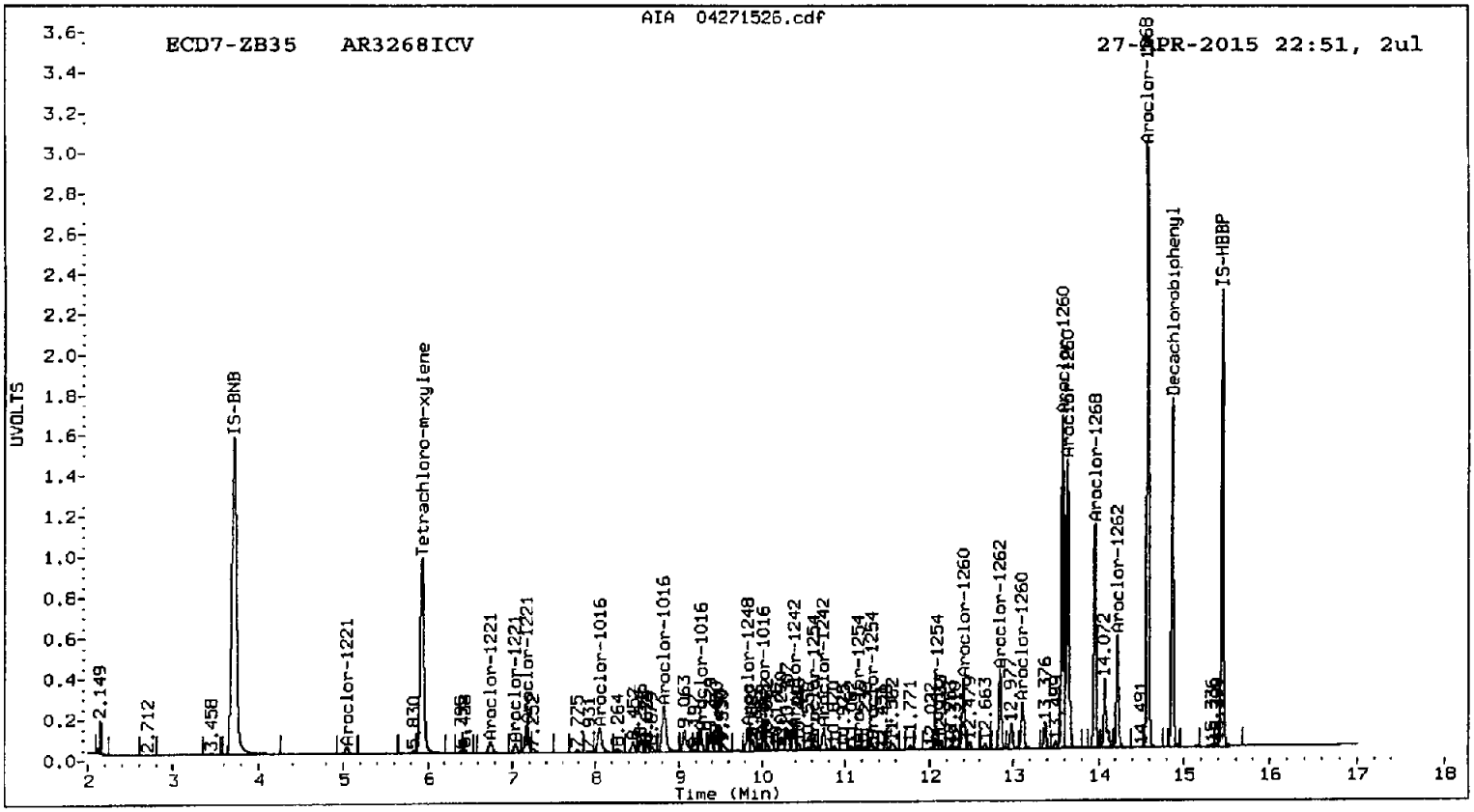
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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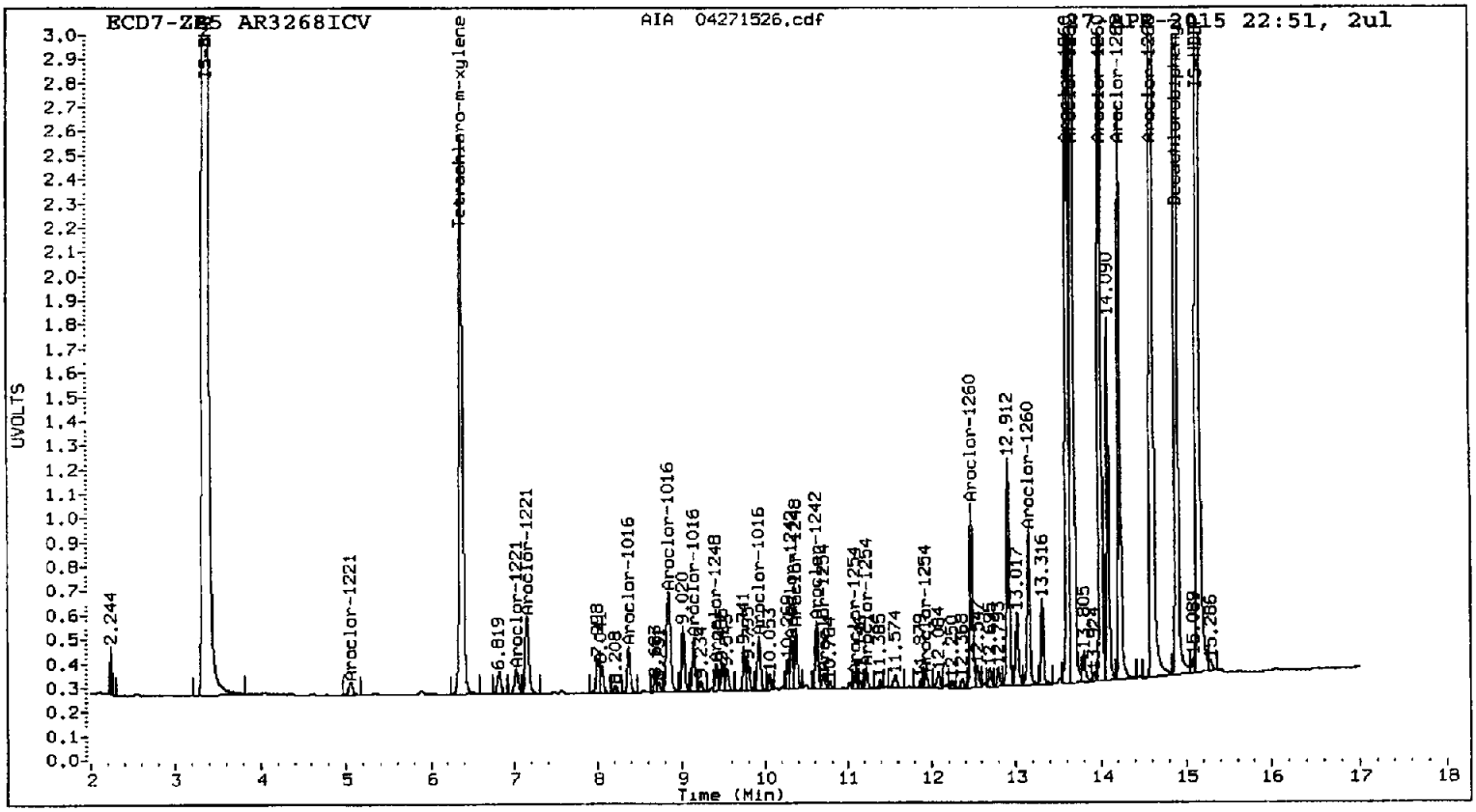
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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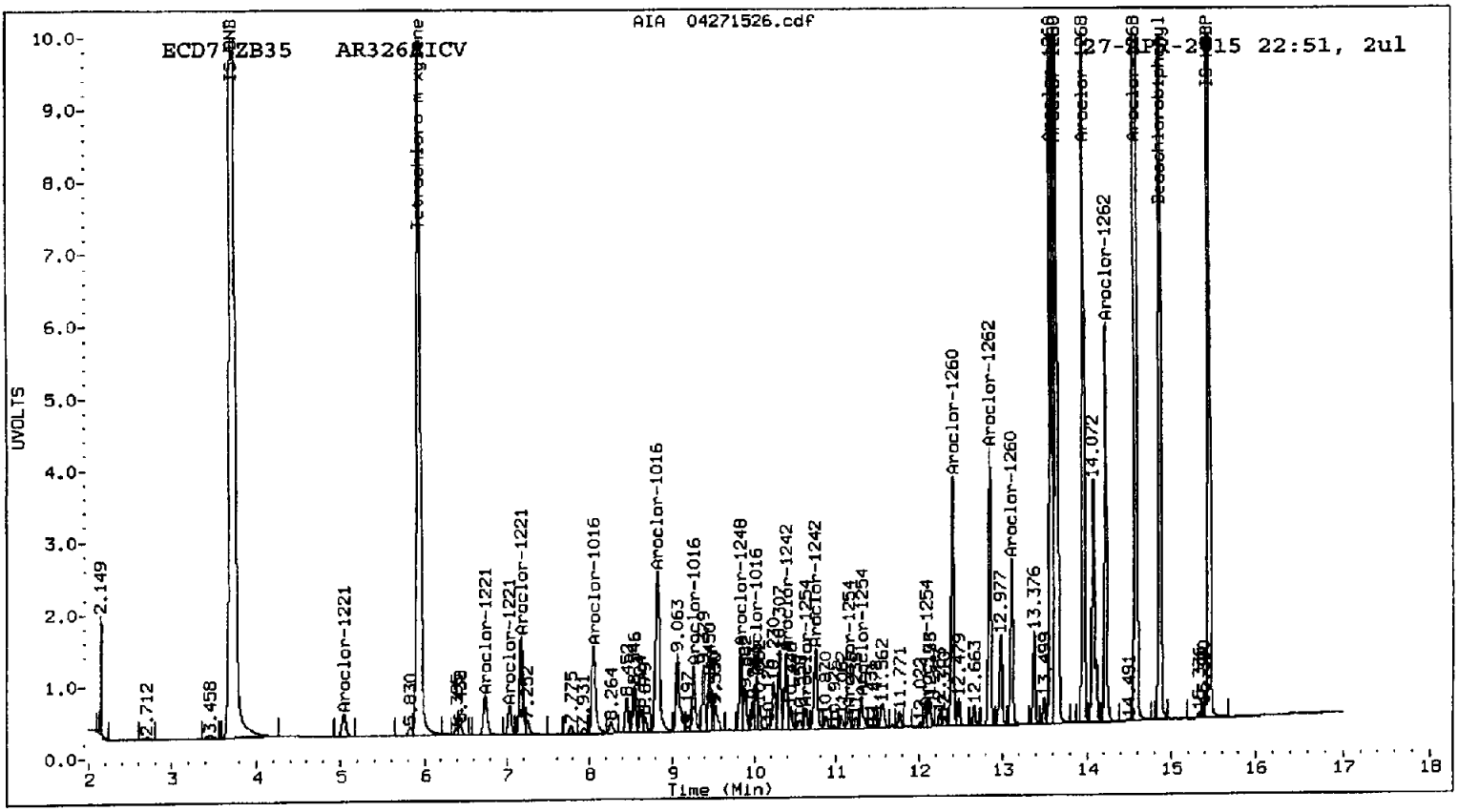
UVOLTS
Time (Min)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Aroclor-1221
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Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
UVOLTS
Time (Min)

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150427.b/ddt-1.b/04271527.d ARI ID: 0.1 PPM DDT

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.668	0.000	5068065	10.711	0.000	11234390	0.100	0.100	0.0	2,4-DDE
11.226	0.000	5620253	11.100	0.000	18541682	0.100	0.100	0.0	2,4-DDD
11.733	0.000	2405765	11.861	0.000	25652101	0.100	0.200#	66.7*	2,4-DDT
11.103	0.000	9241925	11.400	0.000	13377279	0.100	0.100	0.0	4,4-DDE
11.677	0.000	9444978	11.861	0.000	25652101	0.100	0.200#	66.7*	4,4-DDD
12.188	0.000	1895243	12.288	0.000	4443878	0.100	0.100	0.0	4,4-DDT

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

04/23/15

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150427.b/ddt-1.b/04271528.d ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
0.000	-10.668	0	0.000	-10.711	0	0.000	0.000	----	2,4-DDE
0.000	-11.226	0	11.099	0.000	249549	0.000	0.001	----	2,4-DDD
0.000	-11.733	0	11.862	0.001	6644504	0.000	0.053#	----	2,4-DDT
11.102	-0.001	56933	11.401	0.001	28933	0.001	0.000	96.8*	4,4-DDE
11.677	0.000	2240763	11.862	0.001	6644504	0.024	0.053#	73.6*	4,4-DDD
12.187	0.000	1857806	12.289	0.001	4080984	0.101	0.094	7.4	4,4-DDT

\# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

PCB Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGA8

AGA8 - 0071

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AGA8 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00033 Analysis Start Date: 05/28/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ___	Method Blank in Control?	Y / N / ___
Retention times within Windows?	Y / N / ___	BS/BSD Recovery in Control?	Y / N / ___
ICV/CCV met %D Criteria?	Y / N / ___	BS/BSD RPD ≤30%?	NA / BS only
Surrogate Recovery in Control?	Y / N / ___	MS / MSD Recovery in Control?	Y / N / ✓
Internal STD. within 50-200%?	NA / Y / N / ___	MS / MSD RPD ≤30%?	NA / <10%
Manual Integrations?	Y / N / ___	Samples Diluted?	Y / N / ___
Integration Summary?	Y / N / ___	Special Analysis Request?	Y / N / ___

Detail problems, corrective actions and/or other pertinent information below

(Review 1) Analyst: _____ **Date:** 05/28/15

(Review 2) Reviewer: _____ **Date:** 6/1/15

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 05/27/15 15 05/27/15 Analysis: PCB Analyst: JC

Column 1 Serial No.: 213134 Column Type: TBS

Column 2 Serial No.: 175388 Column Type: TB35

GC Method: PCB ICal Date: 05/27/15 Injection Volume: 2µL

IS	Ical/Ccal	ICV
	C4641	
	C4646	D962 - D968
D971	D83 - D92	

Document All Maintenance Tasks In Element

C:\chem\2\ECD7.1\20150527.D\

Inject Date/Time	Filename	DF	LabID	Cl:
27-MAY-2015 17:50	05271510.d	1	IB	
27-MAY-2015 18:11	05271511.d	1	0.25PPMAR1660	
27-MAY-2015 18:33	05271512.d	1	0.02PPMAR1660	
27-MAY-2015 18:54	05271513.d	1	0.05PPMAR1660	
27-MAY-2015 19:15	05271514.d	1	1PPMAR1660	
27-MAY-2015 19:37	05271515.d	1	0.1PPMAR1660	
27-MAY-2015 19:58	05271516.d	1	0.5PPMAR1660	
27-MAY-2015 20:20	05271517.d	1	AR1242	
27-MAY-2015 20:41	05271518.d	1	AR1248	
27-MAY-2015 21:02	05271519.d	1	AR1254	
27-MAY-2015 21:24	05271520.d	1	AR2162	
27-MAY-2015 21:45	05271521.d	1	AR3268	
27-MAY-2015 22:07	05271522.d	1	AR1660ICV	
27-MAY-2015 22:28	05271523.d	1	AR1242ICV	
27-MAY-2015 22:49	05271524.d	1	AR1248ICV	
27-MAY-2015 23:11	05271525.d	1	AR1254ICV	
27-MAY-2015 23:32	05271526.d	1	AR2162	
27-MAY-2015 23:54	05271527.d	1	AR3268	
28-MAY-2015 00:15	05271528.d	1	0.1 PPM DDT	
28-MAY-2015 00:36	05271529.d	1	DDT BD	
28-MAY-2015 00:58	05271530.d	1	AR1254	
28-MAY-2015 01:19	05271531.d	1	AR1660	
28-MAY-2015 01:41	05271532.d	1	AGG2MBS1	AGG2M
28-MAY-2015 02:02	05271533.d	1	AGG2LCSS1	AGG2L
28-MAY-2015 02:23	05271534.d	1	AGF9A	CS-2C
28-MAY-2015 02:45	05271535.d	1	AGF9B	HL-2C
28-MAY-2015 03:06	05271536.d	1	AGF8A	CS-2C
28-MAY-2015 03:28	05271537.d	1	AGF8B	HL-20
28-MAY-2015 03:49	05271538.d	1	AGG2A	NTS2
28-MAY-2015 04:10	05271539.d	1	AGG2B	ST7-0
28-MAY-2015 04:32	05271540.d	1	AGG2C	7th-S
28-MAY-2015 04:53	05271541.d	1	AGG2D	HP-ST
28-MAY-2015 05:15	05271542.d	1	AR1248	
28-MAY-2015 05:36	05271543.d	1	AR1660	
28-MAY-2015 05:57	05271544.d	1	AGA8MBS1	AGA8M
28-MAY-2015 06:19	05271545.d	1	AGA8LCSS1	AGA8L
28-MAY-2015 06:40	05271546.d	1	AGA8A	SDP-1
28-MAY-2015 07:02	05271547.d	1	AGA8B	SDP-1
28-MAY-2015 07:23	05271548.d	1	AGA8C	SDP-1
28-MAY-2015 07:45	05271549.d	1	AGA8D	SDP-0
28-MAY-2015 08:06	05271550.d	1	AGA8E	SDP-0
28-MAY-2015 08:27	05271551.d	1	AGA8F	SDP-0
28-MAY-2015 08:49	05271552.d	1	AGA8FMS	SDP-0
28-MAY-2015 09:10	05271553.d	1	AGA8FMSD	SDP-0
28-MAY-2015 09:32	05271554.d	1	AR1242	
28-MAY-2015 09:53	05271555.d	1	AR1660	
28-MAY-2015 10:14	05271556.d	1	AGA8G	SDP-0
28-MAY-2015 10:36	05271557.d	1	AGA8H	SDP-0
28-MAY-2015 10:57	05271558.d	1	AGA8I	SDP-0
28-MAY-2015 11:19	05271559.d	1	AGA8MBW1	AGA8M

06/02/15

All entries legible.

Document Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

ARI Job No.: AR12 Method: PCB1.m Instrument: ecd7.i Date: 28-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0058	05271530.d	AR1254		1	NO MANUAL INTEGRATION
0119	05271531.d	AR1660		1	NO MANUAL INTEGRATION
0141	05271532.d	AGG2MBS1	AGG2MBS1	1	NO MANUAL INTEGRATION
0202	05271533.d	AGG2LCSS1	AGG2LCSS1	1	NO MANUAL INTEGRATION
0223	05271534.d	AGF9A	CS-2015051	1	NO MANUAL INTEGRATION
0245	05271535.d	AGF9B	HL-2015051	1	NO MANUAL INTEGRATION
0306	05271536.d	AGF8A	CS-2015050	1	NO MANUAL INTEGRATION
0328	05271537.d	AGF8B	HL-2015050	1	NO MANUAL INTEGRATION
0349	05271538.d	AGG2A	NTS2-05181	1	NO MANUAL INTEGRATION
0410	05271539.d	AGG2B	ST7-051815	1	NO MANUAL INTEGRATION
0432	05271540.d	AGG2C	7th-ST1-05	1	NO MANUAL INTEGRATION
0453	05271541.d	AGG2D	HP-ST6-051	1	NO MANUAL INTEGRATION
0515	05271542.d	AR1248		1	NO MANUAL INTEGRATION
0536	05271543.d	AR1660		1	NO MANUAL INTEGRATION
0557	05271544.d	AGA8MBS1	AGA8MBS1	1	NO MANUAL INTEGRATION
0619	05271545.d	AGA8LCSS1	AGA8LCSS1	1	NO MANUAL INTEGRATION
0640	05271546.d	AGA8A	SDP-10(13.	1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0702	05271547.d	AGA8B	SDP-10(15.	1	NO MANUAL INTEGRATION
0723	05271548.d	AGA8C	SDP-10(16.	1	NO MANUAL INTEGRATION
0745	05271549.d	AGA8D	SDP-09(2.5	1	NO MANUAL INTEGRATION
0806	05271550.d	AGA8E	SDP-08(12.	1	NO MANUAL INTEGRATION
0827	05271551.d	AGA8F	SDP-07(1.5	1	NO MANUAL INTEGRATION
0849	05271552.d	AGA8FMS	SDP-07(1.5	1	NO MANUAL INTEGRATION
0910	05271553.d	AGA8FMSD	SDP-07(1.5	1	NO MANUAL INTEGRATION
0932	05271554.d	AR1242		1	NO MANUAL INTEGRATION
0953	05271555.d	AR1660		1	NO MANUAL INTEGRATION
1014	05271556.d	AGA8G	SDP-07(8.5	1	NO MANUAL INTEGRATION
1036	05271557.d	AGA8H	SDP-06(12.	1	NO MANUAL INTEGRATION
1057	05271558.d	AGA8I	SDP-06(10.	1	NO MANUAL INTEGRATION
1119	05271559.d	AGA8MBW1		1	NO MANUAL INTEGRATION
1140	05271560.d	AGA8LCSW1		1	NO MANUAL INTEGRATION
1202	05271561.d	AGA8LCSDW1		1	NO MANUAL INTEGRATION
1223	05271562.d	AGA8J		1	NO MANUAL INTEGRATION
1245	05271563.d	AGC9L		1	NO MANUAL INTEGRATION
1306	05271564.d	AR1254		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1328	05271565.d	AR1660		1	NO MANUAL INTEGRATION

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271542.d
Data file 2: 20150527.b/0527-2.b/05271542.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 28-MAY-2015 05:15
Report Date: 05/28/2015 14:17
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.003	1380385	5.908	-0.005	6386979	37.6	36.8	2.2	Tetrachloro-m-xylene
14.889	-0.001	2249945	14.862	-0.001	3437261	37.7	34.3	9.5	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.1	92.0
Decachlorobiphenyl	94.2	85.7

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5408388	-0.8
Hexabromobiphenyl	5633814	4749014	-15.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12867109	-1.5
Hexabromobiphenyl	8980422	8319905	-7.4

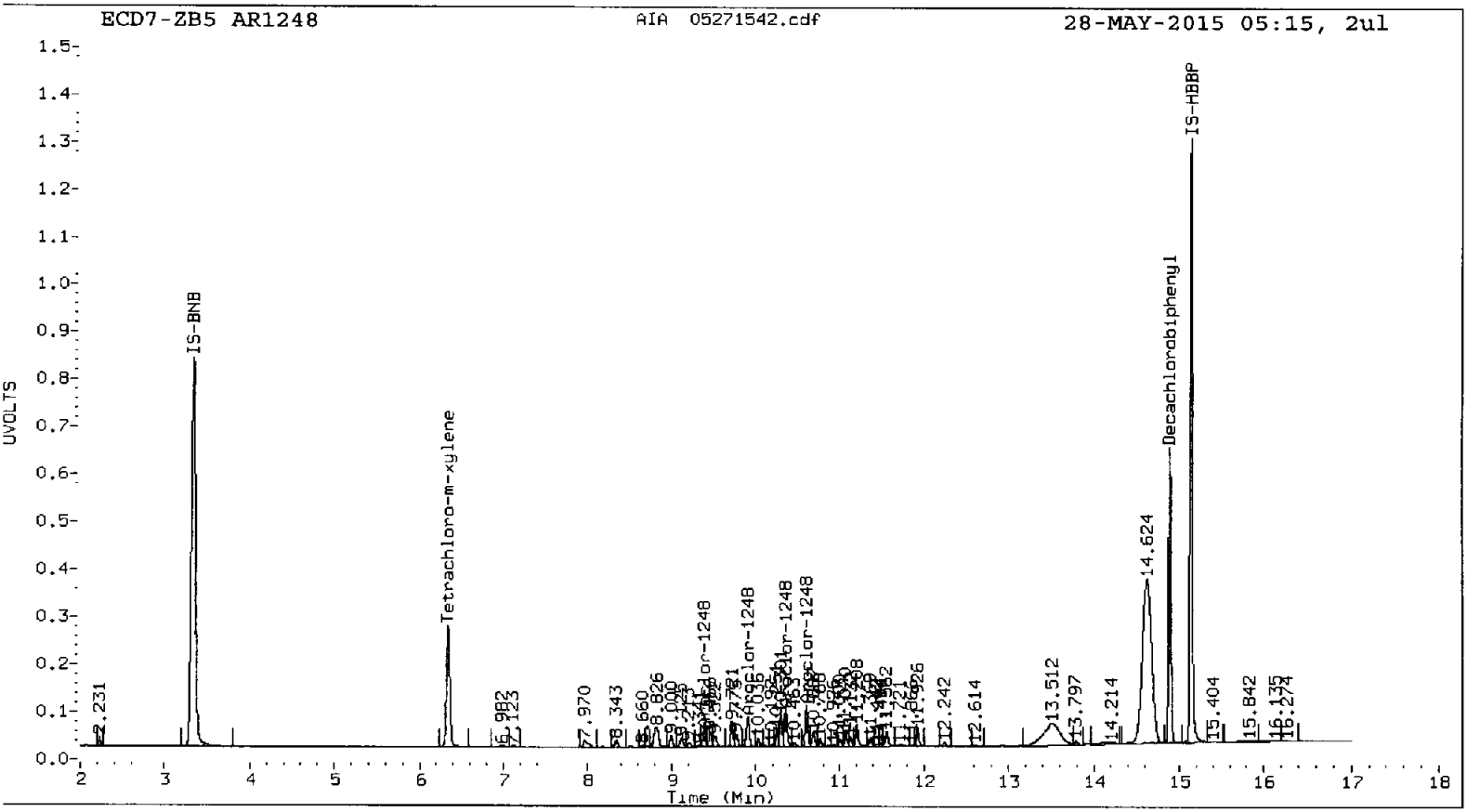
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

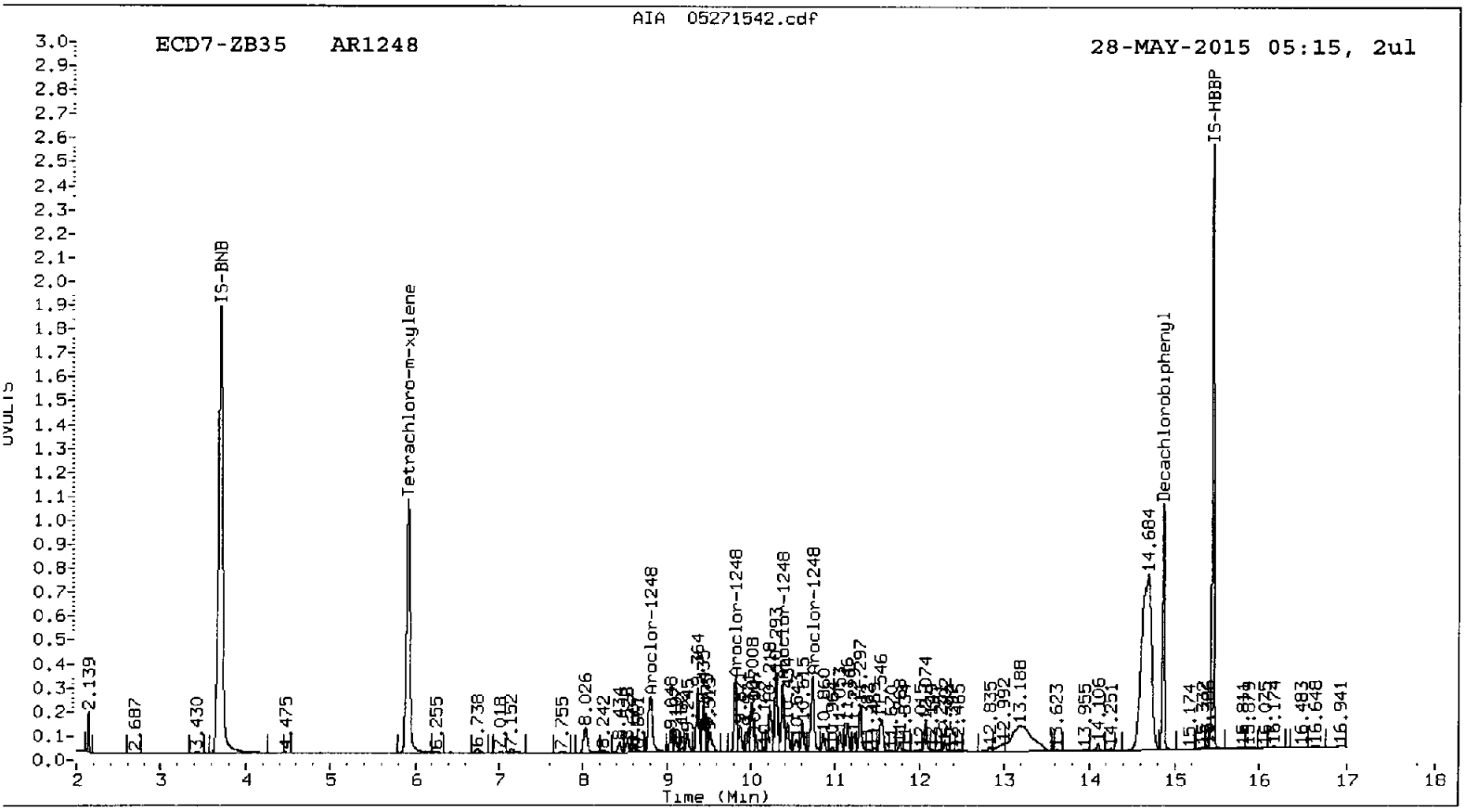
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1248	1	9.393	0.000	154883	249.3	1	8.802	0.000	1735652	244.8
Aroclor-1248	2	9.909	0.000	326801	247.4	2	9.813	0.000	1325372	233.9
Aroclor-1248	3	10.359	0.000	372816	242.9	3	10.372	0.000	1351482	225.0
Aroclor-1248	4	10.605	0.000	376270	242.4	4	10.729	0.000	1716766	221.5
Total Col1Ave (4 peaks):					245.5	Total Col2Ave (4 peaks):				231.3 RPD = 6
Corrected Ave (3 peaks):					244.2	Corrected Ave (3 peaks):				226.8 RPD = 7
CalAmt %D:					-1.8	CalAmt %D:				-7.5

Total PCB Area Col1 (6.445 - 14.790) = 11299788 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 38287968 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1248
AIA 05271542.cdf
28-MAY-2015 05:15, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
14.624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ECD7-ZB35 AR1248
28-MAY-2015 05:15, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
14.684

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271543.d
Data file 2: 20150527.b/0527-2.b/05271543.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 05:36
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.341	-0.003	1417722	5.907	-0.005	6544404	38.9	37.7	3.1	Tetrachloro-m-xylene
14.889	-0.001	2543905	14.861	-0.002	3755144	40.8	36.1	12.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.2	94.2
Decachlorobiphenyl	102.0	90.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5379847	-1.3
Hexabromobiphenyl	5633814	4959414	-12.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12881265	-1.4
Hexabromobiphenyl	8980422	8621556	-4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

ARAS 98749

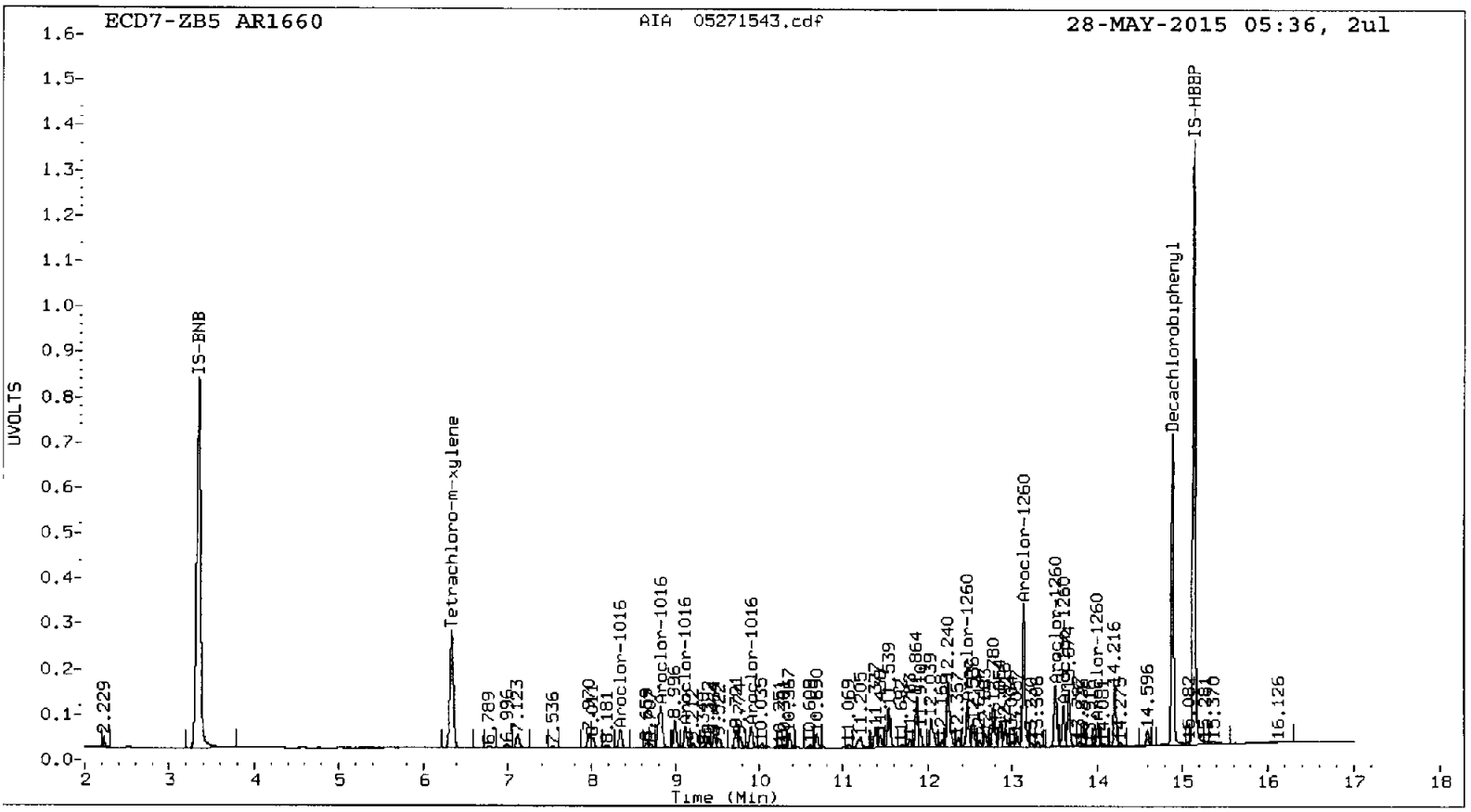
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.342	-0.004	210918	243.8	1	8.026	-0.006	1677754	237.6
Aroclor-1016	2	8.828	-0.004	639708	241.2	2	8.804	-0.004	3500429	233.5
Aroclor-1016	3	9.124	-0.005	226933	250.2	3	9.244	-0.004	913847	236.3
Aroclor-1016	4	9.909	-0.004	237166	246.4	4	10.007	-0.004	625973	229.1
Total Col1Ave (4 peaks):					245.4	Total Col2Ave (4 peaks):				234.1 RPD = 5
Corrected Ave (3 peaks):					243.8	Corrected Ave (3 peaks):				233.0 RPD = 5
CalAmt %D:					-1.8	CalAmt %D:				-6.4
Aroclor-1260	1	12.467	-0.002	426207	263.4	1	12.393	-0.003	1657275	214.4
Aroclor-1260	2	13.143	-0.002	1387590	265.0	2	13.100	-0.002	3837169	213.1
Aroclor-1260	3	13.512	-0.001	637362	262.0	3	13.570	-0.002	1115154	204.0
Aroclor-1260	4	13.611	-0.002	387721	264.1	4	13.622	-0.003	2452391	206.7
Aroclor-1260	5	14.011	-0.001	213103	264.2	NS	---			----
Total Col1Ave (5 peaks):					263.7	Total Col2Ave (4 peaks):				209.5 RPD = 23
Corrected Ave (4 peaks):					263.4	Corrected Ave (3 peaks):				207.9 RPD = 24
CalAmt %D:					5.5	CalAmt %D:				-16.2

Total PCB Area Col1 (6.445 - 14.790) = 11931093 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 47881340 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGAA : 00741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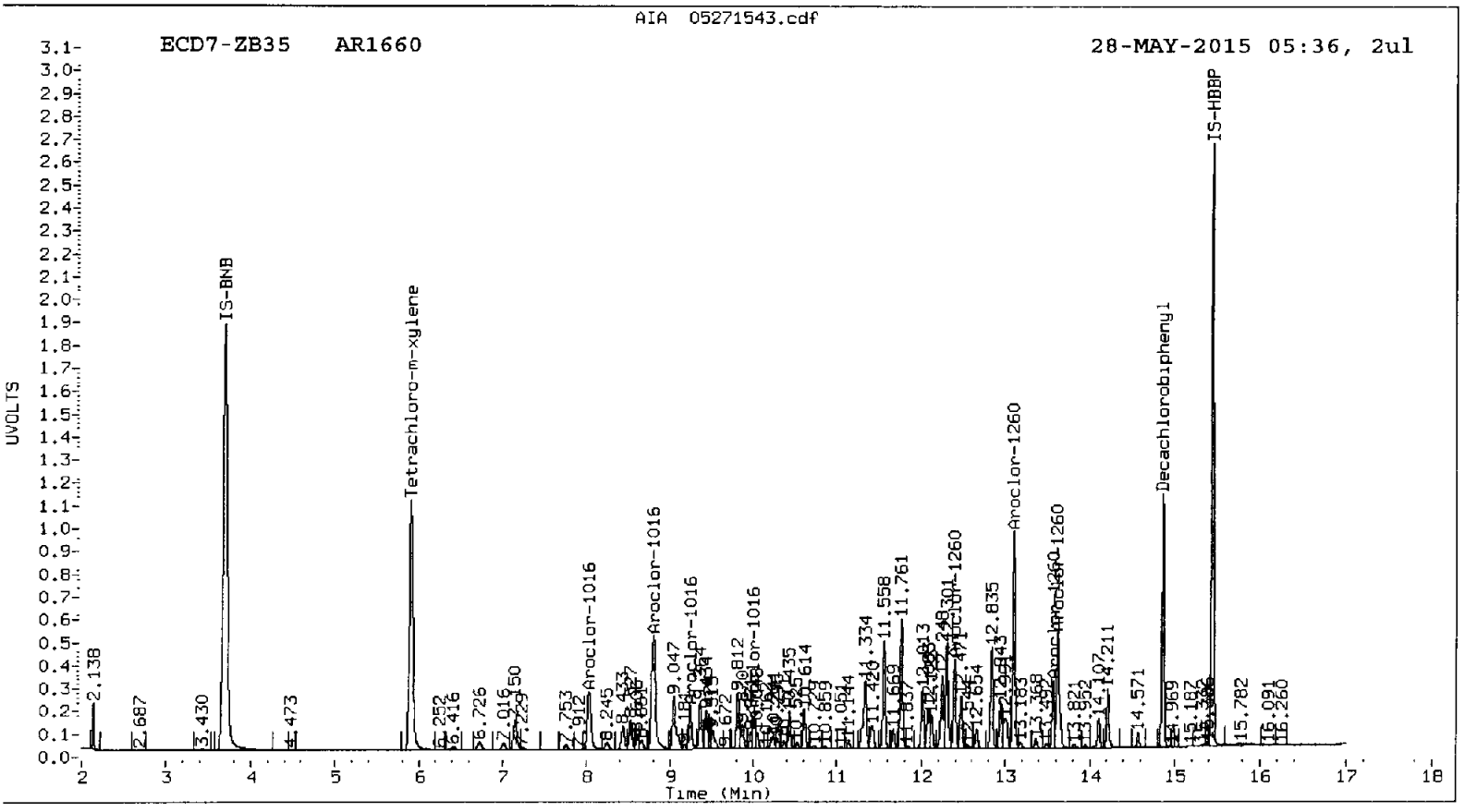
28-MAY-2015 05:36, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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ECD7-ZB35 AR1660
28-MAY-2015 05:36, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271544.d
Data file 2: 20150527.b/0527-2.b/05271544.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8MBS1
Client ID: AGA8MBS1
Injection Date: 28-MAY-2015 05:57
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.344	-0.001	1256351	5.909	-0.004	5944484	35.3	34.3	2.9	Tetrachloro-m-xylene
14.889	-0.001	2357063	14.861	-0.002	3567757	38.1	34.4	10.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	88.3	85.8
Decachlorobiphenyl	95.3	85.9

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5245793	-3.7
Hexabromobiphenyl	5633814	4915871	-12.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12849611	-1.6
Hexabromobiphenyl	8980422	8614143	-4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

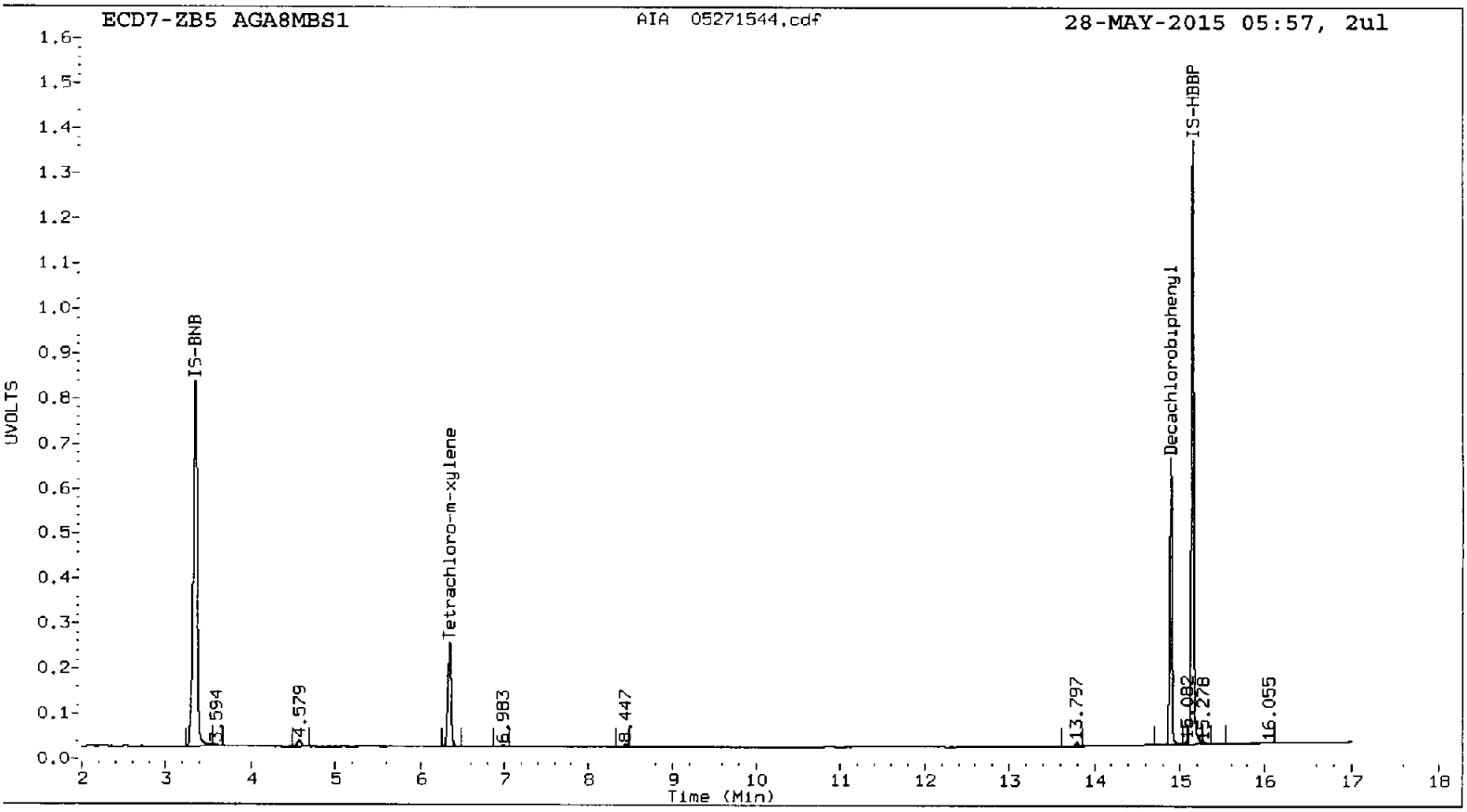
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.740	0.020	82058	36.8
Aroclor-1221	3	---			0.0	3	7.048	0.032	12533	9.9
Aroclor-1221	NS	---			----	4	7.157	0.007	19276	5.0
	Col1Ave: <3 Quant Peaks					Col2Ave:	17.2			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	10.621	0.004	35859	5.3
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	12.075	-0.005	10082	1.5
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 76934 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 700536 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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Decachlorobiphenyl
IS-HBBP
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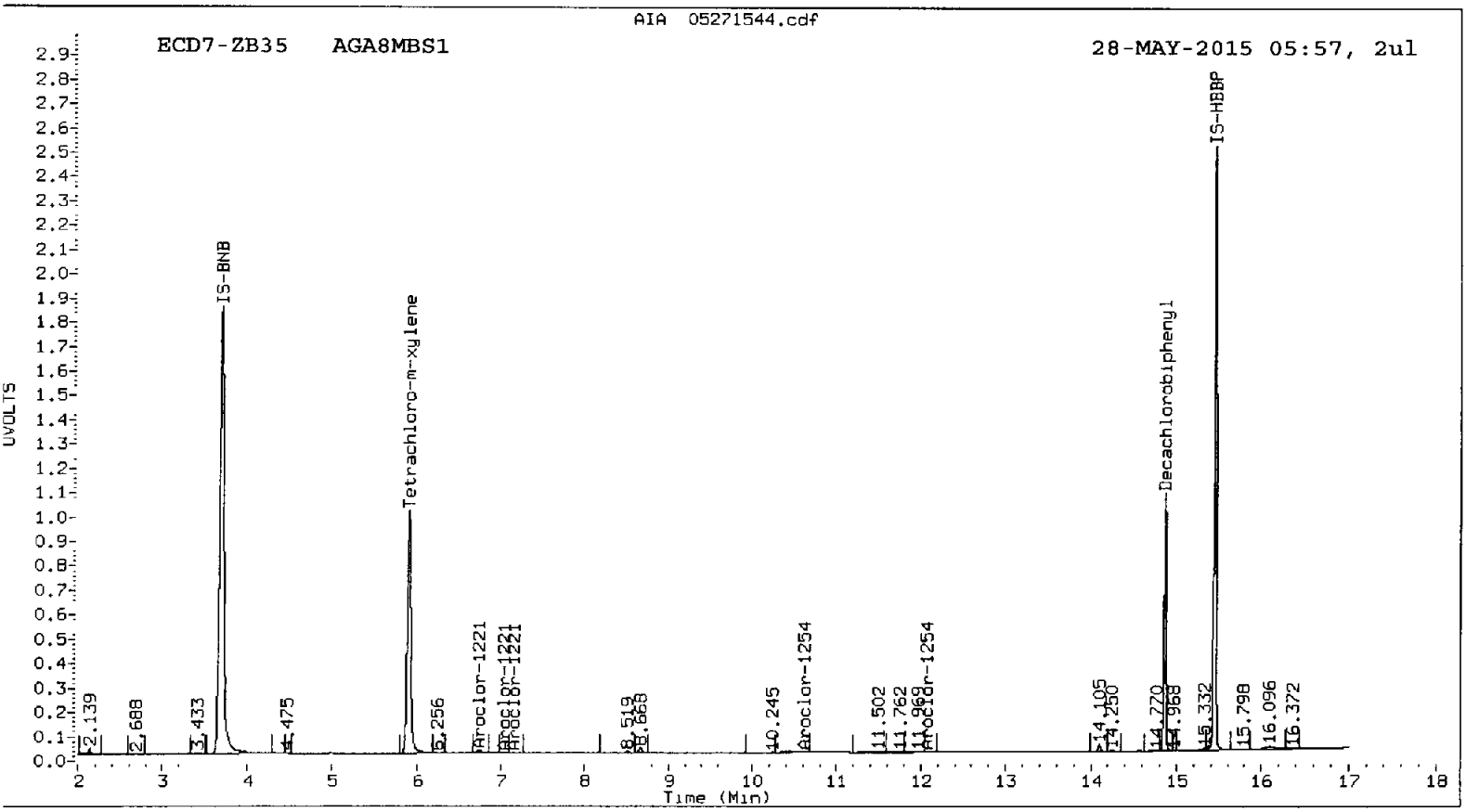
13.797
15.082
15.278
16.055
Time (Min)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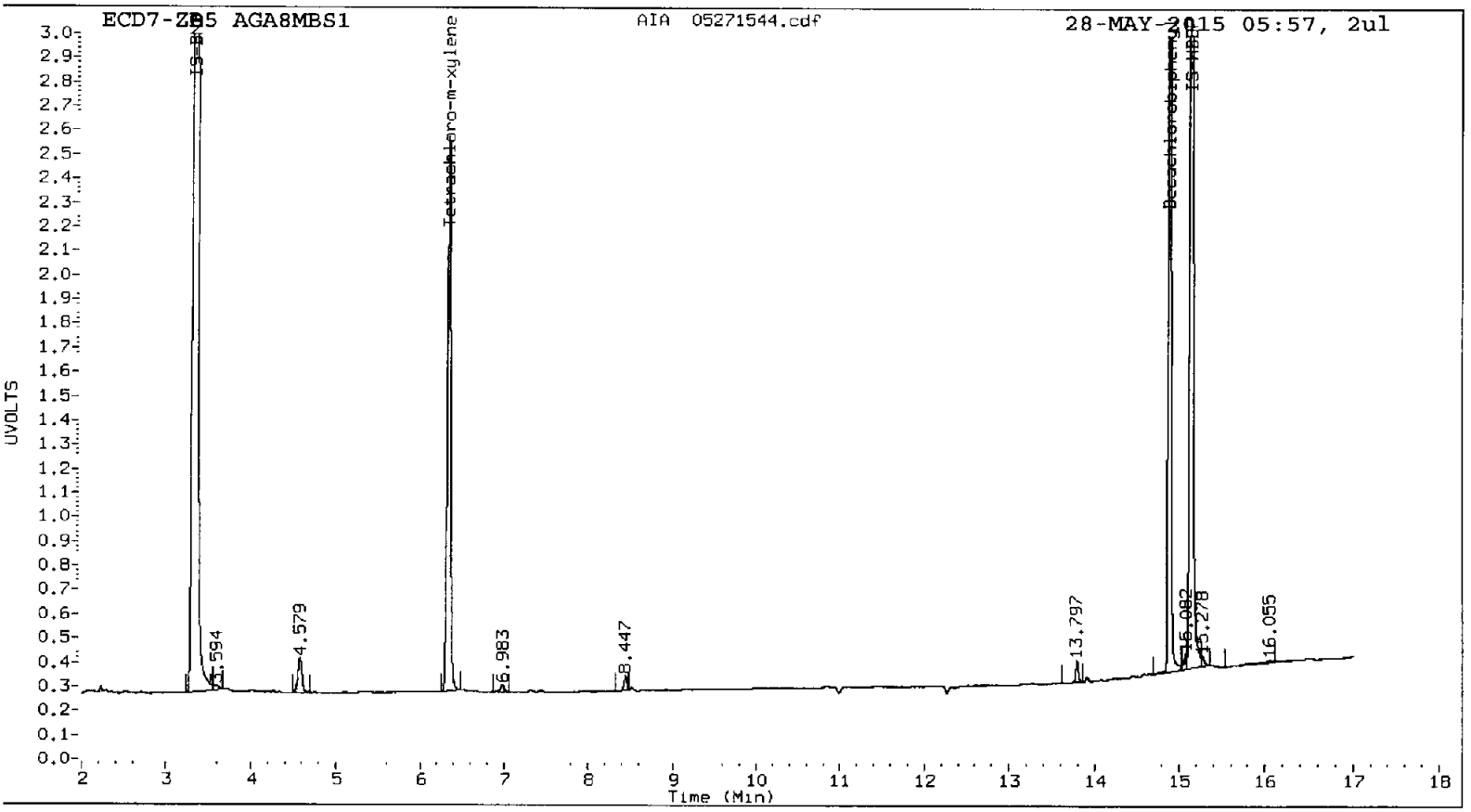
ECD7-ZB35 AGA8MBS1
28-MAY-2015 05:57, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.139
2.688
3.433
4.475
5.256
Aroclor-1221
Aroclor-1221
8.519
8.868
10.245
Aroclor-1254
11.502
11.762
11.969
Aroclor-1254
14.105
14.250
14.770
14.968
15.332
15.798
16.096
16.372
Time (Min)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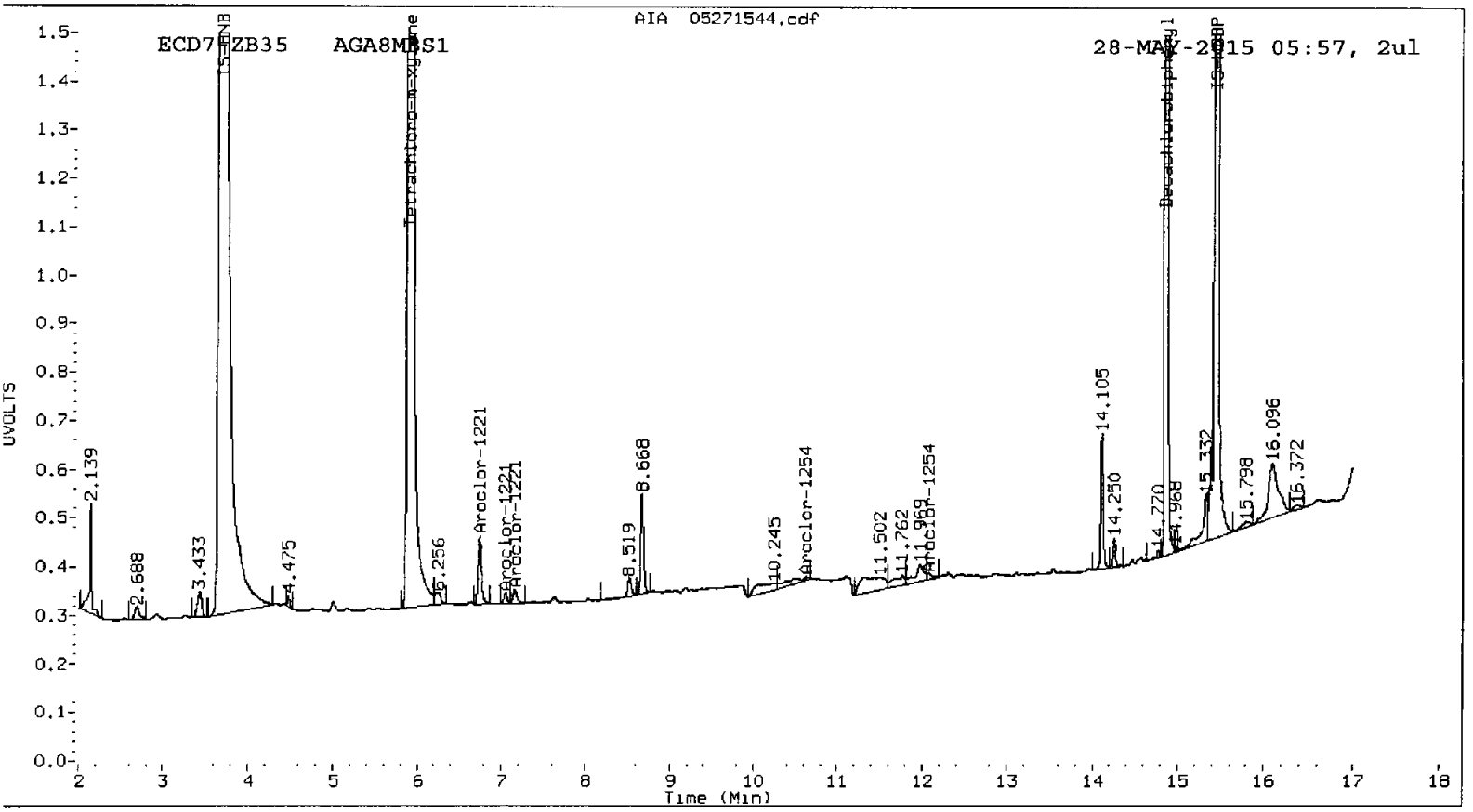
28-MAY-2015 05:57, 2ul
IS-TCMX
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DCBP
4.579
6.983
8.447
13.797
16.082
15.278
16.055
UVOLTS
Time (Min)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ECD7-ZB35 AGA8MBS1
28-MAY-2015 05:57, 2ul
IS-TCMX
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DCBP
2.139
2.688
3.433
4.475
6.256
Aroclor-1221
8.519
8.668
10.245
Aroclor-1254
11.502
11.762
11.969
14.105
14.250
14.770
14.968
15.332
15.798
16.096
16.372
UVOLTS
Time (Min)

AGAS-B797

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271545.d
Data file 2: 20150527.b/0527-2.b/05271545.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8LCSS1
Client ID: AGA8LCSS1
Injection Date: 28-MAY-2015 06:19
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.343	-0.002	1294521	5.908	-0.004	5971440	35.1	33.5	4.5	Tetrachloro-m-xylene
14.889	-0.001	2463287	14.861	-0.002	3728844	37.9	35.2	7.5	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	87.7	83.8
Decachlorobiphenyl	94.8	88.0

A 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5440652	-0.2
Hexabromobiphenyl	5633814	5164750	-8.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13206489	1.1
Hexabromobiphenyl	8980422	8786517	-2.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 08758

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.344	-0.002	408827	467.2	1	8.027	-0.005	3081547	425.7
Aroclor-1016	2	8.829	-0.004	1266204	472.1	2	8.806	-0.003	6777385	440.9
Aroclor-1016	3	9.126	-0.003	454025	494.9	3	9.244	-0.003	1762146	444.4
Aroclor-1016	4	9.910	-0.002	475808	488.7	4	10.007	-0.004	1236592	441.5
Total Col1Ave (4 peaks):		480.7				Total Col2Ave (4 peaks):			438.1	RPD = 9
Corrected Ave (3 peaks):		476.0				Corrected Ave (3 peaks):			436.0	RPD = 9
Aroclor-1221	1	---			0.0	1	5.006	-0.012	37095	27.1
Aroclor-1221	2	7.001	0.003	84506	243.9	2	6.724	0.005	353097	153.9
Aroclor-1221	3	7.125	0.002	313988	321.1	3	7.017	0.002	308166	237.9
Aroclor-1221	NS	---			----	4	7.151	0.001	1316723	332.3
Col1Ave: <3 Quant Peaks						Col2Ave: 187.8				
Aroclor-1232	1	---			0.0	1	5.006	-0.014	37095	44.5
Aroclor-1232	2	7.001	0.002	84506	353.1	2	7.151	-0.002	1316723	470.6
Aroclor-1232	3	7.125	-0.001	313988	480.8	3	8.027	-0.002	3081547	939.3
Aroclor-1232	4	8.829	-0.002	1266204	1160.1	4	9.244	-0.003	1762146	1046.9
Total Col1Ave (3 peaks):		664.7				Total Col2Ave (4 peaks):			625.3	RPD = 6
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			484.8	
Aroclor-1242	1	8.829	-0.006	1266204	645.1	1	8.027	-0.006	3081547	580.2
Aroclor-1242	2	9.126	-0.003	454025	646.0	2	8.806	-0.004	6777385	604.4
Aroclor-1242	3	10.302	-0.003	60388	92.2	3	10.372	-0.004	277566	71.1
Aroclor-1242	4	10.608	0.000	53771	54.8	4	10.729	-0.005	169340	35.6
Total Col1Ave (4 peaks):		359.5				Total Col2Ave (4 peaks):			322.8	RPD = 11
Corrected Ave (3 peaks):		264.0				Corrected Ave (3 peaks):			229.0	RPD = 14
Aroclor-1248	1	9.393	0.001	217459	347.9	1	8.806	0.004	6777385	931.2
Aroclor-1248	2	9.910	0.001	475808	358.0	2	9.814	0.001	2130874	366.4
Aroclor-1248	3	10.367	0.008	242590	157.1	3	10.372	0.000	277566	45.0
Aroclor-1248	4	10.608	0.003	53771	34.4	4	10.729	0.000	169340	21.3
Total Col1Ave (4 peaks):		224.4				Total Col2Ave (4 peaks):			341.0	RPD = 41*
Corrected Ave (3 peaks):		179.8				Corrected Ave (3 peaks):			144.2	RPD = 22
Aroclor-1254	1	10.367	-0.004	242590	244.1	1	10.614	-0.003	1401951	201.5
Aroclor-1254	2	10.691	0.000	243549	171.5	2	10.729	0.016	169340	51.4
Aroclor-1254	3	11.069	-0.002	57841	50.2	3	11.145	-0.003	291885	53.7
Aroclor-1254	4	11.206	-0.004	279405	128.5	4	11.334	0.035	3277286	282.6
Aroclor-1254	5	11.911	-0.014	297835	191.1	5	12.083	0.003	1429646	206.4
Total Col1Ave (5 peaks):		157.1				Total Col2Ave (5 peaks):			159.1	RPD = 1
Corrected Ave (4 peaks):		135.4				Corrected Ave (4 peaks):			128.2	RPD = 5
Aroclor-1260	1	12.467	-0.001	850851	505.0	1	12.393	-0.002	3411305	433.0
Aroclor-1260	2	13.142	-0.003	3005621	551.2	2	13.099	-0.003	8237468	448.9
Aroclor-1260	3	13.512	-0.001	1371012	541.1	3	13.570	-0.003	2364835	424.4
Aroclor-1260	4	13.611	-0.002	813368	532.0	4	13.622	-0.002	5242408	433.6
Aroclor-1260	5	14.010	-0.001	452938	539.1	NS	---			----
Total Col1Ave (5 peaks):		533.7				Total Col2Ave (4 peaks):			435.0	RPD = 20
Corrected Ave (4 peaks):		529.3				Corrected Ave (3 peaks):			430.3	RPD = 21
Aroclor-1262	1	12.467	0.001	850851	279.4	1	12.393	-0.001	3411305	244.9
Aroclor-1262	2	13.142	-0.001	3005621	354.8	2	12.836	-0.001	3889491	297.1
Aroclor-1262	3	13.512	-0.001	1371012	513.5	3	13.099	-0.001	8237468	306.6
Aroclor-1262	4	13.675	0.000	1058523	228.4	4	13.570	-0.001	2364835	204.2
Aroclor-1262	5	14.216	0.000	1069596	258.0	5	14.212	-0.001	2053416	225.5
Total Col1Ave (5 peaks):		326.8				Total Col2Ave (5 peaks):			255.7	RPD = 24

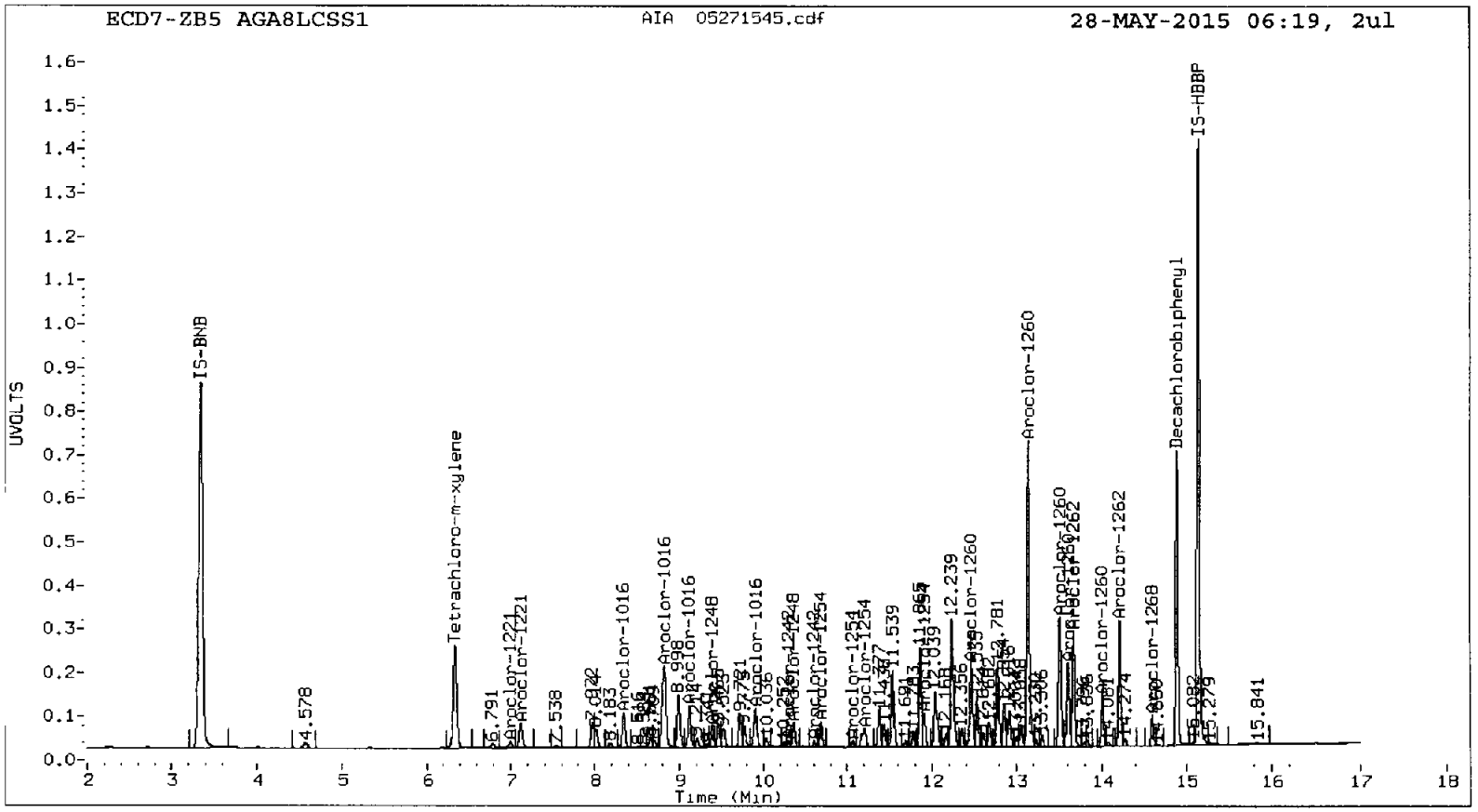
Corrected Ave (4 peaks):			280.2		Corrected Ave (4 peaks):			242.9	RPD = 14
Aroclor-1268	1	13.611	-0.001	813368	101.6	1	13.570	0.001	2364835	114.9
Aroclor-1268	2	13.675	0.001	1058523	112.8	2	13.622	-0.006	5242408	269.5
Aroclor-1268	3	14.010	0.014	452938	54.0	3	13.952	-0.001	91292	5.8
Aroclor-1268	4	14.596	-0.001	260049	8.9	4	14.571	-0.001	460393	10.4
Total Col1Ave (4 peaks):					69.3	Total Col2Ave (4 peaks):			100.1	RPD = 36
Corrected Ave (3 peaks):					54.8	Corrected Ave (3 peaks):			43.7	RPD = 23

Total PCB Area Col1 (6.445 - 14.790) = 24182164 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 95915998 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGHS 00736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28-MAY-2015 06:19, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
4.578
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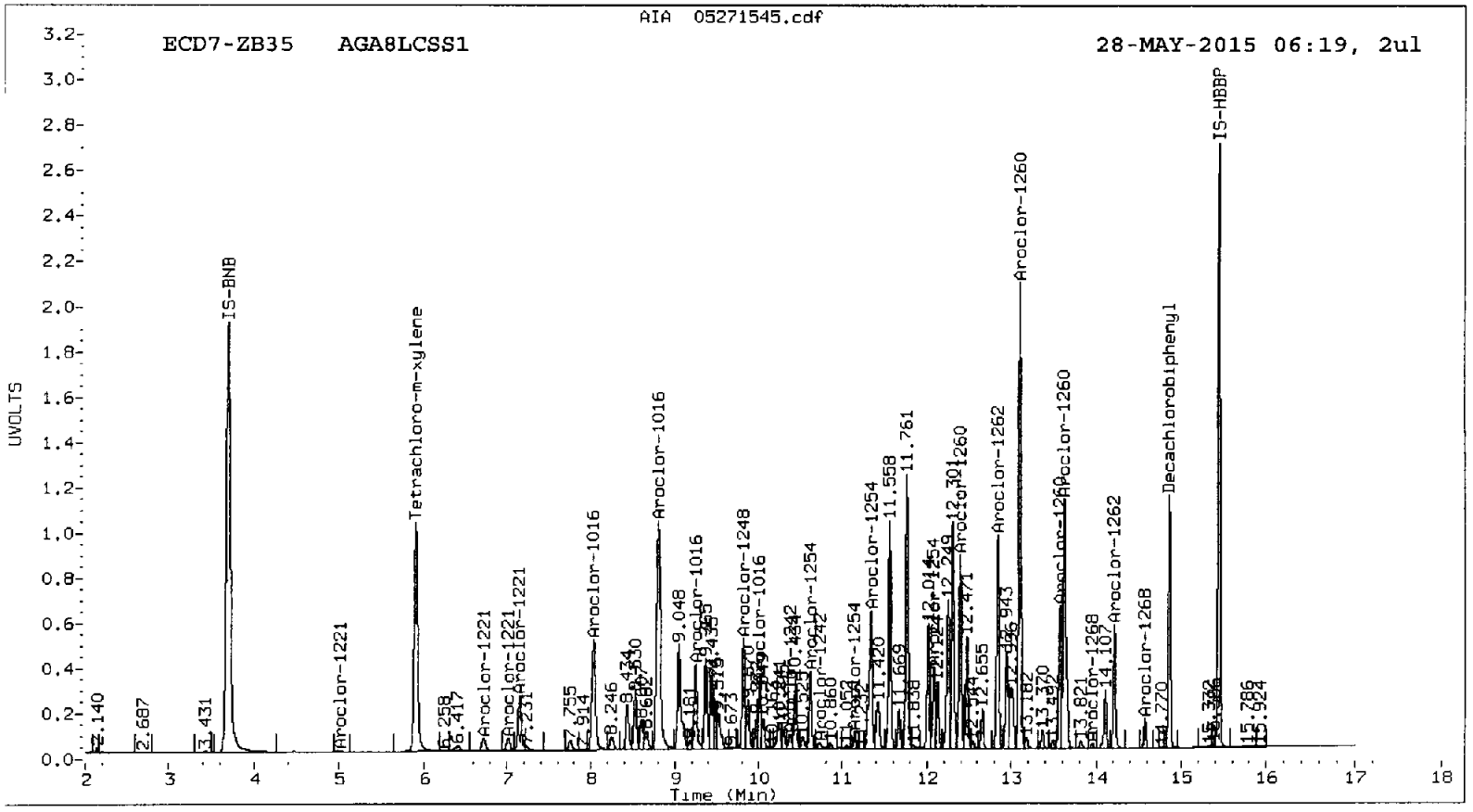
7.538
15.841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28-MAY-2015 06:19, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.140
2.687
3.431
5.258
6.417
7.231
7.755
8.246
9.048
10.860
11.420
11.558
11.669
11.761
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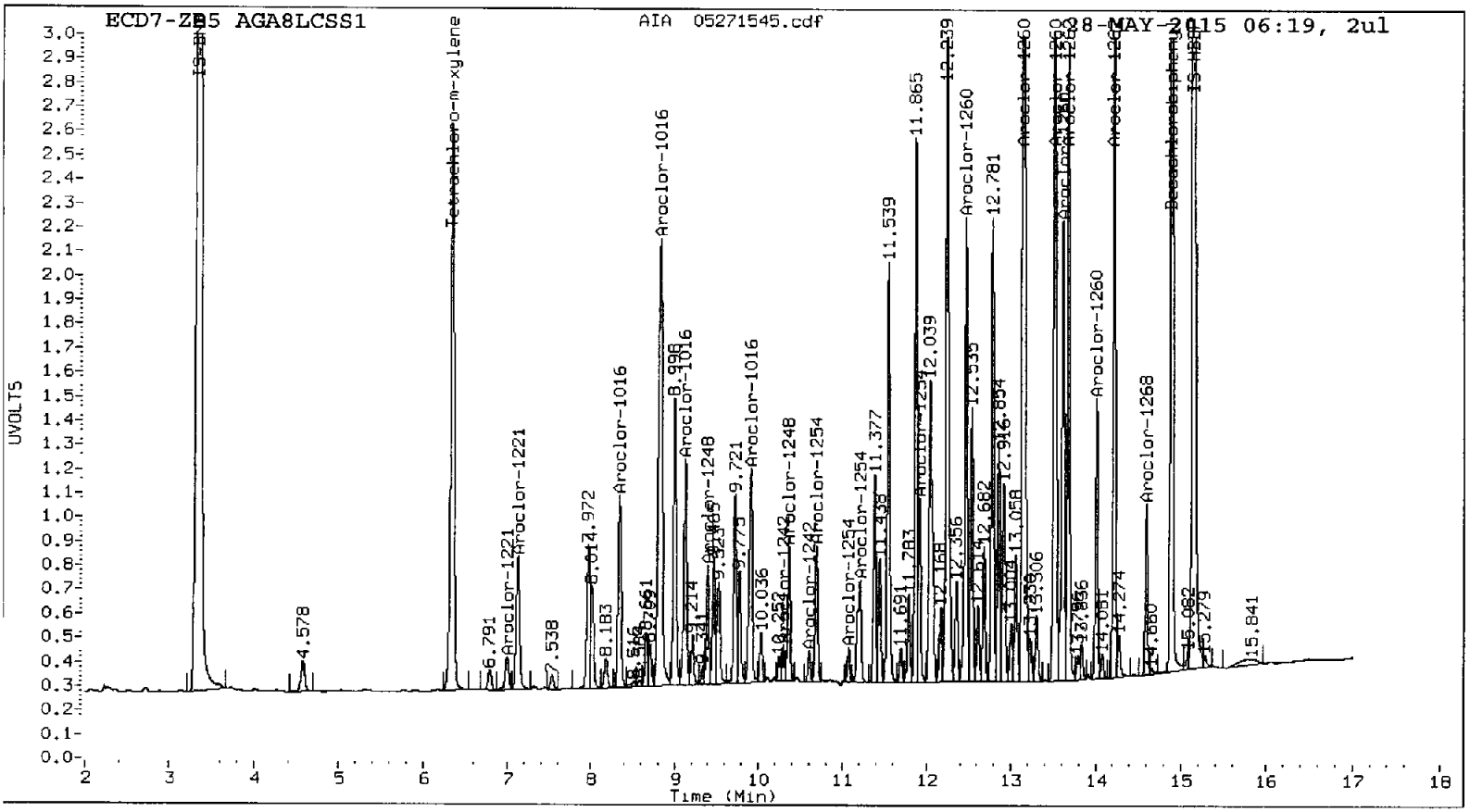
12.655
13.162
13.821
14.107
14.770
15.332
15.586
15.924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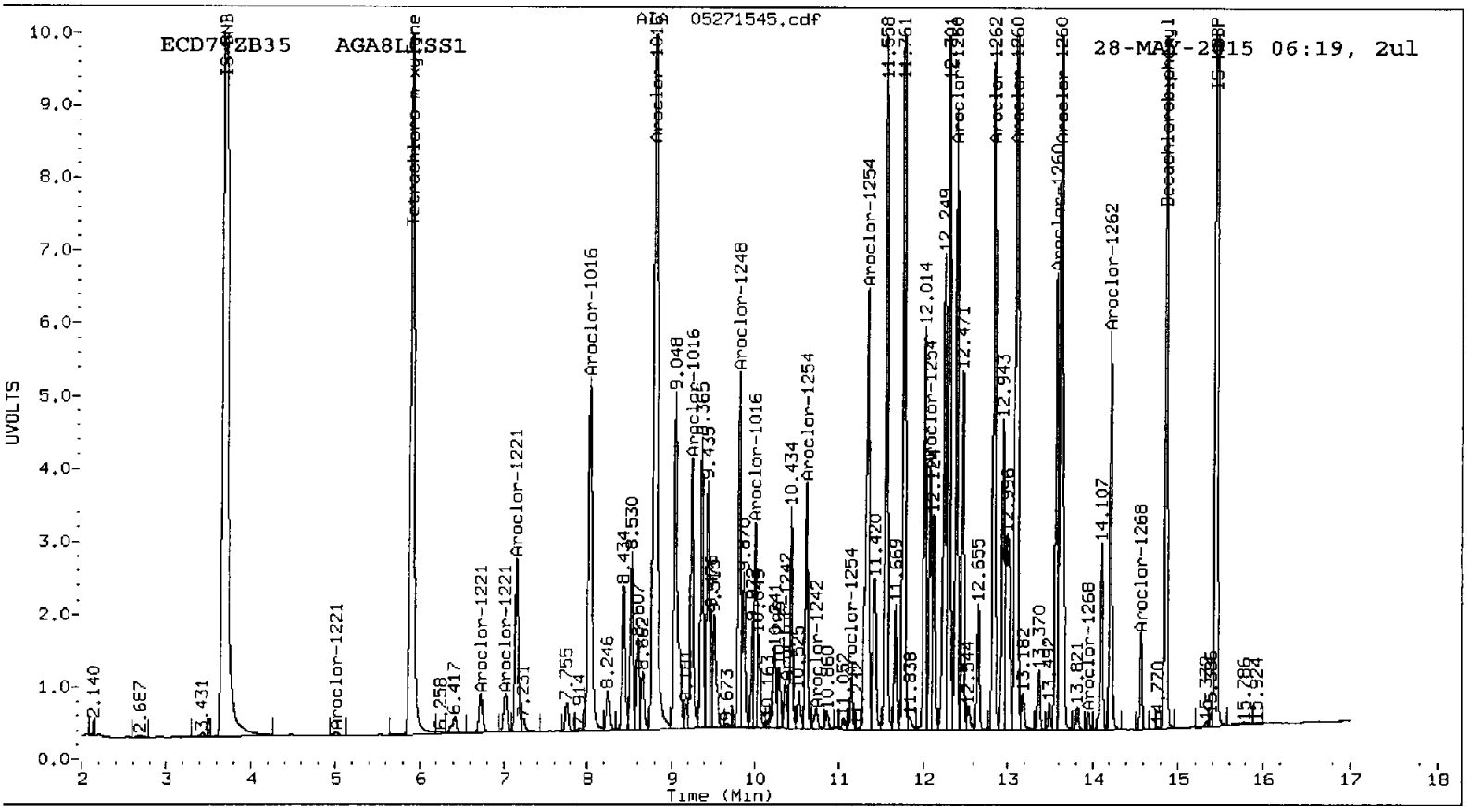
28-MAY-2015 06:19, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1268
Decachlorobiphenyl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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271546.d
Data file 2: 20150527.b/0527-2.b/05271546.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8A
Client ID: SDP-10(13.5-15.0)
Injection Date: 28-MAY-2015 06:40
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.343	-0.002	1209621	5.908	-0.005	5546950	31.5	30.7	2.6	Tetrachloro-m-xylene
14.889	-0.002	2318398	14.861	-0.002	3579867	33.9	31.8	6.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.8	76.8
Decachlorobiphenyl	84.9	79.4

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5659033	3.8
Hexabromobiphenyl	5633814	5430329	-3.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13386742	2.5
Hexabromobiphenyl	8980422	9351051	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8A : 08793

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	4.997	-0.022	81782	58.8
Aroclor-1221	2	---			0.0	2	6.739	0.019	86503	37.2
Aroclor-1221	3	---			0.0	3	7.043	0.027	88543	67.4
Aroclor-1221	NS	---			----	4	7.174	0.024	49781	12.4
	Col1Ave: <3 Quant Peaks					Col2Ave: 44.0				
Aroclor-1232	1	---			0.0	1	4.997	-0.024	81782	96.7
Aroclor-1232	2	---			0.0	2	7.174	0.021	49781	17.6
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	10.368	0.063	19382	28.5	3	10.370	-0.006	10619	2.7
Aroclor-1242	4	10.689	0.081	19353	19.0	4	10.708	-0.026	83871	17.4
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	9.813	0.000	34403	5.8
Aroclor-1248	3	10.368	0.008	19382	12.1	3	10.370	-0.002	10619	1.7
Aroclor-1248	4	10.689	0.084	19353	11.9	4	10.708	-0.022	83871	10.4
	Col1Ave: <3 Quant Peaks					Col2Ave: 6.0				
Aroclor-1254	1	10.368	-0.003	19382	18.8	1	10.614	-0.003	127491	18.1
Aroclor-1254	2	10.689	-0.002	19353	13.1	2	10.708	-0.005	83871	25.1
Aroclor-1254	3	11.072	0.000	21044	17.6	3	11.144	-0.004	80102	14.5
Aroclor-1254	4	11.207	-0.003	31537	13.9	4	11.295	-0.004	186784	15.9
Aroclor-1254	5	11.913	-0.011	15288	9.4	5	12.080	0.001	79415	11.3
	Total Col1Ave (5 peaks):				14.6	Total Col2Ave (5 peaks):			17.0	RPD = 15
	Corrected Ave (4 peaks):				13.5	Corrected Ave (4 peaks):			15.0	RPD = 10
Aroclor-1260	1	12.464	-0.005	19563	11.0	1	12.392	-0.003	59063	7.0
Aroclor-1260	2	13.142	-0.003	41531	7.2	2	13.100	-0.002	140125	7.2
Aroclor-1260	3	13.512	-0.002	18752	7.0	3	13.568	-0.004	65050	11.0
Aroclor-1260	4	13.612	-0.001	18244	11.4	4	13.622	-0.003	106844	8.3
Aroclor-1260	5	---			0.0	NS	---			----
	Total Col1Ave (4 peaks):				9.2	Total Col2Ave (4 peaks):			8.4	RPD = 9
	Corrected Ave (3 peaks):				8.4	Corrected Ave (3 peaks):			7.5	RPD = 12
Aroclor-1262	1	12.464	-0.003	19563	6.1	1	12.392	-0.002	59063	4.0
Aroclor-1262	2	13.142	-0.001	41531	4.7	2	12.833	-0.004	105490	7.6
Aroclor-1262	3	13.512	-0.001	18752	6.7	3	13.100	0.000	140125	4.9
Aroclor-1262	4	13.675	0.000	22714	4.7	4	13.568	-0.002	65050	5.3
Aroclor-1262	5	14.216	0.000	23376	5.4	5	14.211	-0.001	50217	5.2
	Total Col1Ave (5 peaks):				5.5	Total Col2Ave (5 peaks):			5.4	RPD = 2
	Corrected Ave (4 peaks):				5.2	Corrected Ave (4 peaks):			4.8	RPD = 7
Aroclor-1268	1	13.612	0.000	18244	2.2	1	13.568	-0.001	65050	3.0
Aroclor-1268	2	13.675	0.001	22714	2.3	2	13.622	-0.007	106844	5.2

Aroclor-1268 3	---			0.0	3	13.953	0.000	11944	0.7
Aroclor-1268 4	14.597	0.000	11356	0.4	4	14.571	-0.001	30254	0.6

Total Col1Ave (3 peaks): 1.6 Total Col2Ave (4 peaks): 2.4 RPD = 38

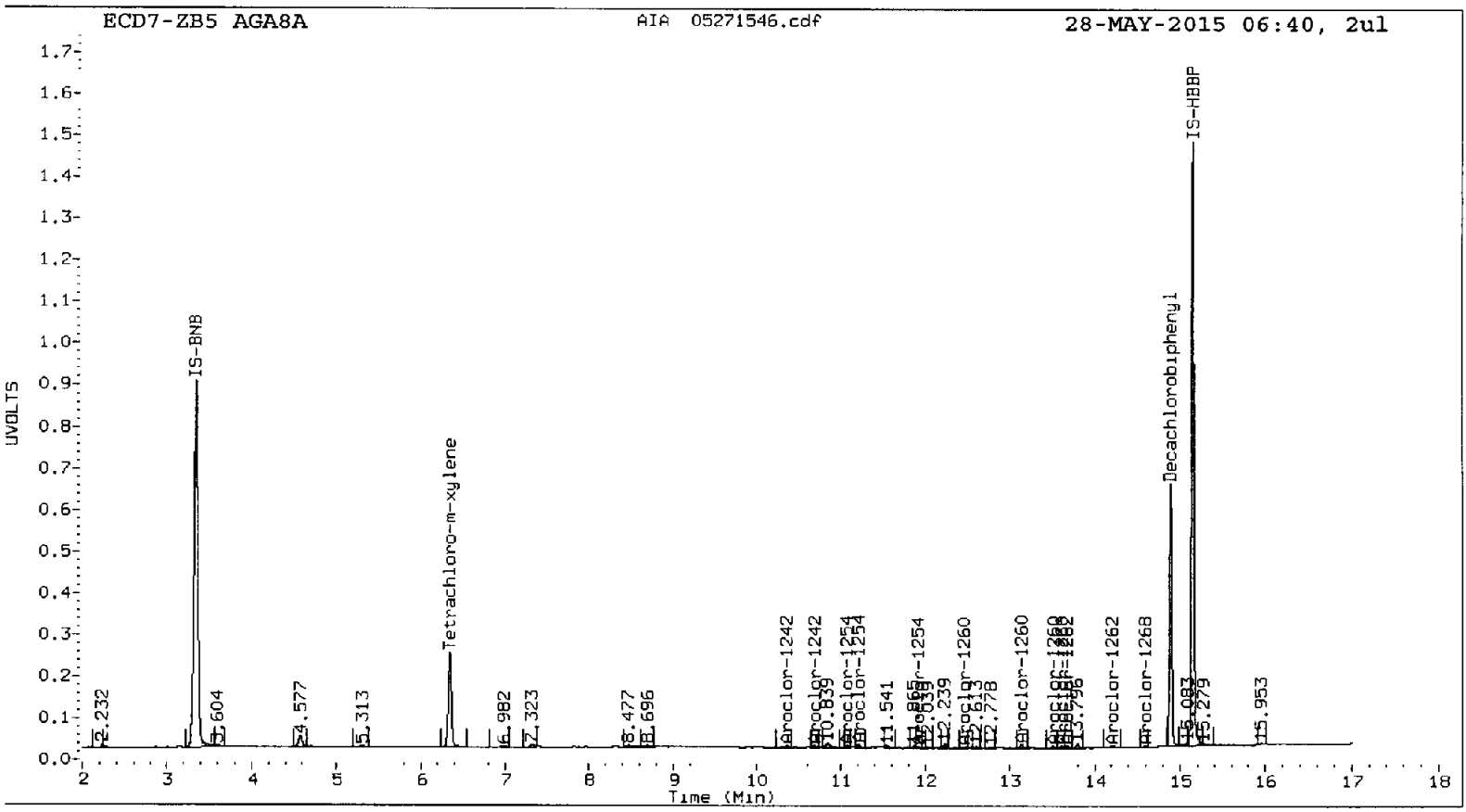
Corrected Ave: < 3 Peaks Corrected Ave (3 peaks): 1.4

Total PCB Area Col1 (6.445 - 14.790) = 638761 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 3238080 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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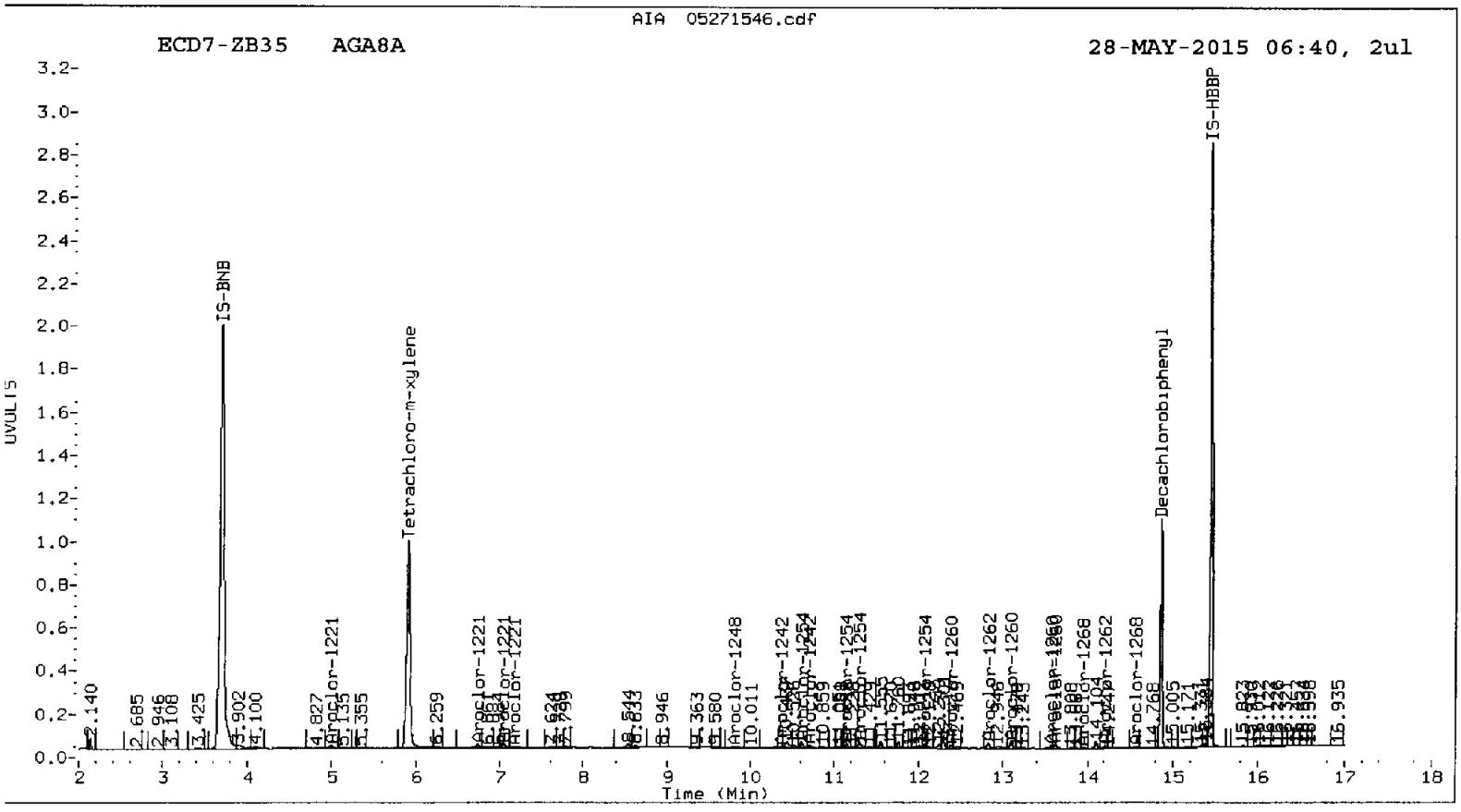
AIA 05271546.cdf
28-MAY-2015 06:40, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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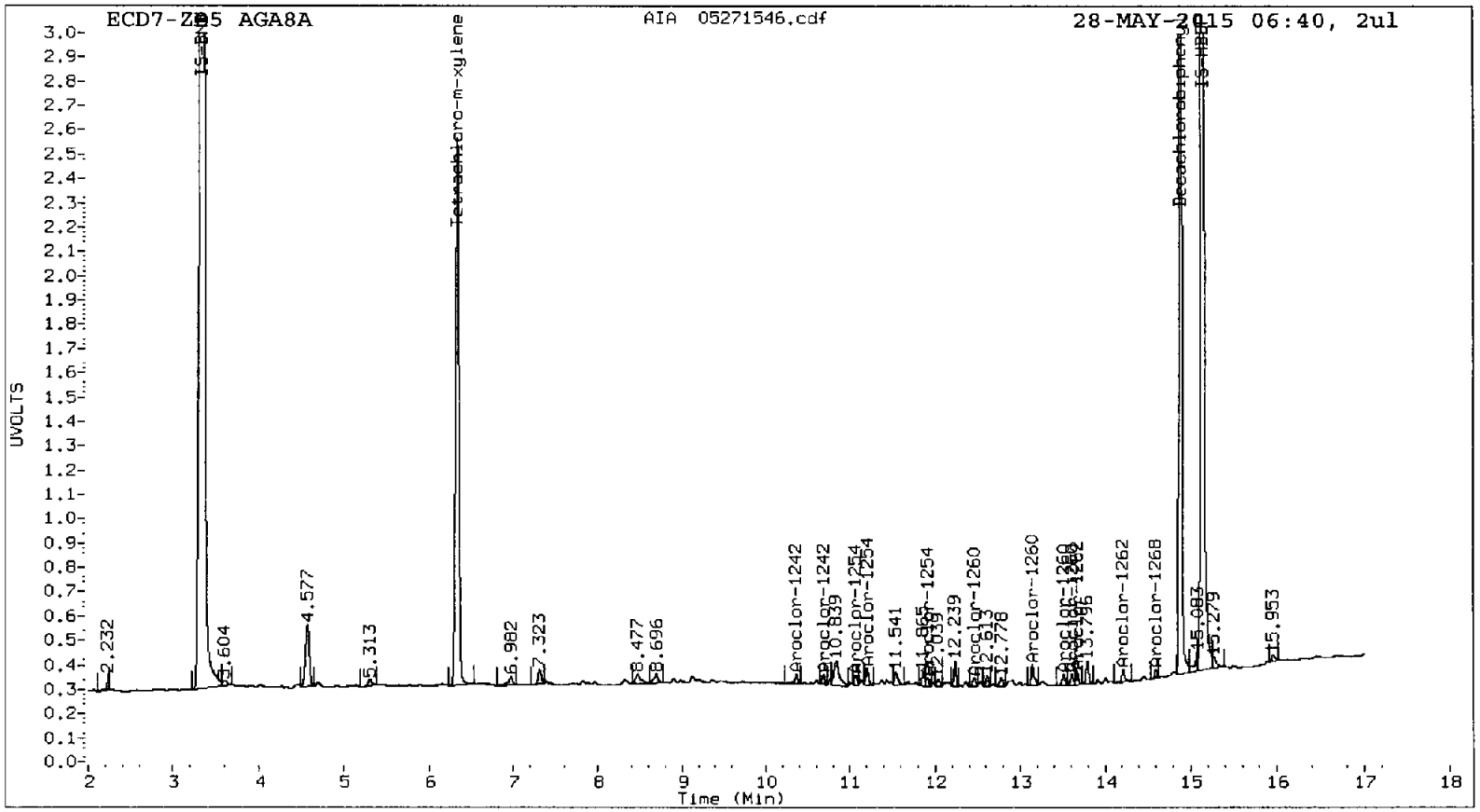
ECD7-ZB35 AGA8A
28-MAY-2015 06:40, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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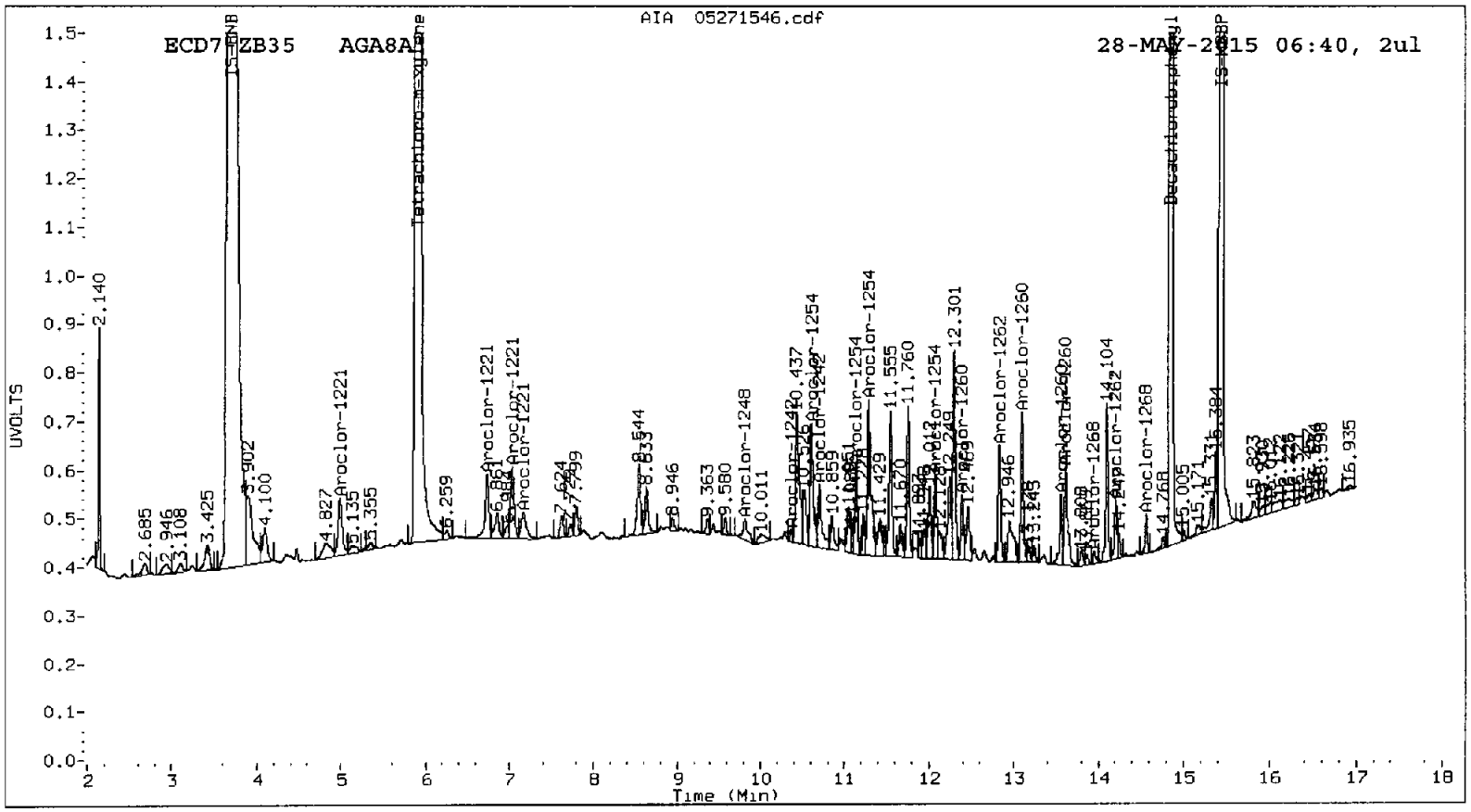
AIA 05271546.cdf
28-MAY-2015 06:40, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)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ECD7-ZB35 AGA8A
28-MAY-2015 06:40, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271547.d
Data file 2: 20150527.b/0527-2.b/05271547.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8B
Client ID: SDP-10(15.5-16.5)
Injection Date: 28-MAY-2015 07:02
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.003	1223868	5.907	-0.006	5804261	31.0	32.1	3.6	Tetrachloro-m-xylene
14.889	-0.002	2727311	14.861	-0.002	3600695	38.8	31.6	20.4	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

05/28/15

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	77.4	80.2
Decachlorobiphenyl	97.1	79.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5828017	6.9
Hexabromobiphenyl	5633814	5585136	-0.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13412705	2.7
Hexabromobiphenyl	8980422	9441477	5.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 : 8082

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.315	-0.031	59344	63.3	1	8.087	0.055	207130	28.2
Aroclor-1016	2	8.902	0.070	23585	8.2	2	8.822	0.014	21102	1.4
Aroclor-1016	3	9.140	0.011	16193	16.5	3	---			0.0
Aroclor-1016	4	---			0.0	4	10.009	-0.002	39079	13.7
Total Col1Ave (3 peaks): 29.3						Total Col2Ave (3 peaks): 14.4				RPD = 68*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1221	1	---			0.0	1	4.956	-0.062	109492	78.6
Aroclor-1221	2	---			0.0	2	6.709	-0.011	496237	212.9
Aroclor-1221	3	---			0.0	3	7.033	0.017	430410	327.2
Aroclor-1221	NS	---			----	4	7.160	0.010	480571	119.4
Col1Ave: <3 Quant Peaks						Col2Ave: 184.5				
Aroclor-1232	1	---			0.0	1	4.956	-0.065	109492	129.2
Aroclor-1232	2	6.982	-0.018	43461	169.6	2	7.160	0.007	480571	169.1
Aroclor-1232	3	---			0.0	3	8.087	0.058	207130	62.2
Aroclor-1232	4	8.902	0.072	23585	20.2	4	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: 120.2				
Aroclor-1242	1	8.902	0.068	23585	11.2	1	8.087	0.054	207130	38.4
Aroclor-1242	2	9.140	0.011	16193	21.5	2	8.822	0.012	21102	1.9
Aroclor-1242	3	10.220	-0.084	52701	75.1	3	10.440	0.064	209319	52.8
Aroclor-1242	4	---			0.0	4	10.707	-0.027	55291	11.5
Total Col1Ave (3 peaks): 36.0						Total Col2Ave (4 peaks): 26.1				RPD = 32
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 17.2				
Aroclor-1248	1	---			0.0	1	8.822	0.020	21102	2.9
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	10.440	0.068	209319	33.4
Aroclor-1248	4	---			0.0	4	10.707	-0.022	55291	6.8
Col1Ave: <3 Quant Peaks						Col2Ave: 14.4				
Aroclor-1254	1	---			0.0	1	10.616	-0.002	78326	11.1
Aroclor-1254	2	---			0.0	2	10.707	-0.006	55291	16.5
Aroclor-1254	3	11.077	0.005	21690	17.6	3	11.175	0.027	60502	11.0
Aroclor-1254	4	11.207	-0.003	19344	8.3	4	11.295	-0.004	43791	3.7
Aroclor-1254	5	---			0.0	5	12.078	-0.001	19937	2.8
Col1Ave: <3 Quant Peaks						Col2Ave: 9.0				
Aroclor-1260	1	12.493	0.024	12246	6.7	1	12.392	-0.003	8339	1.0
Aroclor-1260	2	---			0.0	2	13.099	-0.002	26527	1.3
Aroclor-1260	3	---			0.0	3	13.531	-0.041	503656	84.1
Aroclor-1260	4	13.690	0.078	366018	221.4	4	13.620	-0.004	25548	2.0
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 22.1				
Aroclor-1262	1	12.493	0.026	12246	3.7	1	12.392	-0.002	8339	0.6
Aroclor-1262	2	---			0.0	2	12.833	-0.003	17859	1.3
Aroclor-1262	3	---			0.0	3	13.099	-0.001	26527	0.9
Aroclor-1262	4	13.690	0.016	366018	73.0	4	13.531	-0.039	503656	40.5
Aroclor-1262	5	14.274	0.058	742129	165.5	5	14.213	0.000	10031	1.0
Total Col1Ave (3 peaks): 80.8						Total Col2Ave (5 peaks): 8.8				RPD = 161*
Corrected Ave: < 3 Peaks						Corrected Ave (4 peaks): 0.9				
Aroclor-1268	1	13.690	0.079	366018	42.3	1	13.531	-0.038	503656	22.8
Aroclor-1268	2	---			0.0	2	13.620	-0.008	25548	1.2

Aroclor-1268	3	---		0.0	3	13.951	-0.002	15875	0.9
Aroclor-1268	4	14.654	0.057	72399	2.3	4	14.568	-0.005	22773	0.5

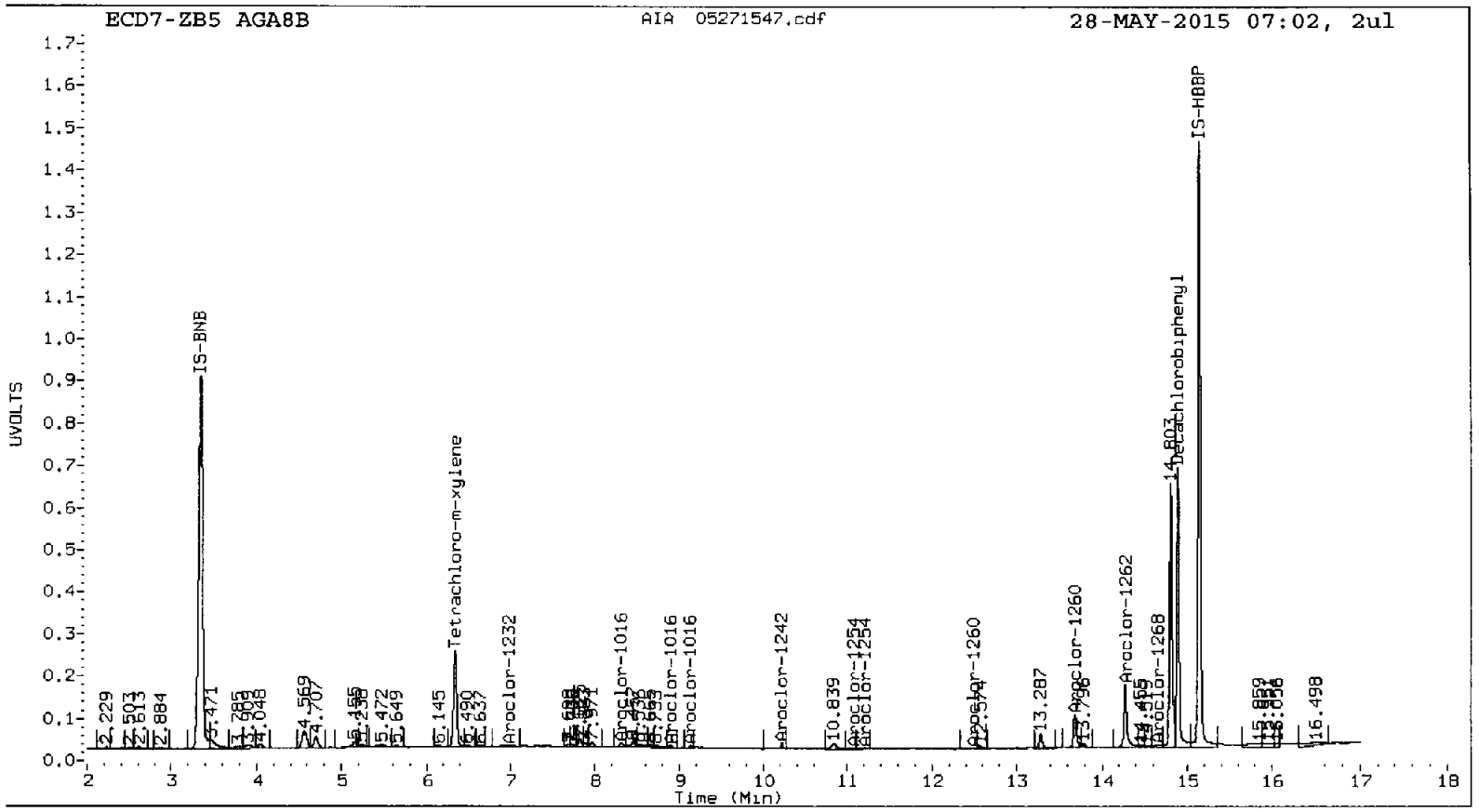
Col1Ave: <3 Quant Peaks Col2Ave: 6.4

Total PCB Area Col1 (6.445 - 14.790) = 2391969 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 9077791 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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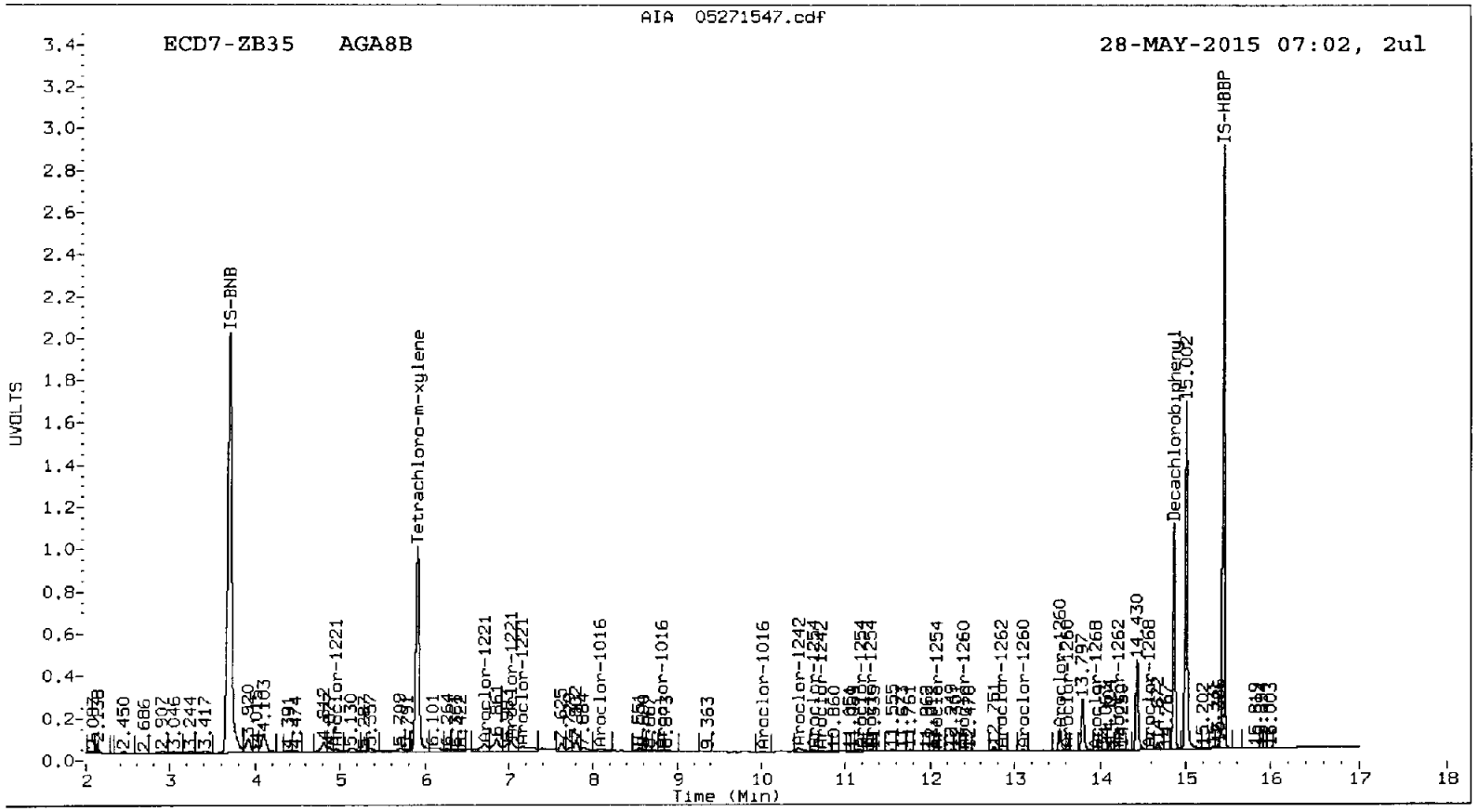
28-MAY-2015 07:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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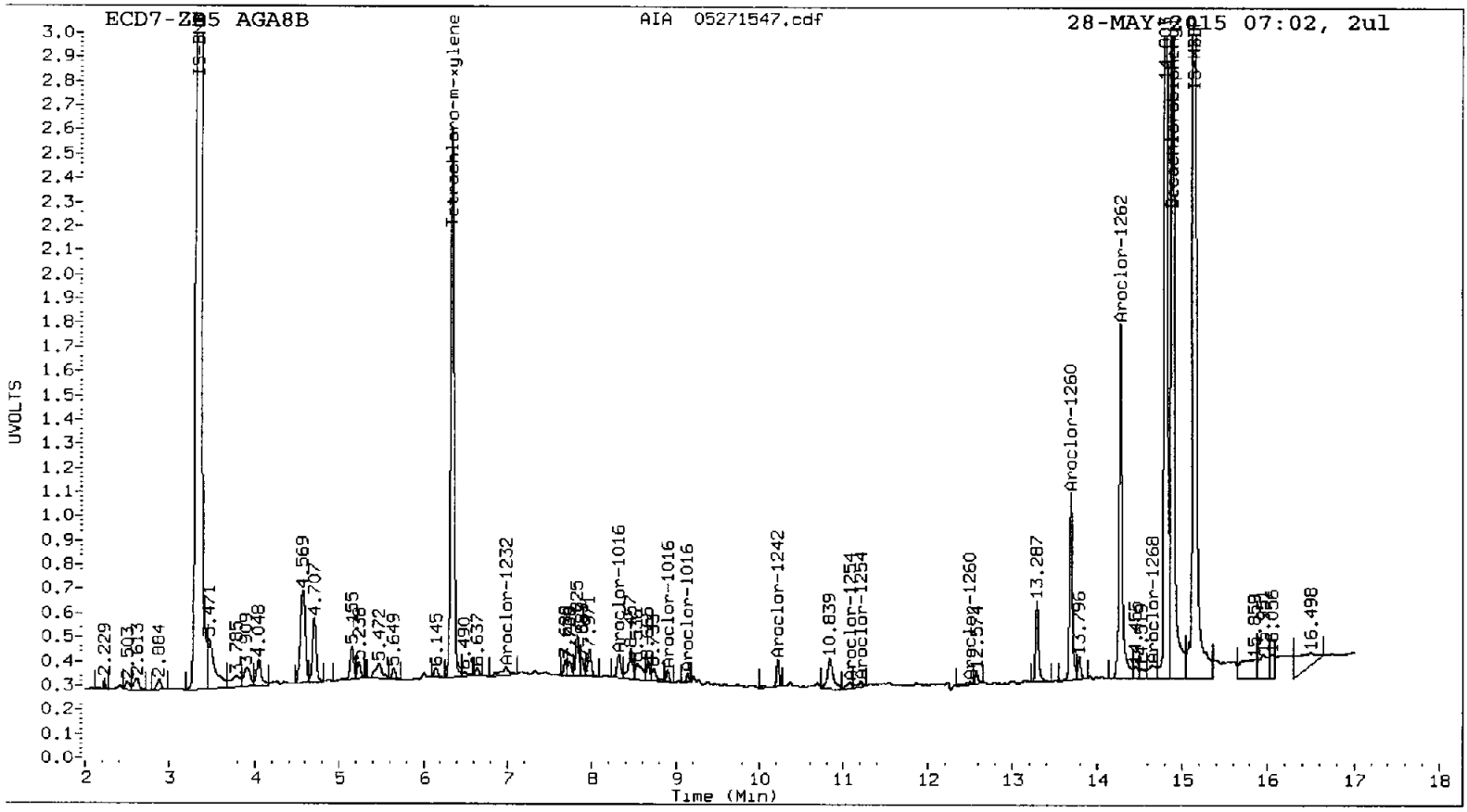
28-MAY-2015 07:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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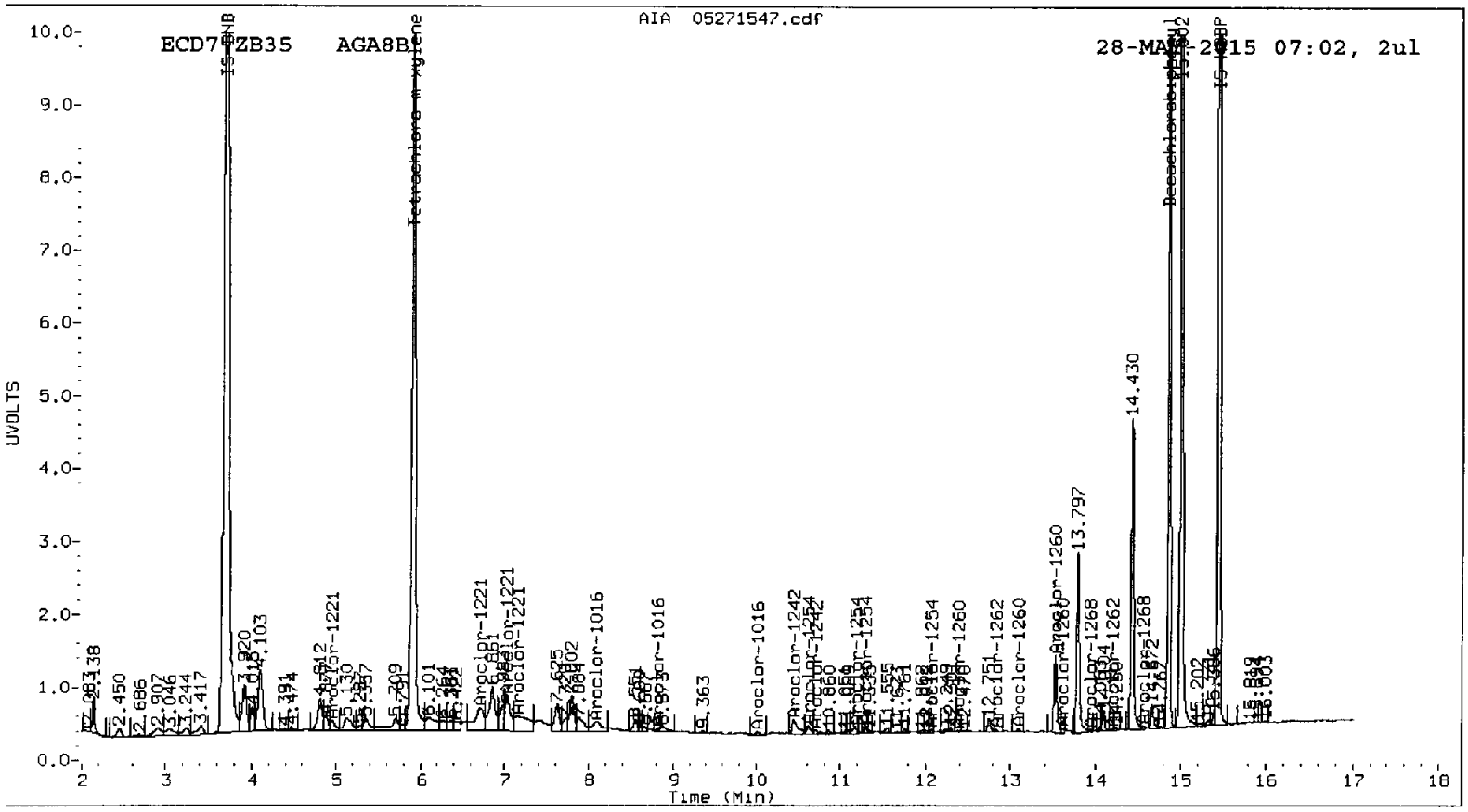
28-MAY-2015 07:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1262
Aroclor-1260
Aroclor-1232
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1268
13.287
13.796
16.498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28-MAY-2015 07:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
14.430
13.797

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271548.d
Data file 2: 20150527.b/0527-2.b/05271548.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8C
Client ID: SDP-10(16.5-17.5)
Injection Date: 28-MAY-2015 07:23
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1190996	5.910	-0.003	5534178	30.2	29.7	1.5	Tetrachloro-m-xylene
14.889	-0.002	2437786	14.862	-0.001	3678929	34.9	31.8	9.2	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	75.4	74.2
Decachlorobiphenyl	87.2	79.5

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5825555	6.9
Hexabromobiphenyl	5633814	5559273	-1.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13823528	5.9
Hexabromobiphenyl	8980422	9594418	6.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 - 05/28/15

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.740	0.021	72413	30.2
Aroclor-1221	3	---			0.0	3	7.045	0.030	130220	96.1
Aroclor-1221	NS	---			----	4	7.160	0.010	24881	6.0
		Col1Ave: <3 Quant Peaks					Col2Ave: 44.1			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	10.470	0.099	115264	17.9
Aroclor-1248	4	---			0.0	4	10.629	-0.100	52616	6.3
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1254	1	---			0.0	1	10.629	0.012	52616	7.2
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	11.164	0.016	17365	3.1
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	13.693	0.018	45452	9.1	4	13.536	-0.035	50271	4.0
Aroclor-1262	5	14.276	0.060	86485	19.4	5	14.250	0.037	21363	2.1
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			

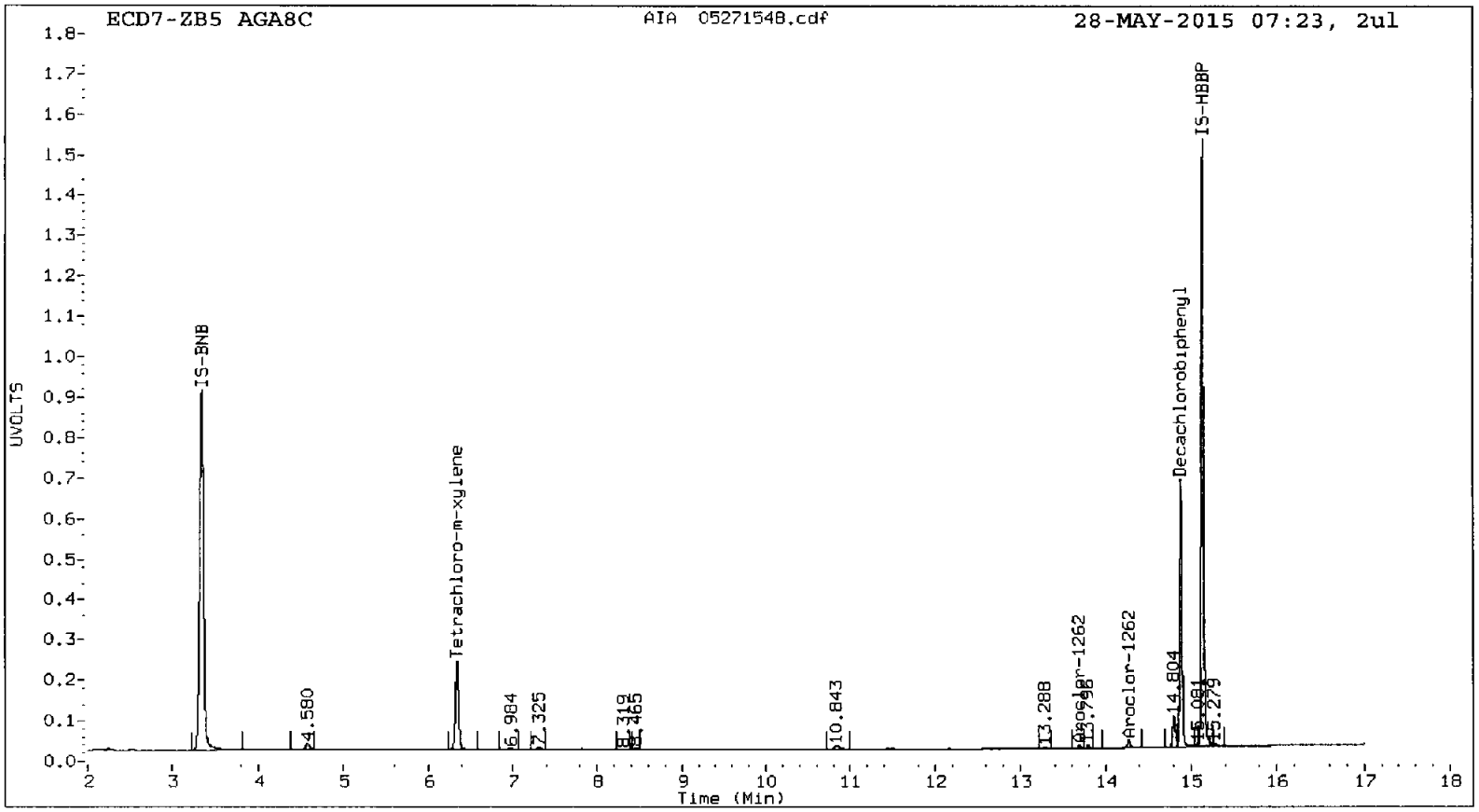
Total PCB Area Col1 (6.445 - 14.790) = 348729 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 1264888 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

AGAS 008905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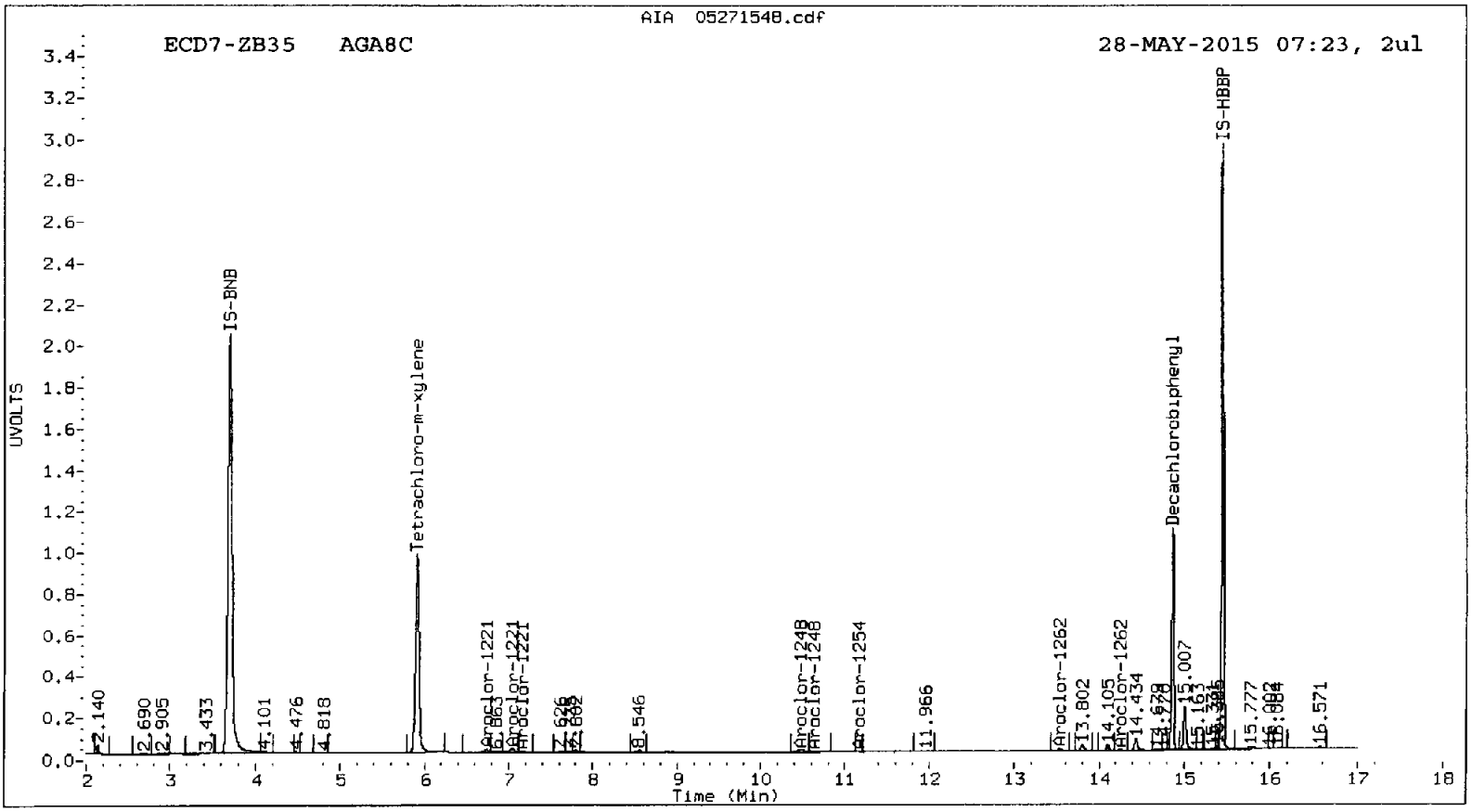
28-MAY-2015 07:23, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1262
4.580
6.984
7.325
10.843
13.288
14.804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28-MAY-2015 07:23, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1262
2.140
2.690
2.905
3.433
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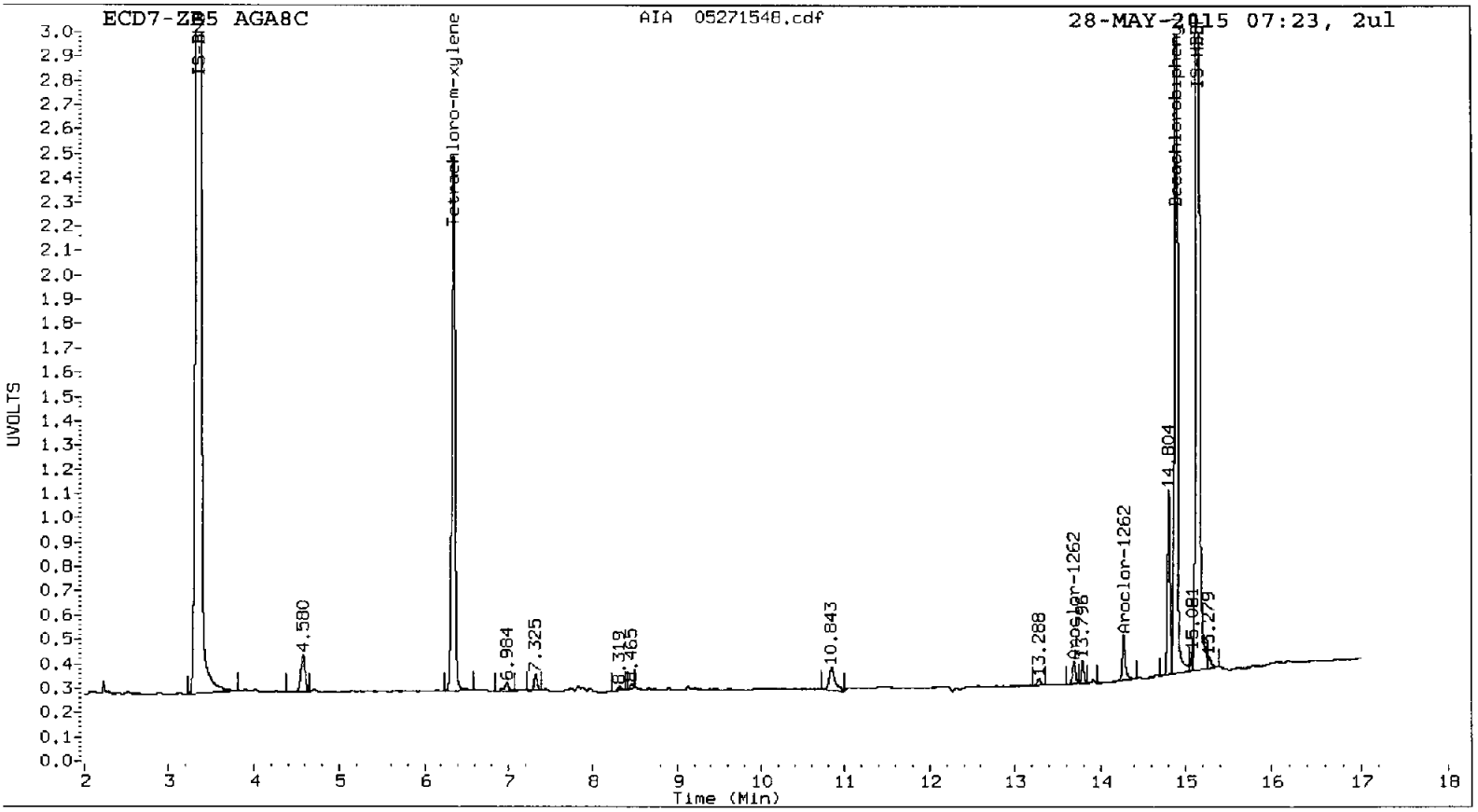
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28-MAY-2015 07:23, 2ul
UVOLTS
Time (Min)
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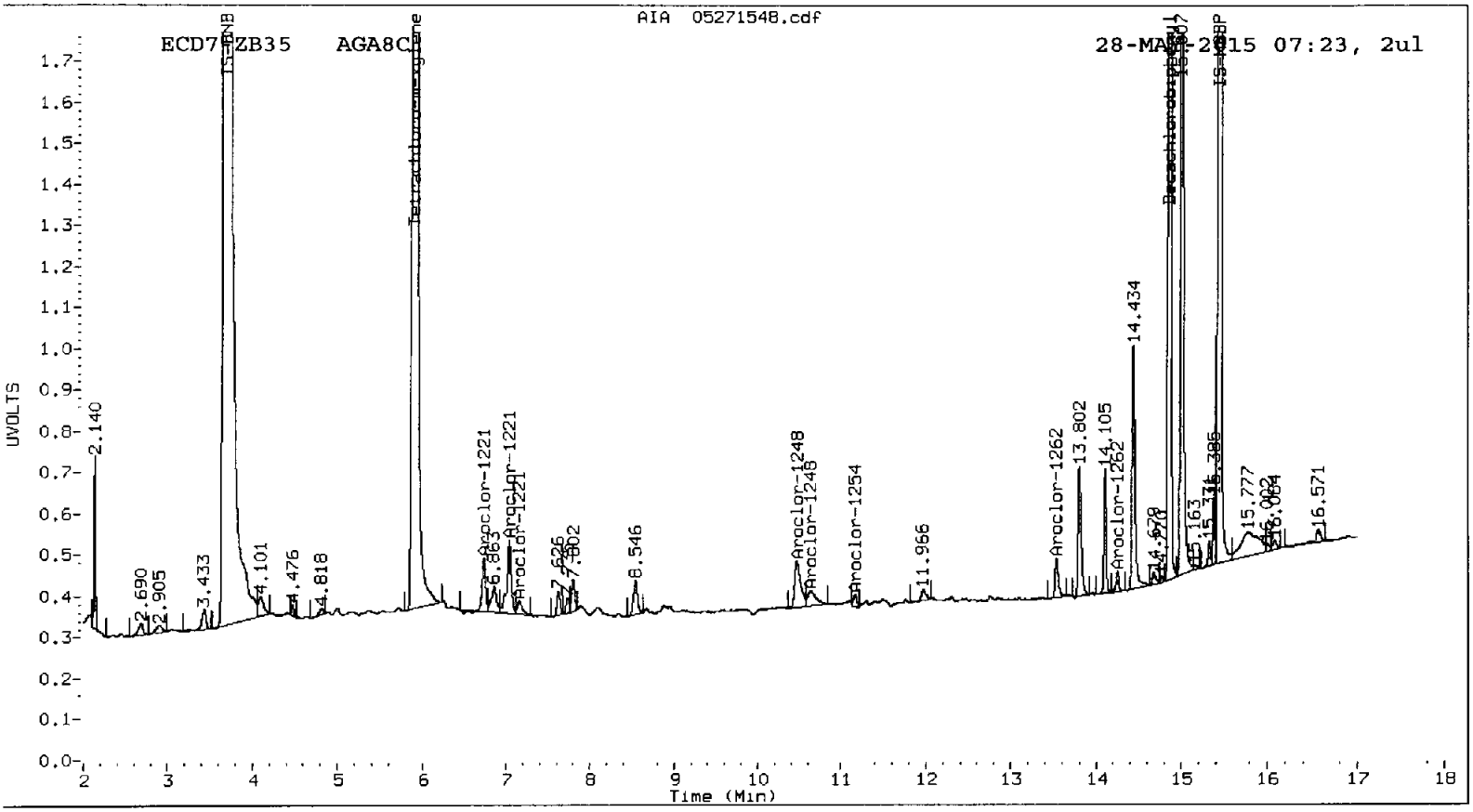
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28-MAY-2015 07:23, 2ul
UVOLTS
Time (Min)
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4.101
4.476
4.818
6.863
7.626
7.802
8.546
11.966
13.802
14.105
14.434
15.163
15.386
15.777
16.571

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271549.d
Data file 2: 20150527.b/0527-2.b/05271549.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8D
Client ID: SDP-09(2.5-4.0)
Injection Date: 28-MAY-2015 07:45
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1236407	5.909	-0.004	5648932	31.0	29.9	3.6	Tetrachloro-m-xylene
14.888	-0.002	2395664	14.861	-0.002	3789535	33.7	31.8	5.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	77.5	74.8
Decachlorobiphenyl	84.3	79.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5879508	7.9
Hexabromobiphenyl	5633814	5648104	0.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13999018	7.2
Hexabromobiphenyl	8980422	9888336	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8D : 05/28/15

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.273	-0.073	65382	69.1	1	---			0.0
Aroclor-1016	2	8.802	-0.030	10905	3.8	2	---			0.0
Aroclor-1016	3	9.118	-0.011	58418	58.9	3	9.169	-0.079	42132	10.0
Aroclor-1016	4	9.894	-0.019	71986	68.4	4	10.029	-0.018	200017	67.4
Total Col1Ave (4 peaks): 50.1						Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	4.997	-0.021	106681	73.4
Aroclor-1221	2	---			0.0	2	6.739	0.019	82371	33.9
Aroclor-1221	3	---			0.0	3	7.045	0.030	126919	92.4
Aroclor-1221	NS	---			----	4	7.178	0.028	84478	20.1
Col1Ave: <3 Quant Peaks						Col2Ave: 55.0				
Aroclor-1232	1	---			0.0	1	4.997	-0.023	106681	120.6
Aroclor-1232	2	6.983	-0.017	18513	71.6	2	7.178	0.025	84478	28.5
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	8.802	-0.028	10905	9.2	4	9.169	-0.078	42132	23.6
Col1Ave: <3 Quant Peaks						Col2Ave: 57.6				
Aroclor-1242	1	8.802	-0.032	10905	5.1	1	---			0.0
Aroclor-1242	2	9.118	-0.011	58418	76.9	2	---			0.0
Aroclor-1242	3	10.338	0.034	79511	112.4	3	10.366	-0.009	95091	23.0
Aroclor-1242	4	10.608	-0.001	11005	10.4	4	10.754	0.020	69980	13.9
Total Col1Ave (4 peaks): 51.2						Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	9.394	0.001	10773	15.9	1	---			0.0
Aroclor-1248	2	9.894	-0.015	71986	50.1	2	9.815	0.003	74138	12.0
Aroclor-1248	3	10.338	-0.021	79511	47.7	3	10.366	-0.005	95091	14.6
Aroclor-1248	4	10.608	0.003	11005	6.5	4	10.754	-0.025	69980	8.3
Total Col1Ave (4 peaks): 30.1						Total Col2Ave (3 peaks): 11.6				RPD = 88*
Corrected Ave (3 peaks): 23.4						Corrected Ave: < 3 Peaks				
Aroclor-1254	1	10.338	-0.033	79511	74.0	1	10.613	-0.005	242492	32.9
Aroclor-1254	2	10.688	-0.003	40151	26.2	2	10.703	-0.010	293360	83.9
Aroclor-1254	3	11.086	0.015	367492	295.2	3	11.145	-0.003	199308	34.6
Aroclor-1254	4	11.203	-0.007	99283	42.3	4	11.293	-0.006	365876	29.8
Aroclor-1254	5	11.921	-0.004	50299	29.9	5	12.074	-0.006	221111	30.1
Total Col1Ave (5 peaks): 93.5						Total Col2Ave (5 peaks): 42.3				RPD = 76*
Corrected Ave (4 peaks): 43.1						Corrected Ave (4 peaks): 31.8				RPD = 30
Aroclor-1260	1	12.468	-0.001	71911	39.0	1	12.392	-0.004	233867	26.4
Aroclor-1260	2	13.142	-0.003	138905	23.3	2	13.098	-0.004	411428	19.9
Aroclor-1260	3	13.511	-0.002	40251	14.5	3	13.567	-0.005	253737	40.5
Aroclor-1260	4	13.612	-0.001	107978	64.6	4	13.623	-0.001	379778	27.9
Aroclor-1260	5	14.004	-0.008	44093	48.0	NS	---			----
Total Col1Ave (5 peaks): 37.9						Total Col2Ave (4 peaks): 28.7				RPD = 28
Corrected Ave (4 peaks): 31.2						Corrected Ave (3 peaks): 24.7				RPD = 23
Aroclor-1262	1	12.468	0.001	71911	21.6	1	12.392	-0.003	233867	14.9
Aroclor-1262	2	13.142	-0.001	138905	15.0	2	12.833	-0.004	258237	17.5
Aroclor-1262	3	13.511	-0.002	40251	13.8	3	13.098	-0.002	411428	13.6
Aroclor-1262	4	13.673	-0.002	145461	28.7	4	13.567	-0.003	253737	19.5
Aroclor-1262	5	14.215	-0.001	90611	20.0	5	14.211	-0.002	215816	21.1
Total Col1Ave (5 peaks): 19.8						Total Col2Ave (5 peaks): 17.3				RPD = 13
Corrected Ave (4 peaks): 17.6						Corrected Ave (4 peaks): 16.4				RPD = 7
Aroclor-1268	1	13.612	0.000	107978	12.3	1	13.567	-0.002	253737	11.0

AGA8 080803

Aroclor-1268	2	13.673	-0.001	145461	14.2	2	13.623	-0.005	379778	17.3
Aroclor-1268	3	14.004	0.007	44093	4.8	3	13.951	-0.001	46361	2.6
Aroclor-1268	4	14.596	-0.001	85350	2.7	4	14.570	-0.003	164229	3.3

Total Col1Ave (4 peaks): 8.5 Total Col2Ave (4 peaks): 8.6 RPD = 1

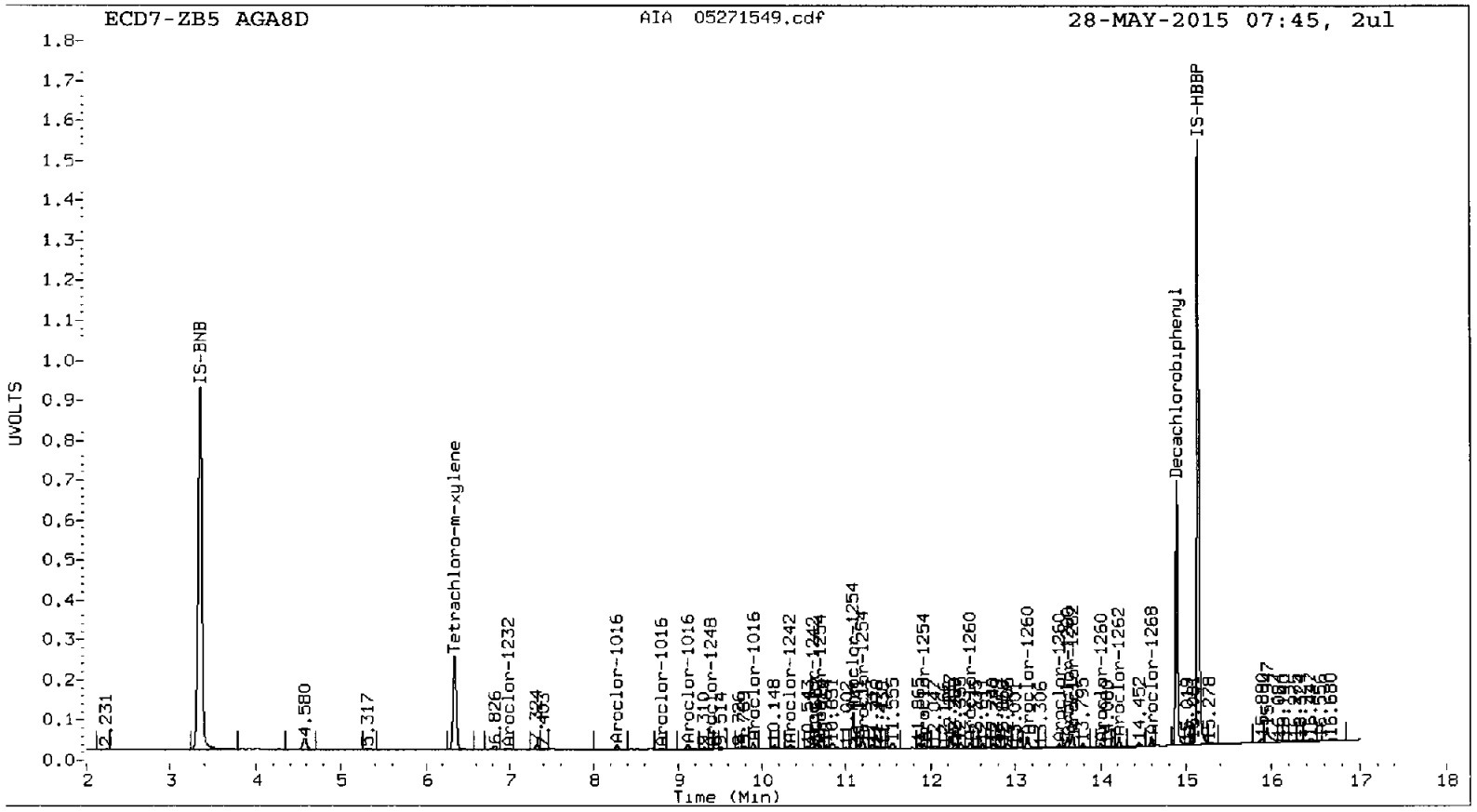
Corrected Ave (3 peaks): 6.6 Corrected Ave (3 peaks): 5.6 RPD = 16

Total PCB Area Col1 (6.445 - 14.790) = 2968909 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 9816150 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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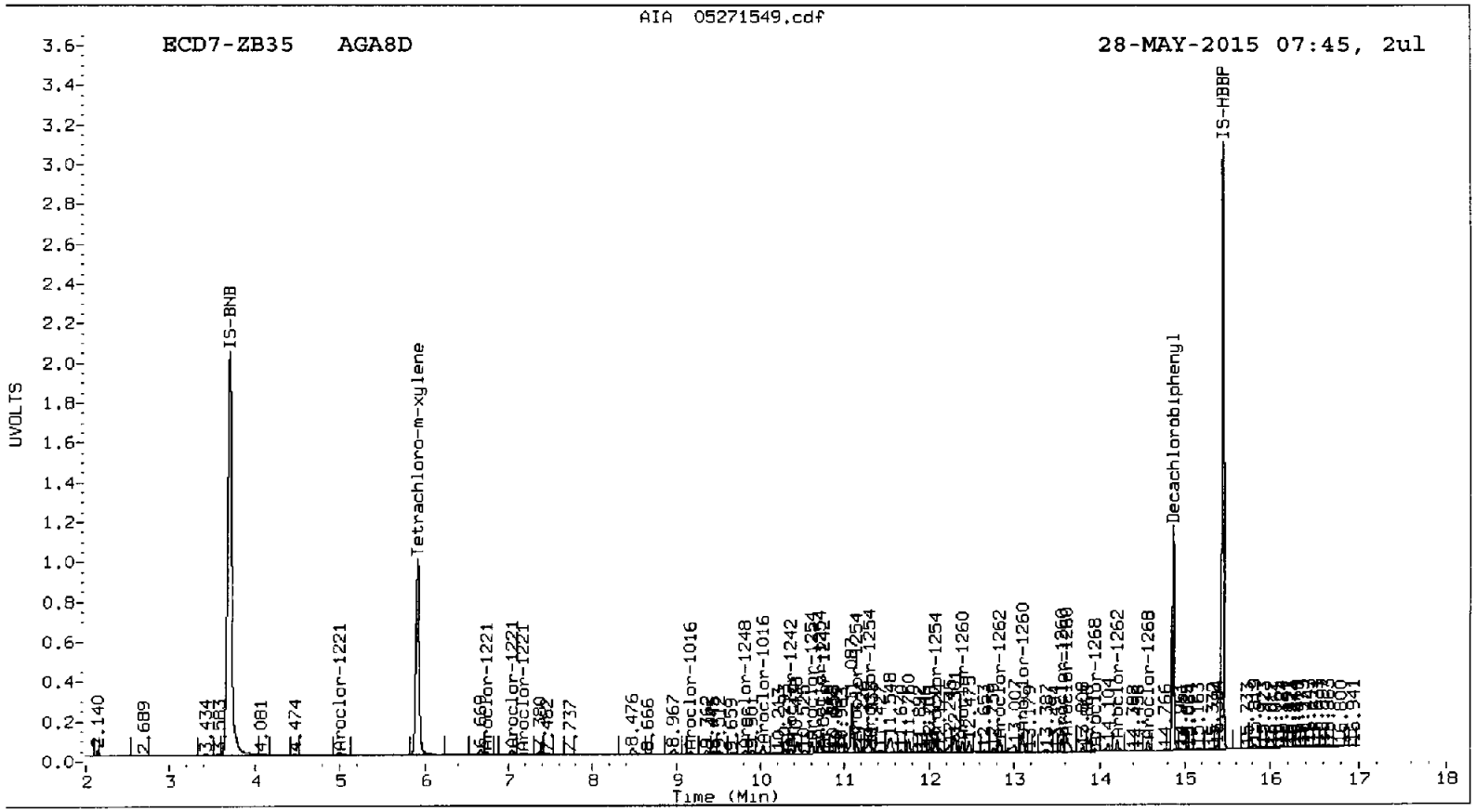
28-MAY-2015 07:45, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl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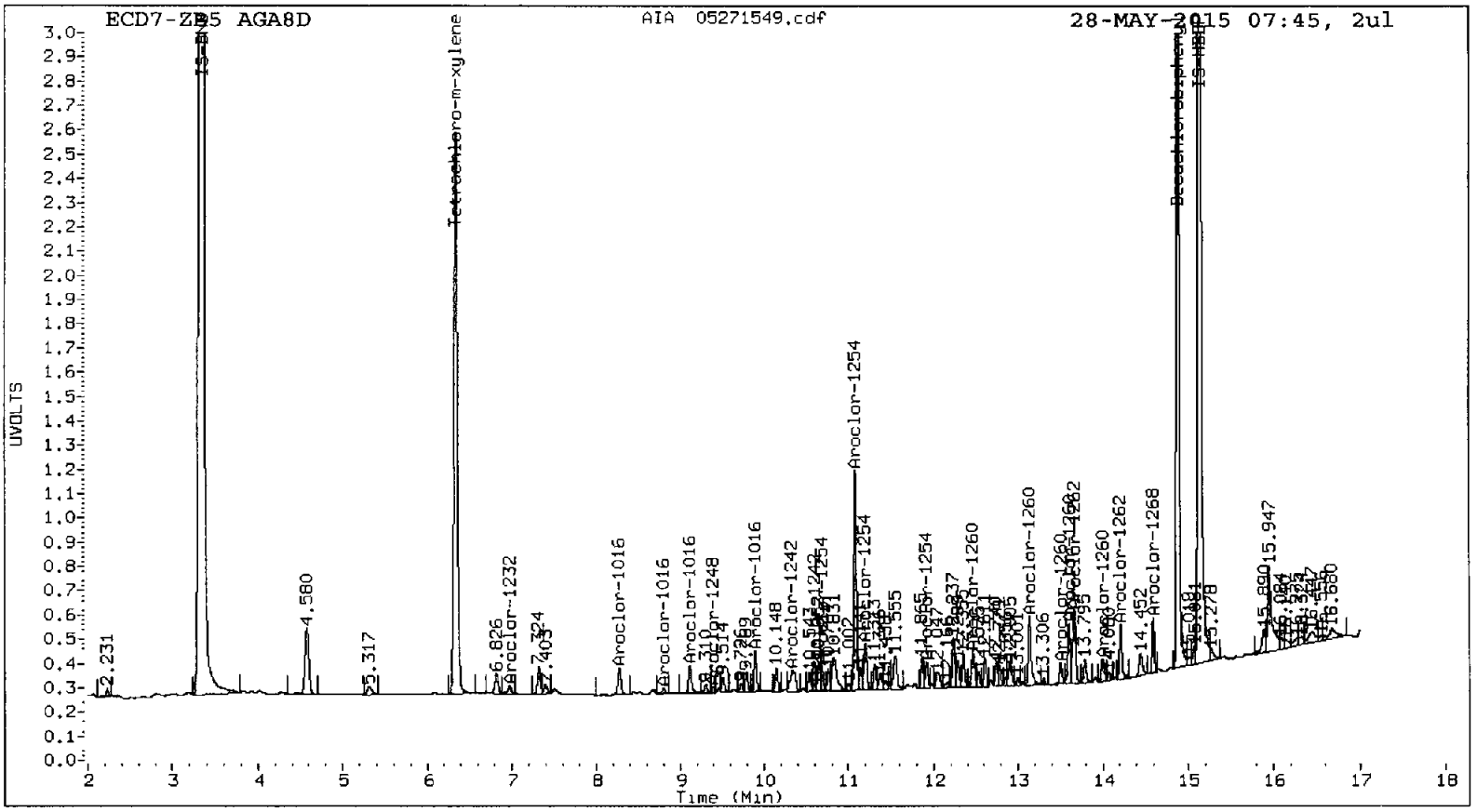
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl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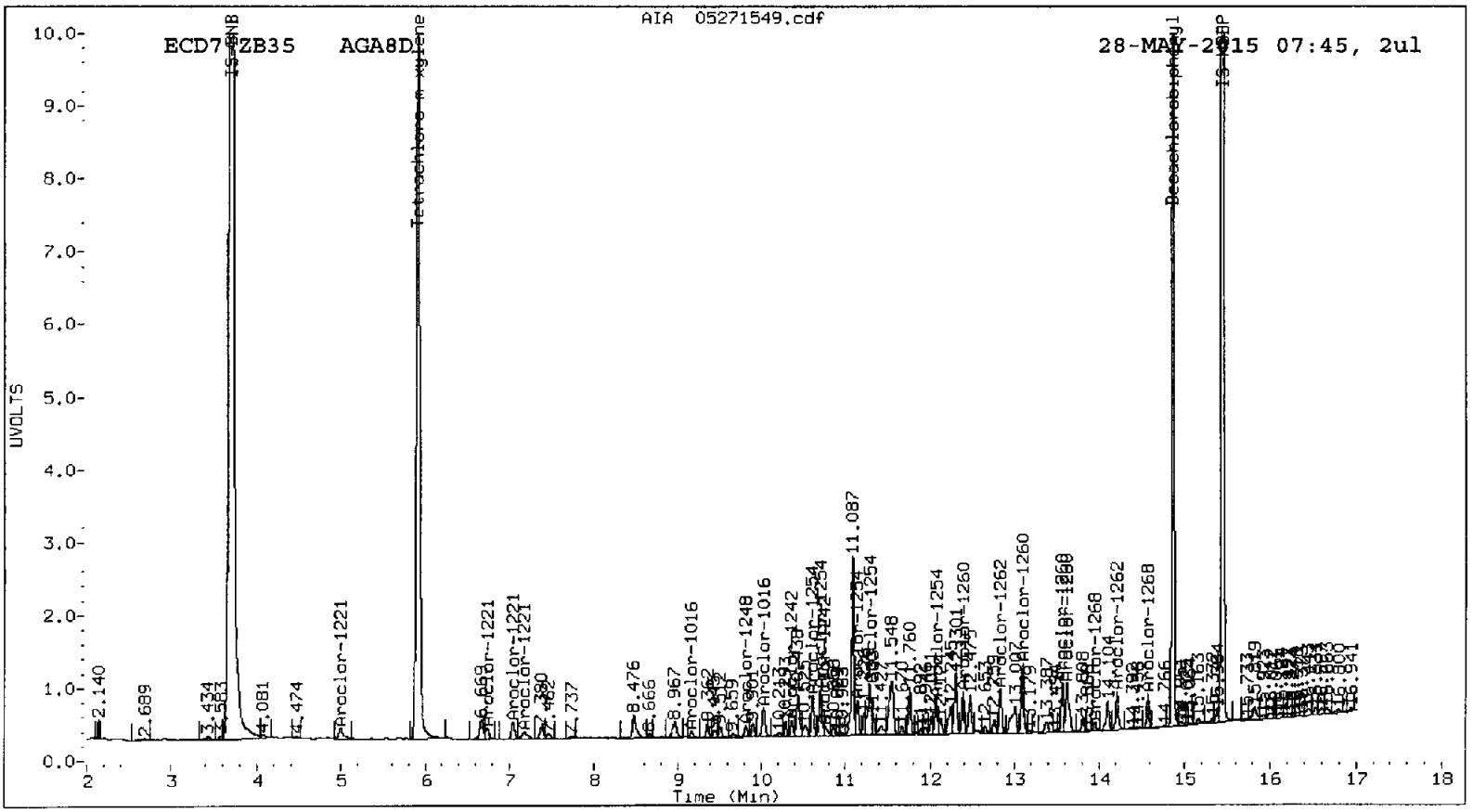
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271550.d
Data file 2: 20150527.b/0527-2.b/05271550.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8E
Client ID: SDP-08(12.0-13.5)
Injection Date: 28-MAY-2015 08:06
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.003	1246390	5.908	-0.005	5874138	33.1	32.0	3.6	Tetrachloro-m-xylene
14.889	-0.001	2457755	14.861	-0.002	3855407	35.8	33.9	5.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	82.8	79.9
Decachlorobiphenyl	89.6	84.7

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5547667	1.8
Hexabromobiphenyl	5633814	5451945	-3.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13628830	4.4
Hexabromobiphenyl	8980422	9438310	5.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

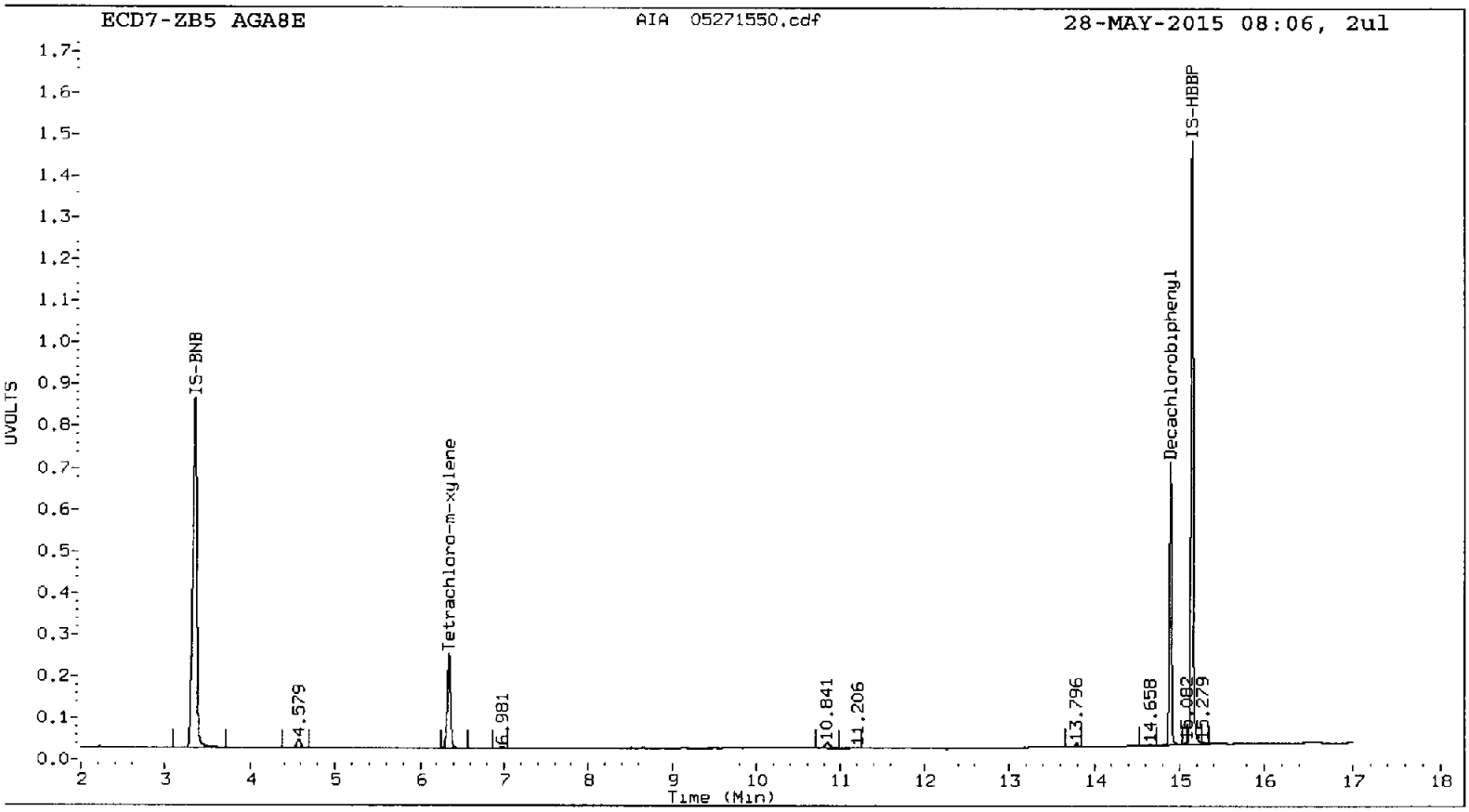
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.740	0.020	79956	33.8
Aroclor-1221	3	---			0.0	3	7.043	0.027	14199	10.6
Aroclor-1221	NS	---			----	4	7.157	0.006	18288	4.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 16.3				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	10.623	0.006	51939	7.2
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	11.164	0.016	38967	6.9
Aroclor-1254	4	---			0.0	4	11.297	-0.002	13853	1.2
Aroclor-1254	5	---			0.0	5	12.077	-0.002	9155	1.3
	Col1Ave: <3 Quant Peaks					Col2Ave: 4.2				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	12.301	-0.093	8930	0.6
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	14.251	0.039	23913	2.4
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 215741 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 668324 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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28-MAY-2015 08:06, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
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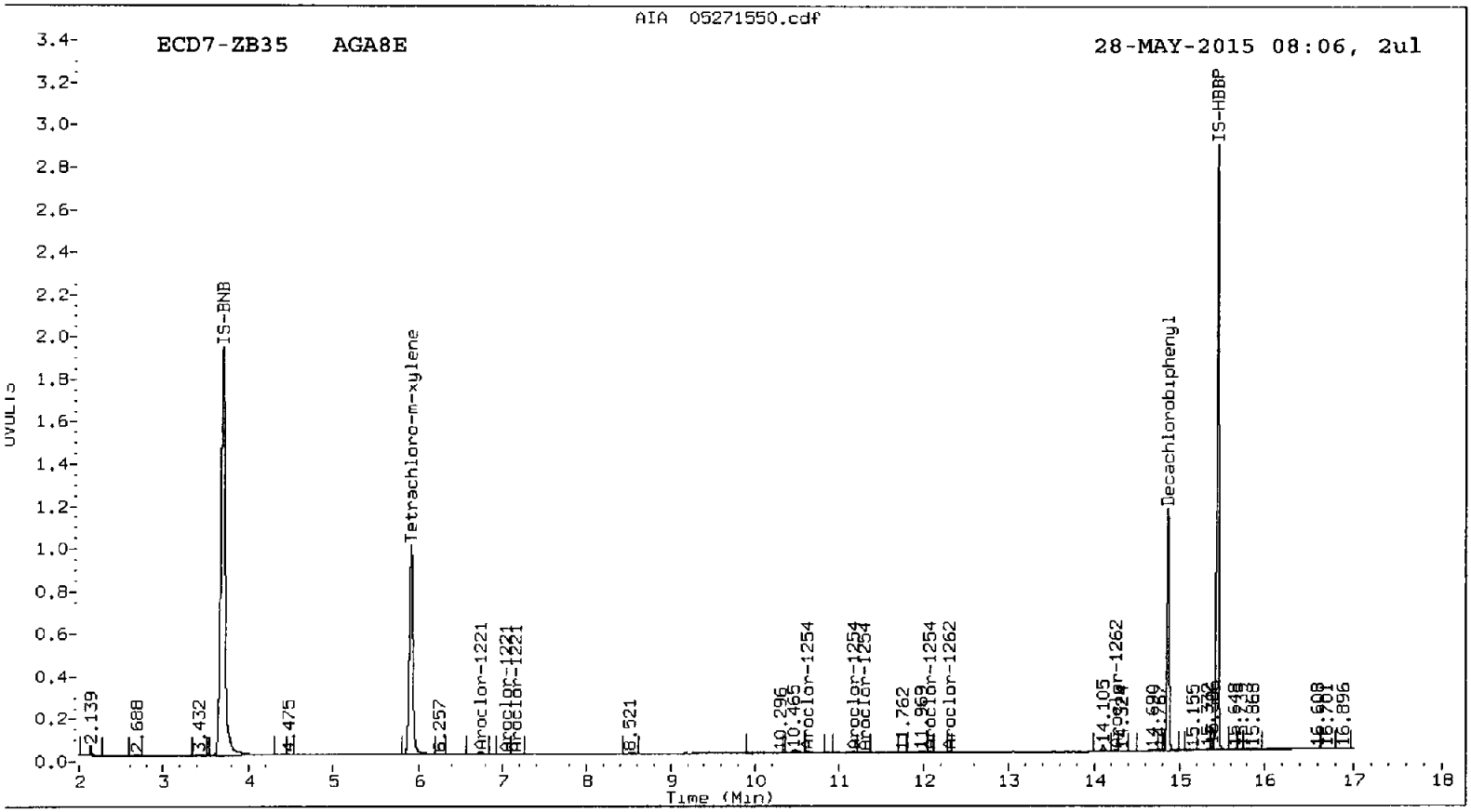
10.841
11.206
13.796
14.658
15.082
15.279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UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1254
Aroclor-1262
2.139
2.688
3.432
4.475
6.257
8.521
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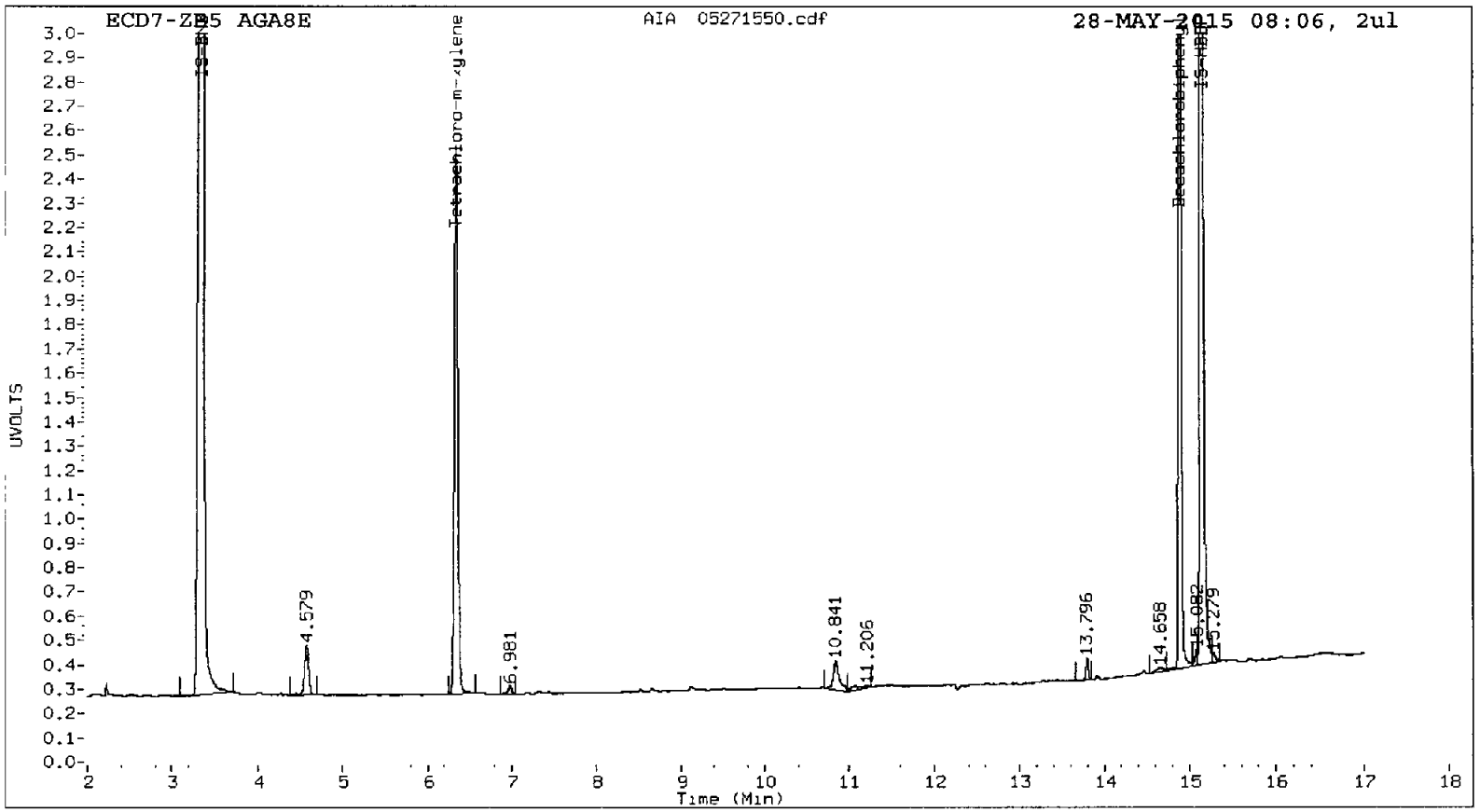
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Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
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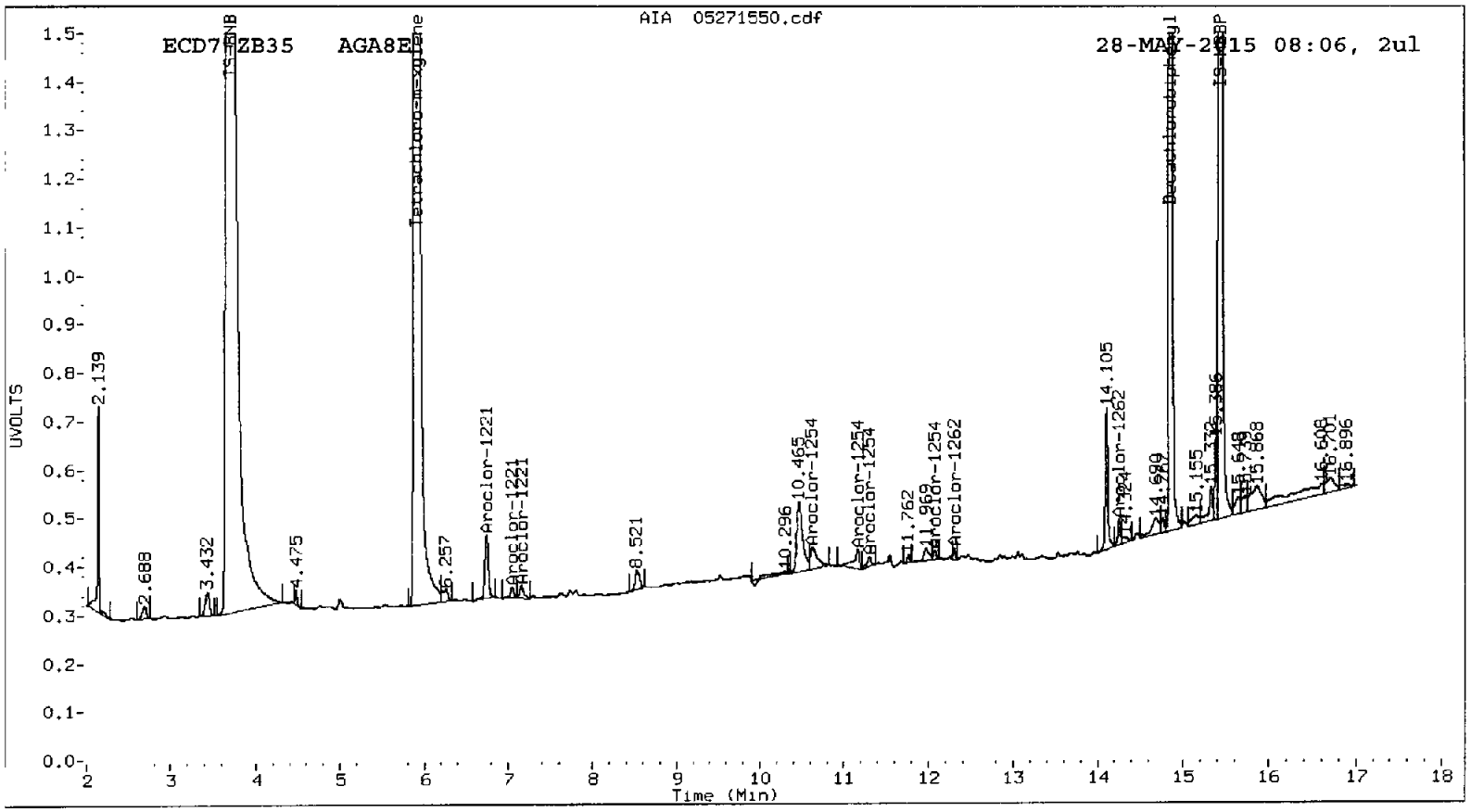
10.841
11.206
13.796
14.658
15.082
15.279
UVOLTS
Time (Min)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IS-DCB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBP
2.139
2.688
3.432
4.475
6.257
Aroclor-1221
8.521
10.296
10.465
Aroclor-1254
11.762
14.105
Aroclor-1262
14.699
15.155
15.386
15.868
16.606
16.896
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271551.d
Data file 2: 20150527.b/0527-2.b/05271551.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8F
Client ID: SDP-07(1.5-3.0)
Injection Date: 28-MAY-2015 08:27
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1221990	5.909	-0.003	5561877	31.6	30.2	4.6	Tetrachloro-m-xylene
14.889	-0.001	2302895	14.861	-0.002	3791755	34.8	33.1	5.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	79.0	75.5
Decachlorobiphenyl	86.9	82.7

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5703856	4.7
Hexabromobiphenyl	5633814	5265703	-6.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13664486	4.6
Hexabromobiphenyl	8980422	9503473	5.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.275	-0.072	85243	92.9	1	---			0.0
Aroclor-1016	2	8.803	-0.029	22690	8.1	2	8.805	-0.003	29906	1.9
Aroclor-1016	3	9.119	-0.010	92672	96.4	3	9.169	-0.079	57798	14.1
Aroclor-1016	4	9.895	-0.018	95195	93.3	4	10.028	0.018	251439	86.8
Total Col1Ave (4 peaks):					72.7	Total Col2Ave (3 peaks):				34.2 RPD = 72*
Corrected Ave (3 peaks):					64.8	Corrected Ave: <3 Peaks				
Aroclor-1221	1	---			0.0	1	4.998	-0.020	181605	128.0
Aroclor-1221	2	---			0.0	2	6.740	0.021	88379	37.2
Aroclor-1221	3	---			0.0	3	7.046	0.031	223650	166.9
Aroclor-1221	NS	---			----	4	7.180	0.030	320517	78.2
Col1Ave: <3 Quant Peaks						Col2Ave:		102.6		
Aroclor-1232	1	---			0.0	1	4.998	-0.022	181605	210.4
Aroclor-1232	2	6.984	-0.016	19889	79.3	2	7.180	0.027	320517	110.7
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	8.803	-0.027	22690	19.8	4	9.169	-0.078	57798	33.2
Col1Ave: <3 Quant Peaks						Col2Ave:		118.1		
Aroclor-1242	1	8.803	-0.031	22690	11.0	1	---			0.0
Aroclor-1242	2	9.119	-0.010	92672	125.8	2	8.805	-0.005	29906	2.6
Aroclor-1242	3	10.339	0.034	201833	294.0	3	10.367	-0.009	171383	42.4
Aroclor-1242	4	10.607	-0.001	27296	26.5	4	10.702	-0.032	834375	169.7
Total Col1Ave (4 peaks):					114.3	Total Col2Ave (3 peaks):				71.6 RPD = 46*
Corrected Ave (3 peaks):					54.4	Corrected Ave: <3 Peaks				
Aroclor-1248	1	9.395	0.002	27803	42.4	1	8.805	0.003	29906	4.0
Aroclor-1248	2	9.895	-0.014	95195	68.3	2	9.815	0.002	132757	22.1
Aroclor-1248	3	10.339	-0.021	201833	124.7	3	10.367	-0.005	171383	26.9
Aroclor-1248	4	10.607	0.002	27296	16.7	4	10.702	-0.027	834375	101.3
Total Col1Ave (4 peaks):					63.0	Total Col2Ave (4 peaks):				38.6 RPD = 48*
Corrected Ave (3 peaks):					42.5	Corrected Ave (3 peaks):				17.6 RPD = 83*
Aroclor-1254	1	10.339	-0.032	201833	193.7	1	10.613	-0.004	470419	65.4
Aroclor-1254	2	10.653	-0.037	267717	179.8	2	10.702	-0.011	834375	244.6
Aroclor-1254	3	11.088	0.017	1509731	1250.2	3	11.145	-0.003	363418	64.6
Aroclor-1254	4	11.206	-0.004	224521	98.5	4	11.294	-0.005	735931	61.3
Aroclor-1254	5	11.922	-0.003	122350	74.9	5	12.073	-0.007	486108	67.8
Total Col1Ave (5 peaks):					359.4	Total Col2Ave (5 peaks):				100.7 RPD = 112*
Corrected Ave (4 peaks):					136.7	Corrected Ave (4 peaks):				64.6 RPD = 71*
Aroclor-1260	1	12.470	0.001	219443	127.7	1	12.391	-0.004	553642	65.0
Aroclor-1260	2	13.142	-0.003	368539	66.3	2	13.098	-0.004	1049040	52.9
Aroclor-1260	3	13.512	-0.002	106559	41.3	3	13.569	-0.004	882014	146.3
Aroclor-1260	4	13.612	0.000	424148	272.1	4	13.624	0.000	1214604	92.9
Aroclor-1260	5	14.001	-0.011	182799	213.4	NS	---			----
Total Col1Ave (5 peaks):					144.2	Total Col2Ave (4 peaks):				89.3 RPD = 47*
Corrected Ave (4 peaks):					112.2	Corrected Ave (3 peaks):				70.2 RPD = 46*
Aroclor-1262	1	12.470	0.003	219443	70.7	1	12.391	-0.003	553642	36.8
Aroclor-1262	2	13.142	-0.001	368539	42.7	2	12.834	-0.003	626883	44.3
Aroclor-1262	3	13.512	-0.001	106559	39.1	3	13.098	-0.002	1049040	36.1
Aroclor-1262	4	13.673	-0.002	535922	113.4	4	13.569	-0.002	882014	70.4
Aroclor-1262	5	14.216	0.000	357905	84.7	5	14.211	-0.002	730873	74.2
Total Col1Ave (5 peaks):					70.1	Total Col2Ave (5 peaks):				52.4 RPD = 29
Corrected Ave (4 peaks):					59.3	Corrected Ave (4 peaks):				46.9 RPD = 23

Aroclor-1268	1	13.612	0.001	424148	52.0	1	13.569	0.000	882014	39.6
Aroclor-1268	2	13.673	-0.001	535922	56.0	2	13.624	-0.004	1214604	57.7
Aroclor-1268	3	14.001	0.004	182799	21.4	3	13.951	-0.002	228110	13.5
Aroclor-1268	4	14.596	-0.001	574010	19.2	4	14.571	-0.002	962929	20.1

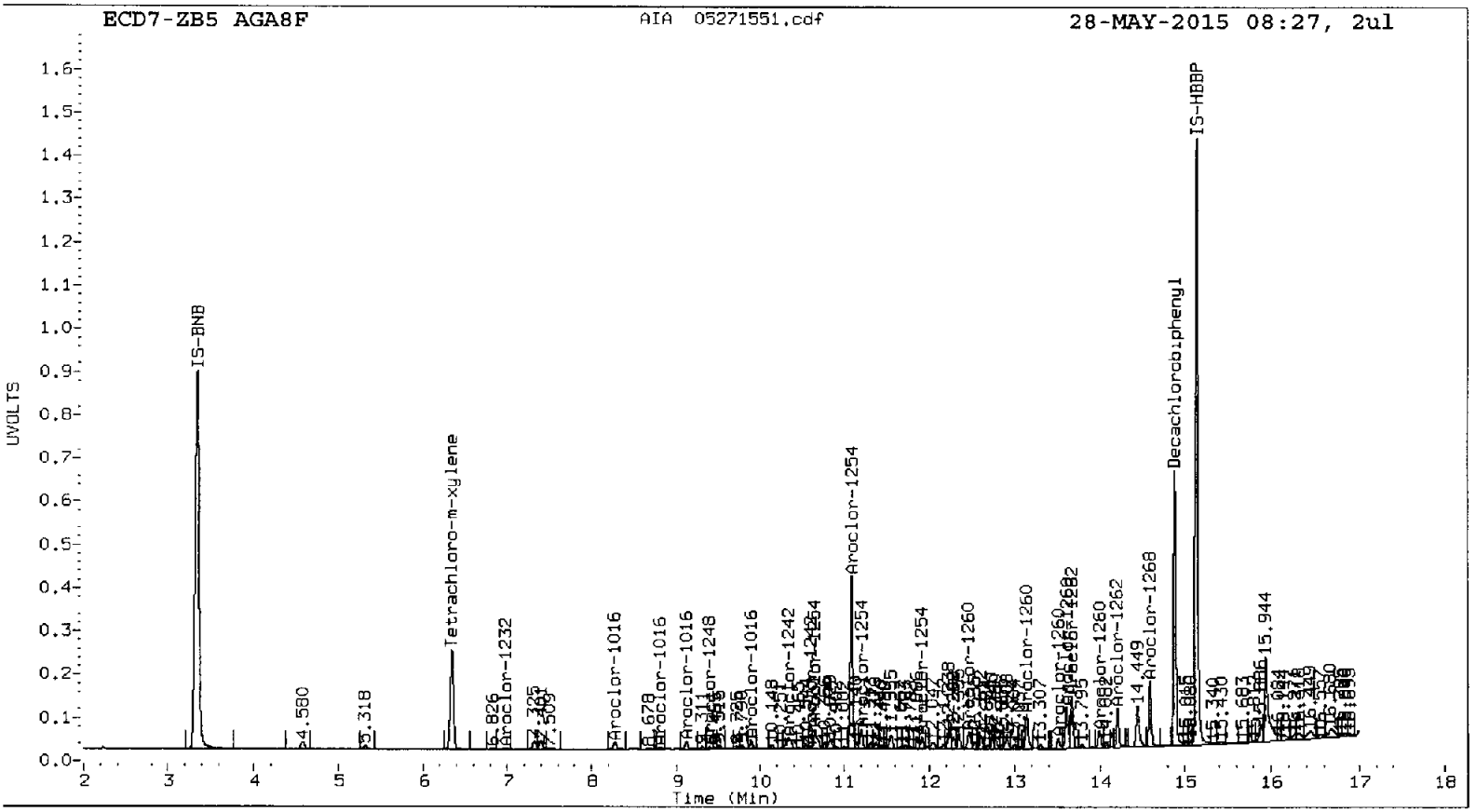
Total Col1Ave (4 peaks): 37.1 Total Col2Ave (4 peaks): 32.7 RPD = 13

Corrected Ave (3 peaks): 30.8 Corrected Ave (3 peaks): 24.4 RPD = 23

Total PCB Area Col1 (6.445 - 14.790) = 8811566 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 23158800 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
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Aroclor-1268
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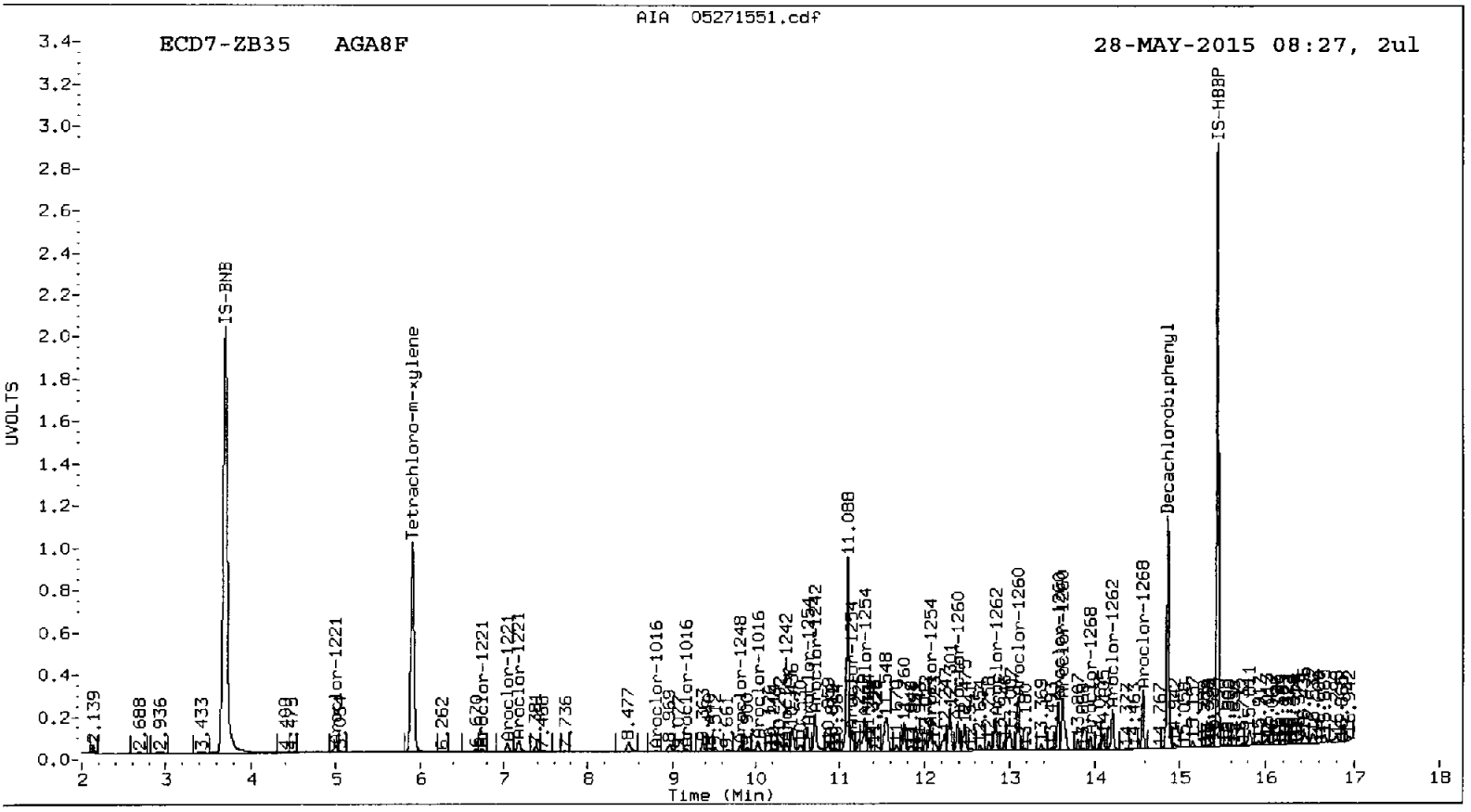
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Decachlorobiphenyl
11.088
Aroclor-1016
Aroclor-1221
Aroclor-1232
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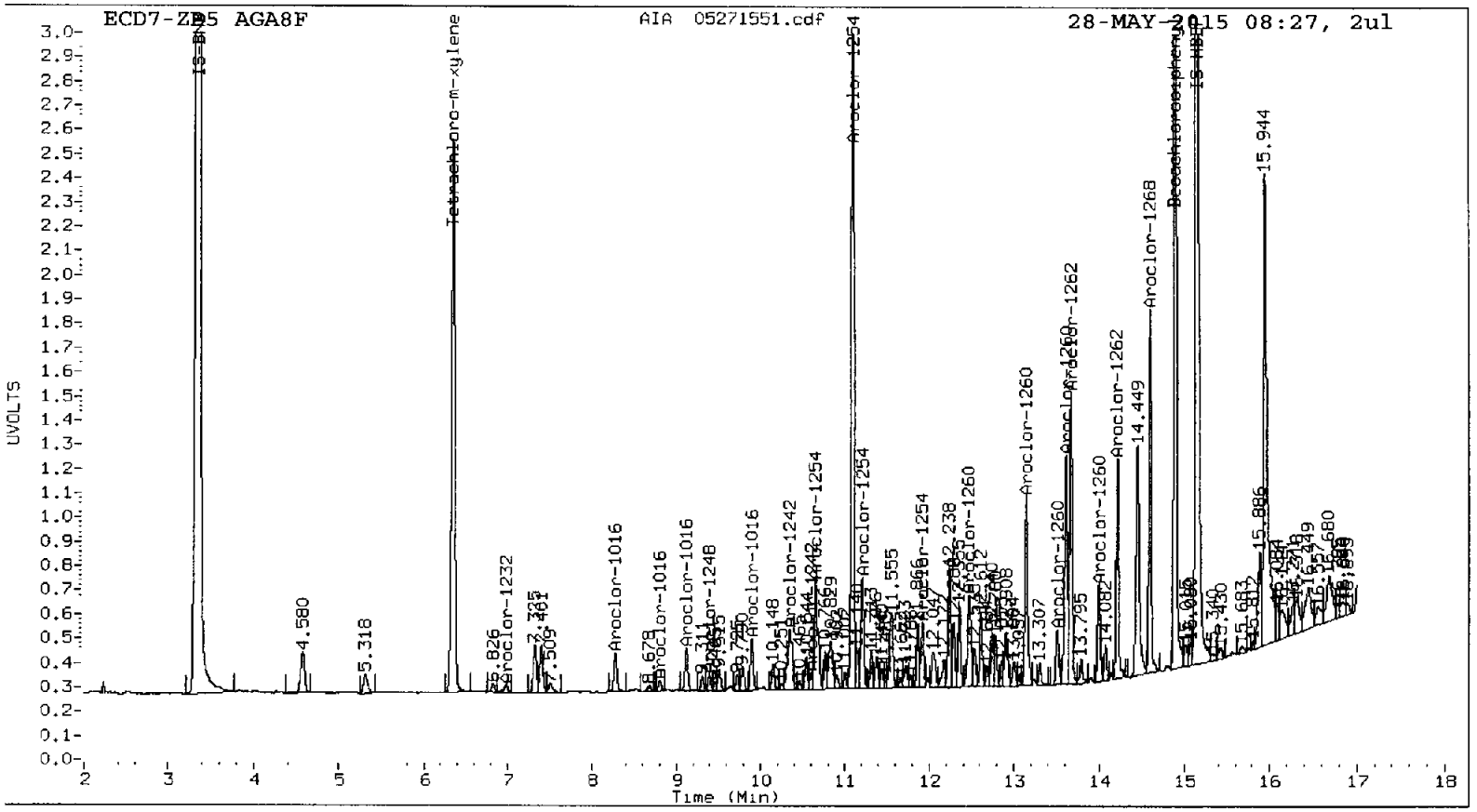
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Time (Min)
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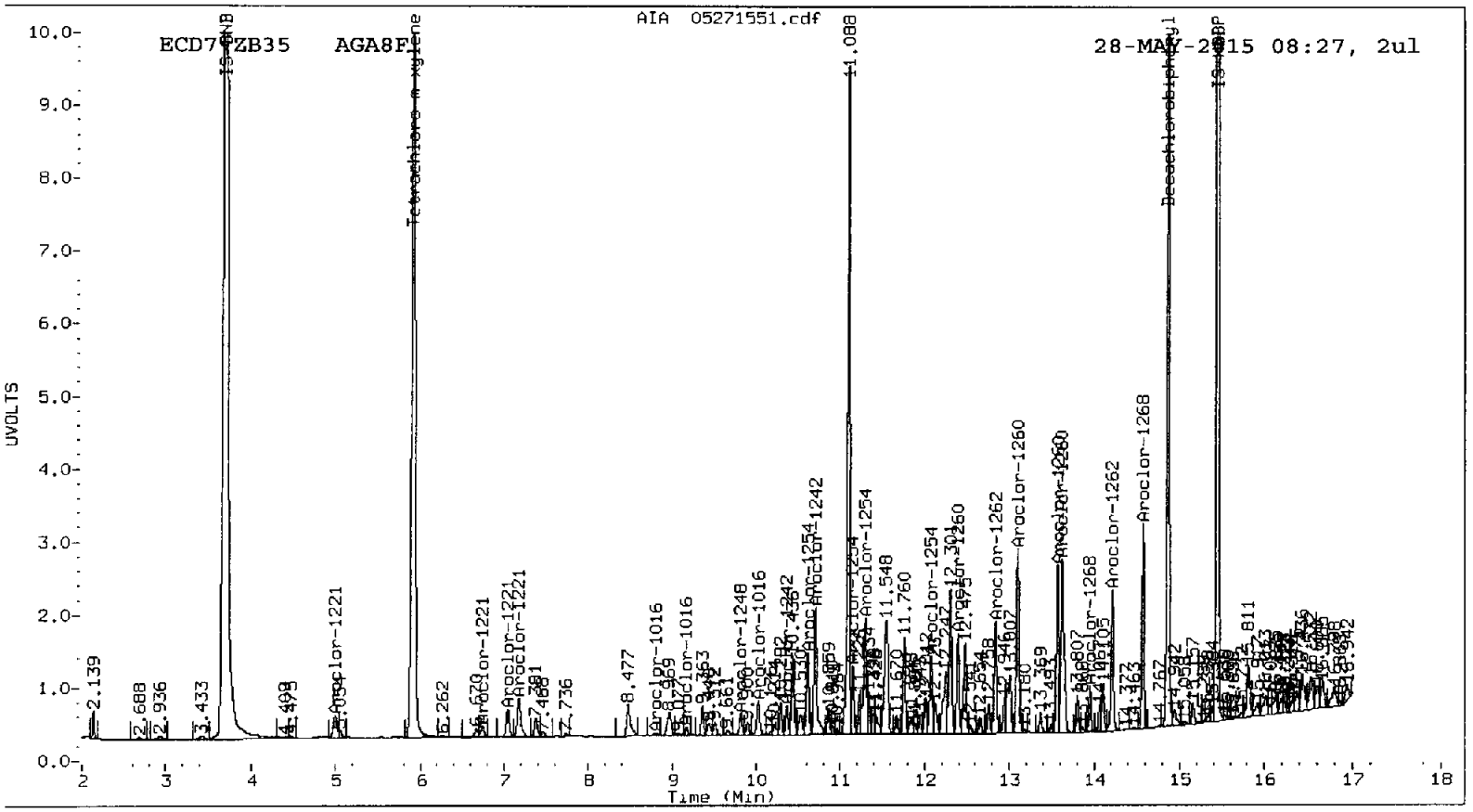
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
4.580
5.318
15.944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Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
11.088

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271552.d
Data file 2: 20150527.b/0527-2.b/05271552.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8FMS
Client ID: SDP-07(1.5-3.0) MS
Injection Date: 28-MAY-2015 08:49
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1291985	5.910	-0.002	5698497	33.6	31.0	8.1	Tetrachloro-m-xylene
14.889	-0.001	2314162	14.861	-0.002	4021868	35.8	35.2	1.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	84.0	77.4
Decachlorobiphenyl	89.5	87.9

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5671697	4.1
Hexabromobiphenyl	5633814	5139433	-8.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13641263	4.5
Hexabromobiphenyl	8980422	9488412	5.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 - 08823

		ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount	
Aroclor-1016	1	8.345	-0.001	399995	438.5	1	8.030	-0.002	2914062	389.7	
Aroclor-1016	2	8.832	0.000	1242712	444.5	2	8.805	-0.003	6263039	394.5	
Aroclor-1016	3	9.126	-0.003	513609	537.1	3	9.244	-0.004	1545334	377.3	
Aroclor-1016	4	9.908	-0.004	525823	518.1	4	10.008	-0.003	1215268	420.0	
Total Col1Ave (4 peaks):					484.5	Total Col2Ave (4 peaks):				395.4	RPD = 20
Corrected Ave (3 peaks):					467.0	Corrected Ave (3 peaks):				387.2	RPD = 19
Aroclor-1221	1	---			0.0	1	4.999	-0.019	258878	182.8	
Aroclor-1221	2	7.003	0.004	88093	243.9	2	6.723	0.004	401250	169.3	
Aroclor-1221	3	7.127	0.004	319827	313.7	3	7.026	0.011	514778	384.8	
Aroclor-1221	NS	---			----	4	7.154	0.004	1657095	404.8	
Col1Ave: <3 Quant Peaks						Col2Ave: 285.4					
Aroclor-1232	1	---			0.0	1	4.999	-0.022	258878	300.4	
Aroclor-1232	2	7.003	0.004	88093	353.1	2	7.154	0.001	1657095	573.4	
Aroclor-1232	3	7.127	0.001	319827	469.8	3	8.030	0.000	2914062	859.9	
Aroclor-1232	4	8.832	0.002	1242712	1092.2	4	9.244	-0.003	1545334	888.8	
Total Col1Ave (3 peaks):					638.4	Total Col2Ave (4 peaks):				655.6	RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				577.9	
Aroclor-1242	1	8.832	-0.002	1242712	687.3	1	8.030	-0.003	2914062	531.1	
Aroclor-1242	2	9.126	-0.003	513609	701.0	2	8.805	-0.005	6263039	540.7	
Aroclor-1242	3	10.303	-0.001	85074	124.6	3	10.369	-0.007	391314	97.0	
Aroclor-1242	4	10.609	0.000	79237	77.5	4	10.704	-0.030	1028100	209.5	
Total Col1Ave (4 peaks):					377.6	Total Col2Ave (4 peaks):				344.6	RPD = 9
Corrected Ave (3 peaks):					269.8	Corrected Ave (3 peaks):				279.2	RPD = 3
Aroclor-1248	1	9.394	0.002	227723	349.5	1	8.805	0.003	6263039	833.1	
Aroclor-1248	2	9.908	-0.001	525823	379.5	2	9.814	0.001	2052607	341.7	
Aroclor-1248	3	10.368	0.009	403701	250.8	3	10.369	-0.003	391314	61.5	
Aroclor-1248	4	10.609	0.004	79237	48.7	4	10.704	-0.025	1028100	125.1	
Total Col1Ave (4 peaks):					257.1	Total Col2Ave (4 peaks):				340.3	RPD = 28
Corrected Ave (3 peaks):					216.3	Corrected Ave (3 peaks):				176.1	RPD = 21
Aroclor-1254	1	10.368	-0.003	403701	389.7	1	10.614	-0.004	1675413	233.2	
Aroclor-1254	2	10.690	-0.001	331642	224.0	2	10.704	-0.009	1028100	301.9	
Aroclor-1254	3	11.088	0.017	1554157	1294.3	3	11.145	-0.003	688787	122.7	
Aroclor-1254	4	11.207	-0.003	543092	239.7	4	11.295	-0.004	1516577	126.6	
Aroclor-1254	5	11.918	-0.007	545433	335.8	5	12.079	-0.001	2293084	320.4	
Total Col1Ave (5 peaks):					496.7	Total Col2Ave (5 peaks):				221.0	RPD = 77*
Corrected Ave (4 peaks):					297.3	Corrected Ave (4 peaks):				196.1	RPD = 41*
Aroclor-1260	1	12.468	-0.001	965199	575.7	1	12.394	-0.002	3409036	400.7	
Aroclor-1260	2	13.143	-0.002	3128926	576.6	2	13.099	-0.003	8570911	432.5	
Aroclor-1260	3	13.513	-0.001	1427171	566.1	3	13.569	-0.004	2671549	444.0	
Aroclor-1260	4	13.613	0.000	1022656	672.2	4	13.621	-0.003	5739974	439.6	
Aroclor-1260	5	14.009	-0.002	522626	625.1	NS	---			----	
Total Col1Ave (5 peaks):					603.1	Total Col2Ave (4 peaks):				429.2	RPD = 34
Corrected Ave (4 peaks):					585.9	Corrected Ave (3 peaks):				424.3	RPD = 32
Aroclor-1262	1	12.468	0.001	965199	318.5	1	12.394	-0.001	3409036	226.7	
Aroclor-1262	2	13.143	0.000	3128926	371.2	2	12.835	-0.002	4349889	307.7	
Aroclor-1262	3	13.513	-0.001	1427171	537.1	3	13.099	-0.001	8570911	295.5	
Aroclor-1262	4	13.675	0.001	1319307	286.1	4	13.569	-0.002	2671549	213.6	
Aroclor-1262	5	14.217	0.001	1220483	295.9	5	14.211	-0.001	2388098	242.9	
Total Col1Ave (5 peaks):					361.8	Total Col2Ave (5 peaks):				257.3	RPD = 34

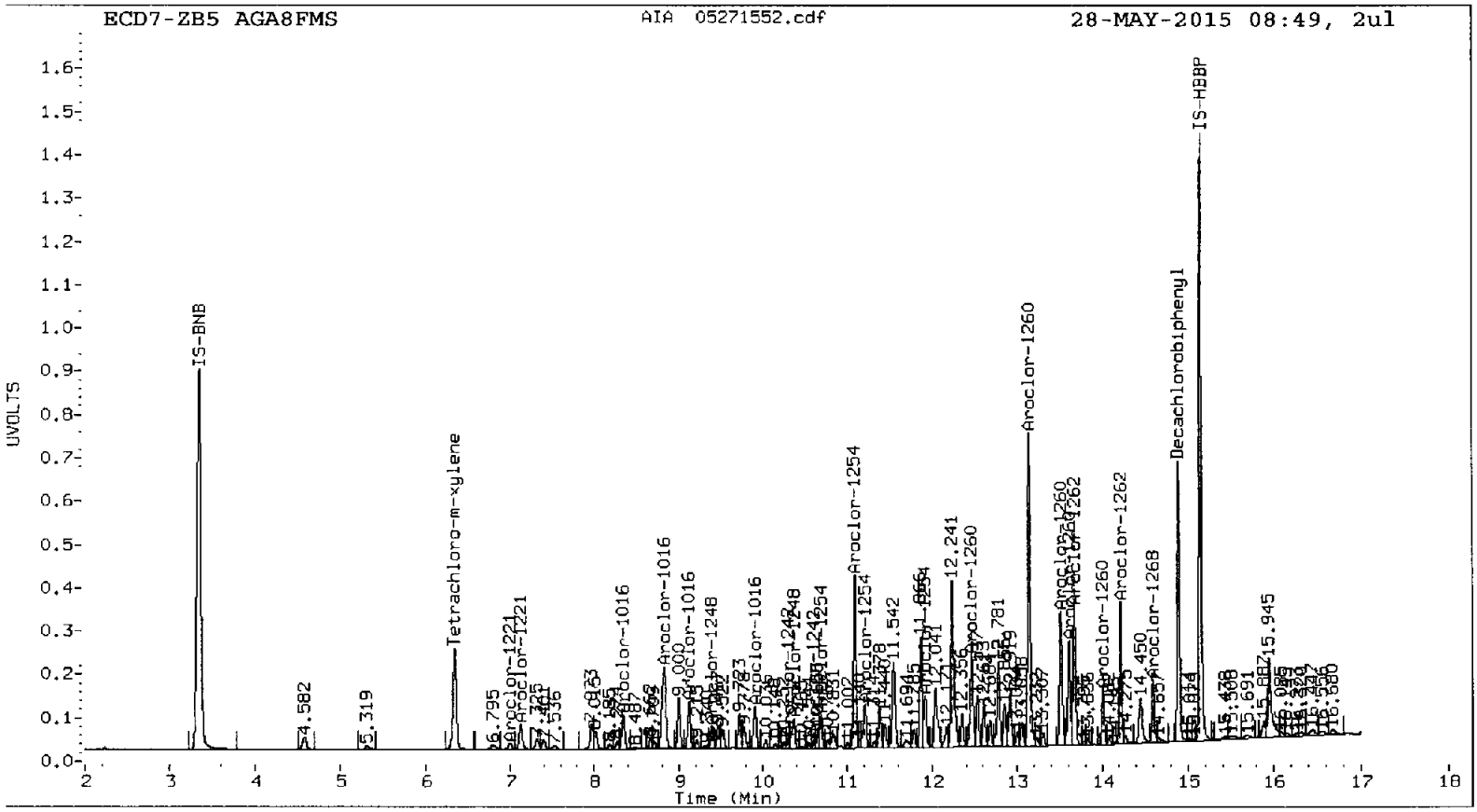
Corrected Ave (4 peaks):			317.9		Corrected Ave (4 peaks):			244.7	RPD = 26	
Aroclor-1268 1	13.613	0.001	1022656	128.4	1	13.569	0.000	2671549	120.1	
Aroclor-1268 2	13.675	0.002	1319307	141.3	2	13.621	-0.007	5739974	273.2	
Aroclor-1268 3	14.009	0.013	522626	62.6	3	13.952	0.000	193143	11.4	
Aroclor-1268 4	14.597	0.000	559840	19.2	4	14.571	-0.002	956931	20.0	
Total Col1Ave (4 peaks):			87.9		Total Col2Ave (4 peaks):			106.2	RPD = 19	
Corrected Ave (3 peaks):			70.1		Corrected Ave (3 peaks):			50.5	RPD = 32	

Total PCB Area Col1 (6.445 - 14.790) = 31647721 Col1 Total PCB = 1.3 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 110892184 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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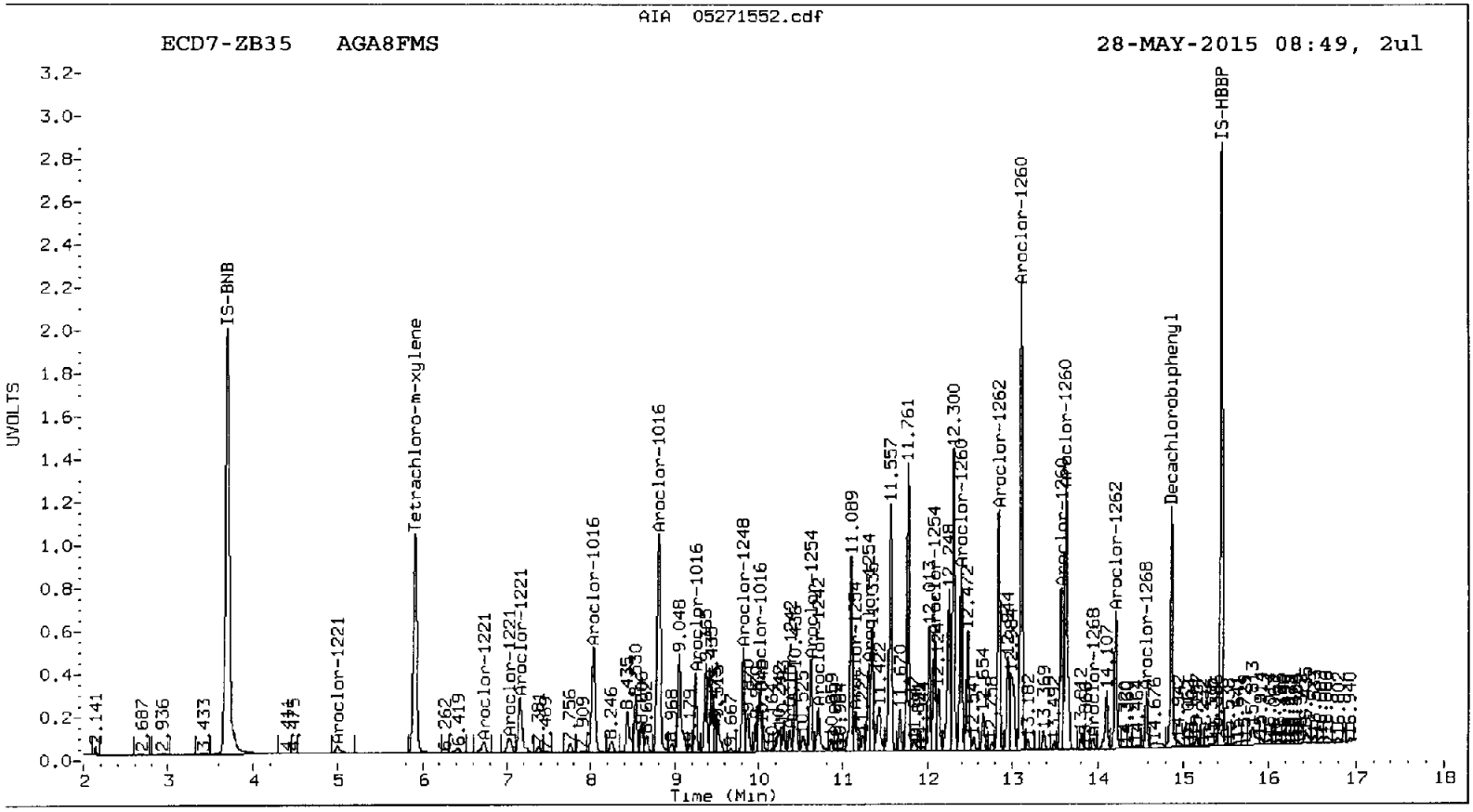
Aroclor-1262
Aroclor-1268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Tetrachloro-m-xylene
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Decachlorobiphenyl
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Aroclor-1260
Aroclor-1262
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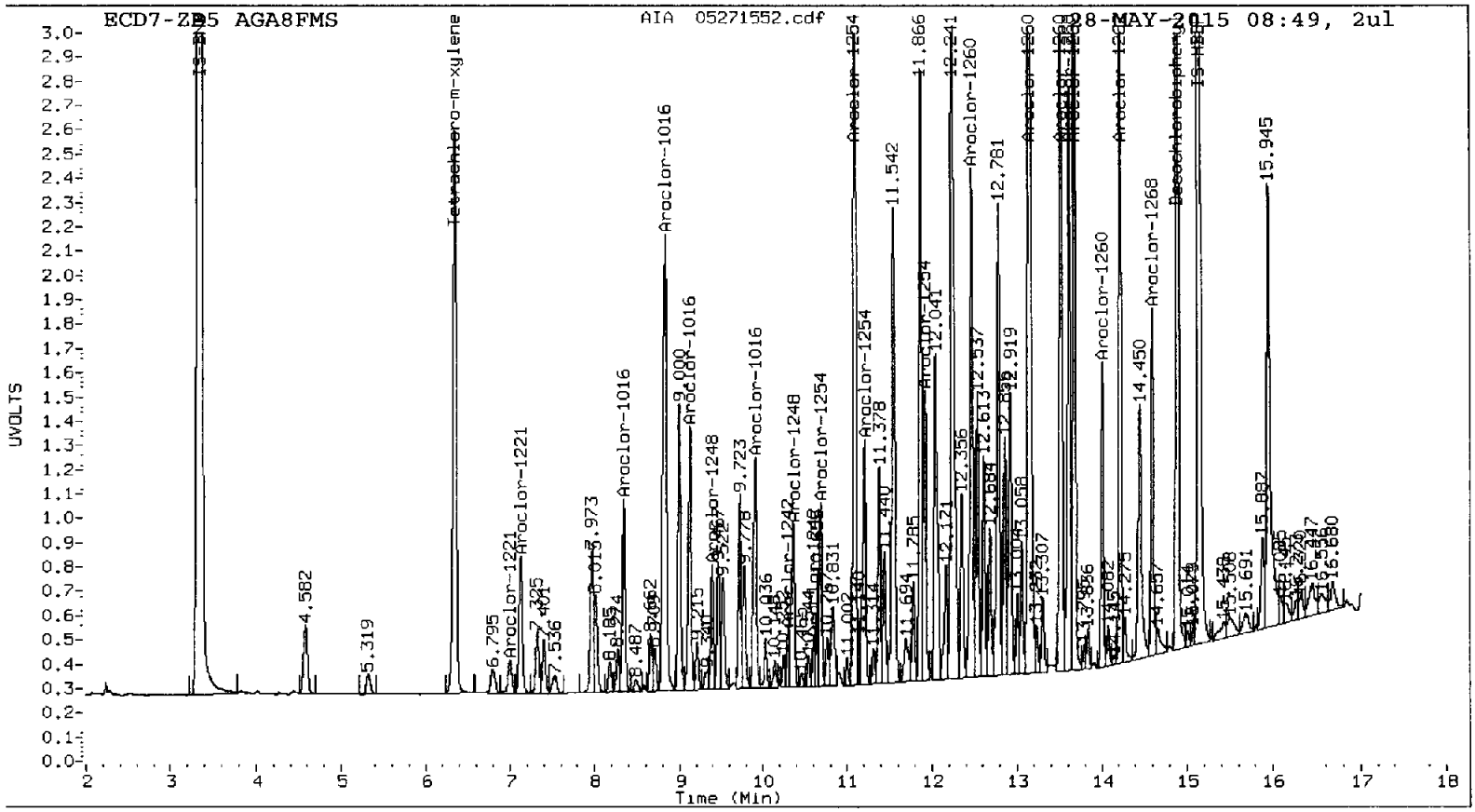
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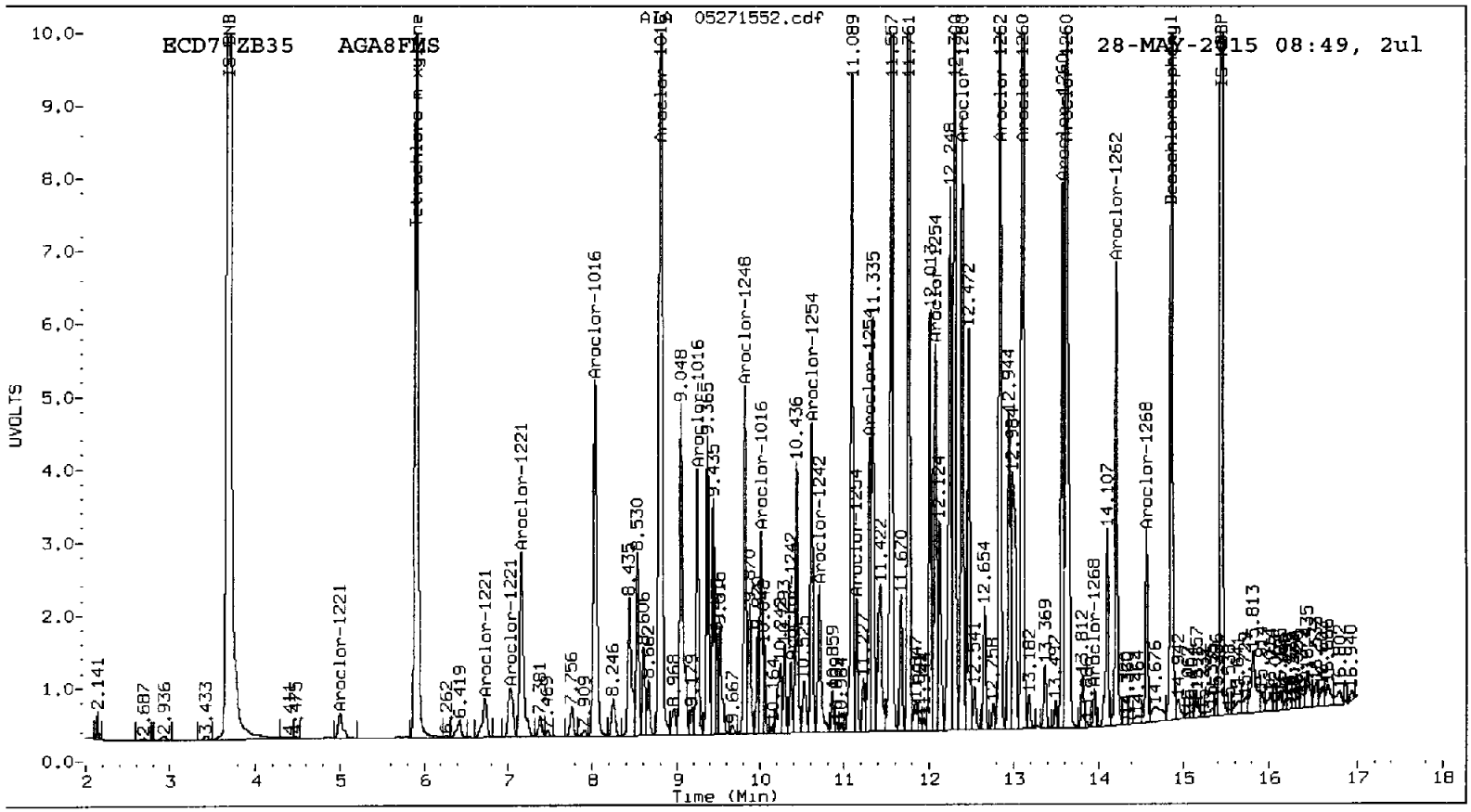
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15.369

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271553.d
Data file 2: 20150527.b/0527-2.b/05271553.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8FMSD
Client ID: SDP-07(1.5-3.0) MSD
Injection Date: 28-MAY-2015 09:10
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.002	1278139	5.911	-0.002	5632964	33.4	31.3	6.5	Tetrachloro-m-xylene
14.890	0.000	2274279	14.862	-0.001	3909722	34.9	34.2	2.1	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	83.4	78.2
Decachlorobiphenyl	87.4	85.6

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5649856	3.7
Hexabromobiphenyl	5633814	5174755	-8.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13356421	2.3
Hexabromobiphenyl	8980422	9475879	5.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 - 38828

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.347	0.001	394403	434.0	1	8.030	-0.001	2850557	389.4
Aroclor-1016	2	8.832	0.000	1227293	440.7	2	8.807	-0.002	6133490	394.6
Aroclor-1016	3	9.127	-0.002	503580	528.6	3	9.245	-0.002	1516719	378.2
Aroclor-1016	4	9.910	-0.003	519172	513.5	4	10.009	-0.001	1182031	417.2
Total Col1Ave (4 peaks):					479.2	Total Col2Ave (4 peaks):				394.8 RPD = 19
Corrected Ave (3 peaks):					462.7	Corrected Ave (3 peaks):				387.4 RPD = 18
Aroclor-1221	1	---			0.0	1	5.000	-0.018	263813	190.2
Aroclor-1221	2	7.005	0.006	84052	233.6	2	6.725	0.005	390539	168.3
Aroclor-1221	3	7.128	0.005	311111	306.3	3	7.028	0.013	476093	363.5
Aroclor-1221	NS	---			----	4	7.156	0.006	1628752	406.4
Col1Ave: <3 Quant Peaks						Col2Ave: 282.1				
Aroclor-1232	1	---			0.0	1	5.000	-0.021	263813	312.6
Aroclor-1232	2	7.005	0.005	84052	338.2	2	7.156	0.003	1628752	575.6
Aroclor-1232	3	7.128	0.002	311111	458.8	3	8.030	0.001	2850557	859.1
Aroclor-1232	4	8.832	0.002	1227293	1082.8	4	9.245	-0.002	1516719	890.9
Total Col1Ave (3 peaks):					626.6	Total Col2Ave (4 peaks):				659.6 RPD = 5
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				582.4
Aroclor-1242	1	8.832	-0.002	1227293	602.1	1	8.030	-0.003	2850557	530.7
Aroclor-1242	2	9.127	-0.002	503580	690.0	2	8.807	-0.003	6133490	540.8
Aroclor-1242	3	10.304	0.000	87749	129.1	3	10.370	-0.005	369362	93.5
Aroclor-1242	4	10.609	0.001	73399	72.1	4	10.704	-0.030	939020	195.4
Total Col1Ave (4 peaks):					373.3	Total Col2Ave (4 peaks):				340.1 RPD = 9
Corrected Ave (3 peaks):					267.7	Corrected Ave (3 peaks):				273.2 RPD = 2
Aroclor-1248	1	9.396	0.003	225458	347.3	1	8.807	0.005	6133490	833.2
Aroclor-1248	2	9.910	0.001	519172	376.2	2	9.814	0.002	1988813	338.1
Aroclor-1248	3	10.369	0.010	357238	222.8	3	10.370	-0.001	369362	59.3
Aroclor-1248	4	10.609	0.005	73399	45.3	4	10.704	-0.025	939020	116.7
Total Col1Ave (4 peaks):					247.9	Total Col2Ave (4 peaks):				336.8 RPD = 30
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				171.4 RPD = 18
Aroclor-1254	1	10.369	-0.002	357238	346.2	1	10.615	-0.003	1491327	212.0
Aroclor-1254	2	10.692	0.001	301622	204.5	2	10.704	-0.009	939020	281.6
Aroclor-1254	3	11.090	0.018	1609958	1246.0	3	11.145	-0.003	540491	98.3
Aroclor-1254	4	11.207	-0.003	494961	219.3	4	11.297	-0.002	1157533	98.7
Aroclor-1254	5	11.914	-0.010	350002	216.3	5	12.082	0.002	1561985	222.9
Total Col1Ave (5 peaks):					466.9	Total Col2Ave (5 peaks):				182.7 RPD = 87*
Corrected Ave (4 peaks):					246.6	Corrected Ave (4 peaks):				158.0 RPD = 44*
Aroclor-1260	1	12.469	0.000	910223	539.2	1	12.394	-0.002	3248794	382.4
Aroclor-1260	2	13.144	0.000	2944968	539.0	2	13.100	-0.002	8032133	405.8
Aroclor-1260	3	13.514	0.000	1317228	518.9	3	13.570	-0.003	2547768	424.0
Aroclor-1260	4	13.614	0.001	979478	639.5	4	13.623	-0.002	5339518	409.5
Aroclor-1260	5	14.011	-0.001	802784	597.3	NS	---			----
Total Col1Ave (5 peaks):					566.8	Total Col2Ave (4 peaks):				405.4 RPD = 33
Corrected Ave (4 peaks):					548.6	Corrected Ave (3 peaks):				399.2 RPD = 32
Aroclor-1262	1	12.469	0.002	910223	298.3	1	12.394	0.000	3248794	216.3
Aroclor-1262	2	13.144	0.001	2944968	347.0	2	12.837	0.001	3745962	265.4
Aroclor-1262	3	13.514	0.001	1317228	492.4	3	13.100	0.000	8032133	277.3
Aroclor-1262	4	13.676	0.001	1269950	273.5	4	13.570	-0.001	2547768	204.0
Aroclor-1262	5	14.217	0.001	1168935	281.4	5	14.213	0.000	2281279	232.3
Total Col1Ave (5 peaks):					338.5	Total Col2Ave (5 peaks):				239.0 RPD = 34

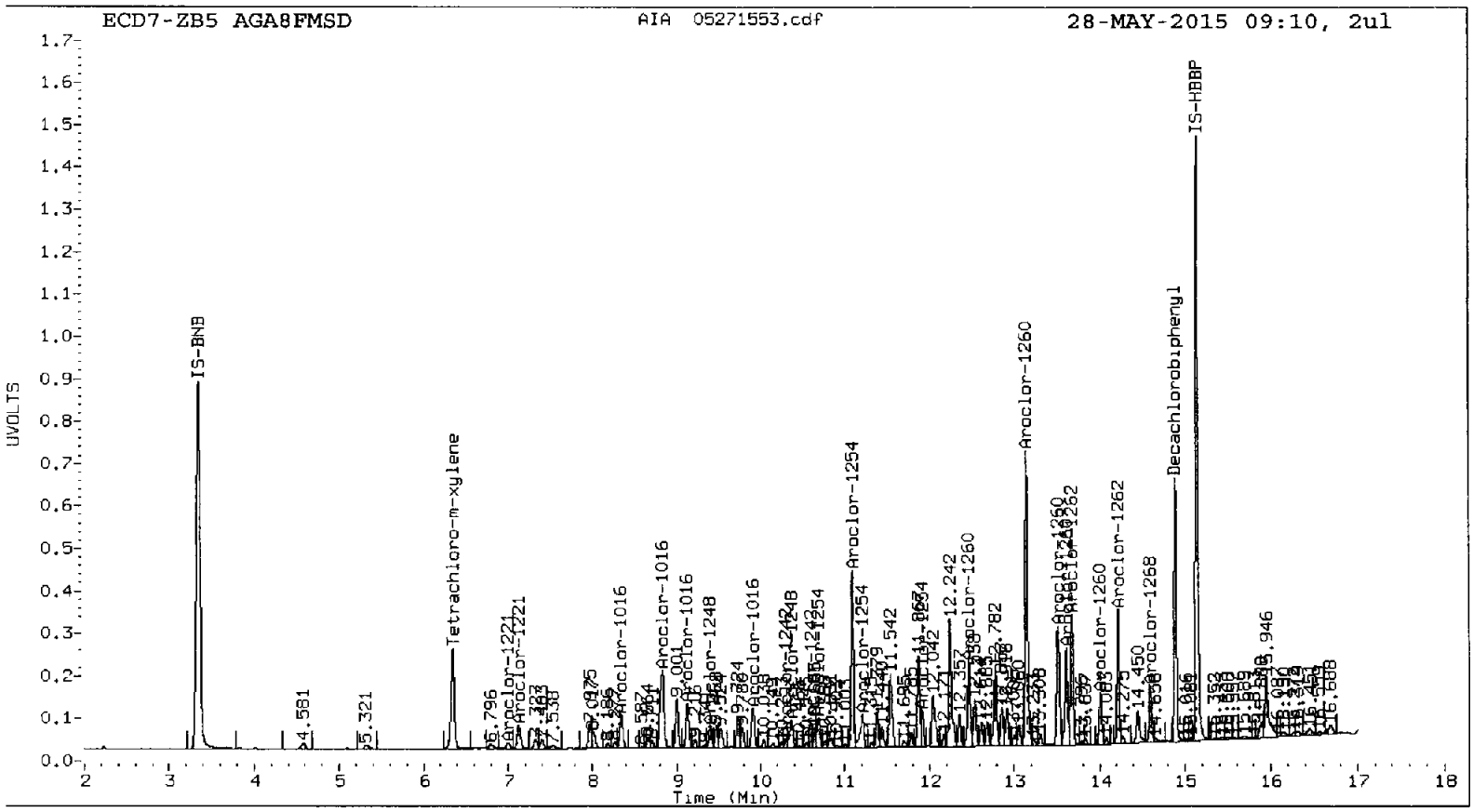
	Corrected Ave (4 peaks):			300.1		Corrected Ave (4 peaks):			229.5	RPD = 27
Aroclor-1268	1	13.614	0.002	979478	122.1	1	13.570	0.001	2547768	114.7
Aroclor-1268	2	13.676	0.002	1269950	135.1	2	13.623	-0.006	5339518	254.5
Aroclor-1268	3	14.011	0.014	502784	59.8	3	13.953	0.000	177559	10.5
Aroclor-1268	4	14.597	0.001	527492	17.9	4	14.572	-0.001	879754	18.5
	Total Col1Ave (4 peaks):			83.7		Total Col2Ave (4 peaks):			99.5	RPD = 17
	Corrected Ave (3 peaks):			66.6		Corrected Ave (3 peaks):			47.9	RPD = 33

Total PCB Area Col1 (6.445 - 14.790) = 28886388 Col1 Total PCB = 1.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 100502532 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

ABAA : 008130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Time (Min)
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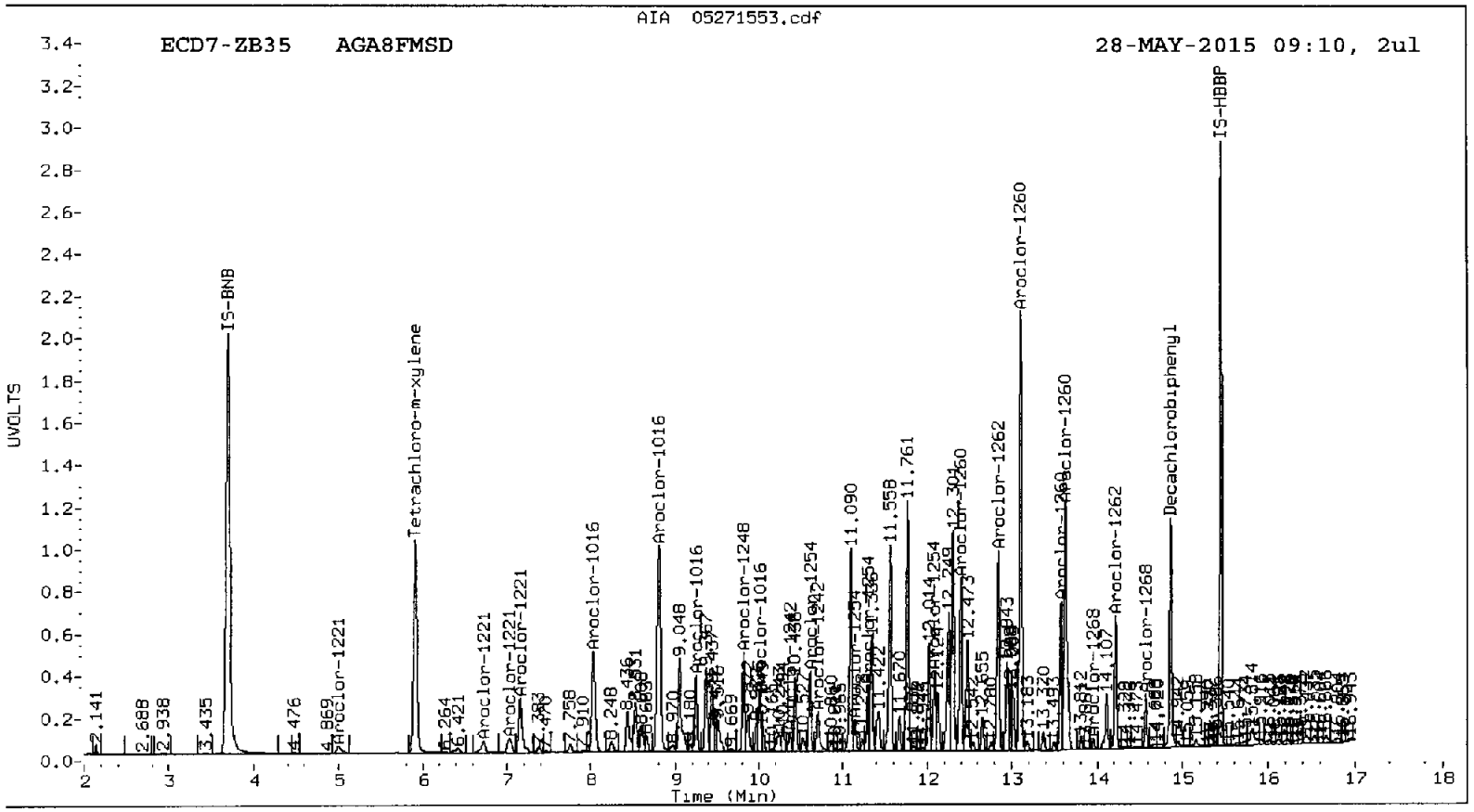
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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IS-HBBP
Decachlorobiphenyl
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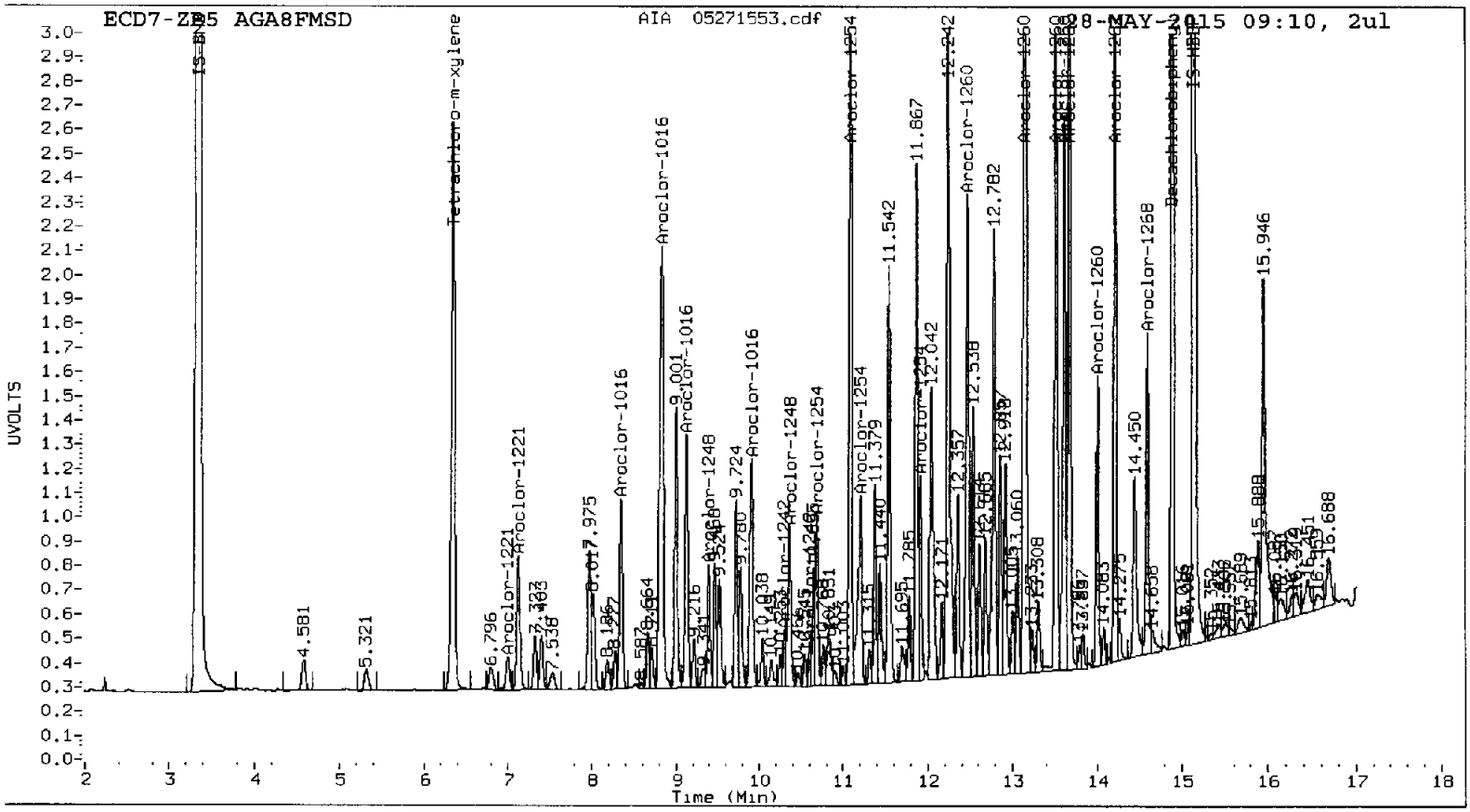
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Time (Min)
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Aroclor-1221
Aroclor-1248
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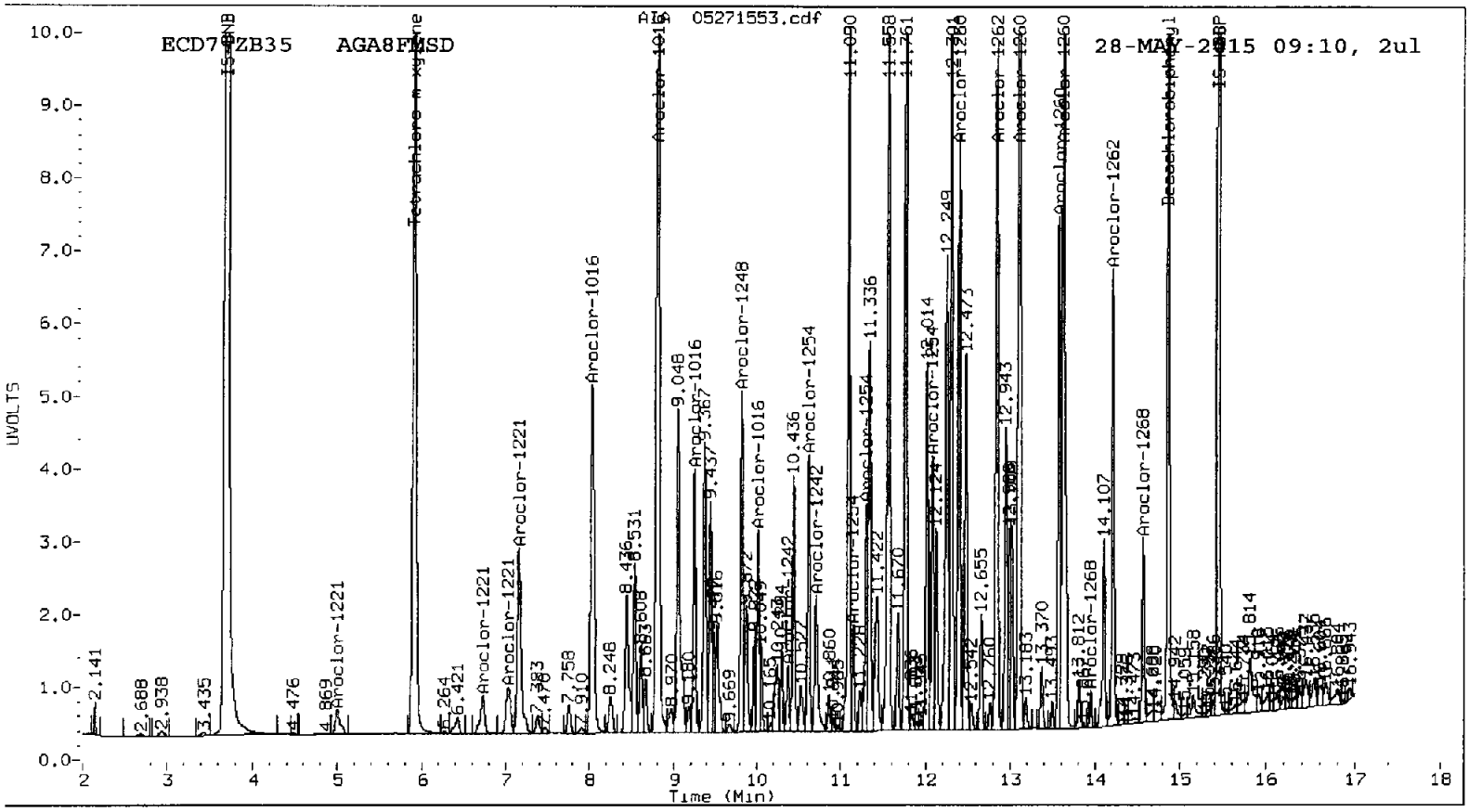
Aroclor-1260
Aroclor-1268
Decachlorobiphenyl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Time (Min)
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Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271554.d
Data file 2: 20150527.b/0527-2.b/05271554.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 28-MAY-2015 09:32
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.002	1392769	5.912	0.000	6521098	37.9	36.9	2.6	Tetrachloro-m-xylene
14.890	0.000	2557488	14.863	0.001	4240986	38.2	38.2	0.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.7	92.3
Decachlorobiphenyl	95.6	95.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5420555	-0.5
Hexabromobiphenyl	5633814	5318139	-5.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13103463	0.3
Hexabromobiphenyl	8980422	9200397	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	8.834	0.000	496244	253.8	1	8.033	0.000	1319265	250.3
Aroclor-1242	2	9.129	0.000	177214	253.1	2	8.810	0.000	2755213	247.6
Aroclor-1242	3	10.305	0.000	164508	252.2	3	10.375	0.000	940242	242.6
Aroclor-1242	4	10.608	0.000	248507	254.3	4	10.734	0.000	1147685	243.5

Total Col1Ave (4 peaks): 253.3 Total Col2Ave (4 peaks): 246.0 RPD = 3

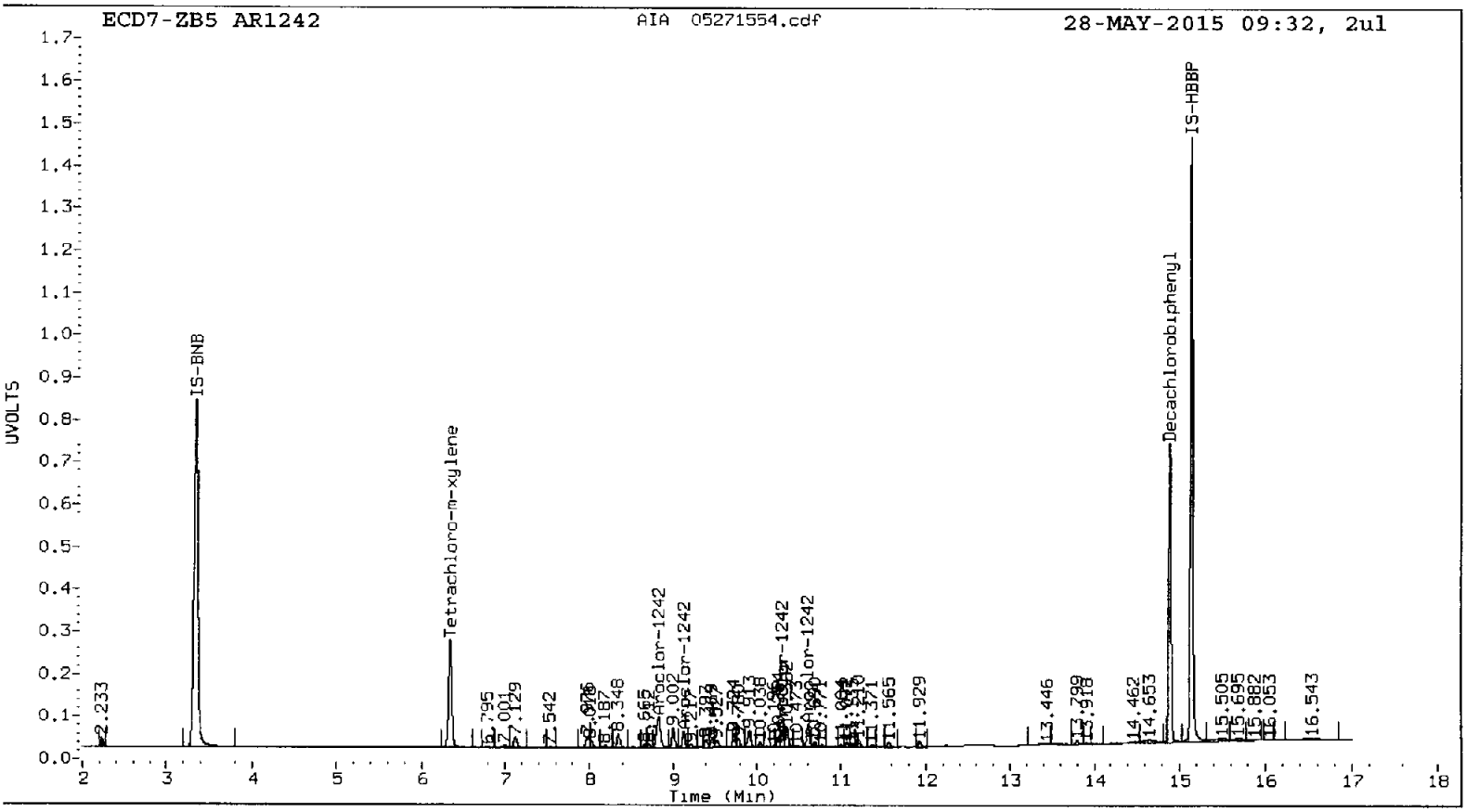
Corrected Ave (3 peaks): 253.0 Corrected Ave (3 peaks): 244.6 RPD = 3

CalAmt %D: 1.3 CalAmt %D: -1.6

Total PCB Area Col1 (6.445 - 14.790) = 3891082 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 20851001 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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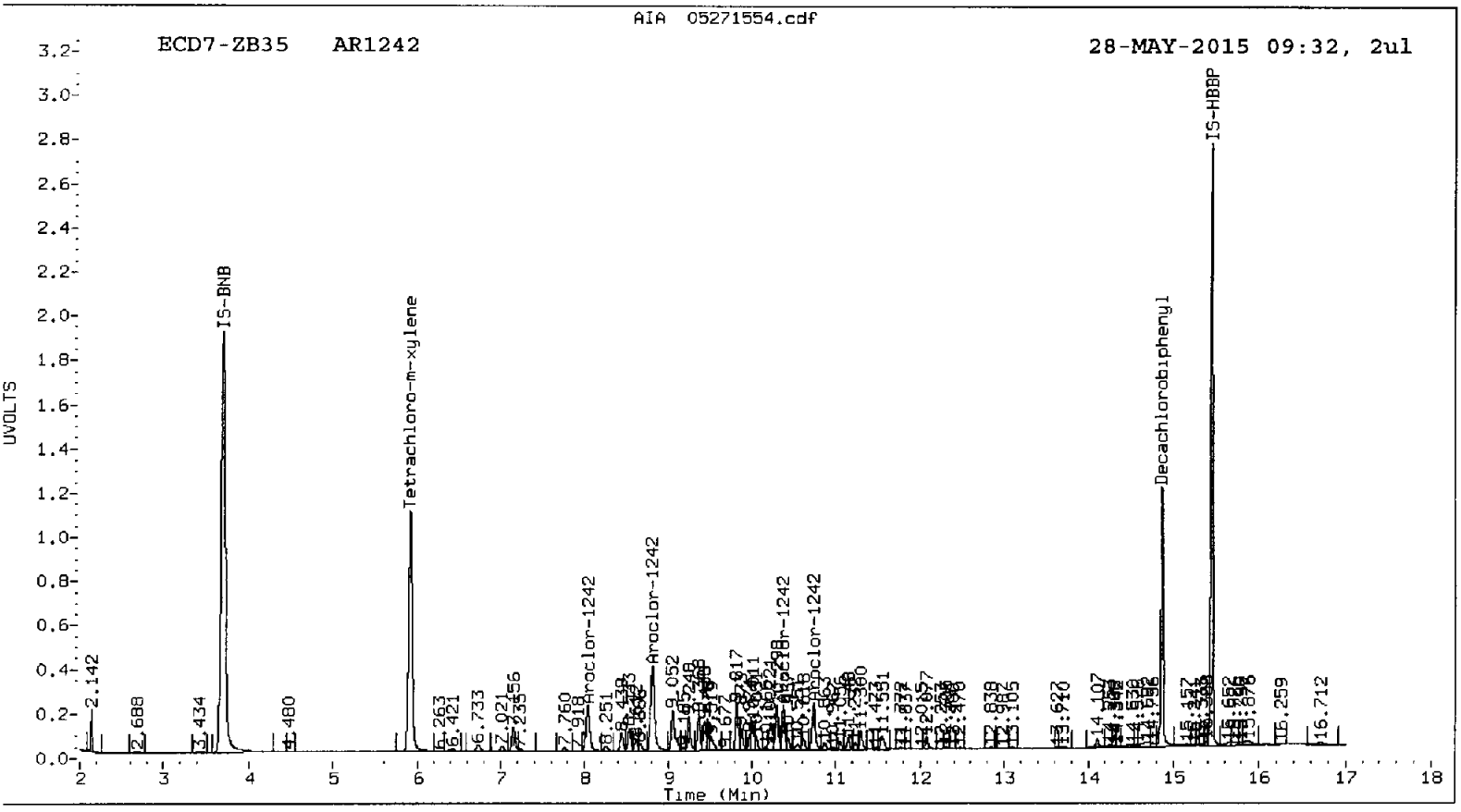
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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28-MAY-2015 09:32, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271555.d
Data file 2: 20150527.b/0527-2.b/05271555.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 09:53
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.003	1425524	5.913	0.001	6699558	39.0	37.9	2.9	Tetrachloro-m-xylene
14.891	0.000	2699156	14.863	0.000	4254161	39.4	37.8	4.2	Decachlorobiphenyl

' Indicates RPD > 40%
I Indicates Column 1 peak was manually integrated
I Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.4	94.6
Decachlorobiphenyl	98.5	94.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5393241	-1.0
Hexabromobiphenyl	5633814	5446526	-3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13124437	0.5
Hexabromobiphenyl	8980422	9338057	4.0

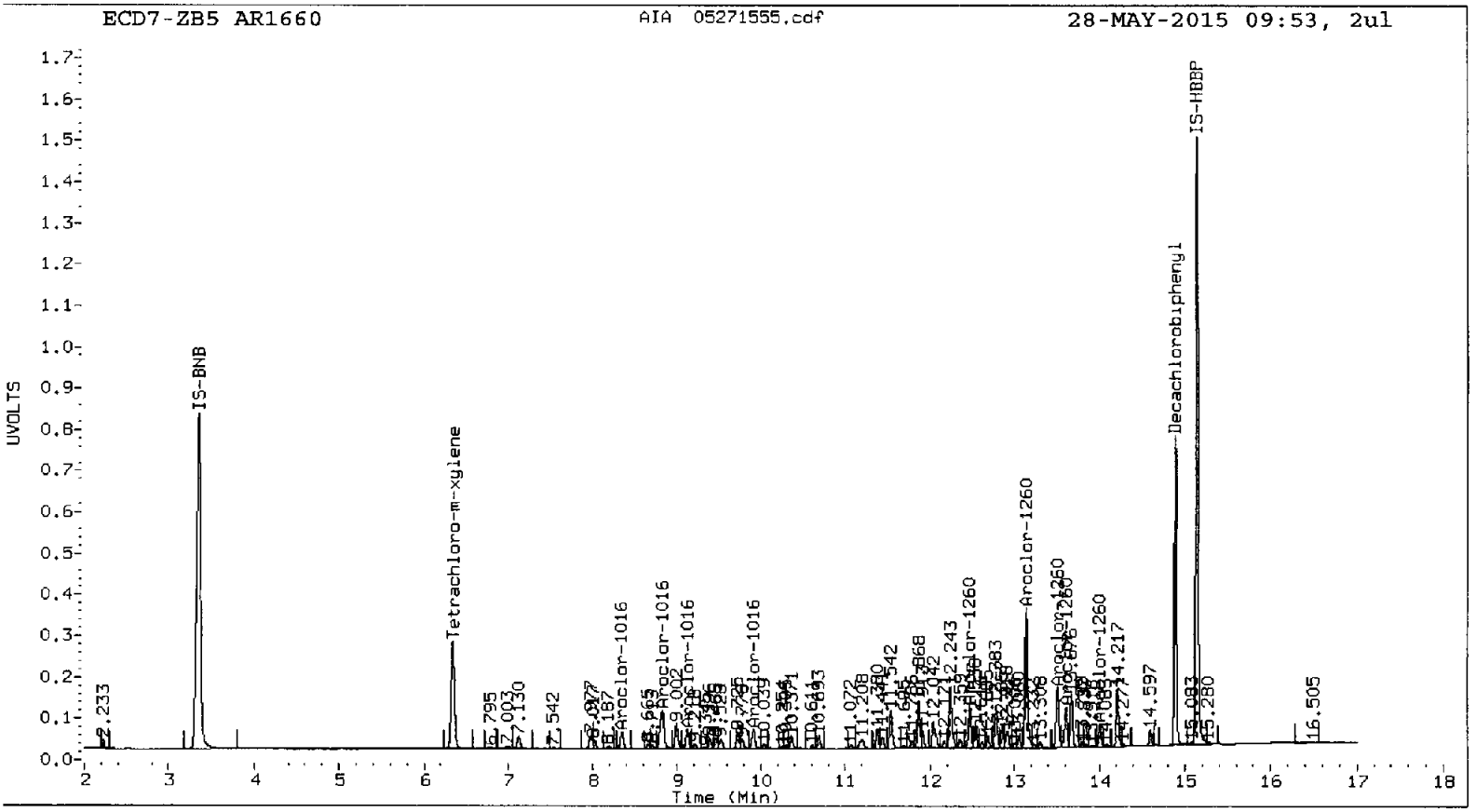
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.348	0.002	211672	244.0	1	8.032	0.001	1715639	238.5
Aroclor-1016	2	8.833	0.001	644419	242.4	2	8.810	0.001	3605396	236.0
Aroclor-1016	3	9.129	0.000	229395	252.3	3	9.249	0.001	952880	241.8
Aroclor-1016	4	9.913	0.001	240666	249.4	4	10.011	0.000	654796	235.2
Total Col1Ave (4 peaks):					247.0	Total Col2Ave (4 peaks):				237.9 RPD = 4
Corrected Ave (3 peaks):					245.3	Corrected Ave (3 peaks):				236.6 RPD = 4
CalAmt %D:					-1.2	CalAmt %D:				-4.8
Aroclor-1260	1	12.469	0.001	440432	247.9	1	12.396	0.000	1875738	224.0
Aroclor-1260	2	13.145	0.000	1464112	254.6	2	13.102	0.000	4372613	224.2
Aroclor-1260	3	13.514	0.000	675173	252.7	3	13.573	0.000	1283959	216.8
Aroclor-1260	4	13.613	0.000	407925	253.0	4	13.624	0.000	2839792	221.0
Aroclor-1260	5	14.012	0.000	223987	252.8	NS	---			----
Total Col1Ave (5 peaks):					252.2	Total Col2Ave (4 peaks):				221.5 RPD = 13
Corrected Ave (4 peaks):					251.6	Corrected Ave (3 peaks):				220.6 RPD = 13
CalAmt %D:					0.9	CalAmt %D:				-11.4

Total PCB Area Col1 (6.445 - 14.790) = 12314924 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 52420455 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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Time (Min)
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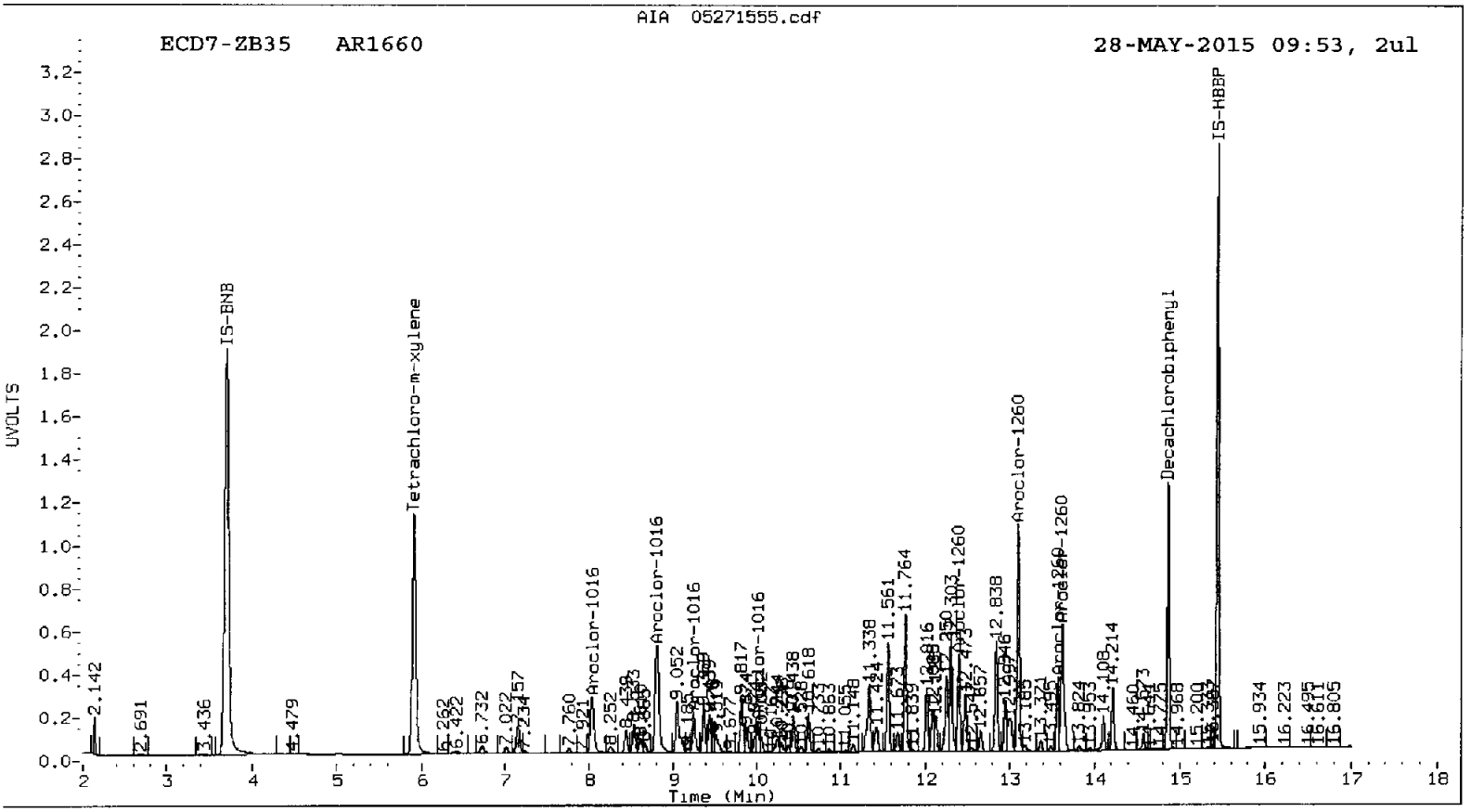
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271556.d
Data file 2: 20150527.b/0527-2.b/05271556.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8G
Client ID: SDP-07(8.5-9.5)
Injection Date: 28-MAY-2015 10:14
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1251250	5.911	-0.001	5807594	32.2	31.4	2.5	Tetrachloro-m-xylene
14.890	0.000	2420505	14.863	0.000	3899026	34.1	32.7	4.1	Decachlorobiphenyl

' Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
I Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	80.6	78.6
Decachlorobiphenyl	85.2	81.8

A 05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5725121	5.1
Hexabromobiphenyl	5633814	5647565	0.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13693431	4.9
Hexabromobiphenyl	8980422	9882394	10.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 : 0813A

Aroclor	Peak#	RT	Shift	ZB5 Col Area	Amount	Peak#	RT	Shift	ZB35 Col Area	Amount
Aroclor-1016	1	8.344	-0.003	27954	30.4	1	8.033	0.001	98901	13.2
Aroclor-1016	2	8.833	0.001	70645	25.0	2	8.811	0.003	435192	27.3
Aroclor-1016	3	9.128	-0.001	38105	39.5	3	9.248	0.000	137398	33.4
Aroclor-1016	4	9.912	-0.001	42539	41.5	4	10.011	0.000	143720	49.5
Total Col1Ave (4 peaks):				34.1		Total Col2Ave (4 peaks):			30.8	RPD = 10
Corrected Ave (3 peaks):				31.6		Corrected Ave (3 peaks):			24.6	RPD = 25
Aroclor-1221	1	---			0.0	1	4.999	-0.019	45078	31.7
Aroclor-1221	2	---			0.0	2	6.740	0.020	101444	42.6
Aroclor-1221	3	---			0.0	3	7.044	0.029	110122	82.0
Aroclor-1221	NS	---			---	4	7.159	0.008	39952	9.7
Col1Ave: <3 Quant Peaks						Col2Ave: 41.5				
Aroclor-1232	1	---			0.0	1	4.999	-0.022	45078	52.1
Aroclor-1232	2	6.985	-0.014	21978	87.3	2	7.159	0.006	39952	13.8
Aroclor-1232	3	---			0.0	3	8.033	0.003	98901	29.1
Aroclor-1232	4	8.833	0.003	70645	61.5	4	9.248	0.001	137398	78.7
Col1Ave: <3 Quant Peaks						Col2Ave: 43.4				
Aroclor-1242	1	8.833	-0.001	70645	34.2	1	8.033	0.000	98901	18.0
Aroclor-1242	2	9.128	-0.001	38105	51.5	2	8.811	0.001	435192	37.4
Aroclor-1242	3	10.304	0.000	55093	80.0	3	10.374	-0.001	361794	89.3
Aroclor-1242	4	10.607	-0.001	102368	99.2	4	10.732	-0.002	486799	98.8
Total Col1Ave (4 peaks):				66.2		Total Col2Ave (4 peaks):			60.9	RPD = 8
Corrected Ave (3 peaks):				55.2		Corrected Ave (3 peaks):			48.2	RPD = 14
Aroclor-1248	1	9.395	0.003	14741	22.4	1	8.811	0.009	435192	57.7
Aroclor-1248	2	9.912	0.003	42539	30.4	2	9.817	0.004	195251	32.4
Aroclor-1248	3	10.361	0.001	81445	50.1	3	10.374	0.003	361794	56.6
Aroclor-1248	4	10.607	0.002	102368	62.3	4	10.732	0.003	486799	59.0
Total Col1Ave (4 peaks):				41.3		Total Col2Ave (4 peaks):			51.4	RPD = 22
Corrected Ave (3 peaks):				34.3		Corrected Ave (3 peaks):			48.9	RPD = 35
Aroclor-1254	1	10.361	-0.010	81445	77.9	1	10.618	0.000	193102	26.8
Aroclor-1254	2	10.692	0.002	33005	22.1	2	10.732	0.019	486799	142.4
Aroclor-1254	3	11.072	0.001	39986	33.0	3	11.147	-0.001	113715	20.2
Aroclor-1254	4	11.211	0.001	85719	37.5	4	11.298	-0.001	245566	20.4
Aroclor-1254	5	11.924	-0.001	67301	41.0	5	12.079	-0.001	266843	37.1
Total Col1Ave (5 peaks):				42.3		Total Col2Ave (5 peaks):			49.4	RPD = 15
Corrected Ave (4 peaks):				33.4		Corrected Ave (4 peaks):			26.1	RPD = 24
Aroclor-1260	1	12.470	0.001	78070	42.4	1	12.395	0.000	318902	36.0
Aroclor-1260	2	13.144	-0.001	269400	45.2	2	13.101	-0.001	864384	41.9
Aroclor-1260	3	13.514	0.000	135448	48.9	3	13.572	-0.001	285335	45.5
Aroclor-1260	4	13.614	0.001	61657	36.9	4	13.623	-0.001	541781	39.8
Aroclor-1260	5	14.011	0.000	32673	35.6	NS	---			----
Total Col1Ave (5 peaks):				41.8		Total Col2Ave (4 peaks):			40.8	RPD = 2
Corrected Ave (4 peaks):				40.0		Corrected Ave (3 peaks):			39.2	RPD = 2
Aroclor-1262	1	12.470	0.003	78070	23.4	1	12.395	0.001	318902	20.4
Aroclor-1262	2	13.144	0.001	269400	29.1	2	12.838	0.001	368172	25.0
Aroclor-1262	3	13.514	0.000	135448	46.4	3	13.101	0.001	864384	28.6
Aroclor-1262	4	13.677	0.002	81804	16.1	4	13.572	0.002	285335	21.9
Aroclor-1262	5	14.217	0.001	91400	20.2	5	14.214	0.001	247048	24.1
Total Col1Ave (5 peaks):				27.0		Total Col2Ave (5 peaks):			24.0	RPD = 12
Corrected Ave (4 peaks):				22.2		Corrected Ave (4 peaks):			22.8	RPD = 3

Aroclor-1268	1	13.614	0.002	61657	7.0	1	13.572	0.003	285335	12.3
Aroclor-1268	2	13.677	0.003	81804	8.0	2	13.623	-0.005	541781	24.8
Aroclor-1268	3	14.011	0.015	32673	3.6	3	13.954	0.002	7709	0.4
Aroclor-1268	4	---			0.0	4	14.573	0.000	34675	0.7

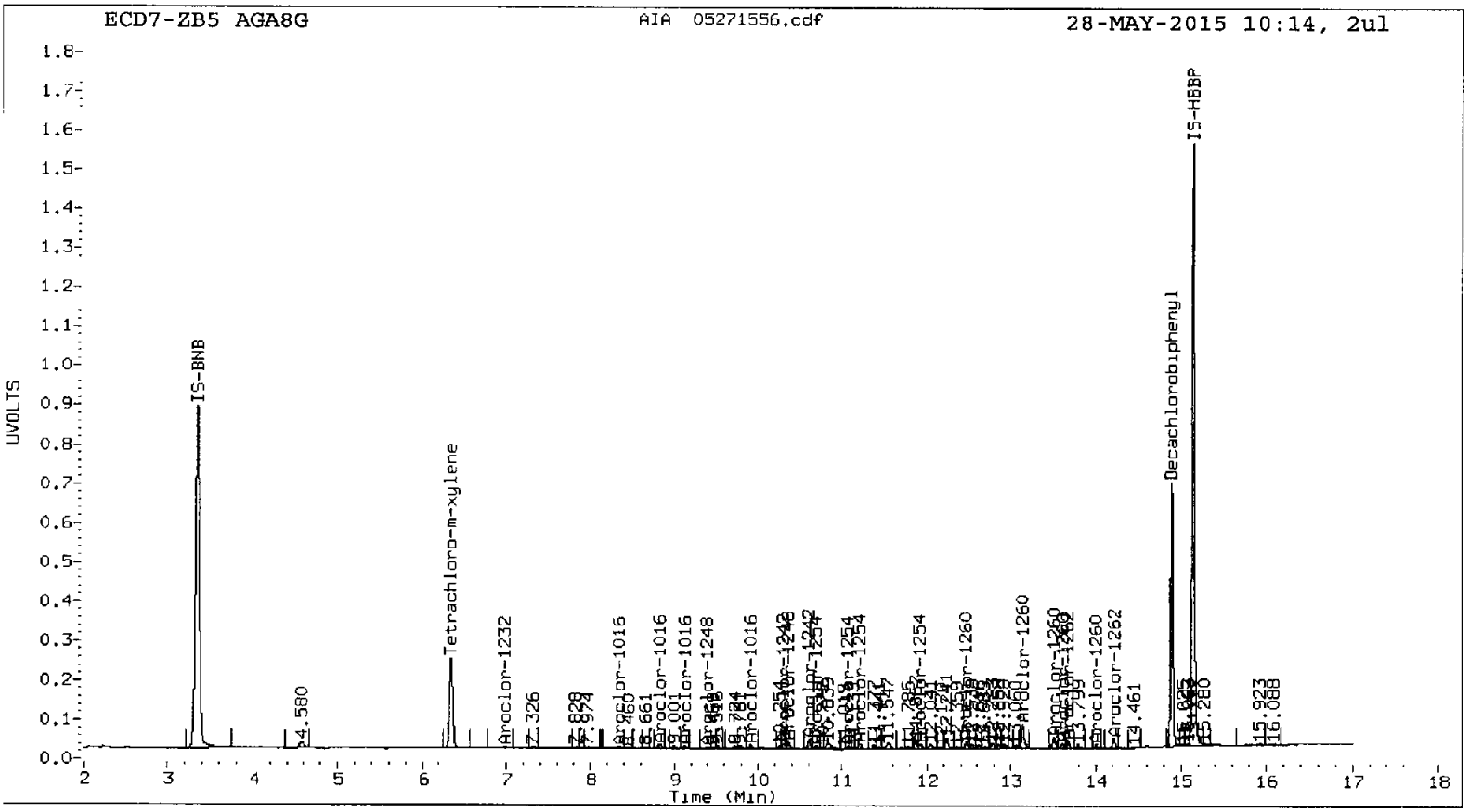
Total Col1Ave (3 peaks): 6.2 Total Col2Ave (4 peaks): 9.6 RPD = 43*

Corrected Ave: < 3 Peaks Corrected Ave (3 peaks): 4.5

Total PCB Area Col1 (6.445 - 14.790) = 2749993 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 11476186 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical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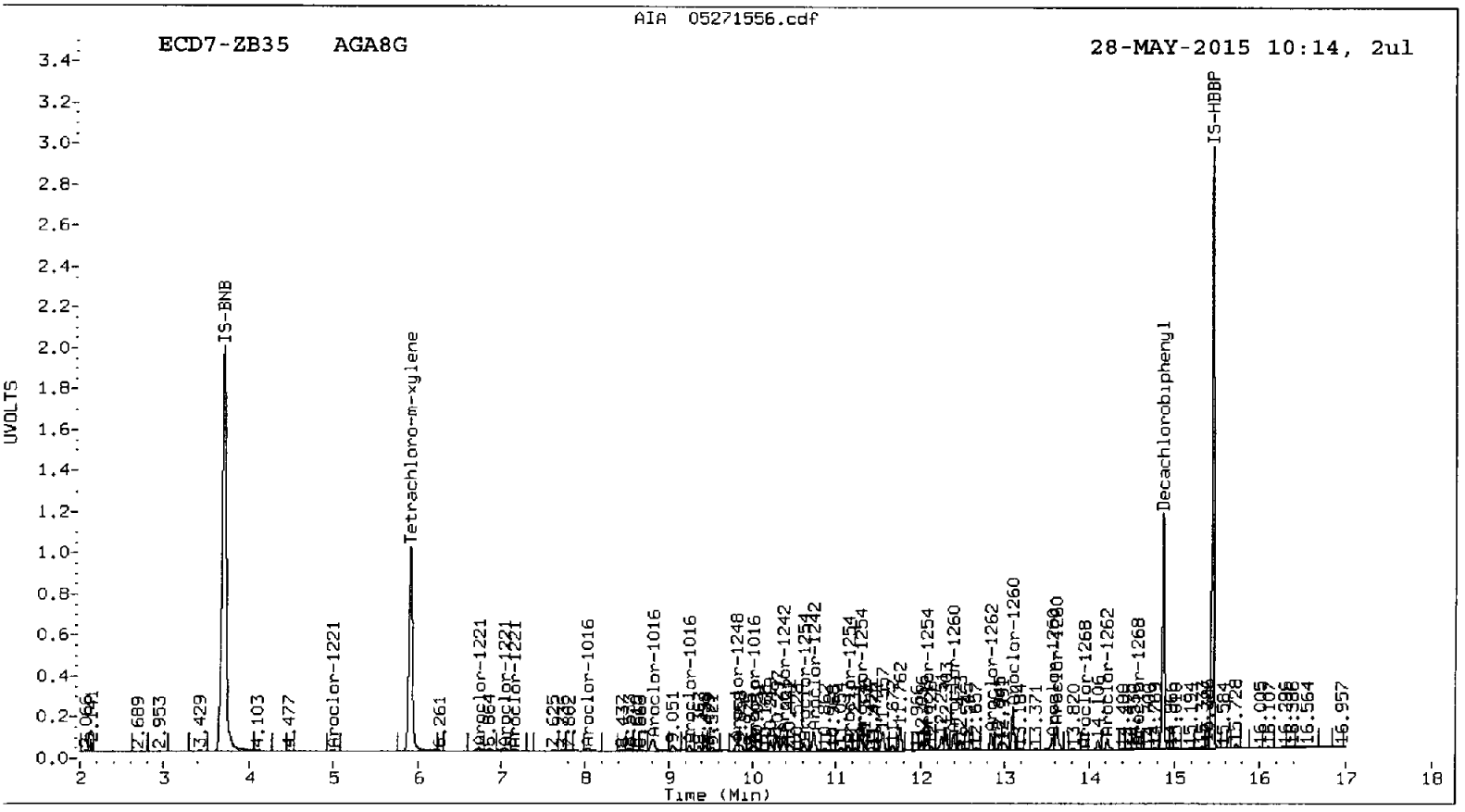
AIA 05271556.cdf
28-MAY-2015 10:14, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP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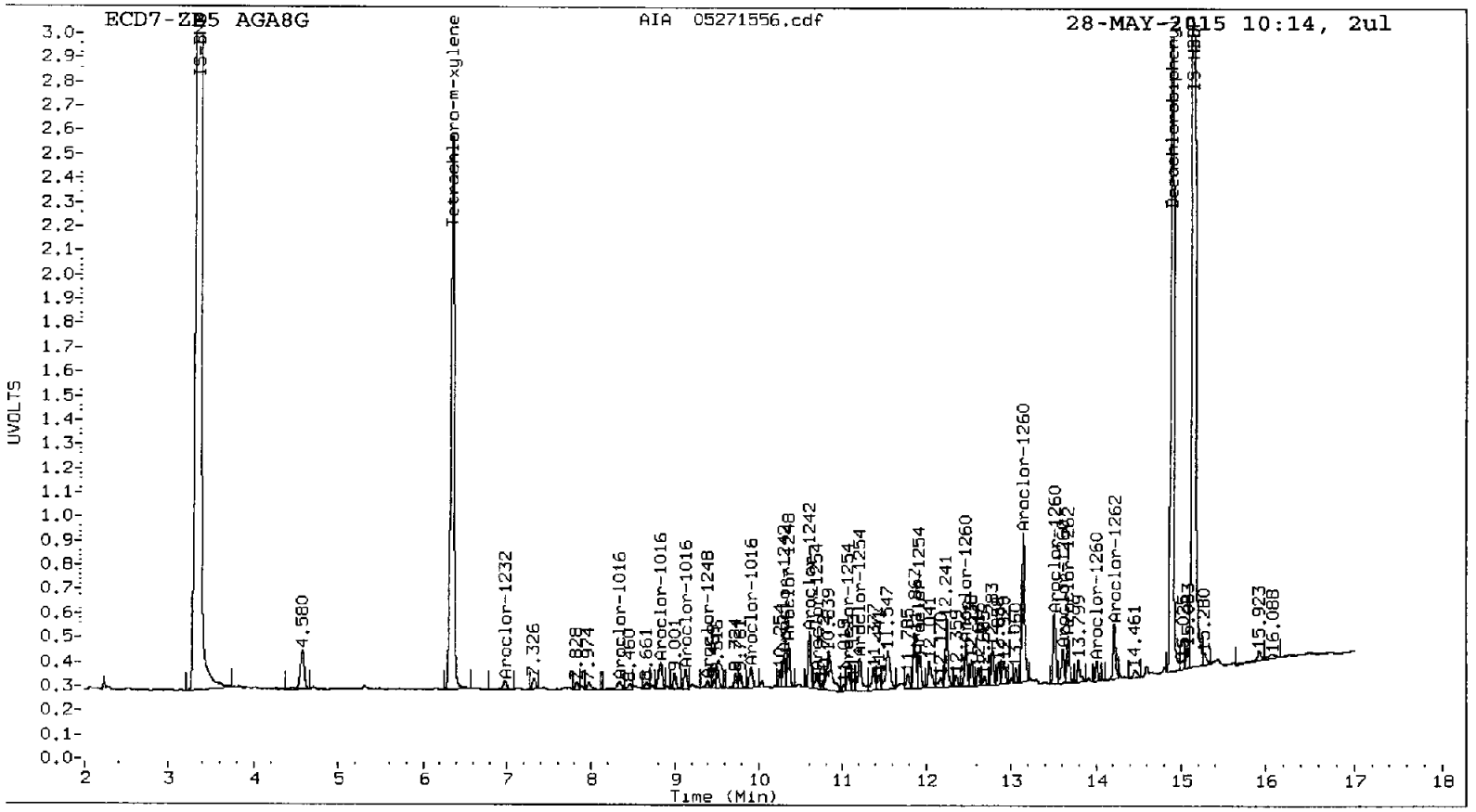
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP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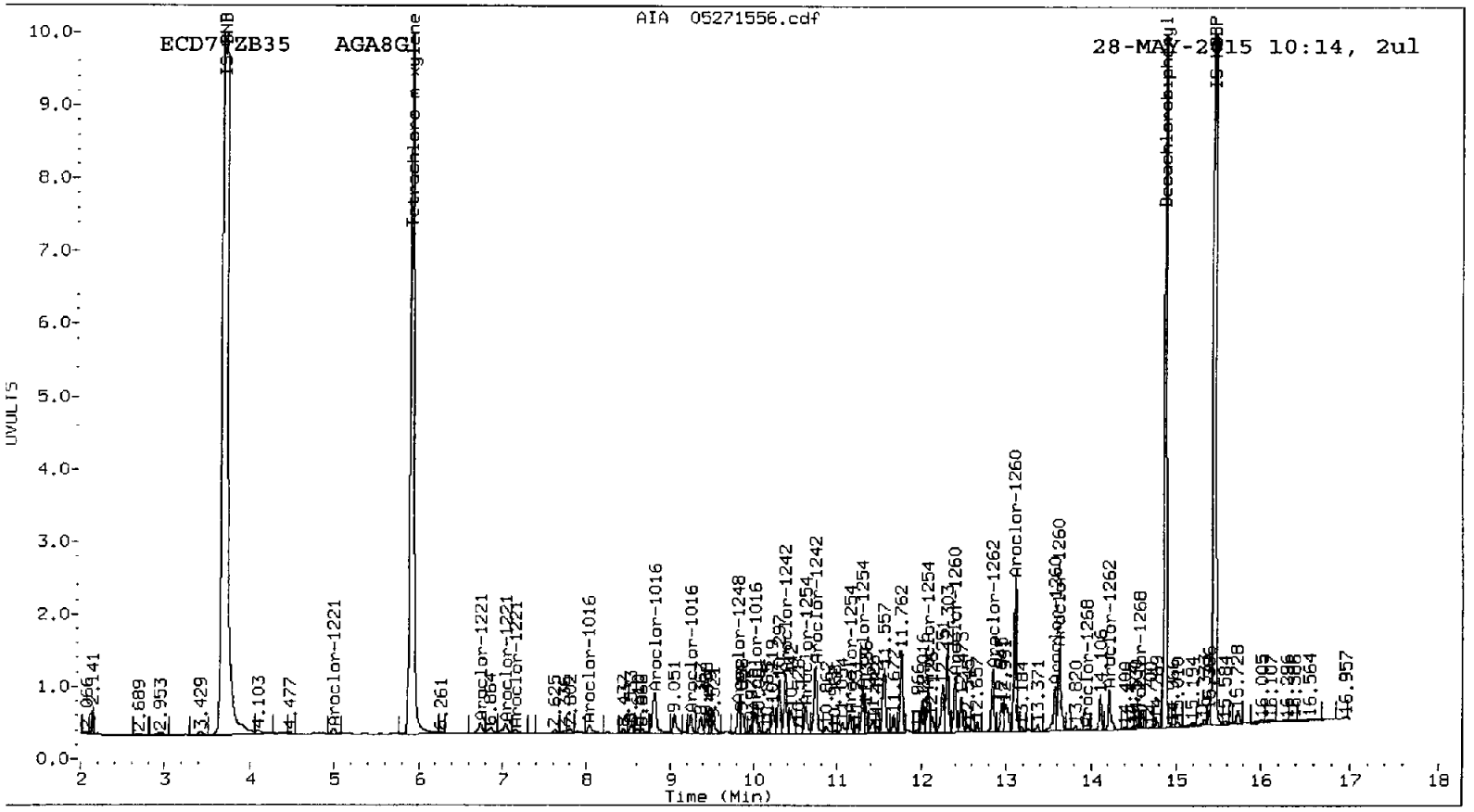
28-MAY-2015 10:14, 2ul
IS-DBB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBP
4.580
Aroclor-1232
7.326
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
UVOLTS
Time (Min)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28-MAY-2015 10:14, 2ul
IS-DBB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBP
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271557.d
Data file 2: 20150527.b/0527-2.b/05271557.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8H
Client ID: SDP-06(12.5-13.5)
Injection Date: 28-MAY-2015 10:36
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.003	1261141	5.912	0.000	5845223	32.3	32.2	0.3	Tetrachloro-m-xylene
14.890	0.000	2480895	14.863	0.000	3956236	34.3	32.5	5.3	Decachlorobiphenyl

' Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
I Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	80.8	80.6
Decachlorobiphenyl	85.7	81.3

A 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5754188	5.6
Hexabromobiphenyl	5633814	5753539	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13450396	3.0
Hexabromobiphenyl	8980422	10093680	12.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 08643

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.323	-0.023	19406	21.0	1	8.093	0.061	61501	8.3
Aroclor-1016	2	8.747	-0.085	17522	6.2	2	8.730	-0.078	20658	1.3
Aroclor-1016	3	9.141	0.012	10051	10.4	3	---			0.0
Aroclor-1016	4	---			0.0	4	10.070	0.060	4730	1.7
	Total Col1Ave (3 peaks):				12.5	Total Col2Ave (3 peaks):				3.8 RPD = 107*
	Corrected Ave: < 3 Peaks					Corrected Ave: < 3 Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.740	0.021	127082	54.4
Aroclor-1221	3	---			0.0	3	7.039	0.024	65599	49.7
Aroclor-1221	NS	---			----	4	7.168	0.017	17342	4.3
	Col1Ave: <3 Quant Peaks					Col2Ave: 36.1				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.989	-0.011	30241	119.5	2	7.168	0.015	17342	6.1
Aroclor-1232	3	---			0.0	3	8.093	0.064	61501	18.4
Aroclor-1232	4	8.747	-0.083	17522	15.2	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	8.747	-0.087	17522	8.4	1	8.093	0.060	61501	11.4
Aroclor-1242	2	9.141	0.012	10051	13.5	2	8.730	-0.080	20658	1.8
Aroclor-1242	3	---			0.0	3	10.457	0.081	178154	44.8
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 19.3				
Aroclor-1248	1	---			0.0	1	8.730	-0.072	20658	2.8
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	10.457	0.085	178154	28.4
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	10.626	0.008	66207	9.3
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	11.299	0.000	51505	4.4
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	12.482	0.013	67709	36.1	1	12.423	0.028	6840	0.8
Aroclor-1260	2	---			0.0	2	13.053	-0.049	77357	3.7
Aroclor-1260	3	---			0.0	3	13.532	-0.040	40533	6.3
Aroclor-1260	4	13.694	0.081	82585	48.5	4	13.622	-0.002	18519	1.3
Aroclor-1260	5	13.918	-0.094	27094	28.9	NS	---			----
	Total Col1Ave (3 peaks):				37.8	Total Col2Ave (4 peaks):				3.0 RPD = 170*
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks):				1.9
Aroclor-1262	1	12.482	0.015	67709	20.0	1	12.423	0.029	6840	0.4
Aroclor-1262	2	---			0.0	2	12.786	-0.051	75604	5.0
Aroclor-1262	3	---			0.0	3	13.053	-0.047	77357	2.5
Aroclor-1262	4	13.694	0.019	82585	16.0	4	13.532	-0.038	40533	3.0
Aroclor-1262	5	14.241	0.025	27948	6.1	5	14.251	0.038	46321	4.4
	Total Col1Ave (3 peaks):				14.0	Total Col2Ave (5 peaks):				3.1 RPD = 128*
	Corrected Ave: < 3 Peaks					Corrected Ave (4 peaks):				2.6
Aroclor-1268	1	13.694	0.082	82585	9.3	1	13.532	-0.037	40533	1.7
Aroclor-1268	2	---			0.0	2	13.622	-0.006	18519	0.8

Aroclor-1268 3	13.918	-0.078	27094	2.9	3	---			0.0
Aroclor-1268 4	14.655	0.059	25166	0.8	4	14.556	-0.016	19900	0.4

Total Col1Ave (3 peaks): 4.3 Total Col2Ave (3 peaks): 1.0 RPD = 126*

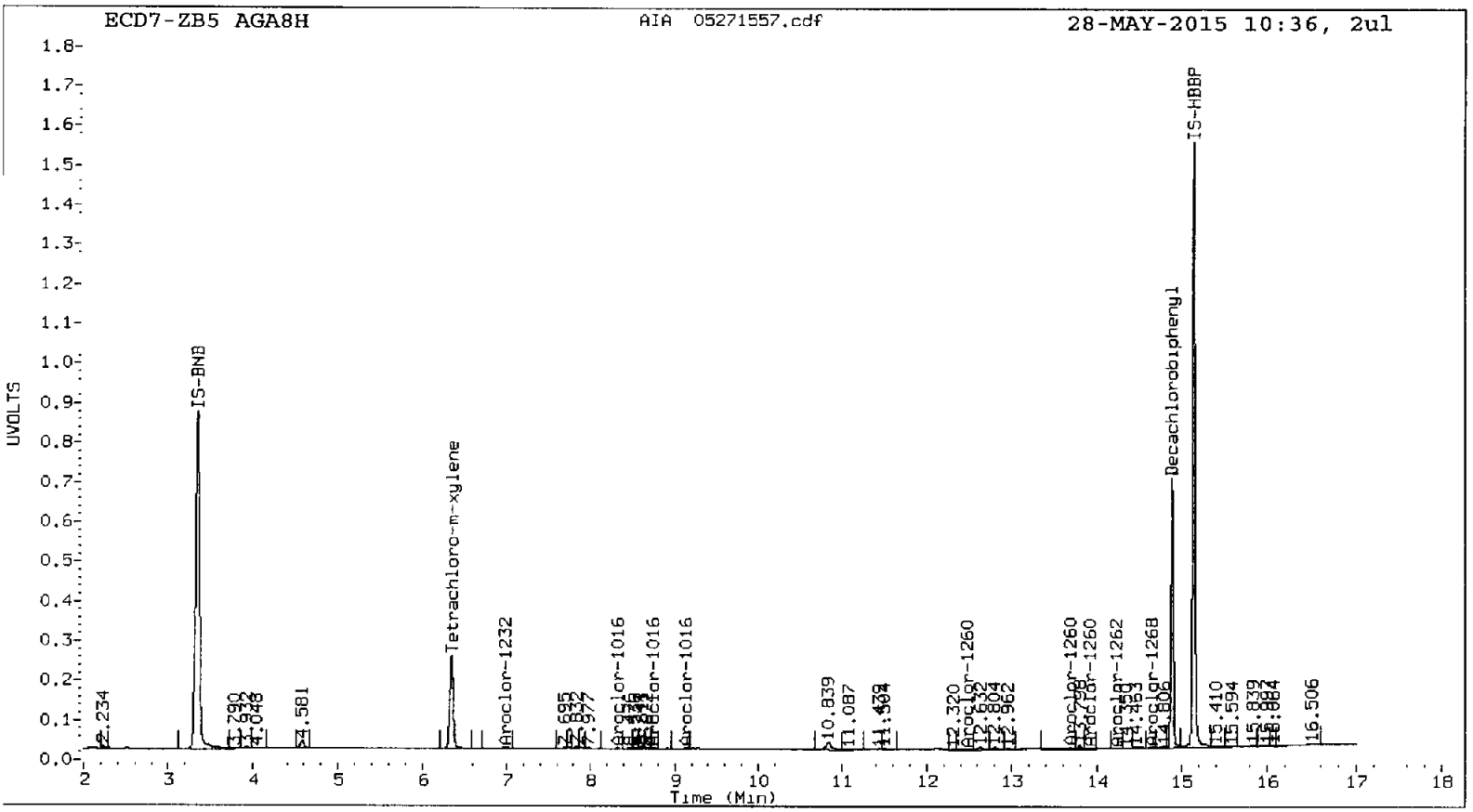
Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Total PCB Area Col1 (6.445 - 14.790) = 1064780 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 1908281 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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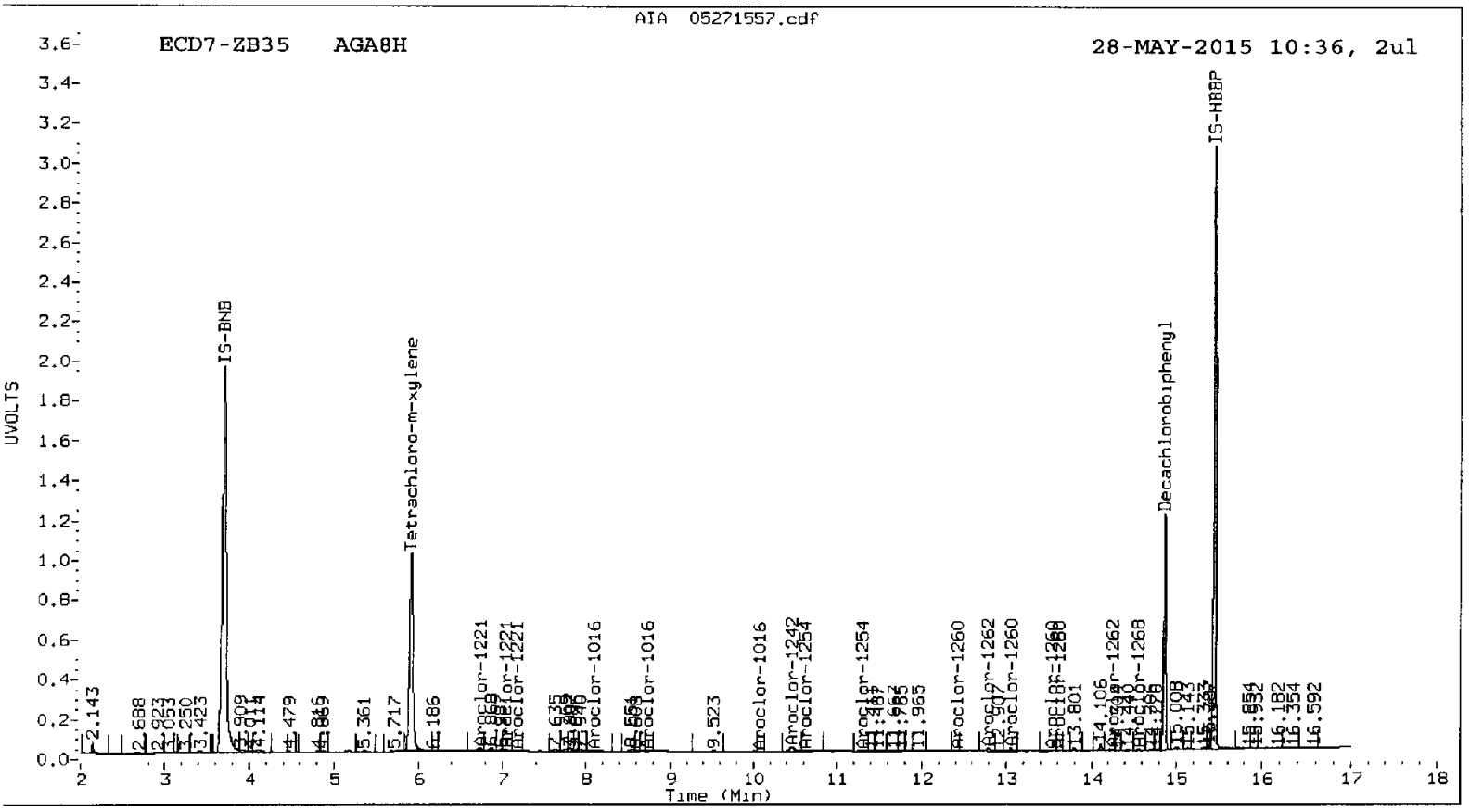
AIA 05271557.cdf
28-MAY-2015 10:36, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1016
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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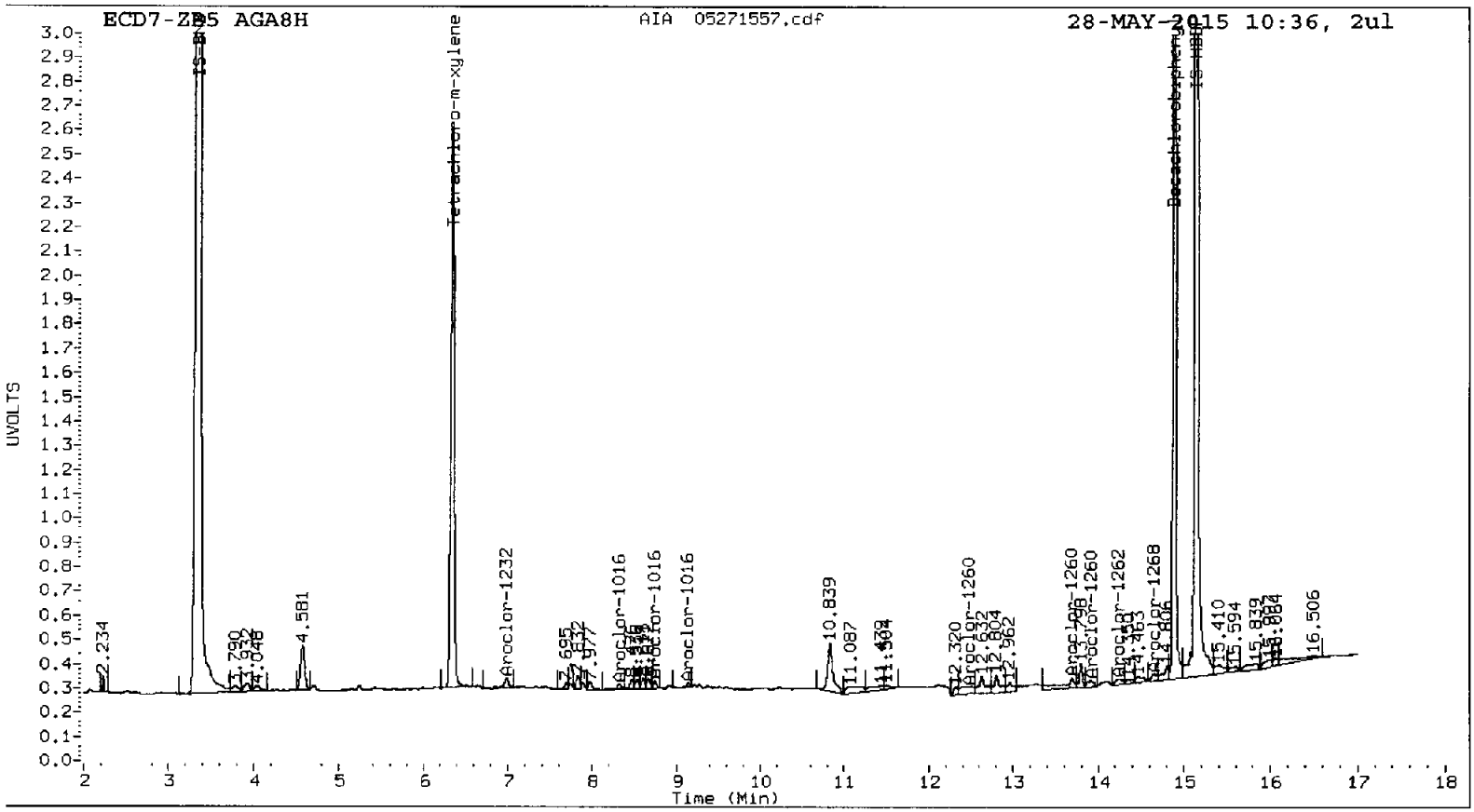
ECD7-ZB35 AGA8H
28-MAY-2015 10:36, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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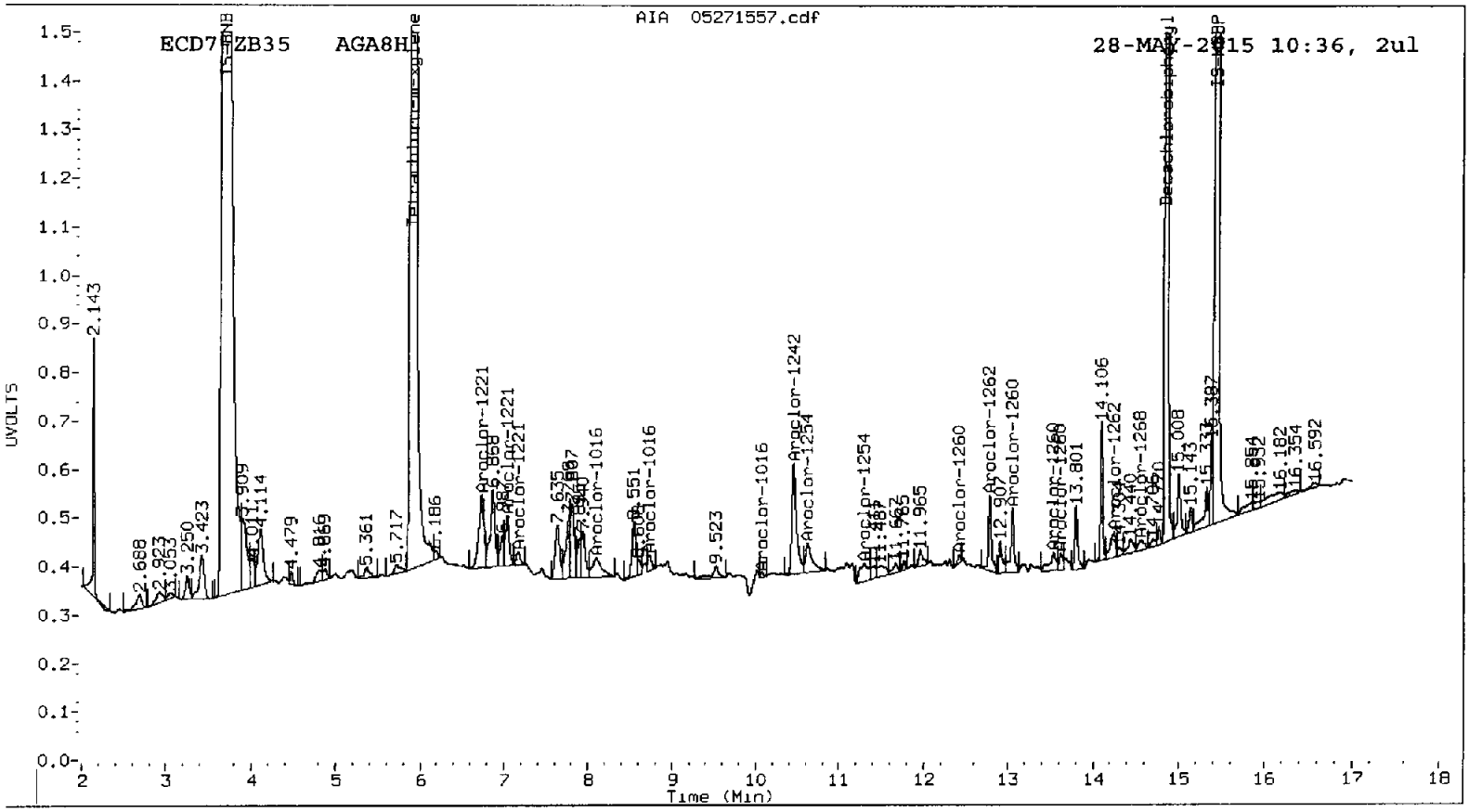
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1232
Aroclor-1016
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)


ECD7-ZB35 AGA8H
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28-MAY-2015 10:36, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271558.d
Data file 2: 20150527.b/0527-2.b/05271558.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8I
Client ID: SDP-06(10.0-11.0)
Injection Date: 28-MAY-2015 10:57
Report Date: 05/28/2015 14:18
Matrix: SOIL
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.346	0.001	1242974	5.910	-0.003	5828543	32.4	31.3	3.6	Tetrachloro-m-xylene
14.890	0.000	2465751	14.863	0.000	4013270	34.3	33.0	3.7	Decachlorobiphenyl

' Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	81.1	78.3
Decachlorobiphenyl	85.7	82.5

1 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5650586	3.7
Hexabromobiphenyl	5633814	5721874	1.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13805081	5.7
Hexabromobiphenyl	8980422	10082150	12.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 8GA8A

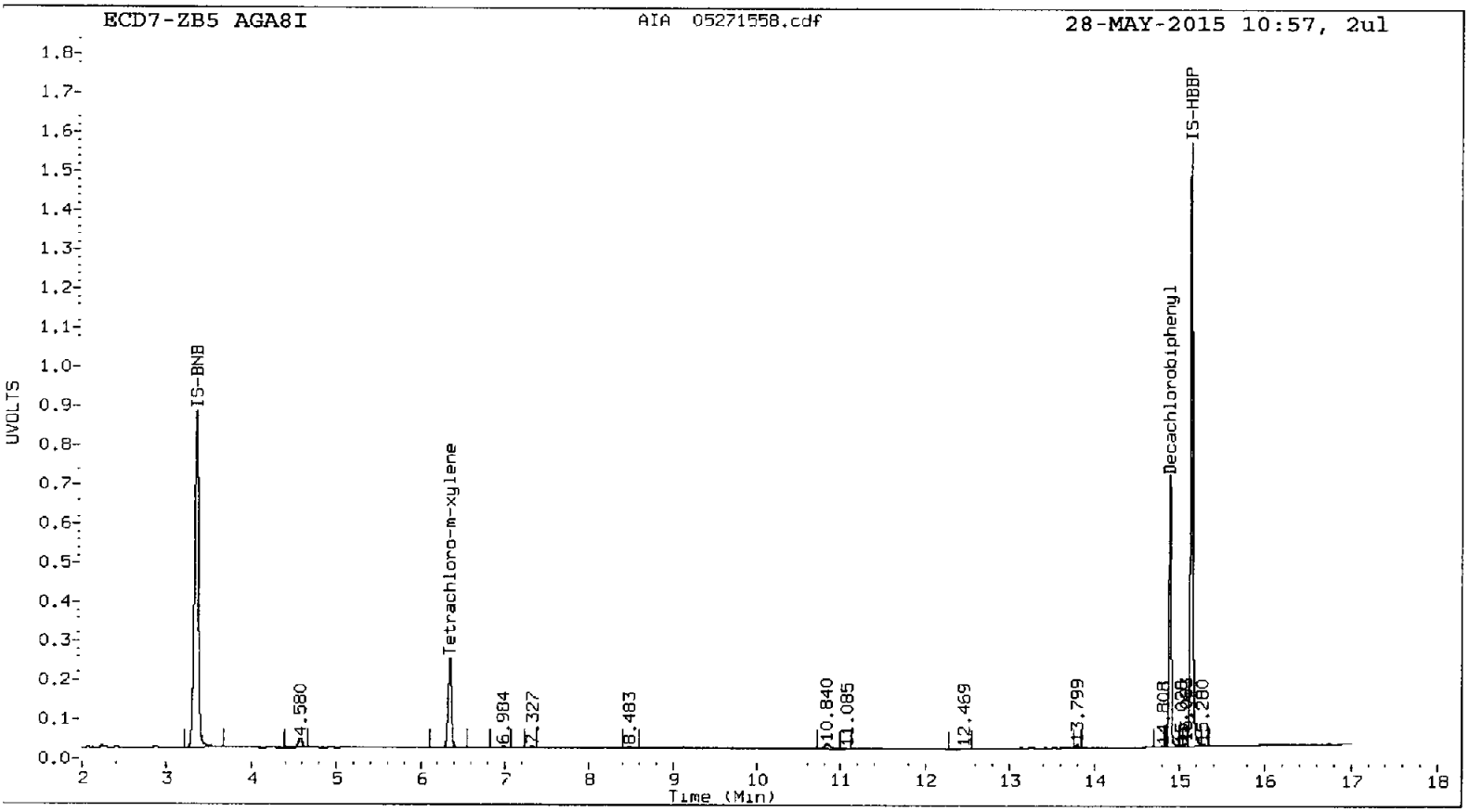
	ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.742	0.022	91389	38.1
Aroclor-1221	3	---			0.0	3	7.047	0.032	73832	54.5
Aroclor-1221	NS	---			----	4	7.177	0.027	42771	10.3
	Col1Ave: <3 Quant Peaks					Col2Ave: 34.3				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	10.622	0.005	60039	8.3
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	11.093	-0.055	40085	7.1
Aroclor-1254	4	---			0.0	4	11.298	-0.001	62272	5.1
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 6.8				
Aroclor-1260	1	---			0.0	1	12.305	-0.091	12567	1.4
Aroclor-1260	2	---			0.0	2	13.102	0.000	14719	0.7
Aroclor-1260	3	---			0.0	3	13.570	-0.002	12063	1.9
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.3				
Aroclor-1262	1	---			0.0	1	12.305	-0.090	12567	0.8
Aroclor-1262	2	---			0.0	2	12.841	0.004	8071	0.5
Aroclor-1262	3	---			0.0	3	13.102	0.002	14719	0.5
Aroclor-1262	4	---			0.0	4	13.570	0.000	12063	0.9
Aroclor-1262	5	---			0.0	5	14.253	0.041	35284	3.4
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.2				
Aroclor-1268	1	---			0.0	1	13.570	0.001	12063	0.5
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	14.571	-0.001	9459	0.2
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 294952 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 1019631 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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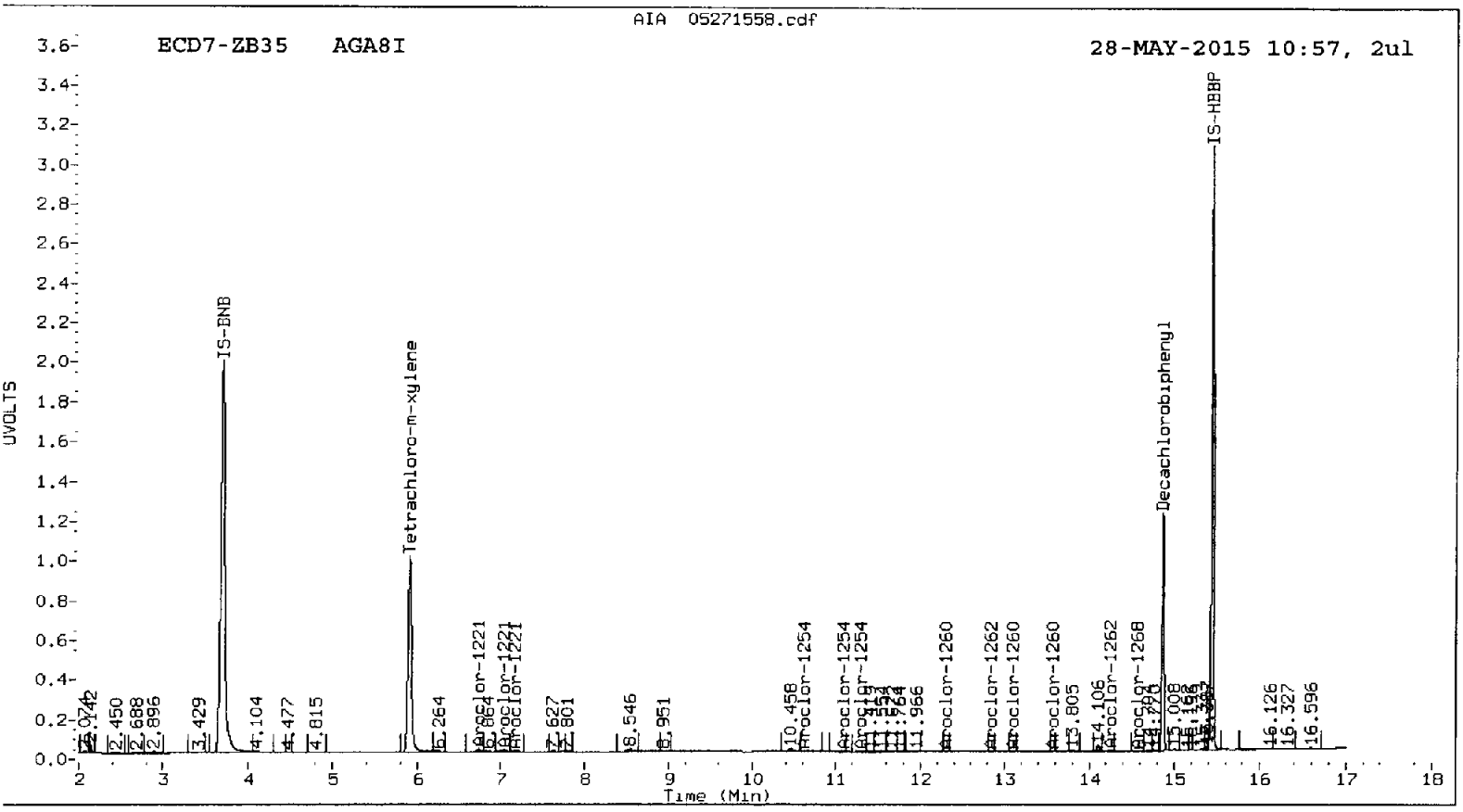
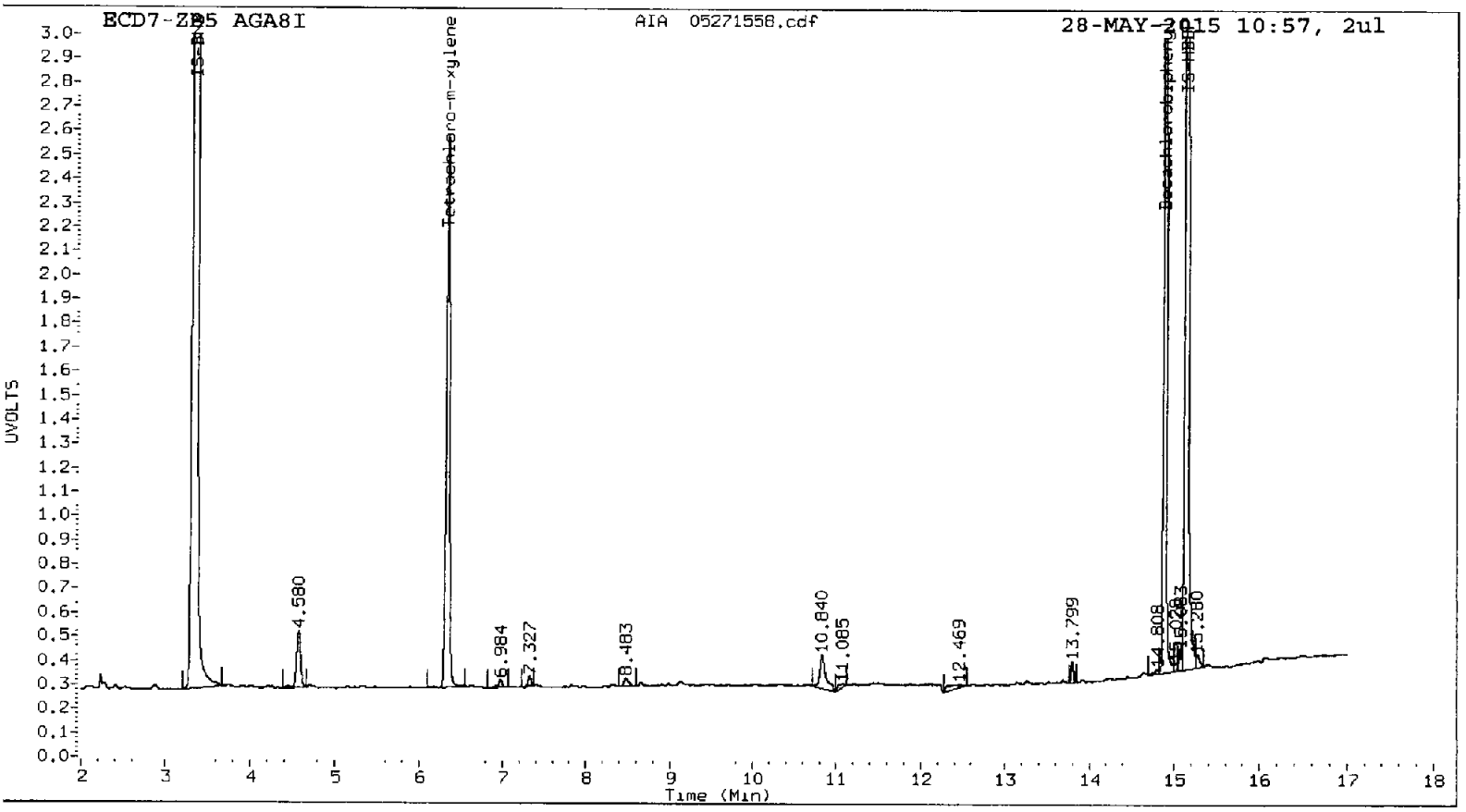
AIA 05271558.cdf
28-MAY-2015 10:57, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
4.580
6.984
7.327
8.483
10.840
11.085
12.469
13.799
15.280
Time (Min)


AIA 05271558.cdf
ECD7-ZB35 AGA8I
28-MAY-2015 10:57, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Time (Min)


ECD7-ZB35 AGA8I
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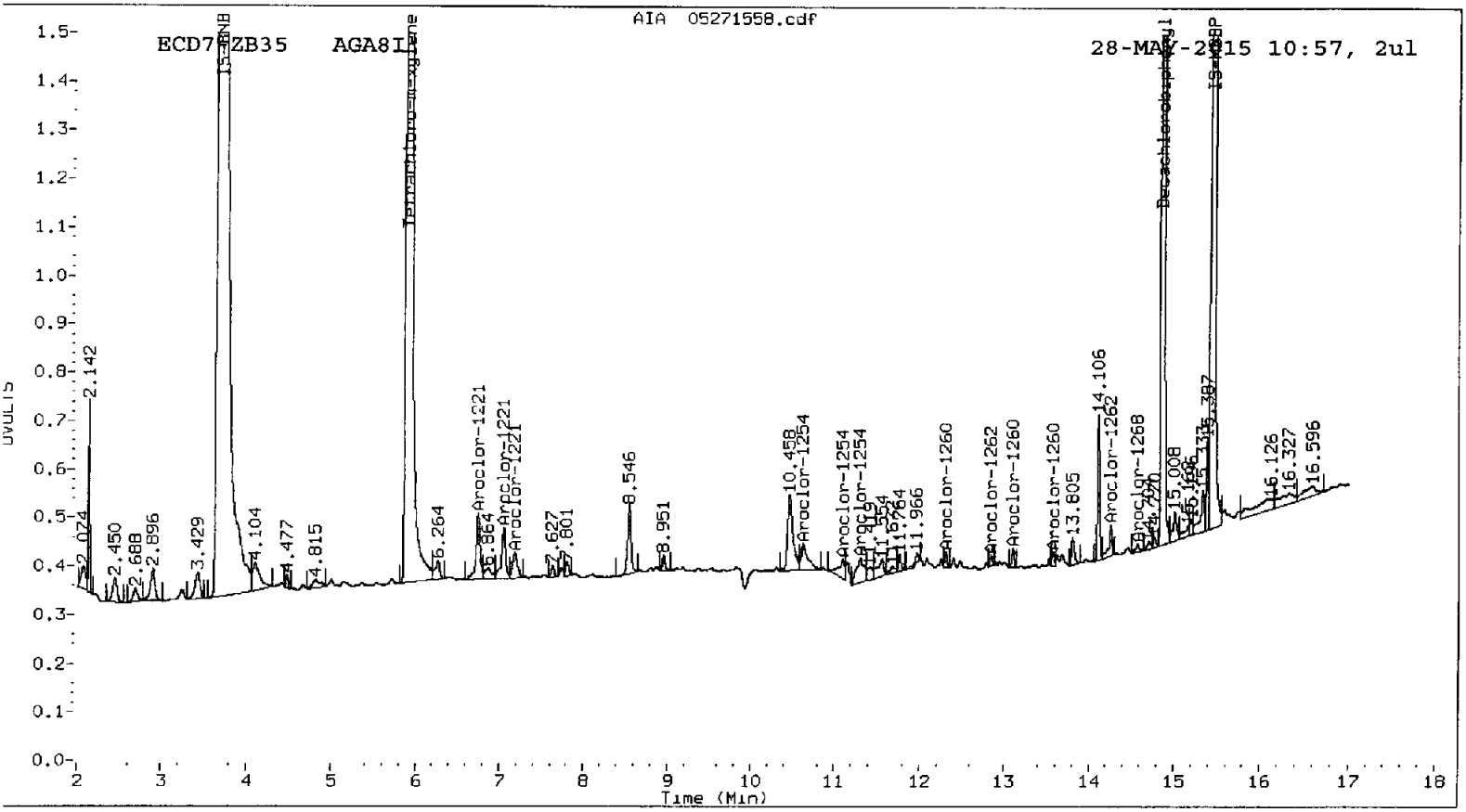
28-MAY-2015 10:57, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
4.580
6.984
7.327
8.483
10.840
11.085
12.469
13.799
14.808
15.260
UVOLTS
Time (Min)


ECD7-ZB35 AGA8I
AIA 05271558.cdf
28-MAY-2015 10:57, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
2.142
3.429
4.104
6.264
8.546
8.951
10.458
14.106
15.008
16.126
16.327
16.596
Aroclor-1221
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271564.d
Data file 2: 20150527.b/0527-2.b/05271564.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 28-MAY-2015 13:06
Report Date: 05/28/2015 14:19
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.002	1381763	5.913	0.001	6555887	38.0	37.3	2.0	Tetrachloro-m-xylene
14.889	-0.001	2757016	14.863	0.000	4517579	38.5	37.6	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.0	93.1
Decachlorobiphenyl	96.2	94.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5362657	-1.6
Hexabromobiphenyl	5633814	5699387	1.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13048646	-0.1
Hexabromobiphenyl	8980422	9966703	11.0

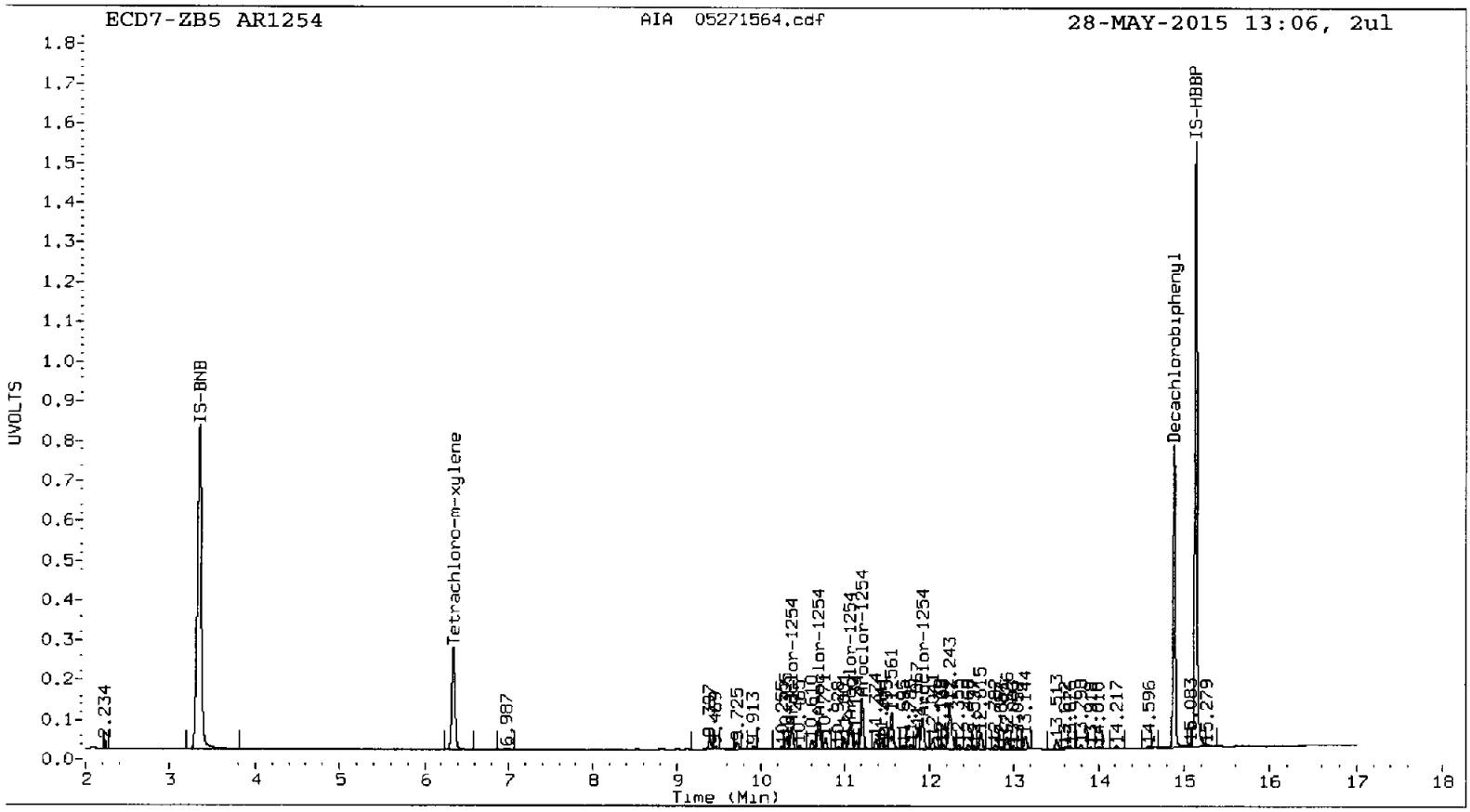
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

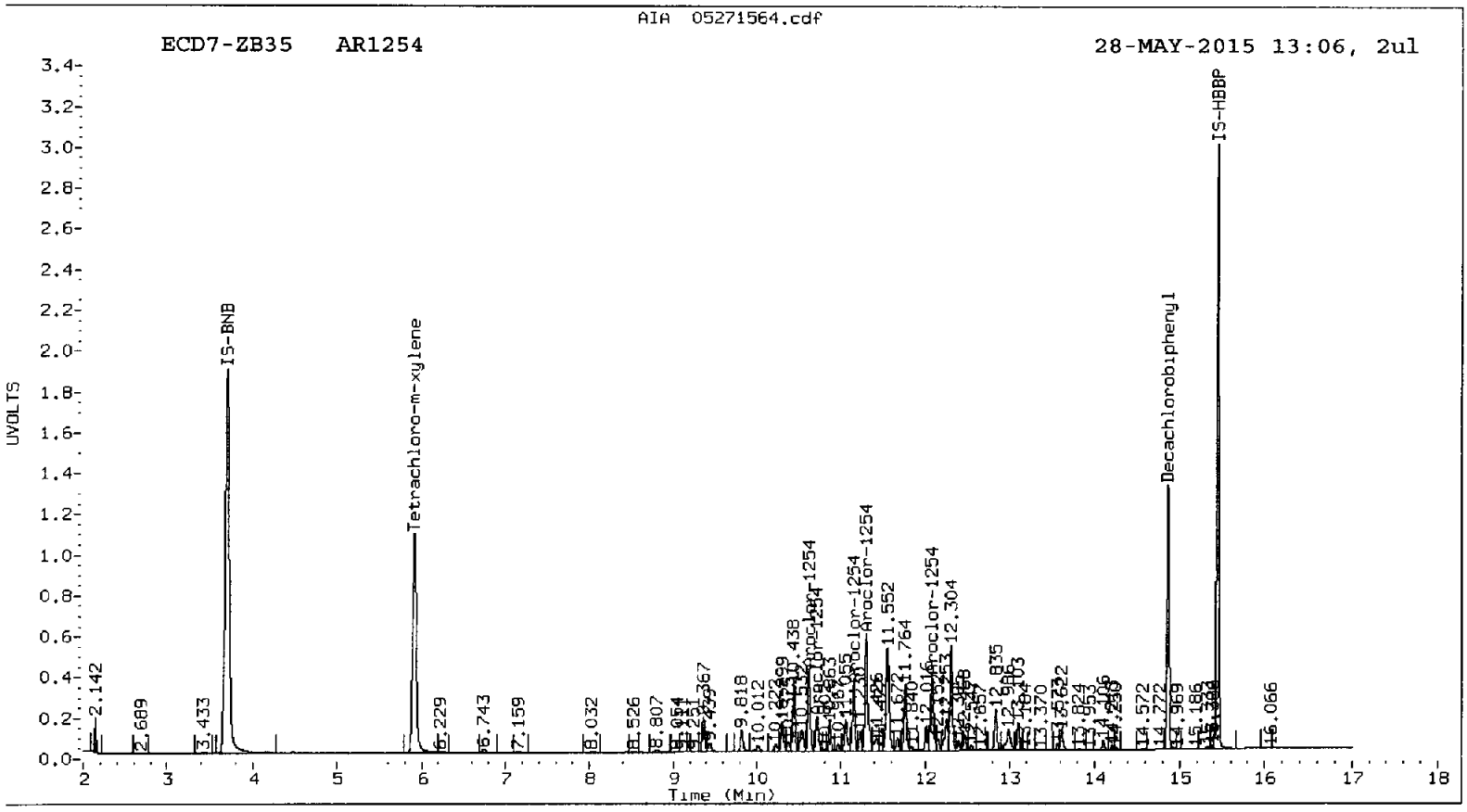
		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.371	0.000	249286	254.5	1	10.617	0.000	1728151	251.4
Aroclor-1254	2	10.691	0.000	357036	255.1	2	10.713	0.000	825862	253.5
Aroclor-1254	3	11.072	0.000	290562	255.9	3	11.148	0.000	1353660	252.0
Aroclor-1254	4	11.210	0.000	547651	255.6	4	11.299	0.000	2870865	250.6
Aroclor-1254	5	11.925	0.000	397081	258.5	5	12.079	0.000	1729335	252.6
Total Col1Ave (5 peaks):					255.9	Total Col2Ave (5 peaks):				252.0 RPD = 2
Corrected Ave (4 peaks):					255.3	Corrected Ave (4 peaks):				251.6 RPD = 1
CalAmt %D:					2.4	CalAmt %D:				0.8

Total PCB Area Col1 (6.445 - 14.790) = 5549670 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 28448913 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1254
AIA 05271564.cdf
28-MAY-2015 13:06, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP


AIA 05271564.cdf
ECD7-ZB35 AR1254
28-MAY-2015 13:06, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271565.d
Data file 2: 20150527.b/0527-2.b/05271565.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 13:28
Report Date: 05/28/2015 14:19
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.000	1433560	5.913	0.000	6742709	39.1	37.9	3.0	Tetrachloro-m-xylene
14.890	0.000	2836095	14.863	0.000	4643347	39.2	37.9	3.4	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.7	94.8
Decachlorobiphenyl	98.1	94.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5407167	-0.8
Hexabromobiphenyl	5633814	5748876	2.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13180150	0.9
Hexabromobiphenyl	8980422	10153131	13.1

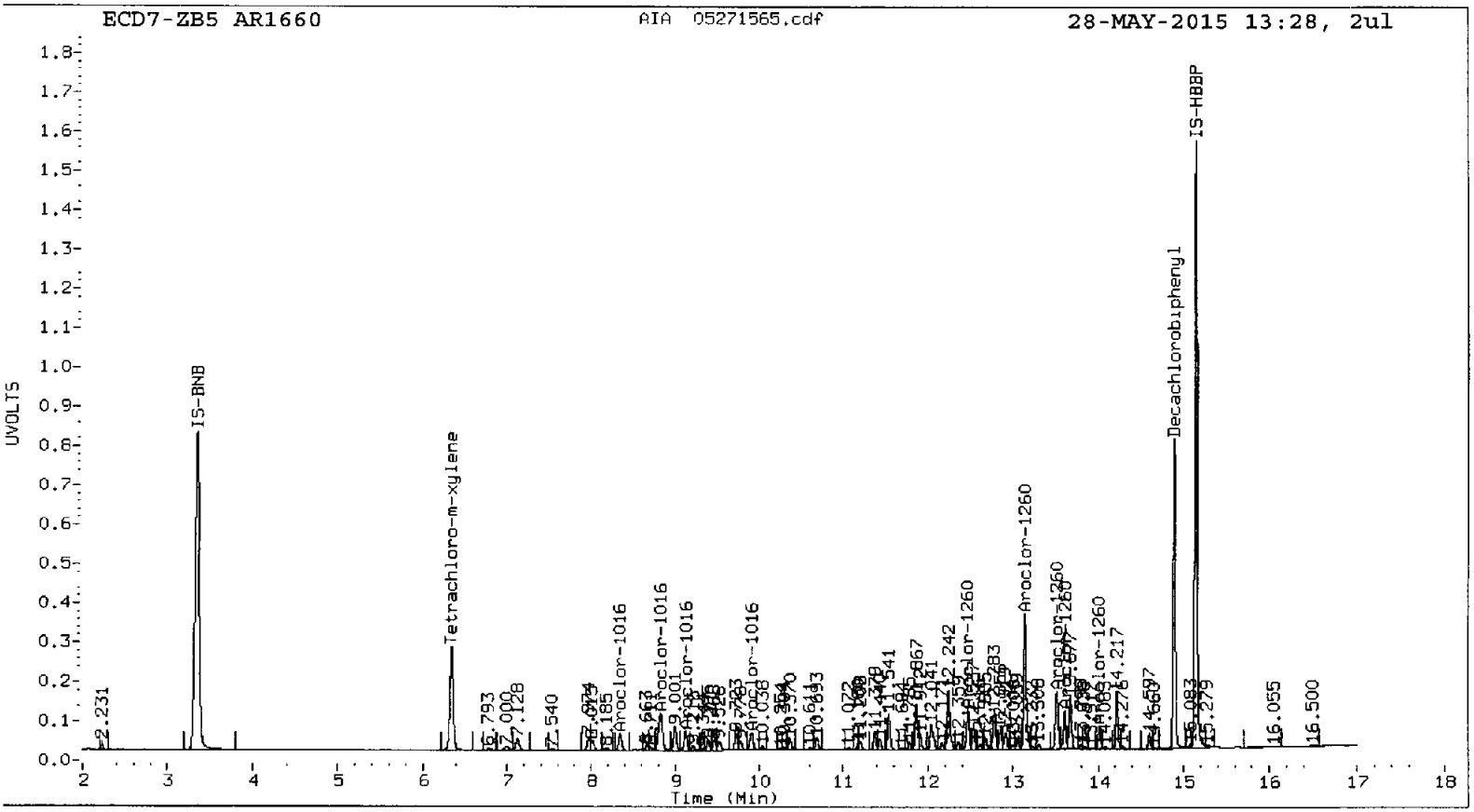
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

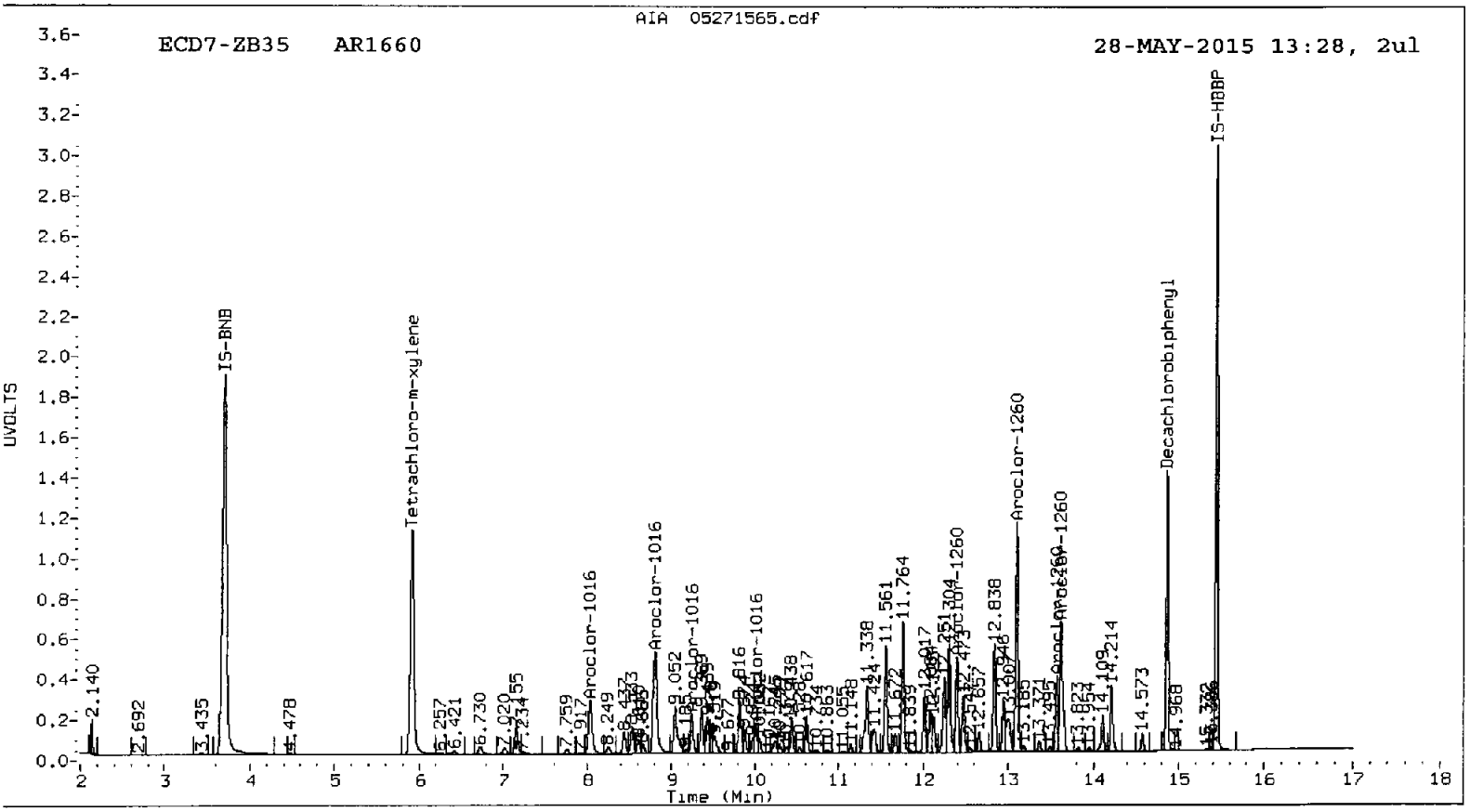
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.346	0.000	212723	244.6	1	8.032	0.000	1727441	239.1
Aroclor-1016	2	8.832	0.000	645791	242.3	2	8.808	0.000	3619609	236.0
Aroclor-1016	3	9.129	0.000	228970	251.1	3	9.248	0.000	951082	240.3
Aroclor-1016	4	9.913	0.000	241083	249.2	4	10.011	0.000	659076	235.8
Total Col1Ave (4 peaks):					246.8	Total Col2Ave (4 peaks):				237.8 RPD = 4
Corrected Ave (3 peaks):					245.3	Corrected Ave (3 peaks):				236.9 RPD = 3
CalAmt %D:					-1.3	CalAmt %D:				-4.9
Aroclor-1260	1	12.469	0.000	448881	239.3	1	12.396	0.000	1965552	215.9
Aroclor-1260	2	13.145	0.000	1491210	245.7	2	13.102	0.000	4715228	222.4
Aroclor-1260	3	13.514	0.000	690415	244.8	3	13.573	0.000	1416789	220.0
Aroclor-1260	4	13.613	0.000	418749	246.1	4	13.624	0.000	3128579	223.9
Aroclor-1260	5	14.012	0.000	233220	249.4	NS	---			----
Total Col1Ave (5 peaks):					245.1	Total Col2Ave (4 peaks):				220.6 RPD = 11
Corrected Ave (4 peaks):					244.0	Corrected Ave (3 peaks):				219.4 RPD = 11
CalAmt %D:					-2.0	CalAmt %D:				-11.8

Total PCB Area Col1 (6.445 - 14.790) = 12551975 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 54489280 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1660
AIA 05271565.cdf
28-MAY-2015 13:28, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP


AIA 05271565.cdf
ECD7-ZB35 AR1660
28-MAY-2015 13:28, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: 4GAB / AGC9 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00033 Analysis Start Date: 05/28/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ___	Method Blank in Control?	Y / N / ✓
Retention times within Windows?	Y / N / ✓	BS/BSD Recovery in Control?	Y / N / ✓
ICV/CCV met %D Criteria?	Y / N / ✓	BS/BSD RPD ≤30%?	NA / <5%
Surrogate Recovery in Control?	Y / N / ✓	MS / MSD Recovery in Control?	Y / N / ✓
Internal STD. within 50-200%?	NA / Y / N / ✓	MS / MSD RPD ≤30%?	NA / ✓
Manual Integrations?	Y / N / ✓	Samples Diluted?	Y / N / ✓
Integration Summary?	Y / N / ✓	Special Analysis Request?	Y / N / ✓

Detail problems, corrective actions and/or other pertinent information below

(Review 1) Analyst: _____ **Date:** 05/29/15

(Review 2) Reviewer: _____ **Date:** 6/1/15

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 05/28/15 Analysis: PCB Analyst: [illegible]

Column 1 Serial No.: 213734 Column Type: ZB5

Column 2 Serial No.: 153883 Column Type: ZB35

GC Method: PCB ICal Date: 05/04/15 Injection Volume: 2µl

IS	Ical/Ccal	ICV
C971	C4641 C4646 D88-D92	D962-D968

Document All Maintenance Tasks In Element

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/201505

	Inject Date/Time	Filename	DF	LabID
1	28-MAY-2015 17:14	05281501.d	1	0.1 PPM DDT
2	28-MAY-2015 17:36	05281502.d	1	DDT BD
3	28-MAY-2015 17:57	05281503.d	1	AR1254
4	28-MAY-2015 18:18	05281504.d	1	AR1660
5	28-MAY-2015 18:40	05281505.d	1	AGQ7MBW1
6	28-MAY-2015 19:01	05281506.d	1	AGQ7LCSW1
7	28-MAY-2015 19:23	05281507.d	1	AGQ7LCSDW1
8	28-MAY-2015 19:44	05281508.d	1	AGQ7A
9	28-MAY-2015 20:05	05281509.d	1	AGC9MBS1
10	28-MAY-2015 20:27	05281510.d	1	AGCLCSS1
11	28-MAY-2015 20:48	05281511.d	1	AGC9A
12	28-MAY-2015 21:10	05281512.d	1	AGC9B
13	28-MAY-2015 21:31	05281513.d	1	AGC9C
14	28-MAY-2015 21:53	05281514.d	1	AR1248
15	28-MAY-2015 22:14	05281515.d	1	AR1660
16	28-MAY-2015 22:35	05281516.d	1	AGC9D
17	28-MAY-2015 22:57	05281517.d	1	AGC9E
18	28-MAY-2015 23:18	05281518.d	1	AGC9F
19	28-MAY-2015 23:40	05281519.d	1	AGC9G
20	29-MAY-2015 00:01	05281520.d	1	AGC9H
21	29-MAY-2015 00:22	05281521.d	1	AGC9HMS
22	29-MAY-2015 00:44	05281522.d	1	AGC9HMSD
23	29-MAY-2015 01:05	05281523.d	1	AGC9I
24	29-MAY-2015 01:27	05281524.d	1	AGC9J
25	29-MAY-2015 01:48	05281525.d	1	AGC9K
26	29-MAY-2015 02:10	05281526.d	1	AR1242
27	29-MAY-2015 02:31	05281527.d	1	AR1660

06/02/15

e all entries legible.
ıtenance Tasks In Element

AGAB 30658

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271554.d
Data file 2: 20150527.b/0527-2.b/05271554.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 28-MAY-2015 09:32
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.347	0.000	1392769	5.912	-0.001	6521098	37.9	36.9	2.6	Tetrachloro-m-xylene
14.890	0.000	2557488	14.863	0.001	4240986	38.2	38.2	0.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.7	92.3
Decachlorobiphenyl	95.6	95.6

5/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5420555	-0.5
Hexabromobiphenyl	5633814	5318139	-5.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13103463	0.3
Hexabromobiphenyl	8980422	9200397	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

4GAA-0855

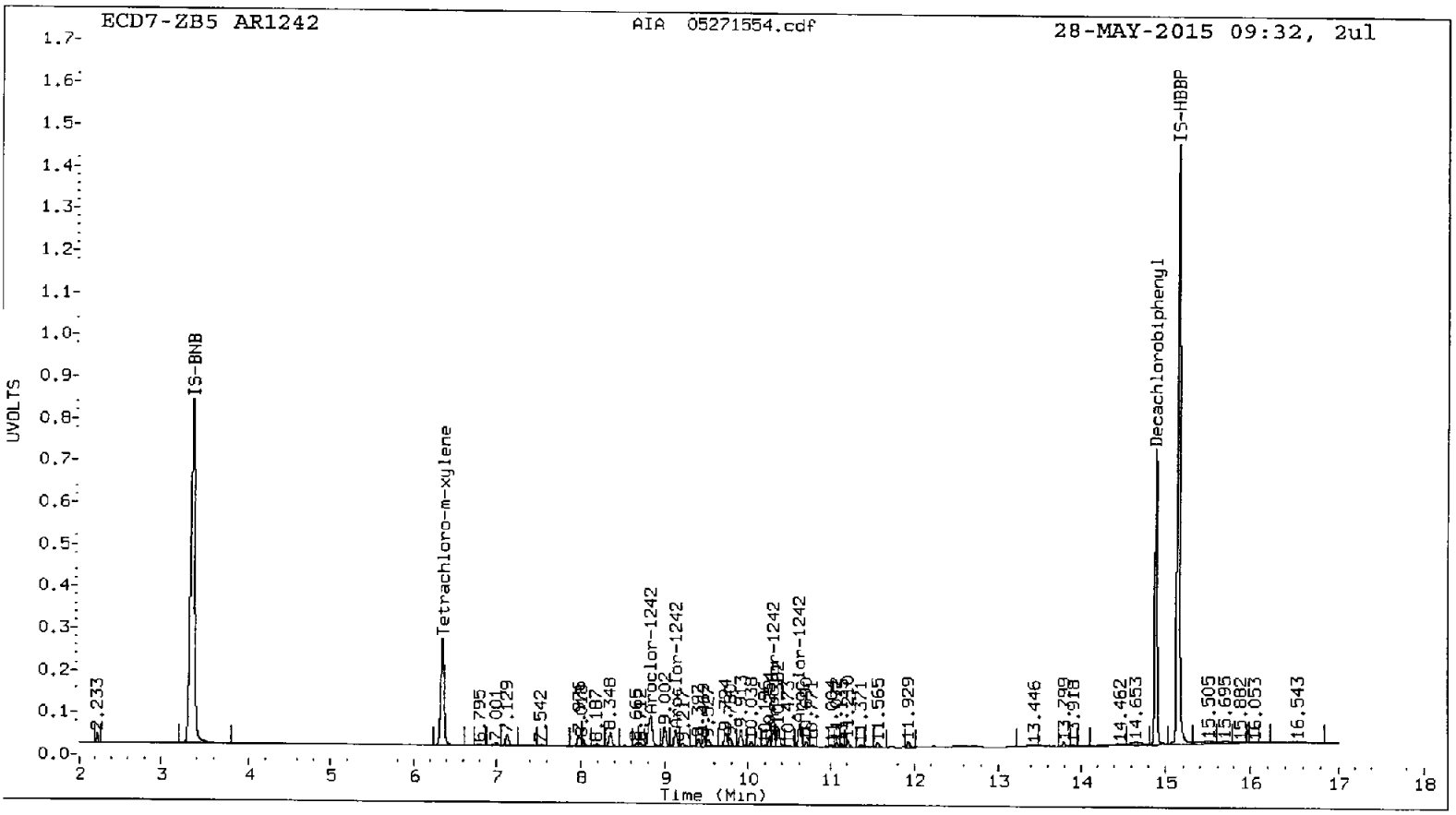
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1242	1	8.834	0.000	496244	253.8	1	8.033	0.000	1319265	250.3
Aroclor-1242	2	9.129	0.000	177214	253.1	2	8.810	-0.001	2755213	247.6
Aroclor-1242	3	10.305	0.000	164508	252.2	3	10.375	-0.001	940242	242.6
Aroclor-1242	4	10.608	0.000	248507	254.3	4	10.734	0.000	1147685	243.5
Total Col1Ave (4 peaks):					253.3	Total Col2Ave (4 peaks):				246.0 RPD = 3
Corrected Ave (3 peaks):					253.0	Corrected Ave (3 peaks):				244.6 RPD = 3
CalAmt %D:					1.3	CalAmt %D:				-1.6

Total PCB Area Col1 (6.447 - 14.791) = 3891082 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 20851001 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1242
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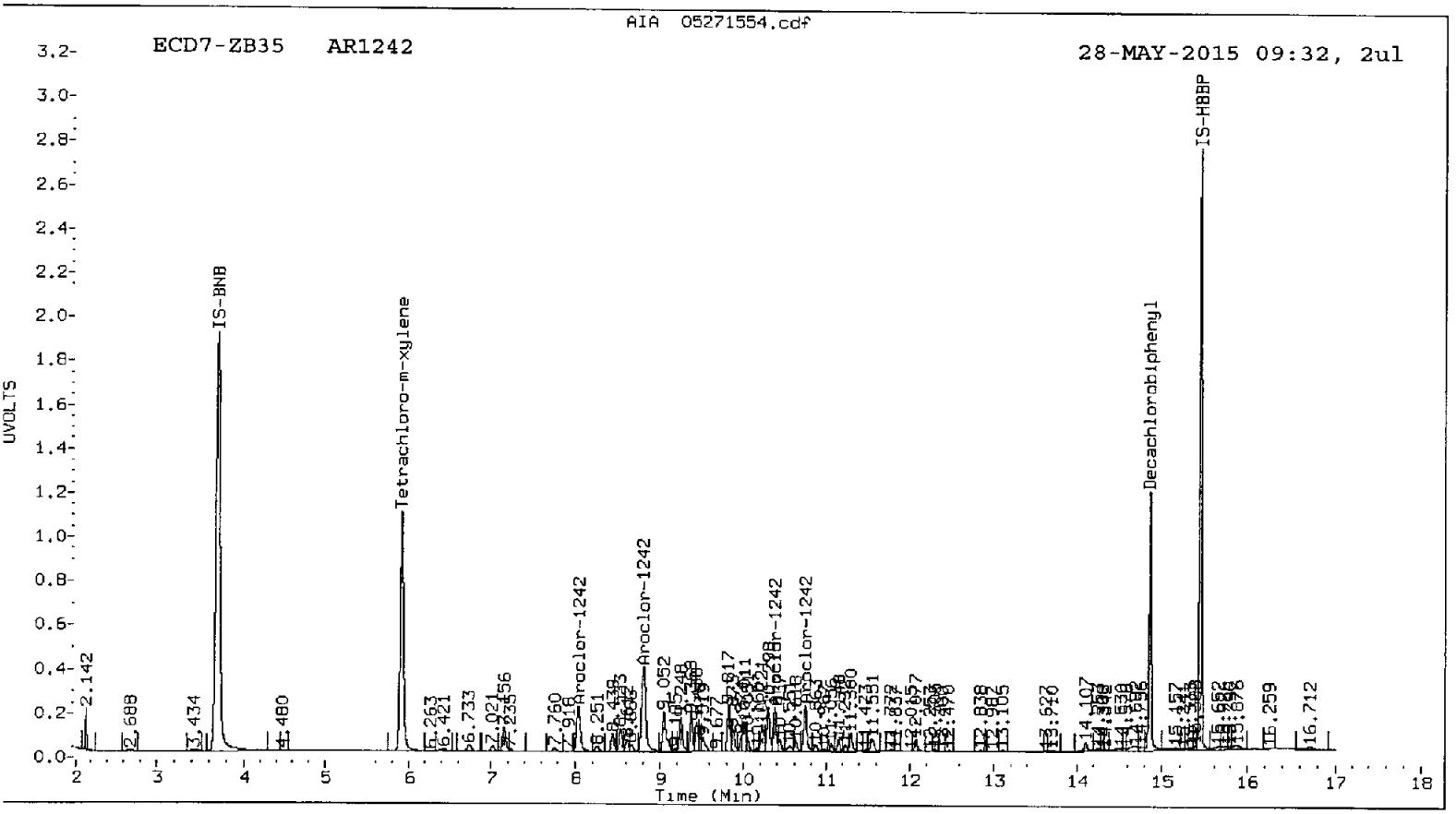
28-MAY-2015 09:32, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
Time (Min)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28-MAY-2015 09:32, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271555.d
Data file 2: 20150527.b/0527-2.b/05271555.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 09:53
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.000	1425524	5.913	0.000	6699558	39.0	37.9	2.9	Tetrachloro-m-xylene
14.891	0.000	2699156	14.863	0.001	4254161	39.4	37.8	4.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.4	94.6
Decachlorobiphenyl	98.5	94.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5393241	-1.0
Hexabromobiphenyl	5633814	5446526	-3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13124437	0.5
Hexabromobiphenyl	8980422	9338057	4.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

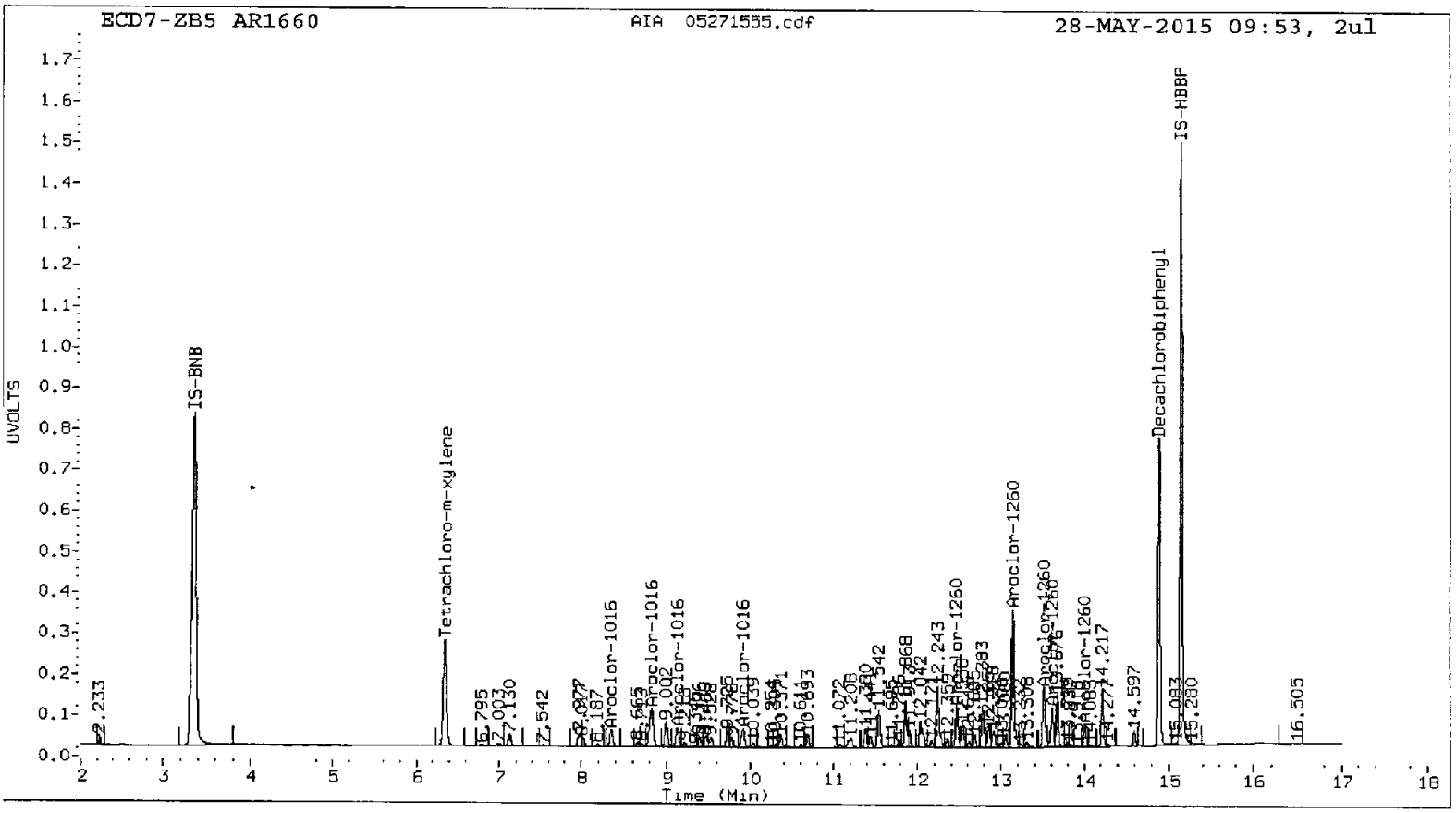
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.348	0.000	211672	244.0	1	8.032	0.001	1715639	238.5
Aroclor-1016	2	8.833	-0.001	644419	242.4	2	8.810	-0.001	3605396	236.0
Aroclor-1016	3	9.129	0.000	229395	252.3	3	9.249	0.000	952880	241.8
Aroclor-1016	4	9.913	0.000	240666	249.4	4	10.011	-0.001	654796	235.2
Total Col1Ave (4 peaks):				247.0		Total Col2Ave (4 peaks):			237.9	RPD = 4
Corrected Ave (3 peaks):				245.3		Corrected Ave (3 peaks):			236.6	RPD = 4
CalAmt %D:				-1.2		CalAmt %D:			-4.8	
Aroclor-1260	1	12.469	-0.001	440432	247.9	1	12.396	-0.001	1875738	224.0
Aroclor-1260	2	13.145	0.000	1464112	254.6	2	13.102	-0.001	4372613	224.2
Aroclor-1260	3	13.514	-0.001	675173	252.7	3	13.573	-0.001	1283959	216.8
Aroclor-1260	4	13.613	-0.001	407925	253.0	4	13.624	-0.001	2839792	221.0
Aroclor-1260	5	14.012	-0.001	223987	252.8	NS	---			----
Total Col1Ave (5 peaks):				252.2		Total Col2Ave (4 peaks):			221.5	RPD = 13
Corrected Ave (4 peaks):				251.6		Corrected Ave (3 peaks):			220.6	RPD = 13
CalAmt %D:				0.9		CalAmt %D:			-11.4	

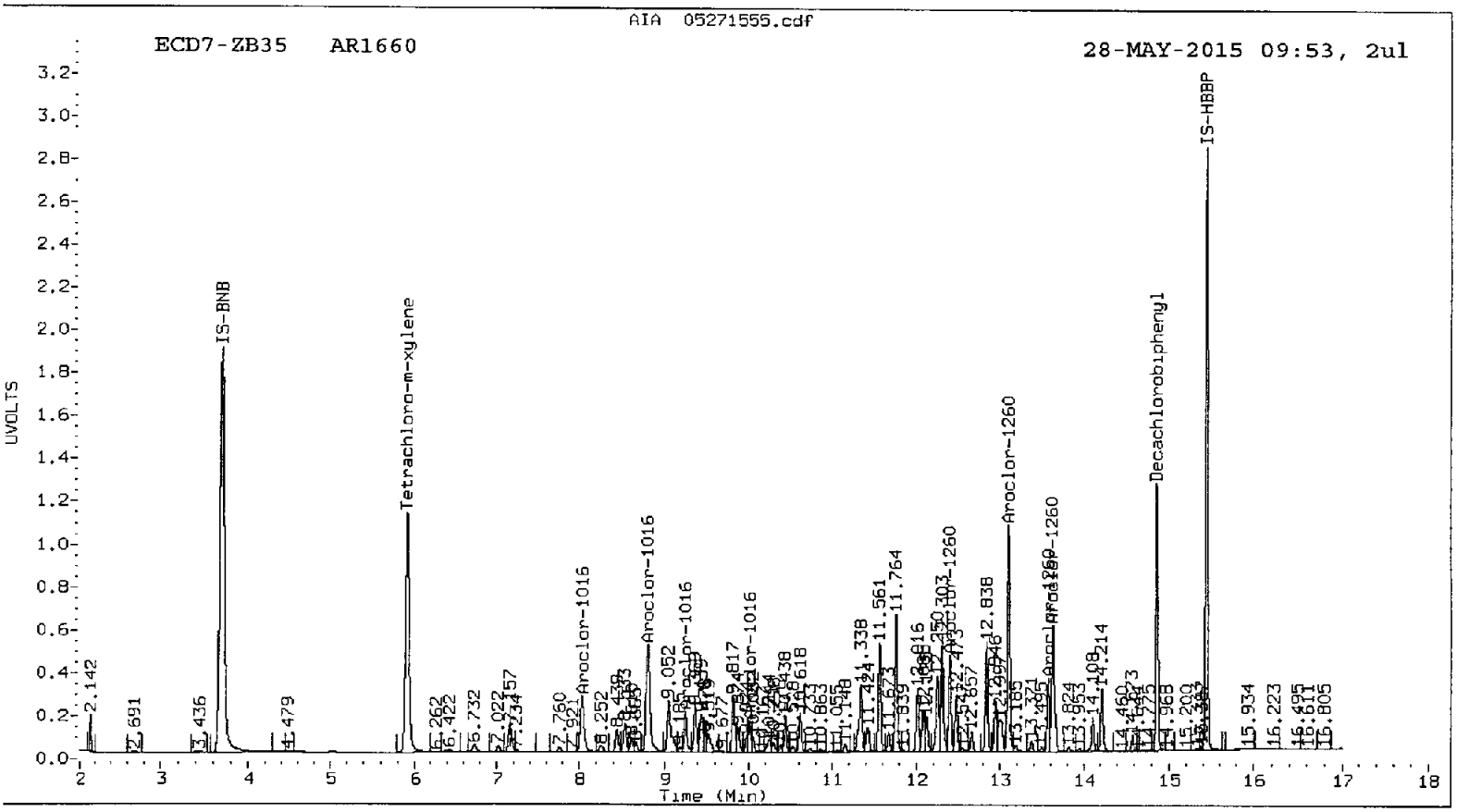
Total PCB Area Col1 (6.447 - 14.791) = 12314924 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 52420455 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1660
AIA 05271555.cdf
28-MAY-2015 09:53, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
IS-HBBP
Decachlorobiphenyl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28-MAY-2015 09:53, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
IS-HBBP
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271559.d
Data file 2: 20150527.b/0527-2.b/05271559.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8MBW1
Client ID:
Injection Date: 28-MAY-2015 11:19
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.003	1087404	5.914	0.001	5259866	28.1	27.9	0.6	Tetrachloro-m-xylene
14.891	0.001	2307253	14.864	0.001	3702463	31.4	30.5	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	70.3	69.8
Decachlorobiphenyl	78.5	76.2

05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5703109	4.7
Hexabromobiphenyl	5633814	5845942	3.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13961066	6.9
Hexabromobiphenyl	8980422	10072454	12.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 8065

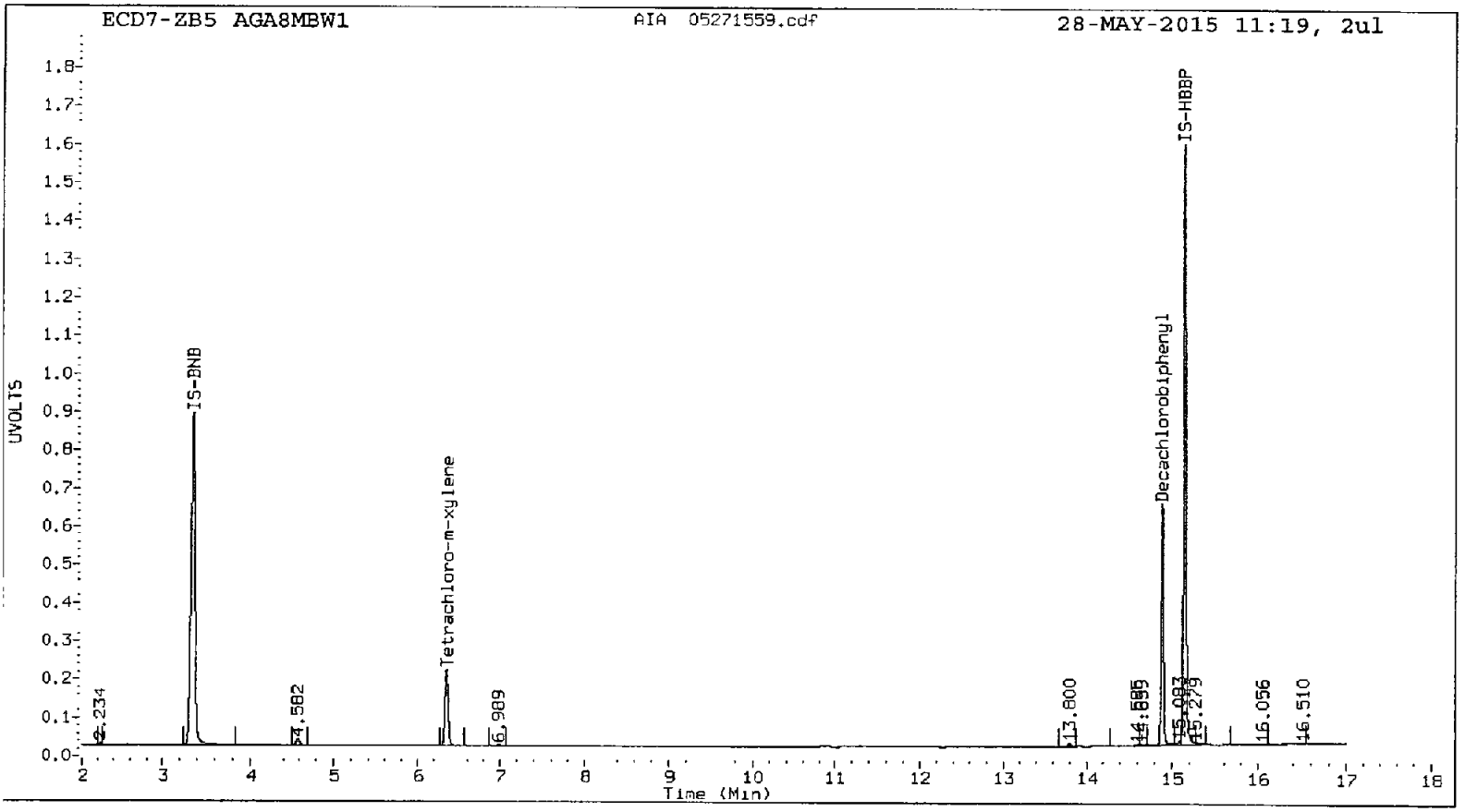
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.746	0.026	76222	31.4
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.163	0.012	15666	3.7
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 76841 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 479531 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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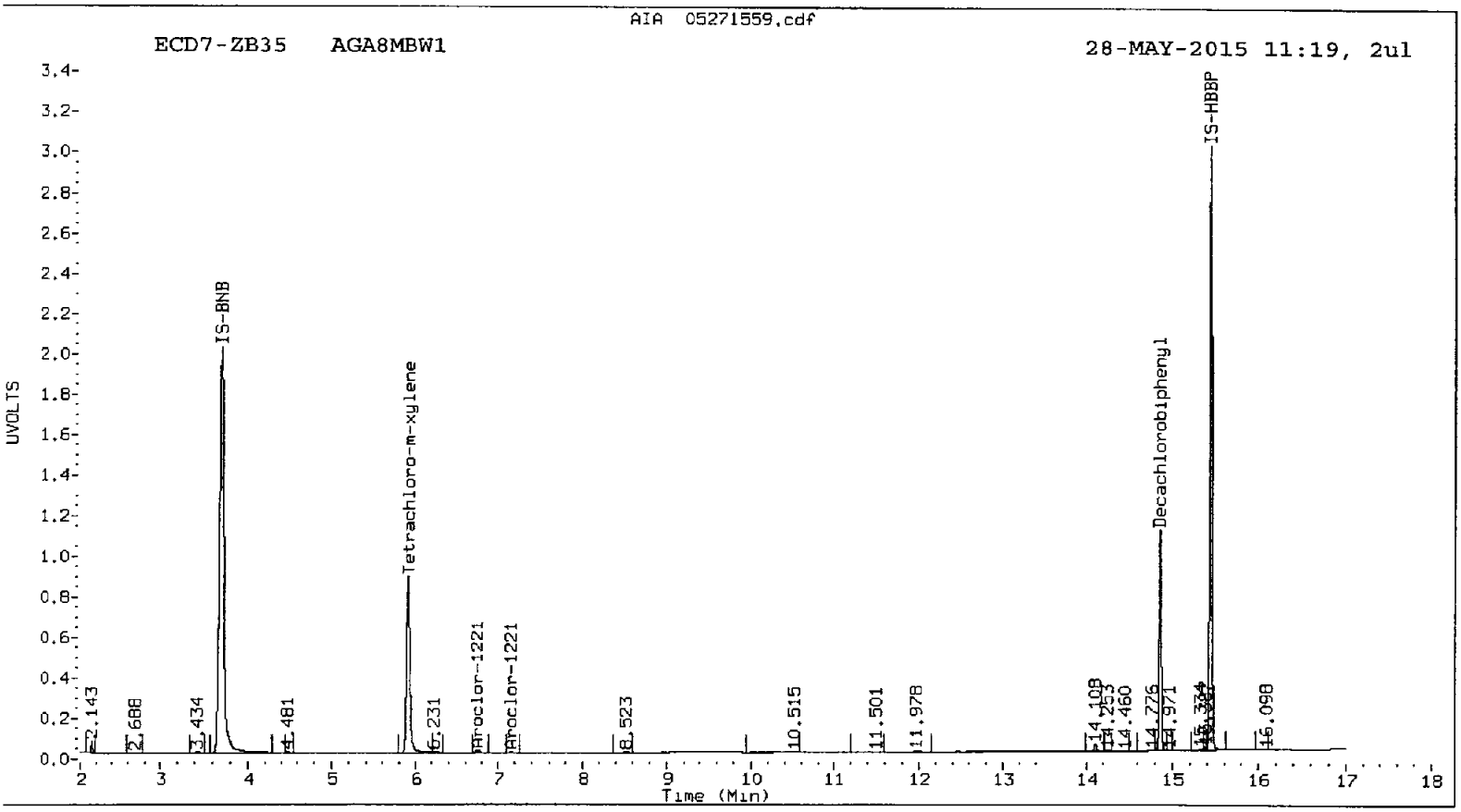
AIA 05271559.cdf
28-MAY-2015 11:19, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
4.582
6.989
13.800
16.056
16.510
Time (Min)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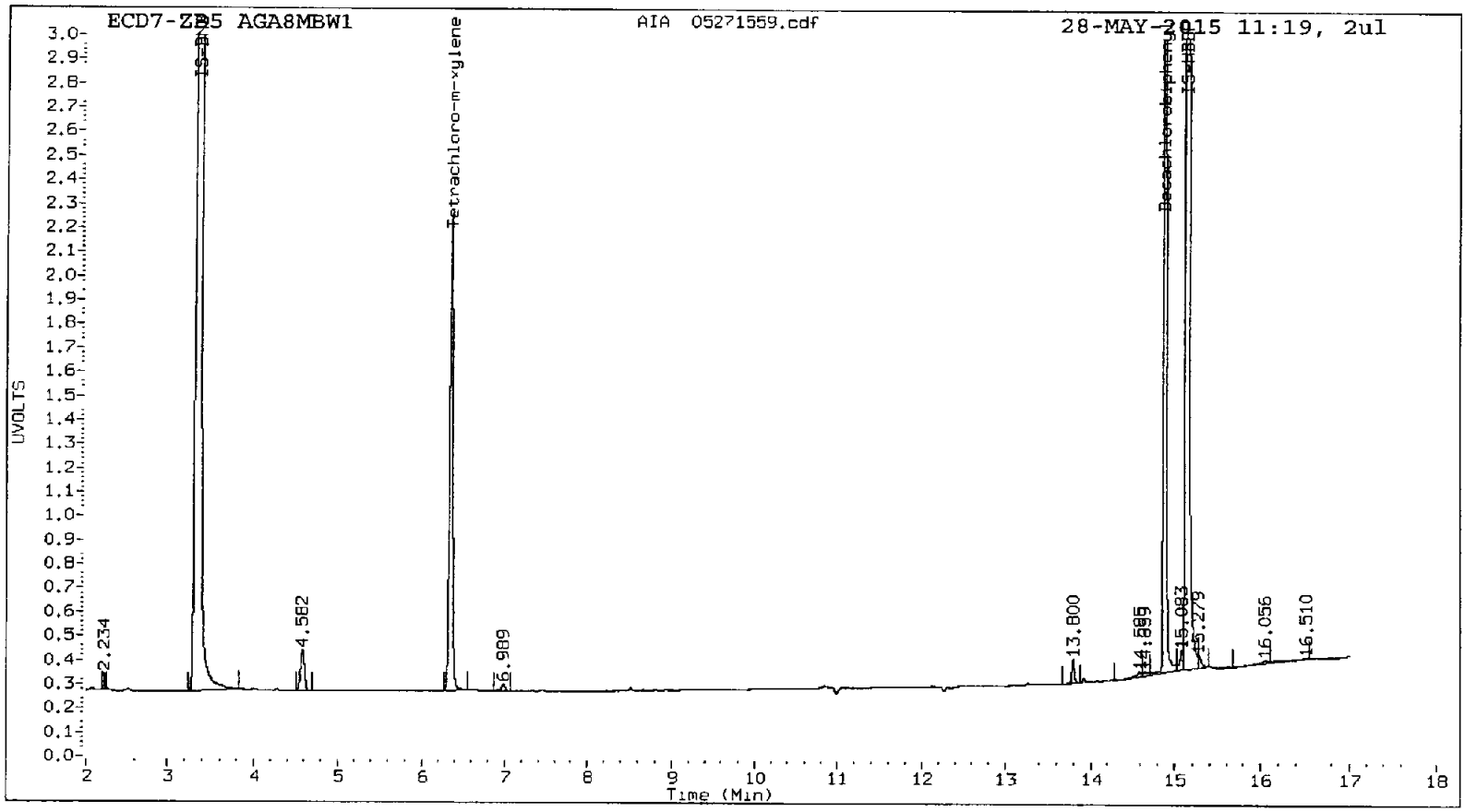
28-MAY-2015 11:19, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1221
Decachlorobiphenyl
IS-HBBP
2.143
2.688
3.434
4.481
6.231
8.523
10.515
11.501
11.978
16.098
Time (Min)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AIA 05271559.cdf
28-MAY-2015 11:19, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
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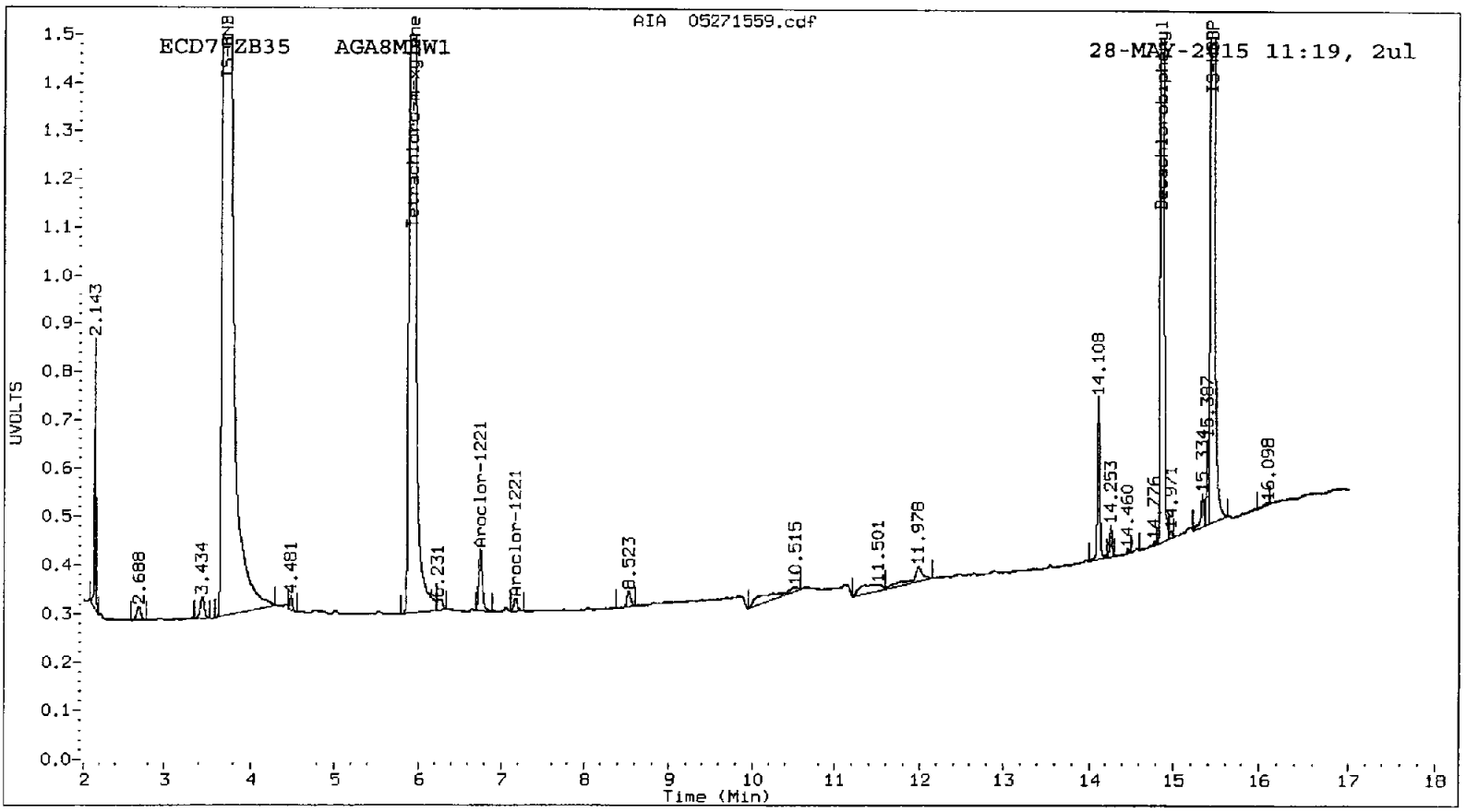
4.562
6.989
13.800
15.083
15.279
16.056
16.510
UVOLTS
Time (Min)


ECD7-ZB35 AGA8MBW1
AIA 05271559.cdf
28-MAY-2015 11:19, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
2.143
2.688
3.434
4.481
6.231
Aroclor-1221
Aroclor-1221
8.523
10.515
11.501
11.978
14.108
14.253
14.460
14.776
14.971
15.334
15.387
16.098
UVOLTS
Time (Min)

AGA 08618

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271560.d
Data file 2: 20150527.b/0527-2.b/05271560.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8LCSW1
Client ID:
Injection Date: 28-MAY-2015 11:40
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.349	0.004	1209498	5.915	0.002	5711333	31.3	30.4	2.9	Tetrachloro-m-xylene
14.890	0.000	2413903	14.863	0.000	3912047	32.5	31.8	2.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.4	76.1
Decachlorobiphenyl	81.3	79.5

5/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5691416	4.4
Hexabromobiphenyl	5633814	5903690	4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13914766	6.5
Hexabromobiphenyl	8980422	10200852	13.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.350	0.004	385170	420.8	1	8.035	0.003	3039701	398.5
Aroclor-1016	2	8.835	0.003	1199760	427.6	2	8.810	0.002	6693333	413.3
Aroclor-1016	3	9.131	0.003	429040	447.1	3	9.250	0.003	1777049	425.3
Aroclor-1016	4	9.915	0.002	450697	442.5	4	10.012	0.002	1703707	577.3
Total Col1Ave (4 peaks):					434.5	Total Col2Ave (4 peaks):				453.6 RPD = 4
Corrected Ave (3 peaks):					430.3	Corrected Ave (3 peaks):				412.4 RPD = 4
Aroclor-1221	1	---			0.0	1	5.021	0.003	24614	17.0
Aroclor-1221	2	7.007	0.008	77802	214.6	2	6.730	0.010	346546	143.3
Aroclor-1221	3	7.130	0.007	296880	290.2	3	7.023	0.007	305391	223.8
Aroclor-1221	NS	---			----	4	7.157	0.006	1296628	310.5
Col1Ave: <3 Quant Peaks						Col2Ave: 173.7				
Aroclor-1232	1	---			0.0	1	5.021	0.000	24614	28.0
Aroclor-1232	2	7.007	0.007	77802	310.8	2	7.157	0.004	1296628	439.8
Aroclor-1232	3	7.130	0.004	296880	434.6	3	8.035	0.005	3039701	879.4
Aroclor-1232	4	8.835	0.005	1199760	1050.8	4	9.250	0.003	1777049	1002.0
Total Col1Ave (3 peaks):					598.7	Total Col2Ave (4 peaks):				587.3 RPD = 2
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				449.1
Aroclor-1242	1	8.835	0.001	1199760	584.3	1	8.035	0.002	3039701	543.2
Aroclor-1242	2	9.131	0.002	429040	583.5	2	8.810	0.000	6693333	566.5
Aroclor-1242	3	10.306	0.002	59260	86.5	3	10.377	0.001	297547	72.3
Aroclor-1242	4	10.612	0.004	50760	49.5	4	10.734	0.000	203160	40.6
Total Col1Ave (4 peaks):					326.0	Total Col2Ave (4 peaks):				305.6 RPD = 6
Corrected Ave (3 peaks):					239.8	Corrected Ave (3 peaks):				218.7 RPD = 9
Aroclor-1248	1	9.398	0.005	205386	314.1	1	8.810	0.008	6693333	872.8
Aroclor-1248	2	9.915	0.006	450697	324.2	2	9.818	0.005	2143964	349.9
Aroclor-1248	3	10.372	0.013	233748	144.7	3	10.377	0.005	297547	45.8
Aroclor-1248	4	10.612	0.007	50760	31.1	4	10.734	0.005	203160	24.2
Total Col1Ave (4 peaks):					203.5	Total Col2Ave (4 peaks):				323.2 RPD = 45*
Corrected Ave (3 peaks):					163.3	Corrected Ave (3 peaks):				140.0 RPD = 15
Aroclor-1254	1	10.372	0.001	233748	224.9	1	10.618	0.001	1424711	194.4
Aroclor-1254	2	10.695	0.004	227550	153.2	2	10.734	0.021	203160	58.5
Aroclor-1254	3	11.074	0.002	51264	42.5	3	11.148	0.000	301072	52.6
Aroclor-1254	4	11.210	0.000	271359	119.3	4	11.338	0.039	3300409	270.1
Aroclor-1254	5	11.914	-0.011	284569	174.6	5	12.086	0.006	1498291	205.3
Total Col1Ave (5 peaks):					142.9	Total Col2Ave (5 peaks):				156.2 RPD = 9
Corrected Ave (4 peaks):					122.4	Corrected Ave (4 peaks):				127.7 RPD = 4
Aroclor-1260	1	12.471	0.002	800816	415.8	1	12.396	0.001	3485729	381.1
Aroclor-1260	2	13.146	0.001	2806930	450.3	2	13.102	0.000	8448498	396.5
Aroclor-1260	3	13.515	0.001	1284480	443.5	3	13.573	0.000	2438162	376.9
Aroclor-1260	4	13.614	0.001	753032	430.9	4	13.625	0.001	5462489	389.1
Aroclor-1260	5	14.012	0.001	418834	436.1	NS	---			----
Total Col1Ave (5 peaks):					436.3	Total Col2Ave (4 peaks):				385.9 RPD = 12
Corrected Ave (4 peaks):					431.6	Corrected Ave (3 peaks):				382.4 RPD = 12
Aroclor-1262	1	12.471	0.004	800816	230.1	1	12.396	0.002	3485729	215.6
Aroclor-1262	2	13.146	0.003	2806930	289.9	2	12.838	0.002	4039228	265.8
Aroclor-1262	3	13.515	0.002	1284480	420.9	3	13.102	0.002	8448498	270.9
Aroclor-1262	4	13.677	0.002	973433	183.8	4	13.573	0.002	2438162	181.3
Aroclor-1262	5	14.218	0.002	992239	209.4	5	14.215	0.002	2120294	200.6
Total Col1Ave (5 peaks):					266.8	Total Col2Ave (5 peaks):				226.8 RPD = 16

AGA8 08071

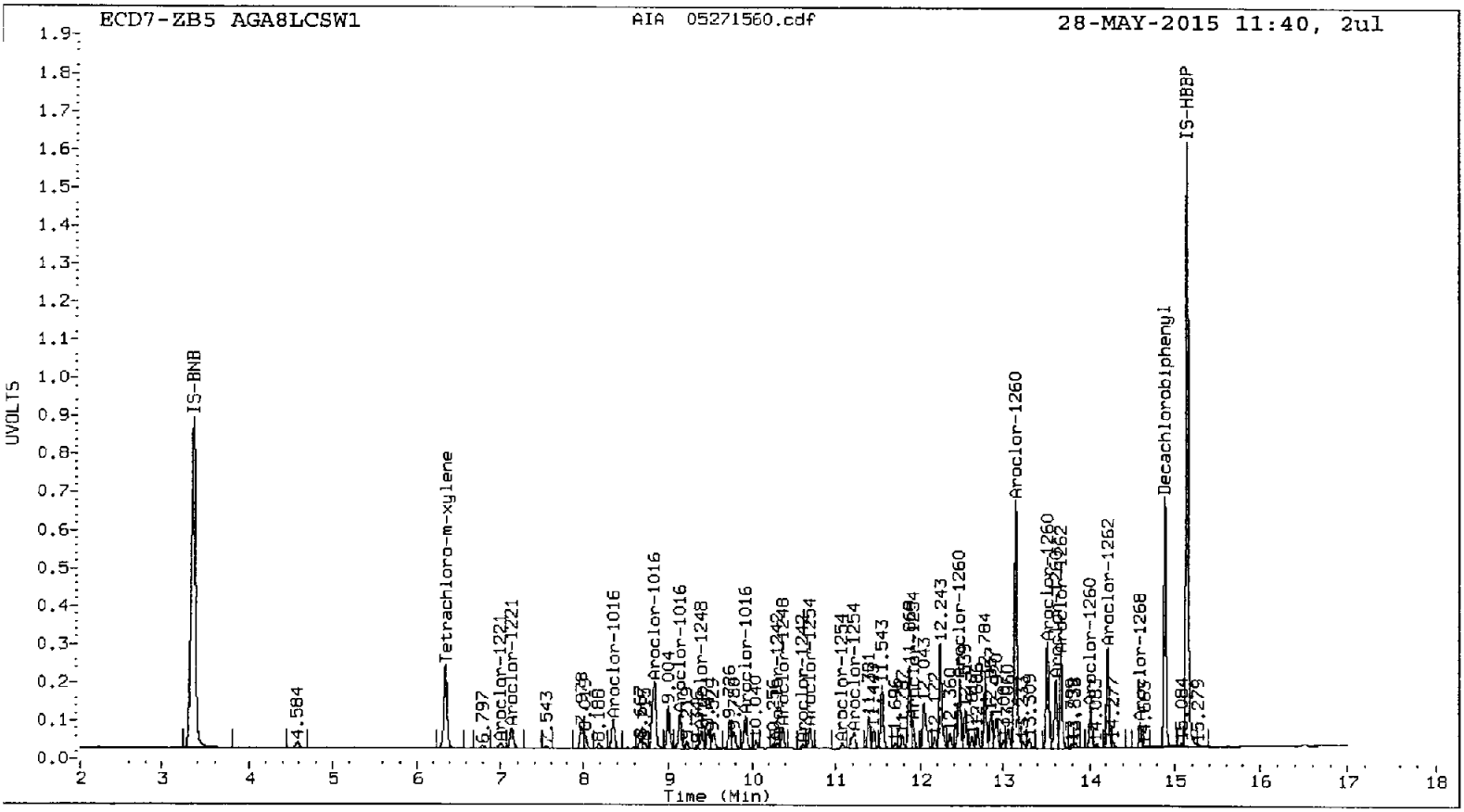
Corrected Ave (4 peaks):			228.3		Corrected Ave (4 peaks):			215.8	RPD = 6
Aroclor-1268 1	13.614	0.002	753032	82.3	1	13.573	0.004	2438162	102.0
Aroclor-1268 2	13.677	0.003	973433	90.8	2	13.625	-0.003	5462489	241.8
Aroclor-1268 3	14.012	0.016	418834	43.7	3	13.953	0.001	97658	5.4
Aroclor-1268 4	14.598	0.001	237746	7.1	4	14.573	0.000	480621	9.4
Total Col1Ave (4 peaks):			56.0		Total Col2Ave (4 peaks):			89.6	RPD = 46*
Corrected Ave (3 peaks):			44.4		Corrected Ave (3 peaks):			38.9	RPD = 13

Total PCB Area Col1 (6.445 - 14.790) = 22658858 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 98120388 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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28-MAY-2015 11:40, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
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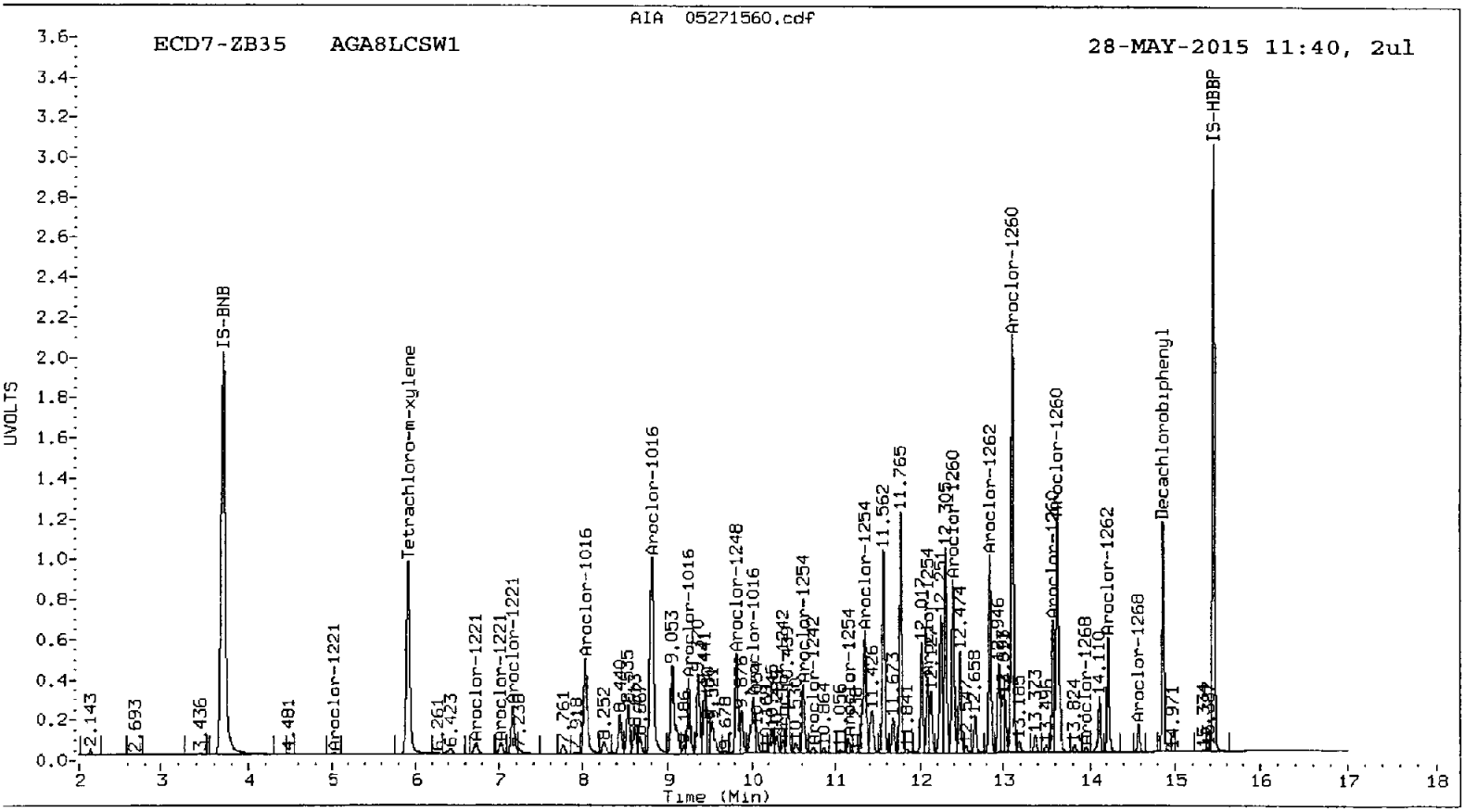
6.797
7.543
9.004
11.543
12.243
15.084
15.279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ECD7-ZB35 AGA8LCSW1
28-MAY-2015 11:40, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.143
2.693
3.436
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9.053
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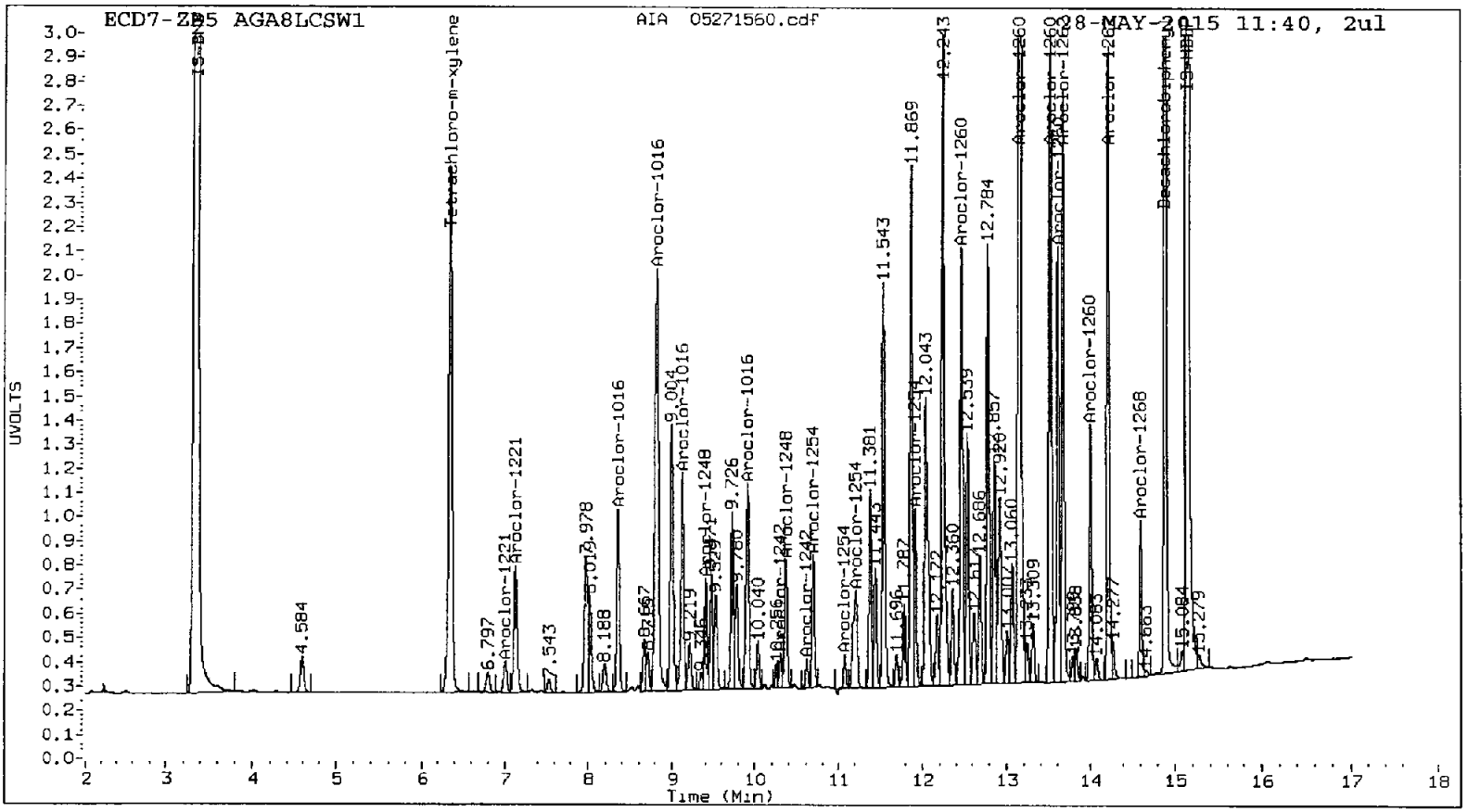
11.765
12.474
14.110
14.971

AGA 08078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AIA 05271560.cdf
28-MAY-2015 11:40, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
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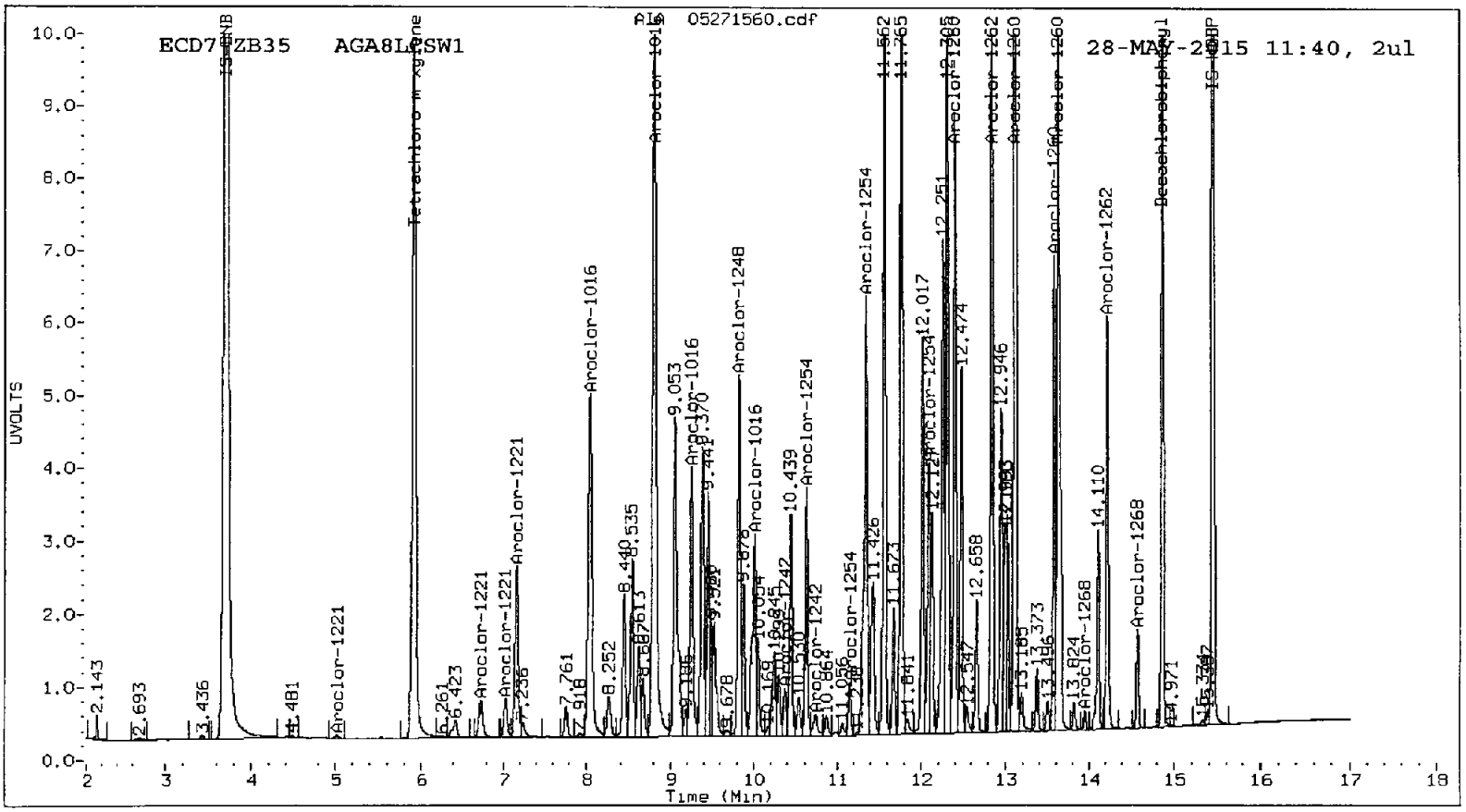
Aroclor-1268
Decachlorobiphenyl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AIA 05271560.cdf
28-MAY-2015 11:40, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271561.d
Data file 2: 20150527.b/0527-2.b/05271561.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8LCSDW1
Client ID:
Injection Date: 28-MAY-2015 12:02
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.349	0.004	1206743	5.914	0.002	5723400	31.5	30.2	4.1	Tetrachloro-m-xylene
14.891	0.001	2225223	14.863	0.000	3631102	30.2	29.7	1.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.7	75.6
Decachlorobiphenyl	75.5	74.2

M 05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5653869	3.8
Hexabromobiphenyl	5633814	5856732	4.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	14041479	7.5
Hexabromobiphenyl	8980422	10142562	12.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 : 208875

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	8.350	0.003	381687	419.7	1	8.033	0.002	3018292	392.2
Aroclor-1016	2	8.834	0.002	1187109	425.9	2	8.812	0.004	6622913	405.3
Aroclor-1016	3	9.130	0.001	423333	444.1	3	9.251	0.003	1758570	417.1
Aroclor-1016	4	9.914	0.002	445828	440.7	4	10.012	0.002	1670049	560.8
	Total Col1Ave (4 peaks):				432.6		Total Col2Ave (4 peaks):			443.8 RPD = 3
	Corrected Ave (3 peaks):				428.8		Corrected Ave (3 peaks):			404.8 RPD = 6
Aroclor-1221	1	---			0.0	1	5.007	-0.011	45880	31.5
Aroclor-1221	2	7.007	0.008	77487	215.2	2	6.730	0.011	345690	141.7
Aroclor-1221	3	7.131	0.008	296046	291.3	3	7.023	0.008	317375	230.5
Aroclor-1221	NS	---			----	4	7.158	0.008	1284513	304.9
	Col1Ave: <3 Quant Peaks						Col2Ave: 177.1			
Aroclor-1232	1	---			0.0	1	5.007	-0.013	45880	51.7
Aroclor-1232	2	7.007	0.007	77487	311.6	2	7.158	0.005	1284513	431.8
Aroclor-1232	3	7.131	0.005	296046	436.2	3	8.033	0.004	3018292	865.3
Aroclor-1232	4	8.834	0.004	1187109	1046.6	4	9.251	0.004	1758570	982.6
	Total Col1Ave (3 peaks):				598.2		Total Col2Ave (4 peaks):			582.8 RPD = 3
	Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			449.6
Aroclor-1242	1	8.834	0.000	1187109	582.0	1	8.033	0.000	3018292	534.5
Aroclor-1242	2	9.130	0.001	423333	579.6	2	8.812	0.002	6622913	555.5
Aroclor-1242	3	10.306	0.002	58597	86.1	3	10.377	0.001	293154	70.6
Aroclor-1242	4	10.612	0.004	49998	49.0	4	10.733	-0.001	193224	38.3
	Total Col1Ave (4 peaks):				324.2		Total Col2Ave (4 peaks):			299.7 RPD = 8
	Corrected Ave (3 peaks):				238.3		Corrected Ave (3 peaks):			214.4 RPD = 11
Aroclor-1248	1	9.398	0.006	203498	313.3	1	8.812	0.010	6622913	855.8
Aroclor-1248	2	9.914	0.005	445828	322.8	2	9.818	0.005	2116400	342.3
Aroclor-1248	3	10.371	0.012	231104	144.0	3	10.377	0.005	293154	44.7
Aroclor-1248	4	10.612	0.007	49998	30.8	4	10.733	0.004	193224	22.8
	Total Col1Ave (4 peaks):				202.7		Total Col2Ave (4 peaks):			316.4 RPD = 44*
	Corrected Ave (3 peaks):				162.7		Corrected Ave (3 peaks):			136.6 RPD = 17
Aroclor-1254	1	10.371	0.000	231104	223.8	1	10.619	0.001	1403385	189.7
Aroclor-1254	2	10.694	0.003	225093	152.5	2	10.733	0.021	193224	55.1
Aroclor-1254	3	11.073	0.001	48097	40.2	3	11.149	0.001	297044	51.4
Aroclor-1254	4	11.210	0.000	266591	118.0	4	11.340	0.040	3252843	263.8
Aroclor-1254	5	11.914	-0.011	281264	173.7	5	12.086	0.006	1476500	200.4
	Total Col1Ave (5 peaks):				141.6		Total Col2Ave (5 peaks):			152.1 RPD = 7
	Corrected Ave (4 peaks):				121.1		Corrected Ave (4 peaks):			124.2 RPD = 2
Aroclor-1260	1	12.471	0.002	781412	409.0	1	12.396	0.001	3425241	376.7
Aroclor-1260	2	13.145	0.000	2732296	441.8	2	13.102	0.000	8289890	391.3
Aroclor-1260	3	13.515	0.002	1251773	435.7	3	13.573	0.001	2398068	372.8
Aroclor-1260	4	13.614	0.001	735783	424.4	4	13.624	0.000	5360862	384.1
Aroclor-1260	5	14.012	0.001	407971	428.2	NS	---			----
	Total Col1Ave (5 peaks):				427.8		Total Col2Ave (4 peaks):			381.2 RPD = 12
	Corrected Ave (4 peaks):				424.3		Corrected Ave (3 peaks):			377.9 RPD = 12
Aroclor-1262	1	12.471	0.004	781412	226.3	1	12.396	0.002	3425241	213.1
Aroclor-1262	2	13.145	0.002	2732296	284.4	2	12.839	0.002	3977818	263.3
Aroclor-1262	3	13.515	0.002	1251773	413.4	3	13.102	0.002	8289890	267.3
Aroclor-1262	4	13.677	0.002	949396	180.7	4	13.573	0.003	2398068	179.4
Aroclor-1262	5	14.218	0.002	966140	205.5	5	14.214	0.002	2088654	198.7
	Total Col1Ave (5 peaks):				262.1		Total Col2Ave (5 peaks):			224.4 RPD = 16

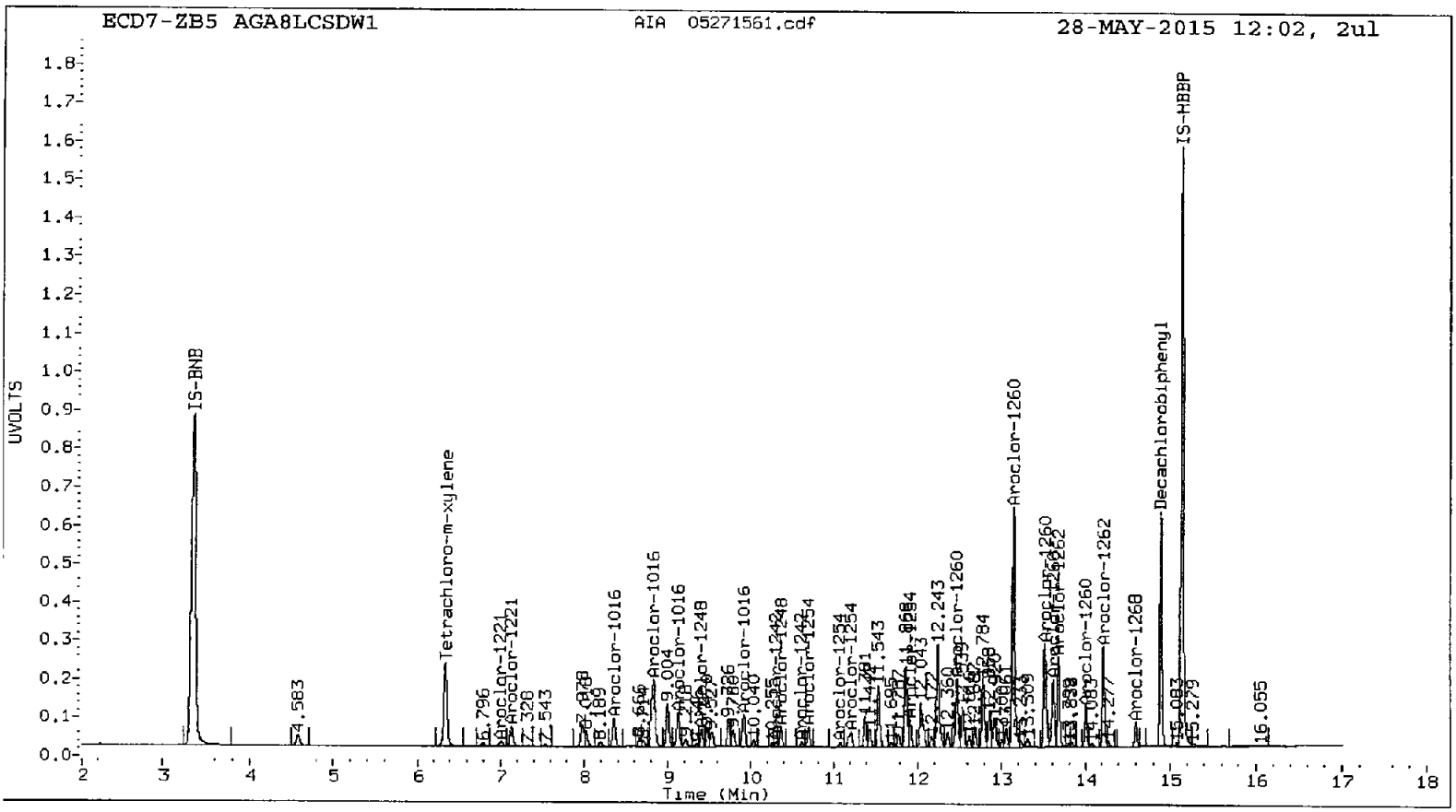
Corrected Ave (4 peaks):			224.2		Corrected Ave (4 peaks):			213.6	RPD = 5
Aroclor-1268 1	13.614	0.002	735783	81.0	1	13.573	0.004	2398068	100.9
Aroclor-1268 2	13.677	0.003	949396	89.2	2	13.624	-0.004	5360862	238.7
Aroclor-1268 3	14.012	0.016	407971	42.9	3	13.954	0.002	95958	5.3
Aroclor-1268 4	14.598	0.001	222111	6.7	4	14.573	0.001	472016	9.3
Total Col1Ave (4 peaks):			55.0		Total Col2Ave (4 peaks):			88.5	RPD = 47*
Corrected Ave (3 peaks):			43.5		Corrected Ave (3 peaks):			38.5	RPD = 12

Total PCB Area Col1 (6.445 - 14.790) = 22221346 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 96659607 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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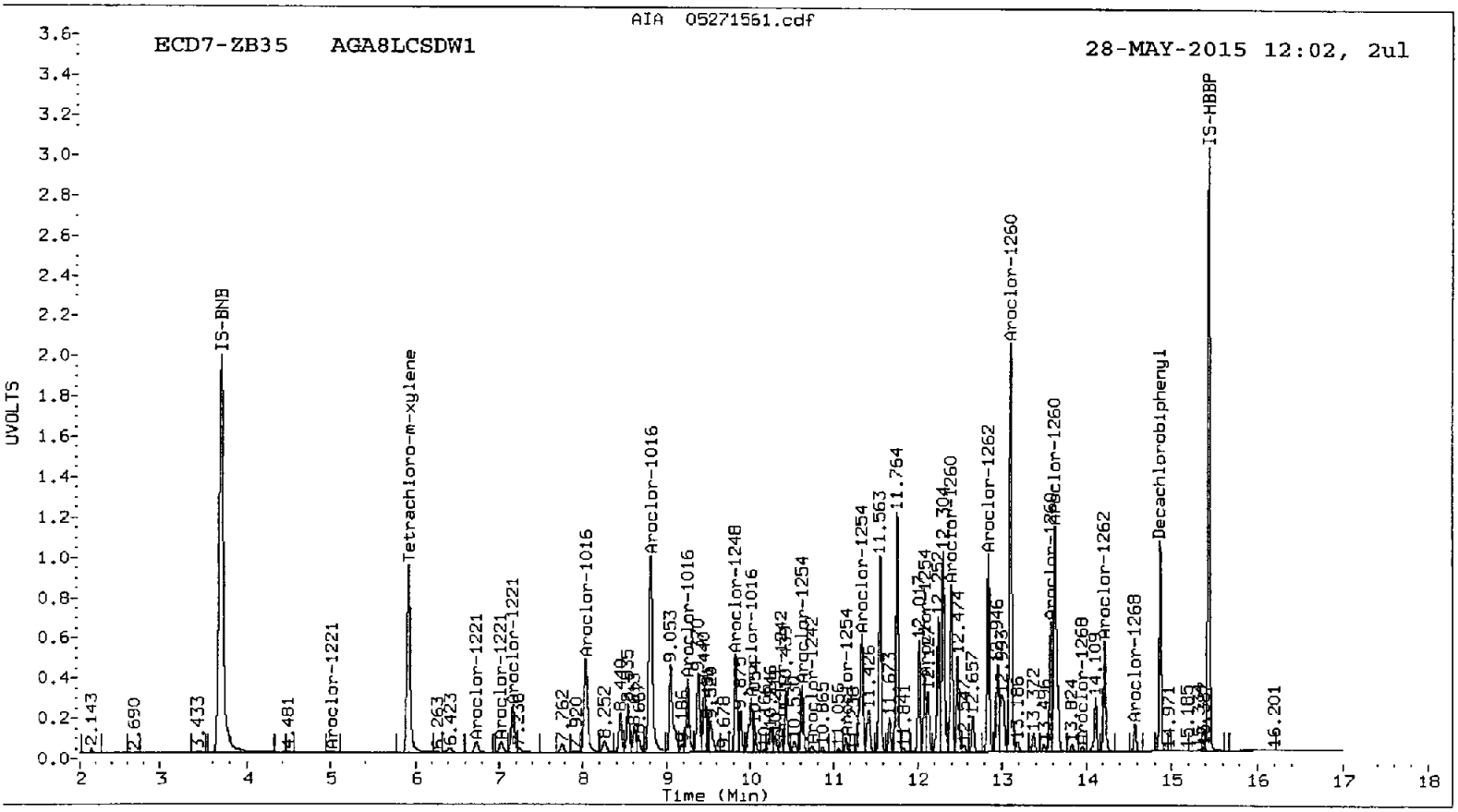
28-MAY-2015 12:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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Time (Min)
IS-BNB
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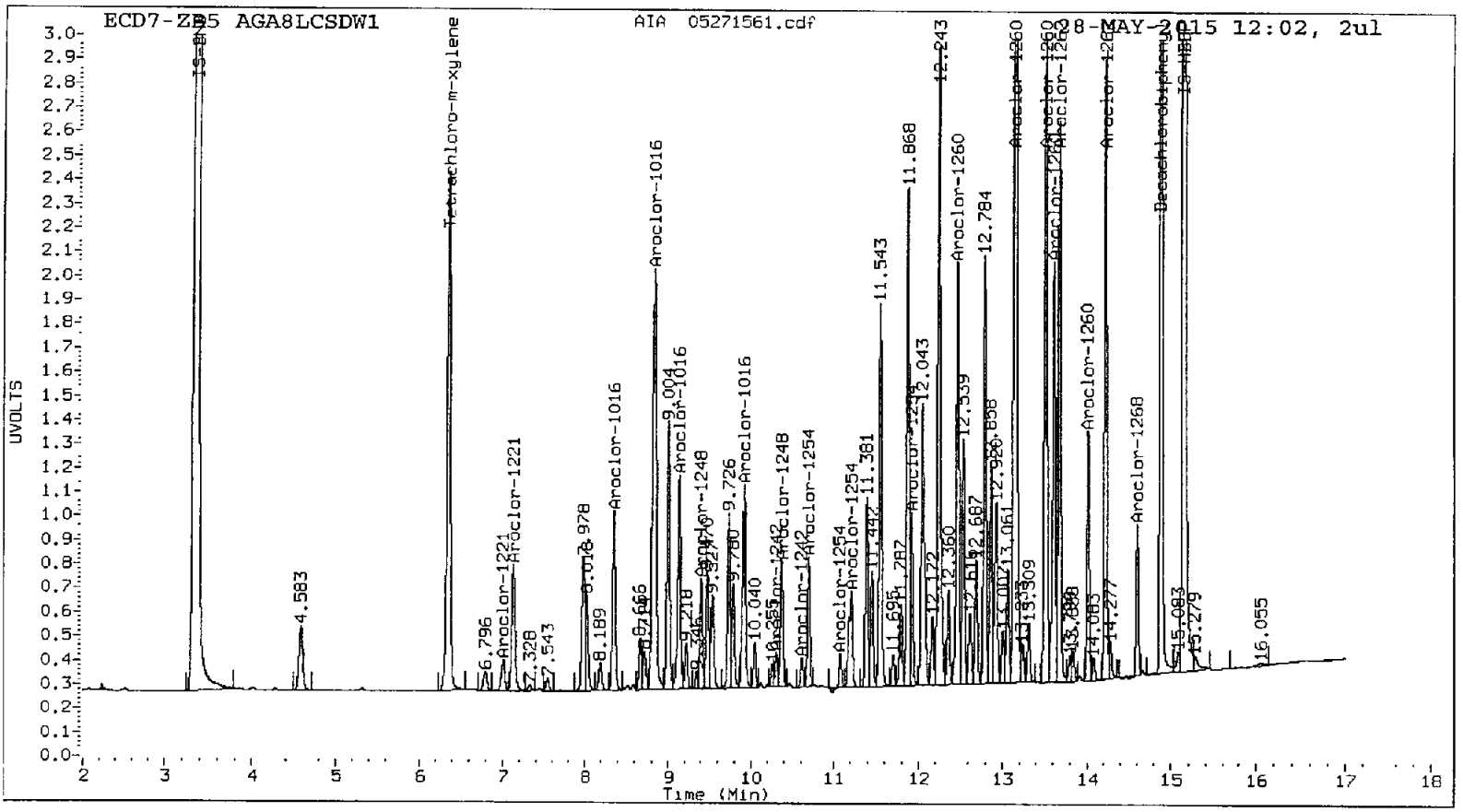
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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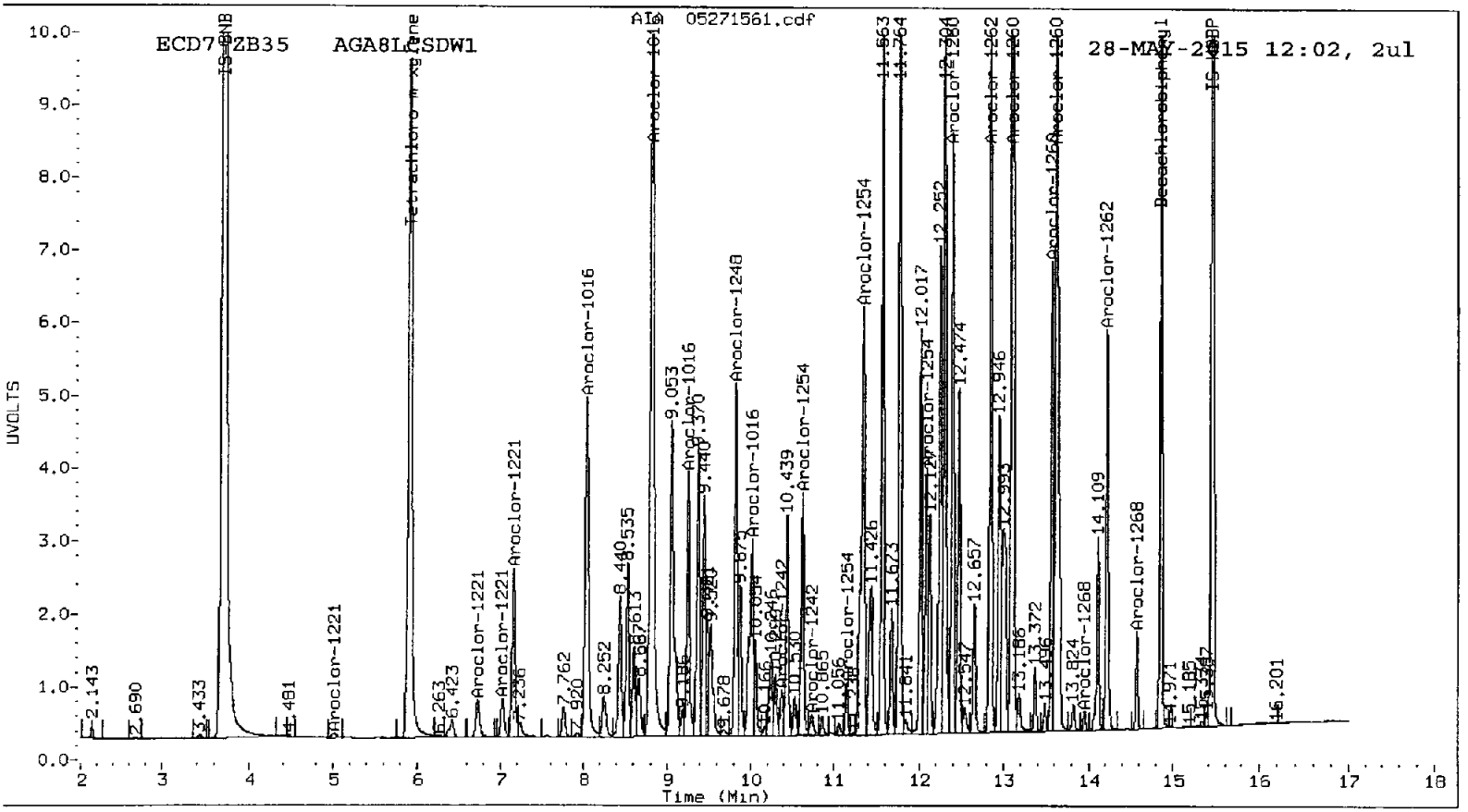
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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28-MAY-2015 12:02, 2ul
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Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271562.d
Data file 2: 20150527.b/0527-2.b/05271562.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8J
Client ID:
Injection Date: 28-MAY-2015 12:23
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.352	0.007	1183102	5.916	0.003	5707407	31.3	30.7	1.8	Tetrachloro-m-xylene
14.891	0.000	2021536	14.863	0.000	3298873	27.0	26.9	0.5	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.1	76.8
Decachlorobiphenyl	67.5	67.2

5/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5582012	2.4
Hexabromobiphenyl	5633814	5950071	5.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13779002	5.5
Hexabromobiphenyl	8980422	10173905	13.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8J, 8B8A8

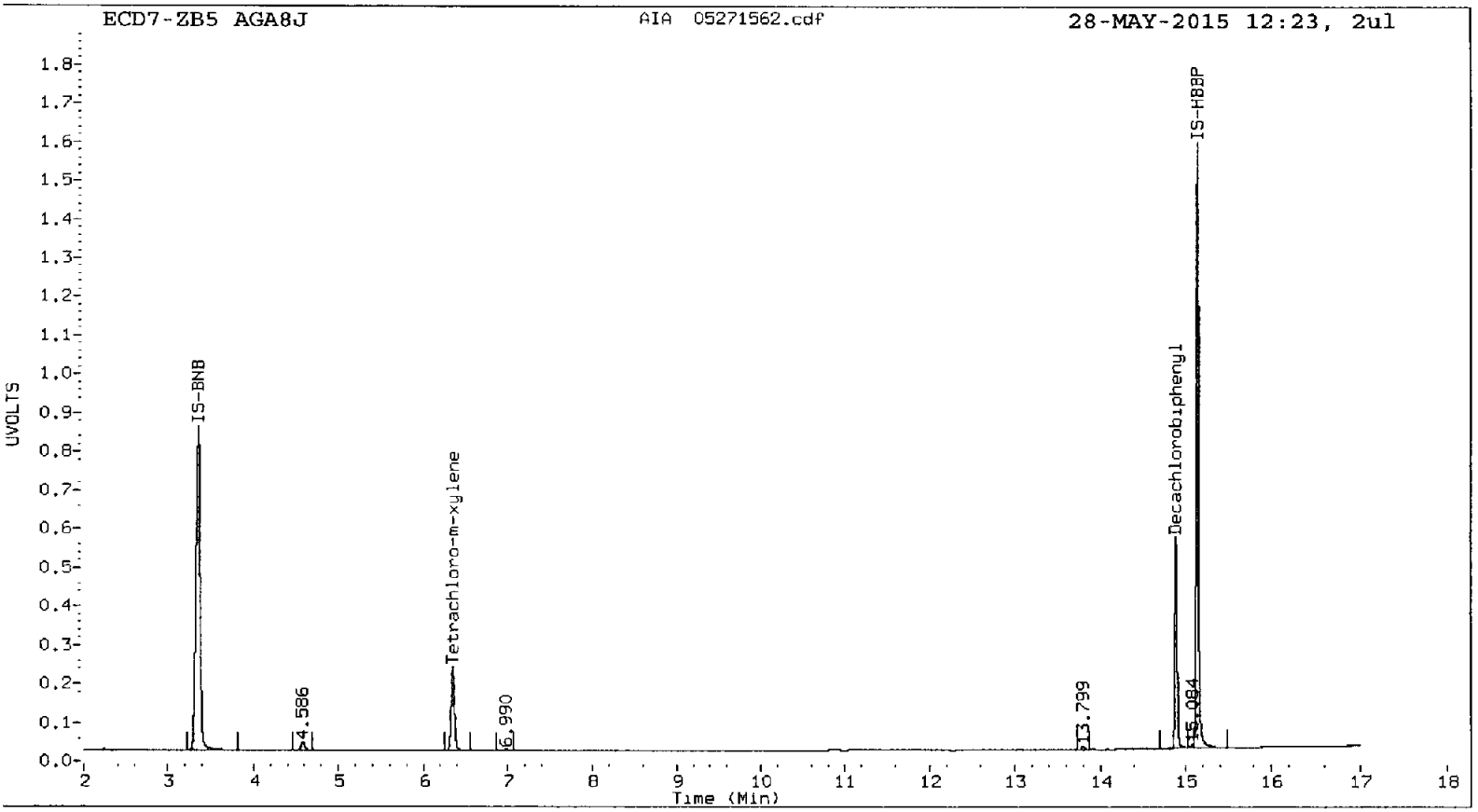
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.748	0.028	80139	33.5
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.165	0.014	19301	4.7
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 58249 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 415949 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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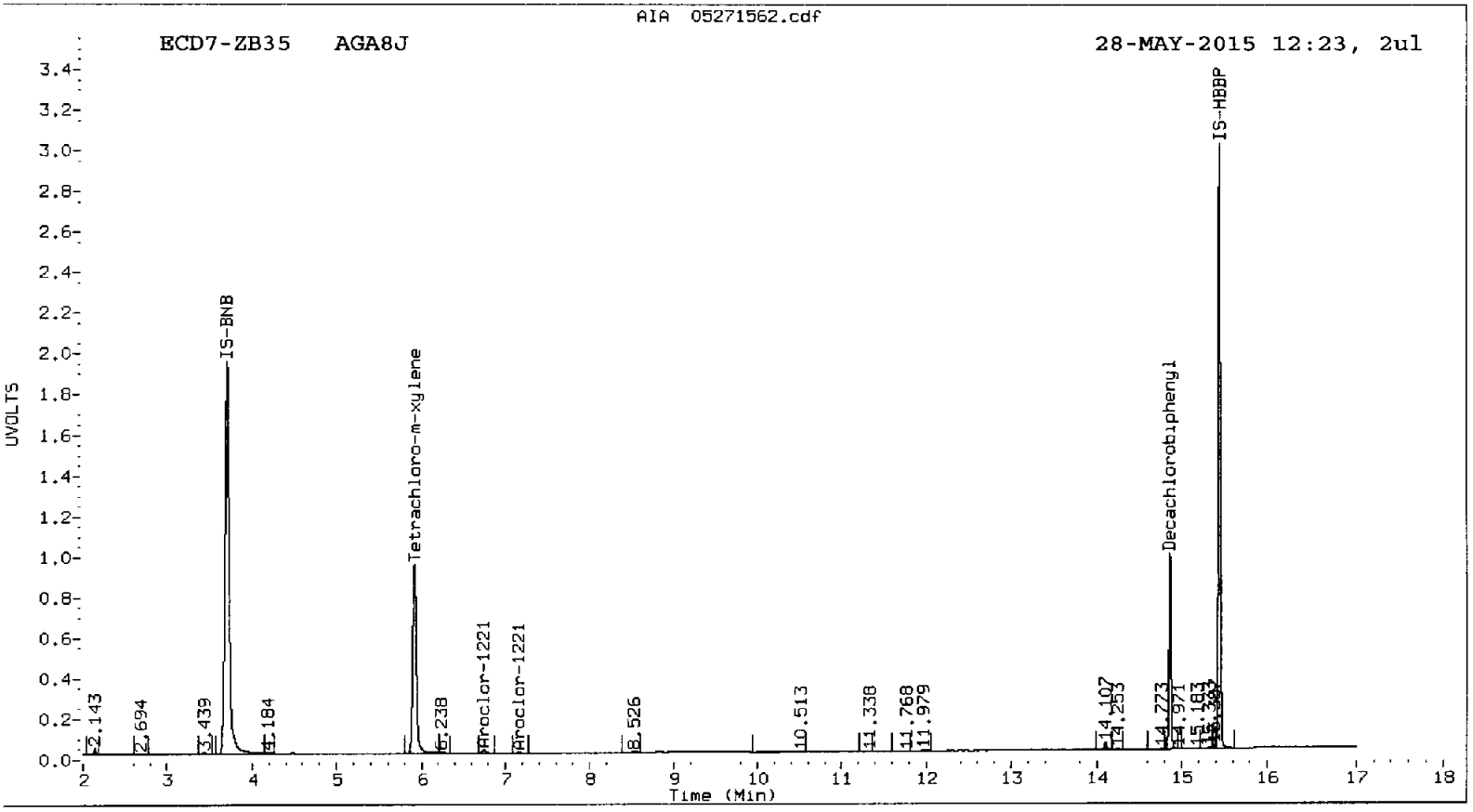
UVOLTS
IS-BNB
4.586
Tetrachloro-m-xylene
6.990
13.799
Decachlorobiphenyl
15.084
IS-HBBP
Time (Min)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UVOLTS
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IS-BNB
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Tetrachloro-m-xylene
5.238
Aroclor-1221
Aroclor-1221
8.526
10.513
11.338
11.768
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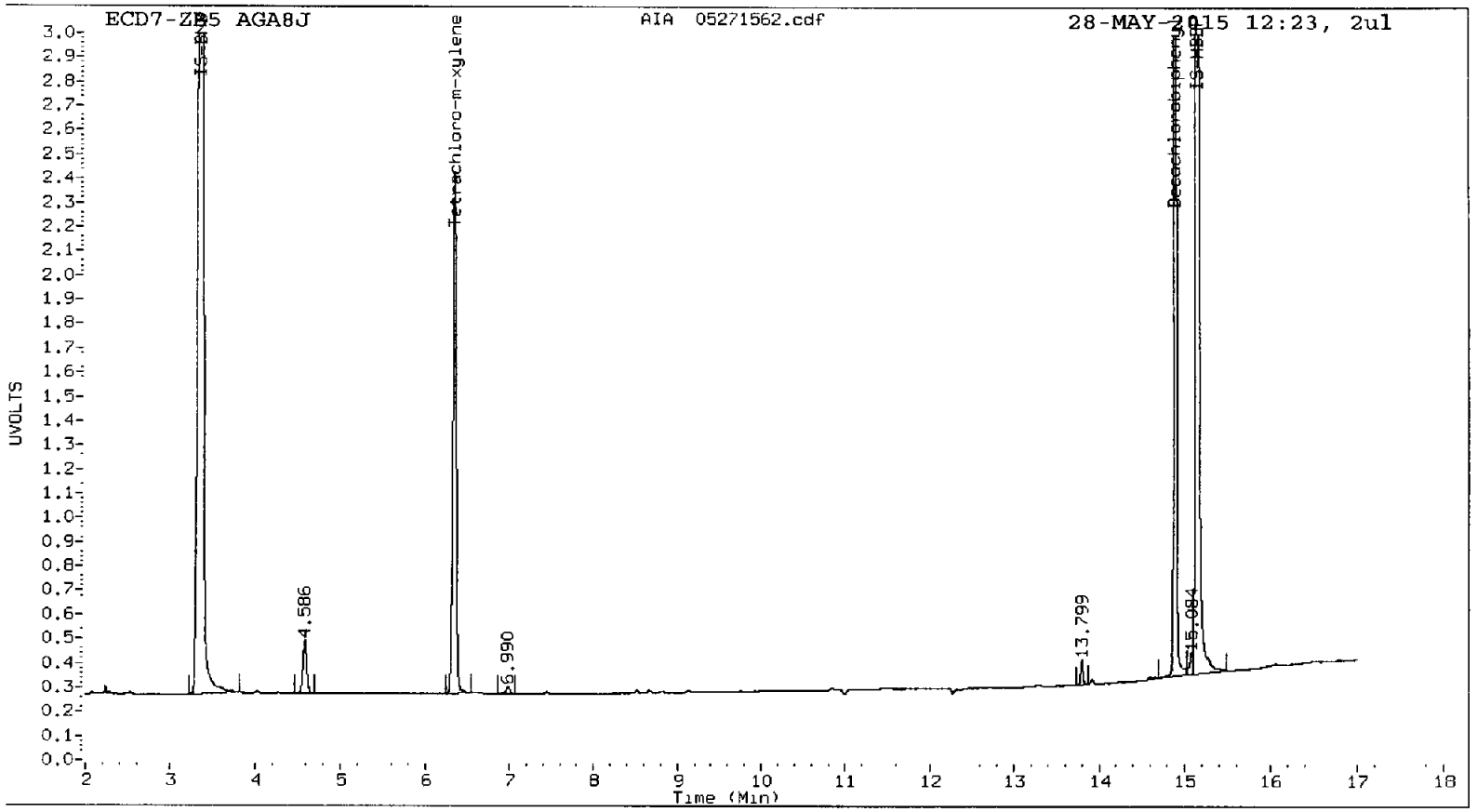
14.253
14.773
14.971
15.183
Decachlorobiphenyl
IS-HBBP
Time (Min)

AGA8 BBBB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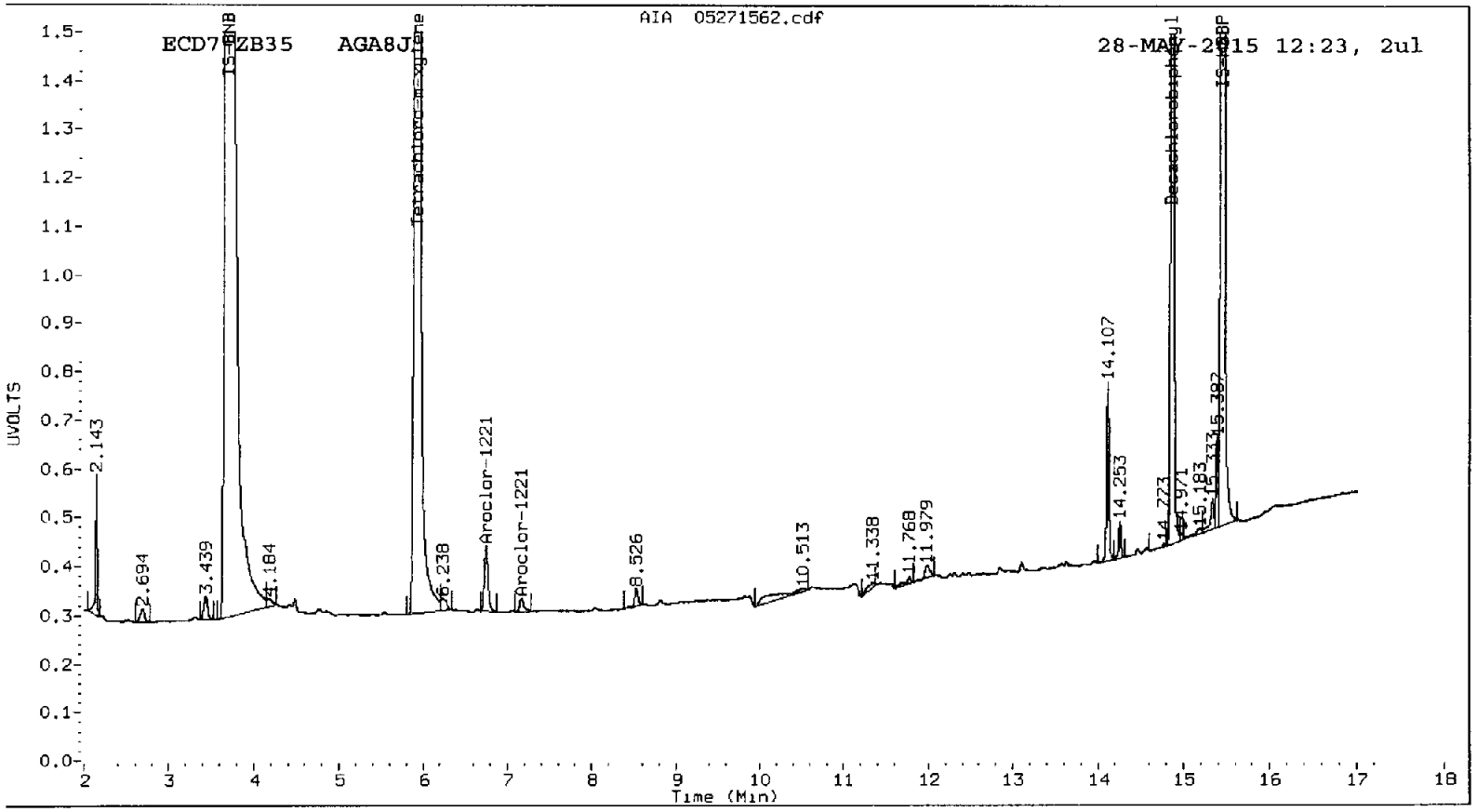
Decachlorobiphenyl
4.586
6.990
13.799
15.084
UVOLTS
Time (Min)


ECD7-ZB35 AGA8J
AIA 05271562.cdf
28-MAY-2015 12:23, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
2.143
2.694
3.439
4.184
6.238
Aroclor-1221
Aroclor-1221
8.526
10.513
11.338
11.768
11.979
14.107
14.253
14.971
15.183
15.387
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271564.d
Data file 2: 20150527.b/0527-2.b/05271564.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 28-MAY-2015 13:06
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.000	1381763	5.913	0.001	6555887	38.0	37.3	2.0	Tetrachloro-m-xylene
14.889	-0.001	2757016	14.863	0.000	4517579	38.5	37.6	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.0	93.1
Decachlorobiphenyl	96.2	94.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5362657	-1.6
Hexabromobiphenyl	5633814	5699387	1.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13048646	-0.1
Hexabromobiphenyl	8980422	9966703	11.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1254	1	10.371	0.009	249286	254.5	1	10.617	0.010	1728151	251.4
Aroclor-1254	2	10.691	0.008	357036	255.1	2	10.713	0.010	825862	253.5
Aroclor-1254	3	11.072	0.007	290562	255.9	3	11.148	0.009	1353660	252.0
Aroclor-1254	4	11.210	0.007	547651	255.6	4	11.299	0.008	2870865	250.6
Aroclor-1254	5	11.925	0.006	397081	258.5	5	12.079	0.007	1729335	252.6

Total Col1Ave (5 peaks): 255.9 Total Col2Ave (5 peaks): 252.0 RPD = 2

Corrected Ave (4 peaks): 255.3 Corrected Ave (4 peaks): 251.6 RPD = 1

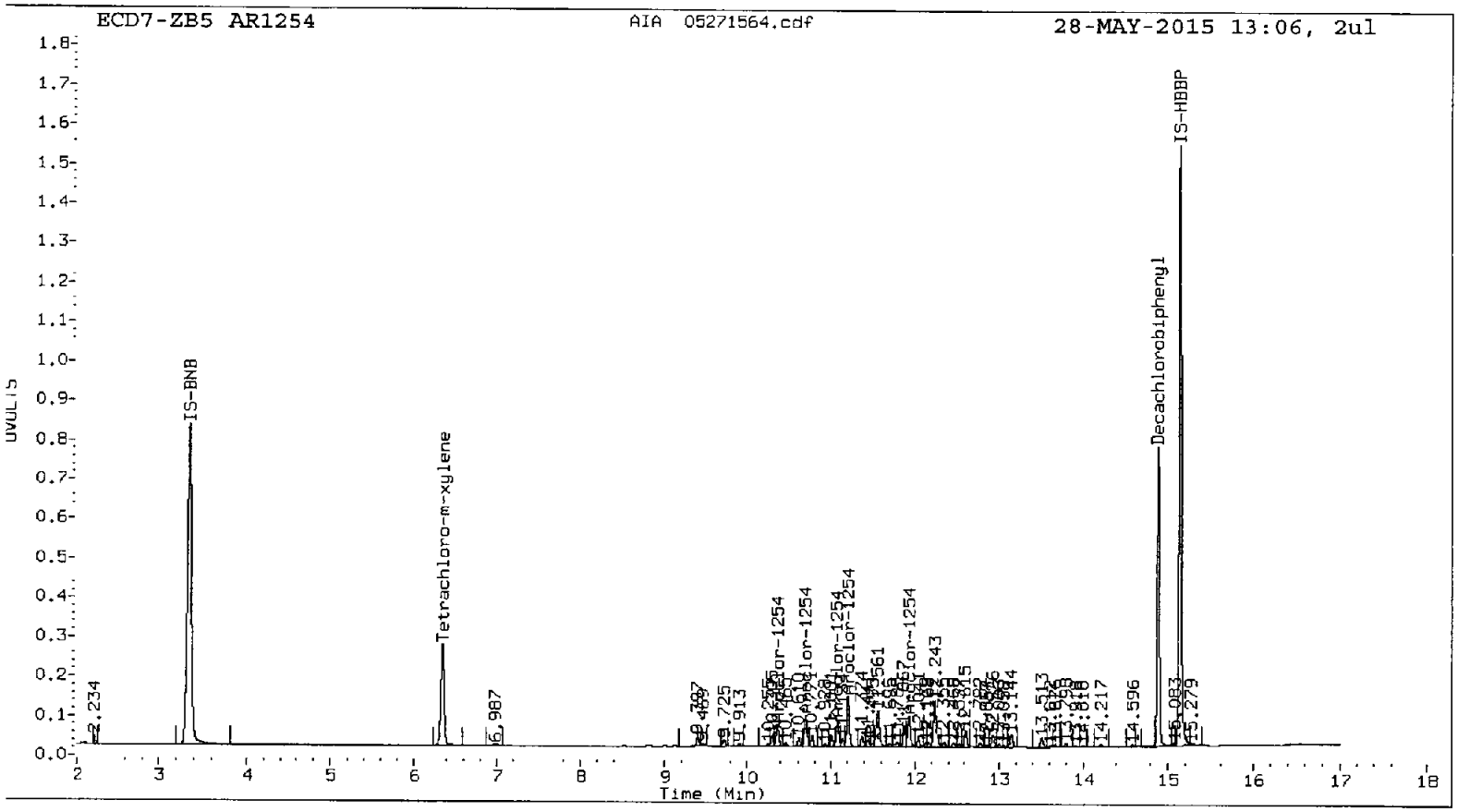
CalAmt %D: 2.4 CalAmt %D: 0.8

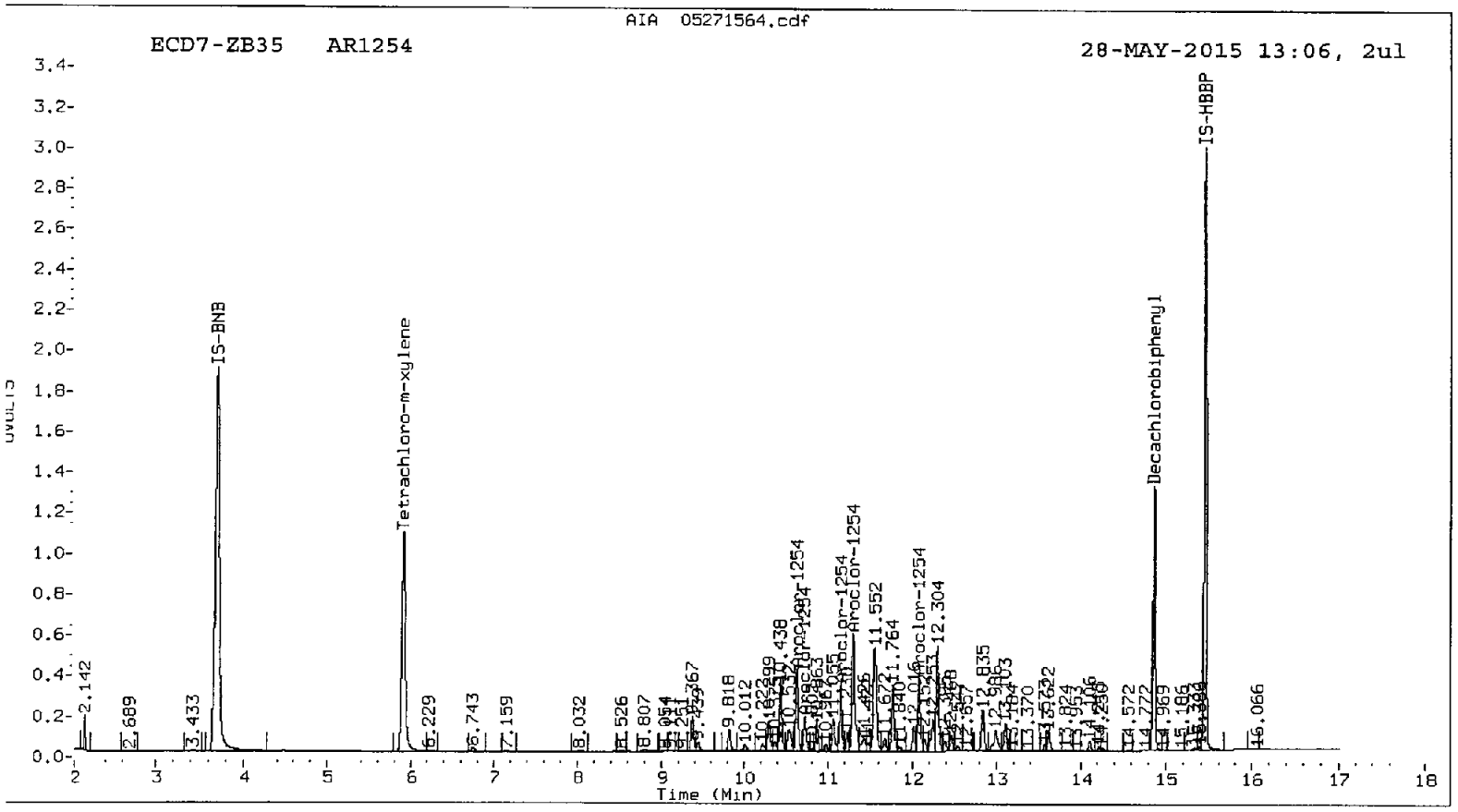
Total PCB Area Col1 (6.447 - 14.791) = 5549670 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 28448913 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1254
AIA 05271564.cdf
28-MAY-2015 13:06, 2ul
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


AIA 05271564.cdf
ECD7-ZB35 AR1254
28-MAY-2015 13:06, 2ul
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271565.d
Data file 2: 20150527.b/0527-2.b/05271565.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 13:28
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	-0.002	1433560	5.913	0.000	6742709	39.1	37.9	3.0	Tetrachloro-m-xylene
14.890	0.000	2836095	14.863	0.000	4643347	39.2	37.9	3.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.7	94.8
Decachlorobiphenyl	98.1	94.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5407167	-0.8
Hexabromobiphenyl	5633814	5748876	2.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13180150	0.9
Hexabromobiphenyl	8980422	10153131	13.1

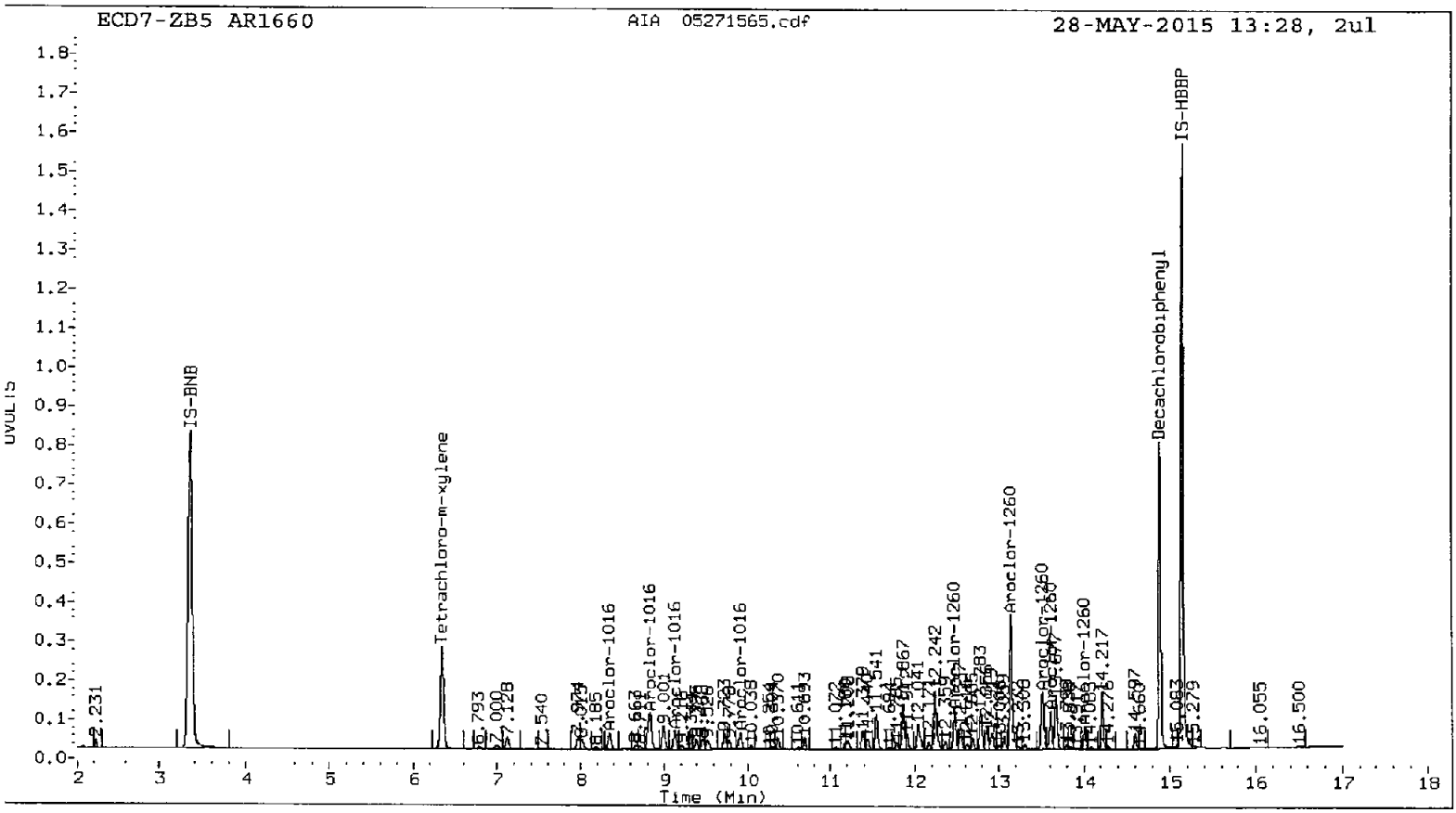
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

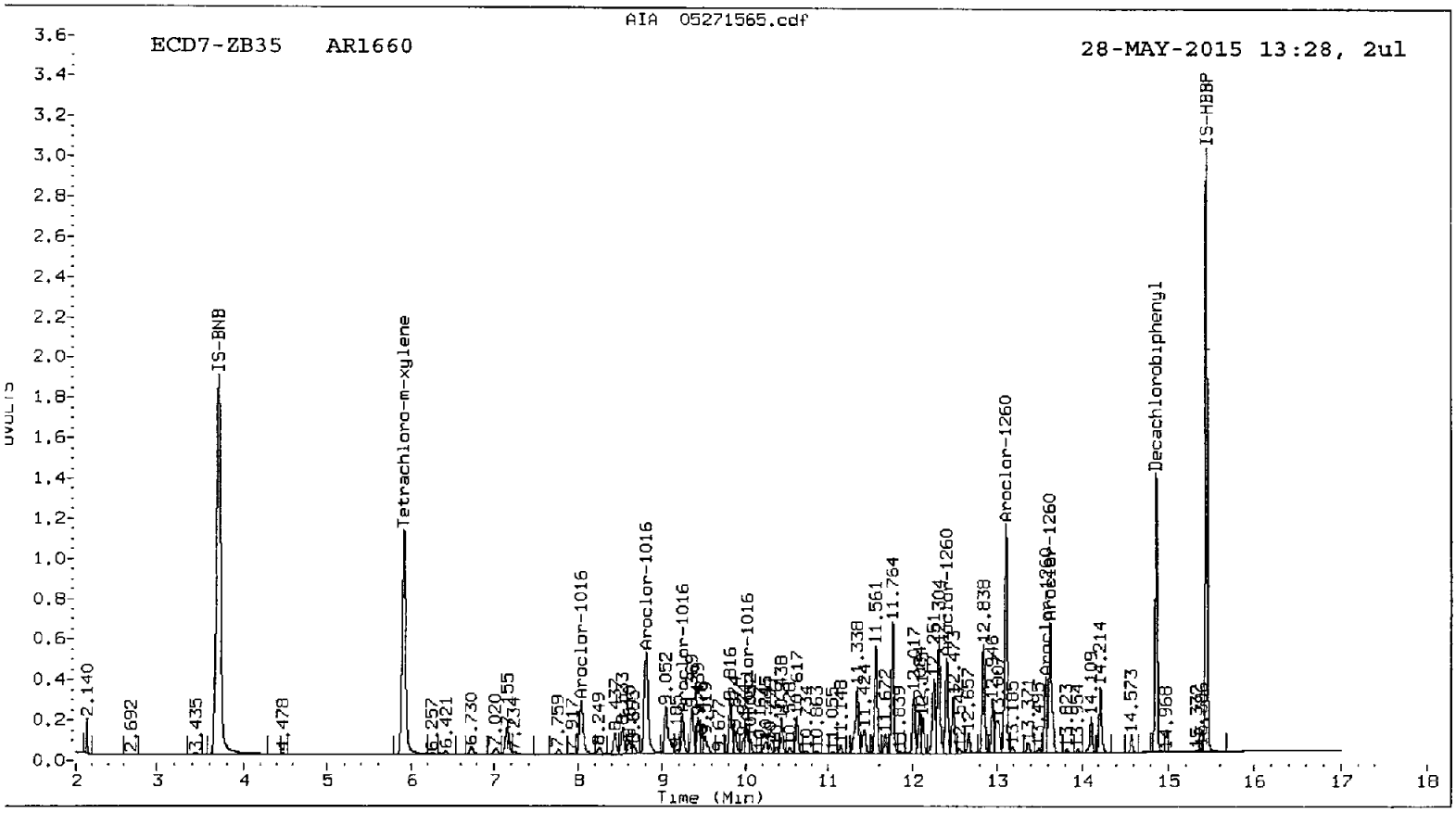
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.346	-0.002	212723	244.6	1	8.032	0.001	1727441	239.1
Aroclor-1016	2	8.832	-0.002	645791	242.3	2	8.808	-0.002	3619609	236.0
Aroclor-1016	3	9.129	0.000	228970	251.1	3	9.248	-0.001	951082	240.3
Aroclor-1016	4	9.913	-0.001	241083	249.2	4	10.011	-0.002	659076	235.8
Total Col1Ave (4 peaks):					246.8	Total Col2Ave (4 peaks):				237.8 RPD = 4
Corrected Ave (3 peaks):					245.3	Corrected Ave (3 peaks):				236.9 RPD = 3
CalAmt %D:					-1.3	CalAmt %D:				-4.9
Aroclor-1260	1	12.469	-0.001	448881	239.3	1	12.396	-0.001	1965552	215.9
Aroclor-1260	2	13.145	0.000	1491210	245.7	2	13.102	-0.001	4715228	222.4
Aroclor-1260	3	13.514	-0.001	690415	244.8	3	13.573	-0.001	1416789	220.0
Aroclor-1260	4	13.613	-0.001	418749	246.1	4	13.624	-0.001	3128579	223.9
Aroclor-1260	5	14.012	-0.001	233220	249.4	NS	---			----
Total Col1Ave (5 peaks):					245.1	Total Col2Ave (4 peaks):				220.6 RPD = 11
Corrected Ave (4 peaks):					244.0	Corrected Ave (3 peaks):				219.4 RPD = 11
CalAmt %D:					-2.0	CalAmt %D:				-11.8

Total PCB Area Col1 (6.447 - 14.791) = 12551975 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 54489280 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1660
AIA 05271565.cdf
28-MAY-2015 13:28, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)


AIA 05271565.cdf
ECD7-ZB35 AR1660
28-MAY-2015 13:28, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)

TPHD Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGA8

Analytical Chemists and Consultants

Element BOE#45

(8015C) NWTPHD-Soil/Sediment
Microwave (3546) (SOP # 3304S)

Preparation Test TPHD # 3 (DIESMI)

ARI Job No(s) AGA8/AGC9 (15E0011/15E0013) Page 1 of 1

In-House (5ppm)
Batch set up by: SP

Bottle #	Extraction Requirements	Weight Extracted (wet wt)	Acid Clean (1:1) Y/N	Silica Gel Clean (1:1) Y/N	Final Effective Volume	Volume to Lab	Comments
							Element ID
	AGA8 MBS	10.00g	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
	SBS	10.00g	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
	~~SBS Dup.~~	~~10.00g~~	~~(1:1) Y/N~~	~~(1:1) Y/N~~	~~1mL~~	~~1mL~~	
	QLS	10.00g	(1:1) Y/N	(1:1) Y/N	~~1mL~~	~~1mL~~	
1	AGA8 B	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-02
1	E	10.00	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-05
1	F	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-06
1	Fms	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
1	FmsD	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
1	H	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-08
1	I	10.07	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-09
1	AGC9 C	10.01	(1:1) Y/N	(1:1) Y/N	~~1mL~~ 5mL	1mL	15E0013-03
1	D	10.05	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-04
1	E	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-05
1	H	10.01	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-08
1	HmS	10.03	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
1	HmSD	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
1	I	10.06	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-09
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL	
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL	SP 5/26/15

Analyst/Date: [illegible] 05/24/15 — SP 5/26/15 — SP 5/26/15

Verify Client ID: [illegible] 05/24/15 — Analyst/Date

Microwave 1 2 3: CT 5/24/15 — [illegible] — Analyst/Date

TurboVap 1 2 3 4
~~Pre-Acid/Silica Clean~~ SP 5/26/15
SP 5/26/15 — Analyst/Date

TurboVap 1 2 3
Post Acid/Silica Clean
N/A — Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O (D0041559)	450µg/mL	100µL	4/16/16	[illegible]	[illegible]
Spike	11 (C0043362)	15000µg/mL	100µL	9/19/15	[illegible]	[illegible]
~~QLS Spike~~	~~18 ( )~~	~~1000µg/mL~~	~~50µL~~			
Extraction Time: 15:10				Balance ID: B139298041		

SPECIAL INSTRUCTIONS: 1. Weigh into 100mL beakers-dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add DCM to the vessel until the solvent is 1" above soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then let cool 15 min. in cold water bath. Re-homogenize while cool. 7. Collect into turbo tube with sm. funnel containing glasswool and 1" sodium sulfate. 8. Add (2) 10mL DCM rinses to vessel and transfer to turbo tube. 9. TurboVap. 10. Acid/Silica Clean-up?= Y (N) 11. TurboVap (if Silica Clean). 12. Vial in DCM.

A. Need Total Solids Y (N) B. Archive/Freeze Y (N)

AGA8 : 38891

Organic Extractions
Reagent and Solutions Identification

(8015C) NWTPHD-Soil/Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) 46A8/A6C9 (15E0011/15E0013)

(8015C) NWTPHD Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station:	Microwave
Methylene Chloride: (I#) D442479	CT 5/24/15
Anhydrous Sodium Sulfate: (I# + jar date) D441874	TMP
Neutral Glasswool: (I# + jar date) D441494	
Vialing Station:	Vialing
Methylene Chloride: (I#) D442078	SC 5/26/15
Concentrated Sulfuric Acid: (I# N/A)	
Silica Gel (SPE) Darts: (I# N/A	

ADAS 30852

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/15EΦΦ11

Client ID: Kennedy Jenks Consultants

Parameter: TPHD

Client Project: POS Silver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= B C, E, G, 5/19/15	MφΦ5/14/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☒ Clay/Clumps (Difficult to homogenize)= H, I.	MφΦ5/14/15
☒ Rocks (%+size)? 20.0/0 A, 10.0/0 B, 20.0/0 D F.	MφΦ5/14/15
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: B 5/20/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGC9/15EA0213 Client ID: Kennedy Jenks Consultants

Parameter: TPHD Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= A-K	KK 5/19/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions). (Centrifuge#1 used for all Centrifugations) Sample 'c' – dark, viscous. Took to a Sink FEV.	SP 5/26/15

Reviewed by/Date: [signature] 5/28/15

3058F

Revision 10
09/12/13

AGAS : 88851

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8015C) NWTPHD / NWHCID –Water Separatory Funnel (3510C) (SOP # 3311S)

Element Batch BOE0944

Preparation Test (TPHD) HCID # 1

ARI Job No(s) AGA8, AGC9

Page 1 of 1

In-House (0.25-0.50ppm)

Batch set up by: JH

Bottle #	Extraction Requirements	Volume Extracted	DryVap Module # Y/(N)	Acid/Silica Clean (1:1) (1mL) Y/(N)	Final Effective Volume	Volume to Lab	Comments	Verify Client ID
	AGA8 MBW	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		PD 5/20/15
	SBW	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		
	SBW Dup.	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		
	~~QLS~~	~~500mL~~	# Y/N	(1:1) Y/N	~~1mL~~	~~1mL~~		
6	AGA8 J	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL	15E0911-10 B	Analyst/Date
4	AGC9 L	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL	15E0913-12 B	KD 80-85°C (Y) N
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		(1) 2 3 4 5 6
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		RH 5/20/15
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		Turbo Vap (1) 2 3
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		DD 5/21/15
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		~~500mL~~	# Y/N	(1:1) Y/N	1mL	1mL	DD 5/21/15	
Analyst/Date	PD 5/20/15	—	—		DC 5/21/15	DC 5/21/15	Reviewed by/Date	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O (D0911559)	450µg/mL	100µL	5/16/16	PD	SP
Spike	11 (C0933672)	15000µg/mL	100µL	9/14/15	PD	SP
~~QLS Spike~~	~~18 ( )~~	~~1000µg/mL~~	~~50µL~~			
Extraction Time:	0804					

SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH.

4. ~~IF HCID ONLY USE LOW LEVEL DCM ONLY!~~ 5. Extract 2X with 30mL DCM.

6. ~~DryVap or~~ KD at 80°. 7. TurboVap if KD. 8. Acid/Silica Clean-ups? Y (N) 9. If NO clean-ups: Vial 1.0mL in DCM.

10. ~~If Clean-ups: Vial approximately 1.0mL in DCM. (Mark the bottom of the miniscus of the volume of the clear vial for GC.)~~

A. Archive Y (N)

AGA8 . 80885

Reagent and Solutions Identification

(8015C) NWTPHD / NWHCID –Water
Separatory Funnel (3510C) (SOP # 3311S)

ARI Job No(s) AGA8, AGC9

(8015C)TPHD/HCID Aqueous:	Analyst/Date
Separatory Funnel Station:	Sep. Funnel
1:1 Sulfuric Acid/DI H2O: (DD01673)	PD 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: ( )	
Anhydrous Sodium Sulfate: (DD01874)	KD
KD Station:	PH 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: ( )	Vialing
Vialing Station:	DG 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: (N/A)	
Concentrated Sulfuric Acid: (N/A)	
0% Silica Gel: (N/A)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8 / AGC9 Client ID: Kennedy Jenks Consultants

Parameter: TPHD Client Project: Pos Silver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☑ No Anomalies AGA8J & AGC9L	PDS/2/6/15
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date:_____

AGA8 AGC9

TPHD Raw Data
Initial Calibration

ARI Job ID: AGA8

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-FID

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JLW	03/17/2015
	Comments: *YC00022*			
2	ICal %RSD < 20%	YES	JLW	03/17/2015
3	Manual integrations include before/after pictures	YES	JLW	03/17/2015
4	All SCV within +/- 20% (DOD)	YES	JLW	03/17/2015
5	All SCV within +/- 30%	YES	JLW	03/17/2015
6	NO Linear or Quadratic fits used	YES	JLW	03/17/2015
7	NO Calibration points dropped	YES	JLW	03/17/2015
8	Additonal Notes	YES	JLW	03/17/2015
	Comments: *Two high pts for triac surr outside +/-0.05min wiindow, surr not spiked at this level no further CA needed.*			
9	Reviewer Approval (Reviewer)	YES	BB	03/17/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 3/16/2015 5:18:51PM

ANALYSIS SEQUENCE

SDC0026

Instrument: FID4
Calibration ID: UNASSIGNED
MS Energy:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SDC0026-IBL1	Retention Time Std	QC		1	D000116		
SDC0026-IBL2	Instrument Blank	QC		2	D000115		
SDC0026-CAL1	Diesel 50	QC		3	D000830		
SDC0026-CAL2	Diesel 100	QC		4	D000831		
SDC0026-CAL3	Diesel 250	QC		5	D000832		
SDC0026-CAL4	Diesel 500	QC		6	D000833		
SDC0026-CAL5	Diesel 1000	QC		7	D000834		
SDC0026-CAL6	Diesel 2500	QC		8	D000821		
SDC0026-SCV1	Diesel SCV 250	QC		9	C003250		
SDC0026-CAL7	Moil 100	QC		10	C002139		
SDC0026-CAL8	Moil 250	QC		11	C002138		
SDC0026-CAL9	Moil 500	QC		12	C002137		
SDC0026-CALA	Moil 1000	QC		13	C002136		
SDC0026-CALB	Moil 2500	QC		14	C002135		
SDC0026-CALC	Moil 5000	QC		15	D000203		
SDC0026-SCV2	Moil SCV 500	QC		16	D000209		

Samples Loaded By Date

Data Processed By Date

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150316.b

ARI Job No.: SDC0 Method: ftphfid4a.m Instrument: fid4a.i Date: 16-MAR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1037	0316a002.d	SDC0026-IBL1		1	NO MANUAL INTEGRATION
1101	0316a003.d	SDC0026-IBL2		1	NO MANUAL INTEGRATION
1125	0316a004.d	SDC0026-CAL1		1	o-terph,
1149	0316a005.d	SDC0026-CAL2		1	o-terph,
1213	0316a006.d	SDC0026-CAL3		1	o-terph,
1237	0316a007.d	SDC0026-CAL4		1	o-terph,
1301	0316a008.d	SDC0026-CAL5		1	o-terph,
1325	0316a009.d	SDC0026-CAL6		1	o-terph,
1349	0316a010.d	SDC0026-SCV1		1	o-terph,
1412	0316a011.d	SDC0026-CAL7		1	Triacon Surr,
1436	0316a012.d	SDC0026-CAL8		1	Triacon Surr,
1500	0316a013.d	SDC0026-CAL9		1	Triacon Surr,
1524	0316a014.d	SDC0026-CALA		1	Triacon Surr,
1548	0316a015.d	SDC0026-CALB		1	Triacon Surr,
1612	0316a016.d	SDC0026-CALC		1	Triacon Surr,
1636	0316a017.d	SDC0026-SCV2		1	Triacon Surr,

6a

DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150316

Instrument: FID4A.I Project:

Calibration Date: 16-MAR-2015 SDG No.: 20150316

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	16883	16837	16662	16474	16073	16315	16541	1.9
AK Diesel	20602	20180	19759	19321	19009	19111	19664	3.2
OR Diesel	20711	20284	19885	19446	19141	19237	19784	3.2
Cal Diesel	20550	20136	19710	19279	18948	19058	19614	3.2
o-Terph	24171	23714	23513	23246	22946	20666	23043	5.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.522-7.247)
AK Diesel C10-C25 (2.648-7.546)
OR Diesel C10-C28 (2.648-8.396)
Cal Diesel C10-C24 (2.648-7.247)

Calibration Files	Analysis Time
0316a004.d	16-MAR-2015 11:25
0316a005.d	16-MAR-2015 11:49
0316a006.d	16-MAR-2015 12:13
0316a007.d	16-MAR-2015 12:37
0316a008.d	16-MAR-2015 13:01
0316a009.d	16-MAR-2015 13:25

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client:

SDG No.: Project:

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.52 TRIAC: 9.00

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	03/16/15	1014	5.53	9.01
02		SDC0026-IBL1	03/16/15	1037	5.52	9.00
03		SDC0026-IBL2	03/16/15	1101	5.52	8.99
04		SDC0026-CAL1	03/16/15	1125	5.52	8.99
05		SDC0026-CAL2	03/16/15	1149	5.52	8.99
06		SDC0026-CAL3	03/16/15	1213	5.53	8.99
07		SDC0026-CAL4	03/16/15	1237	5.54	8.99
08		SDC0026-CAL5	03/16/15	1301	5.55	8.98
09		SDC0026-CAL6	03/16/15	1325	5.57	8.98
10		SDC0026-SCV1	03/16/15	1349	5.53	8.99
11		SDC0026-CAL7	03/16/15	1412	5.52	8.98
12		SDC0026-CAL8	03/16/15	1436	5.52	8.99
13		SDC0026-CAL9	03/16/15	1500	5.52	9.00
14		SDC0026-CALA	03/16/15	1524	5.52	9.02
15		SDC0026-CALB	03/16/15	1548	5.52	9.06*
16		SDC0026-CALC	03/16/15	1612	5.52	9.10*
17		SDC0026-SCV2	03/16/15	1636	5.52	9.00

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0316a004	0316a005	0316a006	0316a007	0316a008	0316a009
INJ.DATE:	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015
INJ.TIME:	11:25	11:49	12:13	12:37	13:01	13:25

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	Toluene	0.808	0.814	0.815	0.814	0.813	0.816	0.817	0.717-0.917	0.813	0.003
40	Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.023	0.973-1.073	+++++	+++++
39	Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.542	0.492-0.592	+++++	+++++
36	JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.794	0.744-0.844	+++++	+++++
37	Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.729	0.679-0.779	+++++	+++++
38	Hydraulic Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.197	1.147-1.247	+++++	+++++
2	C8	1.088	1.090	1 092	1.090	1.088	1.091	1.100	1.000-1.200	1.090	0.001
3	C10	2.648	2.647	2.647	2.645	2.647	2.648	2.648	2.598-2.698	2.647	0.001
4	C12	3.522	3.521	3.522	3.522	3.523	3.526	3.522	3.472-3.572	3.523	0.002
5	C14	4.198	4.197	4.198	4 198	4.200	4.204	4.199	4.149-4.249	4.199	0.002
6	C16	4.787	4.785	4.787	4.787	4.789	4.795	4.786	4.736-4.836	4.788	0.003
7	C18	5.368	5.368	5.371	5.373	5.375	5.385	5.371	5.321-5.421	5.373	0.006
$ 8	o-terph	5.519	5.522	5.529	5 537	5.548	5.571	5.524	5.474-5.574	5.538	0 019
9	C20	5.997	5.995	5.996	5.996	5.996	6.001	5.997	5.947-6.047	5.997	0.002
10	C22	6.632	6.631	6.629	6.629	6.628	6.632	6.630	6.580-6.680	6.630	0.002
11	C24	7.252	7.249	7.248	7.247	7.244	7.246	7.247	7.197-7.297	7.248	0.003
12	C25	7.549	7.545	7.545	7.543	7.543	7.543	7.546	7.496-7.596	7.545	0.003

Reviewer 1 _____ Date: 3/16/15
Reviewer 2 _____ Date: 3/17/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.836	7.836	7.836	7.835	7.833	7.830	7.835	7.785-7.885	7.834	0.003
14 C28	8.397	8.397	8.397	8.395	8.394	8.393	8.396	8.346-8.446	8.395	0.002
$ 15 Triacon Surr	8.985	8.992	8.989	8.990	8.983	8.981	8.997	8.947-9.047	8.986	0.004
16 C32	9.586	9.588	9.588	9.587	9.586	9.584	9.614	9.564-9.664	9.586	0.002
17 C34	10.236	10.257	10.254	10.252	10.255	10.251	10.257	10.207-10.307	10.251	0.008
18 Filter Peak	11.830	11.818	11.819	11.832	11.853	11.833	11.842	11.742-11.942	11.831	0.013
19 C36	10.907	10.905	10.905	10.909	10.907	10.909	10.905	10.855-10.955	10.907	0.002
20 C38	11.535	11.537	11.535	11.539	11.532	11.536	11.542	11.492-11.592	11.536	0.002
21 C40	12.148	12.147	12.143	12.149	12.149	12.147	12.162	12.112-12.212	12.147	0.002
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.683	0.633-0.733	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.499	0.449-0.549	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.662	0.612-0.712	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.615	0.565-0.665	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a002.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-IBL1
Client ID:
Injection: 16-MAR-2015 10:37

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.817	0.000	327126	436747	WATPHG	(Tol-C12)	1980679	80.24
C8	1.100	0.000	224612	466834	WATPHD	(C12-C24)	2422212	146.44
C10	2.648	0.000	177850	290006	WATPHM	(C24-C38)	2897211	190.33
C12	3.522	0.000	383591	316219	AK102	(C10-C25)	3278824	166.74
C14	4.199	0.000	500081	393730	AK103	(C25-C36)	2477933	269.28
C16	4.786	0.000	530296	395918				
C18	5.371	0.000	401445	390579				
C20	5.997	0.000	367215	383100				
C22	6.630	0.000	348597	384820				
C24	7.247	0.000	343525	370020				
C25	7.546	0.000	325312	367952				
C26	7.835	0.000	346972	401602				
C28	8.396	0.000	337754	403983				
C32	9.614	0.000	268506	398985				
C34	10.257	0.000	240575	397177				
Filter Peak	11.842	0.000	1631	7718				
C36	10.905	0.000	253050	394184				
C38	11.542	0.000	218055	373902				
C40	12.162	0.000	208395	377496				
o-terph	5.524	0.000	876196	1035912				
Triacon Surr	8.997	0.000	622077	908211	NAS DIES	(C10-C24)	3266281	166.53

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1035912	45.0	99.9
Triacontane	908211	45.3	100.7

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a002.d

Date : 16-MAR-2015 10:37

Client ID:

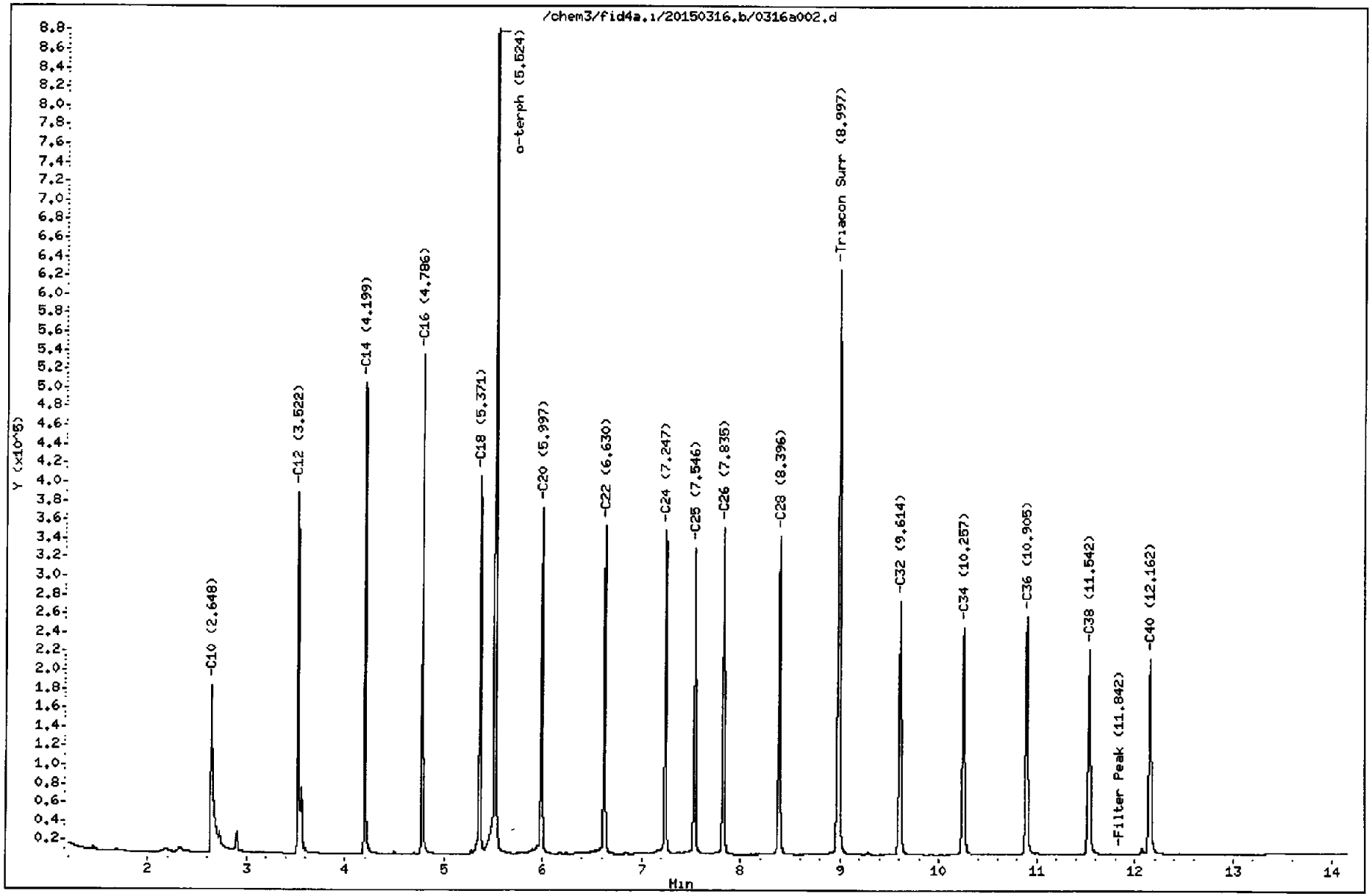
Sample Info: SDC0026-IBL1

Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a003.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-IBL2
Client ID:
Injection: 16-MAR-2015 11:01

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.822	0.005	8897	77310	WATPHG	(Tol-C12)	265972	10.78
C8	1.151	0.051	6208	34984	WATPHD	(C12-C24)	17712	1.07
C10	2.622	-0.025	1274	4085	WATPHM	(C24-C38)	125466	8.24
C12	----				AK102	(C10-C25)	41912	2.13
C14	4.200	0.000	34	85	AK103	(C25-C36)	98297	10.68
C16	4.792	0.006	55	167				
C18	5.396	0.025	87	116				
C20	6.003	0.006	225	988				
C22	6.638	0.008	169	954				
C24	7.246	-0.001	208	1025				
C25	7.543	-0.003	267	1632				
C26	7.832	-0.003	276	742				
C28	8.397	0.001	754	1873				
C32	9.607	-0.006	5274	15891				
C34	10.253	-0.004	688	4019				
Filter Peak	11.872	0.030	973	3759				
C36	10.898	-0.007	929	5947				
C38	11.526	-0.015	1091	6987				
C40	12.144	-0.018	1373	6795				
o-terph	5.525	0.000	993475	1030218				
Triacon Surr	8.995	-0.002	612844	908345	NAS DIES	(C10-C24)	39918	2.04

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1030218	44.7	99.4
Triacontane	908345	45.3	100.7

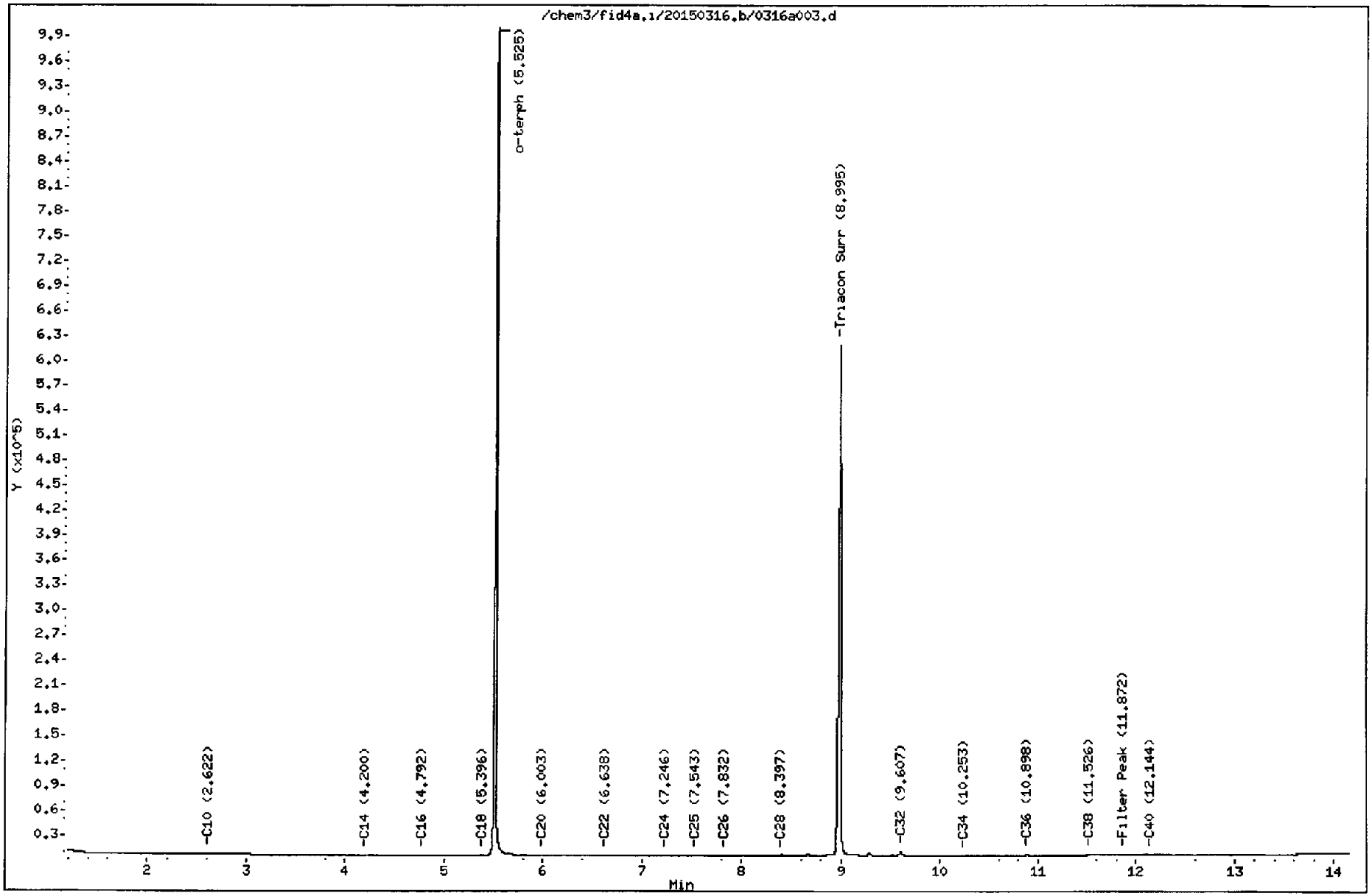
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

JW
3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a003.d
Date : 16-MAR-2015 11:01
Client ID:
Sample Info: SDC0026-IBL2

Instrument: fid4a.i
Operator: JR/VTS/JW
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a004.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL1
Client ID:
Injection: 16-MAR-2015 11:25

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.808	-0.008	5450	18413	WATPHG	(Tol-C12)	455934	18.47
C8	1.088	-0.012	4783	40553	WATPHD	(C12-C24)	844137	51.03
C10	2.648	0.001	3526	7805	WATPHM	(C24-C38)	39443	2.59
C12	3.522	0.000	6903	8569	AK102	(C10-C25)	1030093	52.38
C14	4.198	-0.001	10264	26246	AK103	(C25-C36)	22490	2.44
C16	4.787	0.001	16773	44279				
C18	5.368	-0.003	16069	31231				
C20	5.997	0.000	7263	24304				
C22	6.632	0.002	3094	10217				
C24	7.252	0.005	981	3440				
C25	7.549	0.003	466	1680				
C26	7.836	0.001	220	544				
C28	8.397	0.001	49	117				
C32	9.586	-0.028	269	773				
C34	10.236	-0.021	175	881				
Filter Peak	11.830	-0.012	600	1090				
C36	10.907	0.002	452	3643				
C38	11.535	-0.007	486	1694				
C40	12.148	-0.014	807	4265				
o-terph	5.519	-0.005	231436	217536				
Triacon Surr	8.985	-0.012	73	232	NAS DIES	(C10-C24)	1027512	52.39

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	217536	9.4	21.0 M
Triacontane	232	0.0	0.0

M Indicates the peak was manually integrated

JR 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a004.d

Date : 16-MAR-2015 11:25

Client ID:

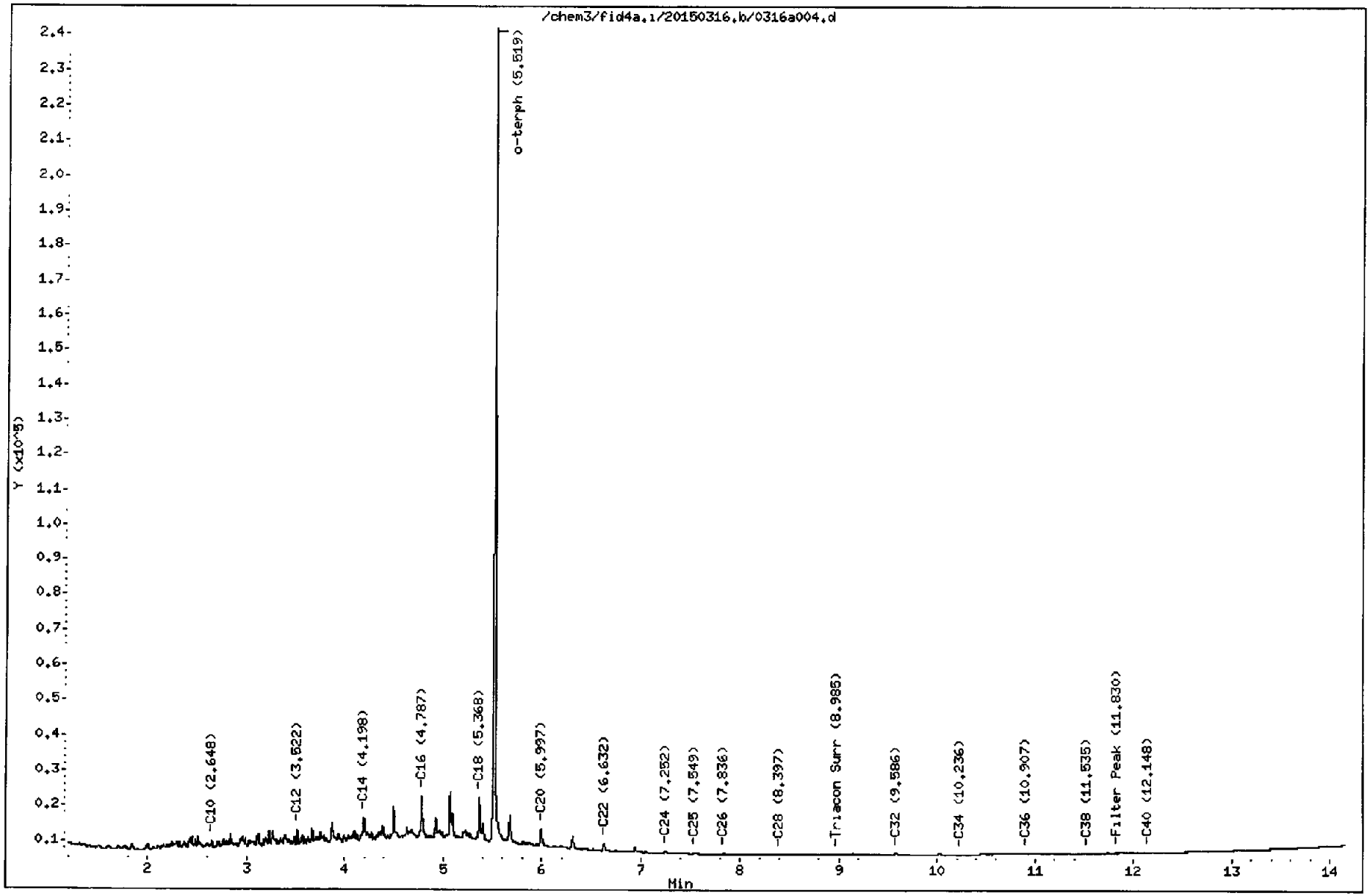
Sample Info: SDC0026-CAL1

Column phase: RTX-1

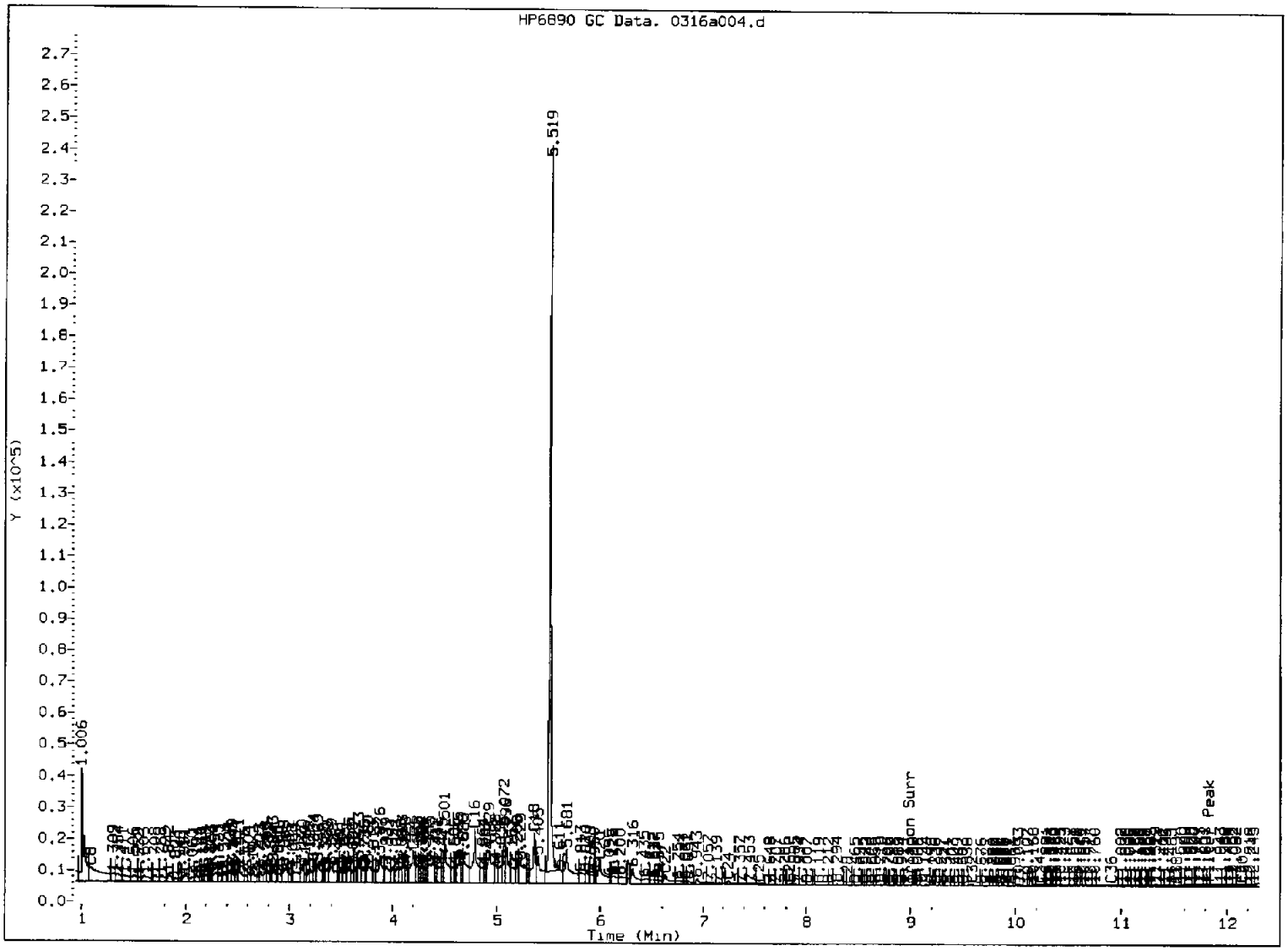
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: SD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a005.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL2
Client ID:
Injection: 16-MAR-2015 11:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	5970	18618	WATPHG	(Tol-C12)	654583	26.52
C8	1.090	-0.010	5478	30518	WATPHD	(C12-C24)	1683704	101.79
C10	2.647	-0.001	6247	9460	WATPHM	(C24-C38)	43734	2.87
C12	3.521	-0.001	15304	17520	AK102	(C10-C25)	2017958	102.62
C14	4.197	-0.002	23410	53428	AK103	(C25-C36)	26547	2.88
C16	4.785	-0.001	37257	88308				
C18	5.368	-0.003	34013	50851				
C20	5.995	-0.002	15775	48885				
C22	6.631	0.001	6891	21166				
C24	7.249	0.002	2215	6845				
C25	7.545	-0.001	1107	3286				
C26	7.836	0.001	490	1114				
C28	8.397	0.001	92	382				
C32	9.588	-0.025	275	757				
C34	10.257	0.000	178	723				
Filter Peak	11.818	-0.024	560	937				
C36	10.905	0.000	429	1825				
C38	11.537	-0.004	498	1781				
C40	12.147	-0.015	748	3656				
o-terph	5.522	-0.003	476461	426851				
Triacon Surr	8.992	-0.005	49	129	NAS DIES	(C10-C24)	2013624	102.66

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	426851	18.5	41.2 M
Triacontane	129	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a005.d

Date : 16-MAR-2015 11:49

Client ID:

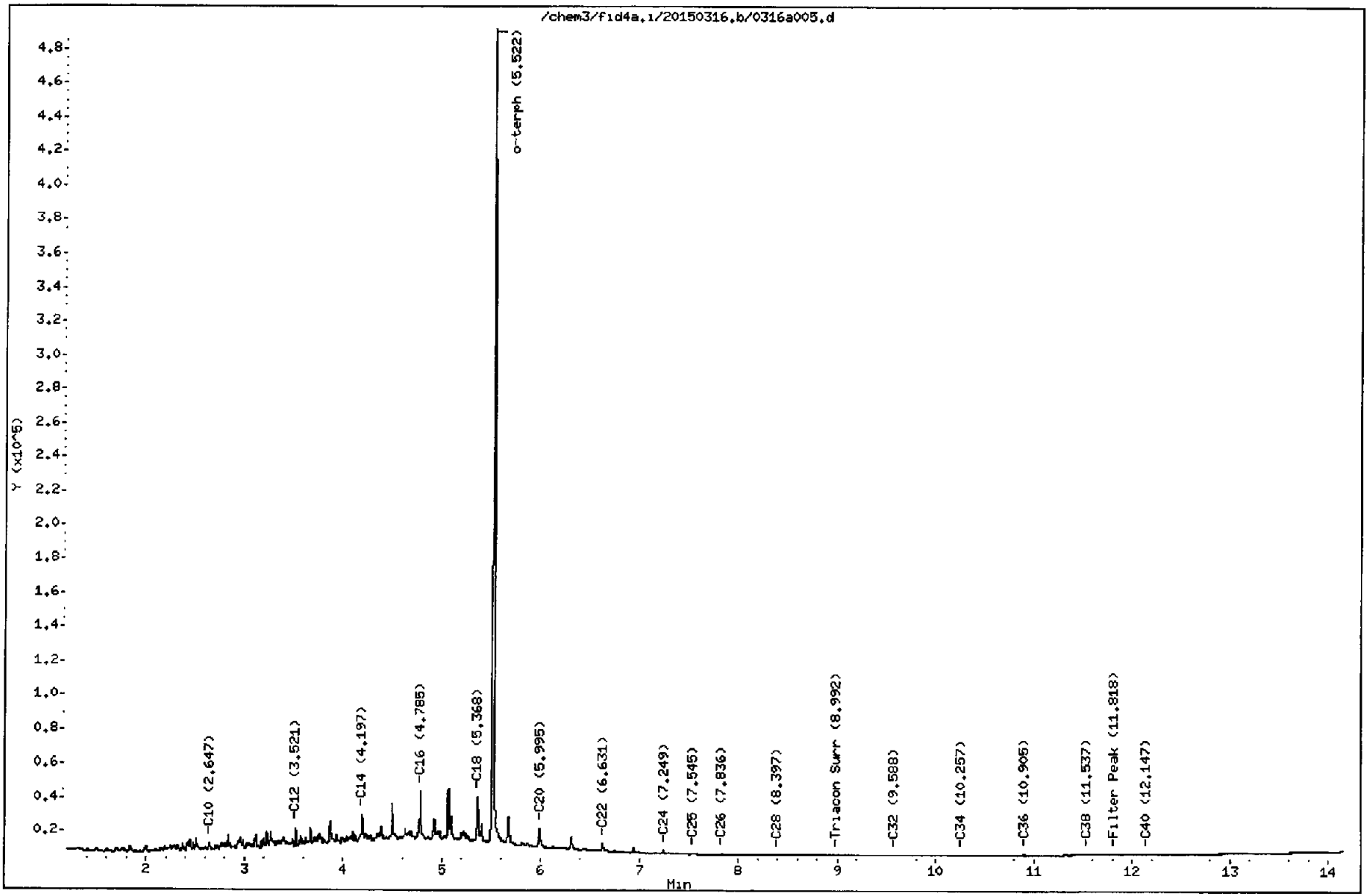
Sample Info: SDC0026-CAL2

Column phase: RTX-1

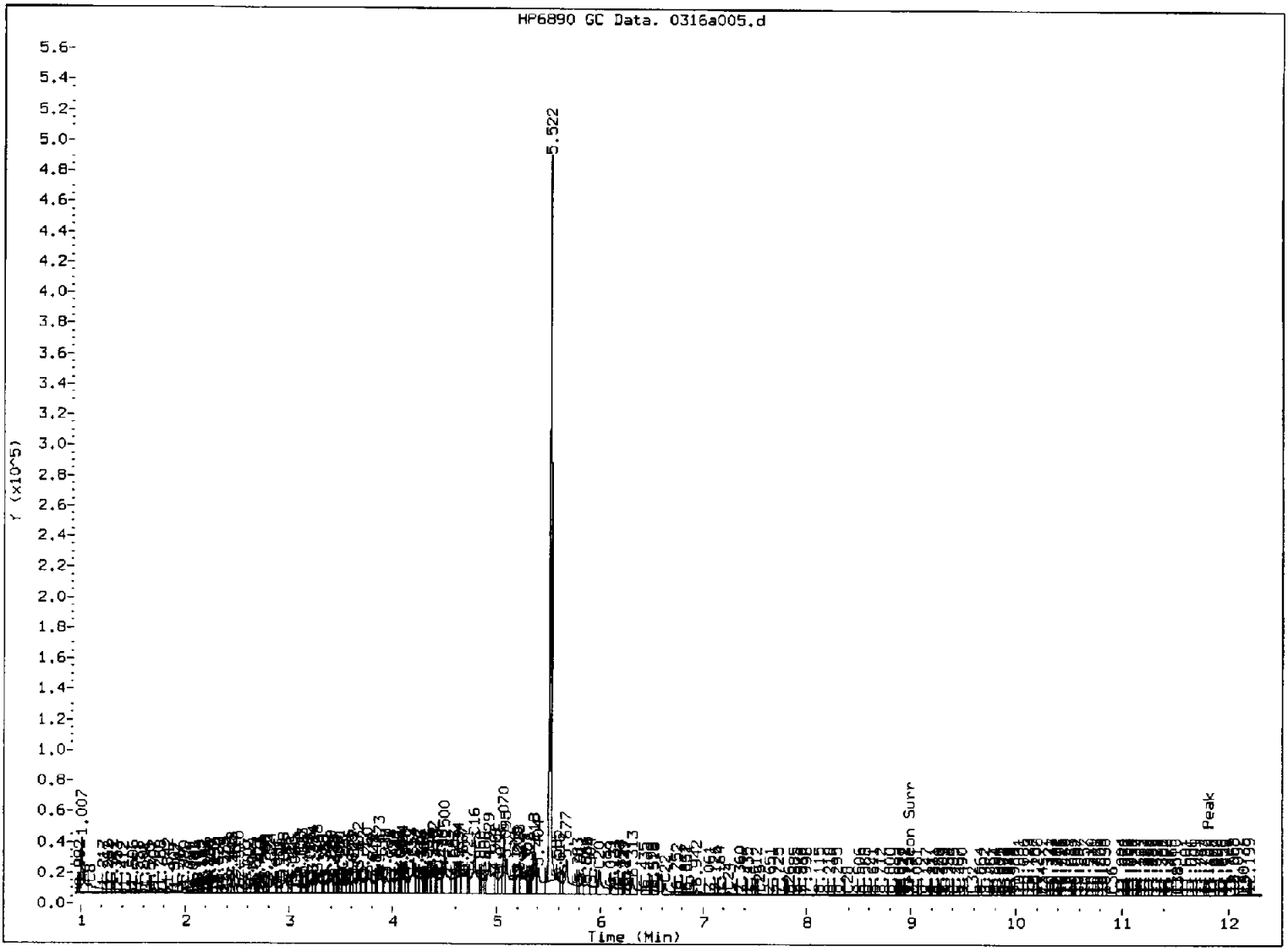
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL2 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: TV Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a006.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL3
Client ID:
Injection: 16-MAR-2015 12:13

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.815	-0.002	7469	19699	WATPHG	(Tol-C12)	1284181	52.02
C8	1.092	-0.008	7581	18554	WATPHD	(C12-C24)	4165385	251.82
C10	2.647	-0.001	16334	21341	WATPHM	(C24-C38)	104205	6.85
C12	3.522	0.000	42096	43463	AK102	(C10-C25)	4939809	251.21
C14	4.198	-0.002	61742	133978	AK103	(C25-C36)	72744	7.91
C16	4.787	0.001	95227	215593				
C18	5.371	0.000	85039	122078				
C20	5.996	-0.001	43802	93183				
C22	6.629	-0.001	17968	51347				
C24	7.248	0.001	6234	14866				
C25	7.545	-0.001	3020	9114				
C26	7.836	0.001	1351	3143				
C28	8.397	0.001	227	650				
C32	9.588	-0.026	2604	4036				
C34	10.254	-0.003	136	653				
Filter Peak	11.819	-0.023	536	1592				
C36	10.905	0.000	5662	11319				
C38	11.535	-0.007	414	1906				
C40	12.143	-0.018	2463	7367				
o-terph	5.529	0.005	1023965	1058096				
Triacon Surr	8.989	-0.008	117	263	NAS DIES	(C10-C24)	4927591	251.23

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1058096	45.9	102.0 M
Triacontane	263	0.0	0.0

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a006.d

Date : 16-MAR-2015 12:13

Client ID:

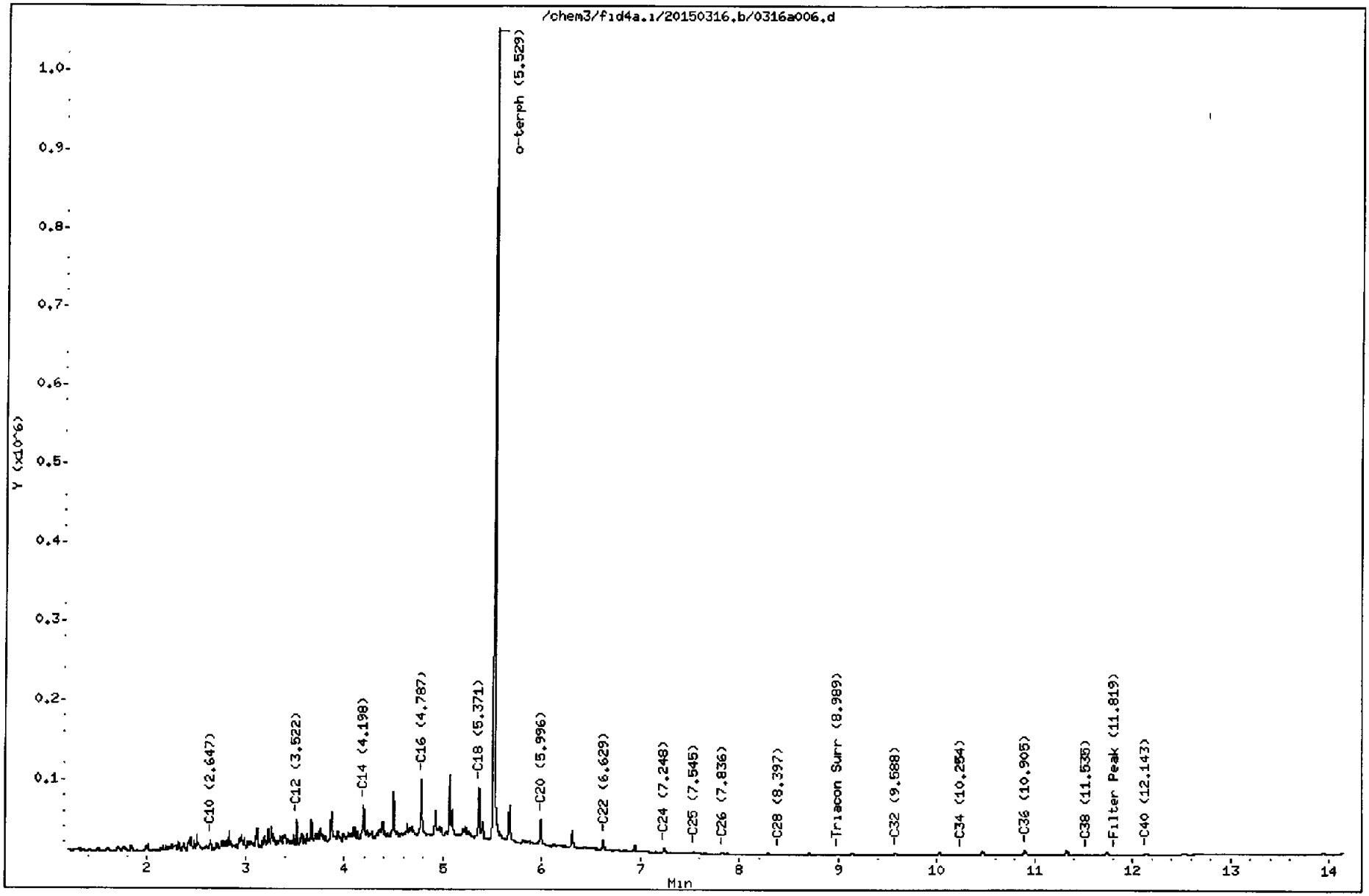
Sample Info: SDC0026-CAL3

Column phase: RTX-1

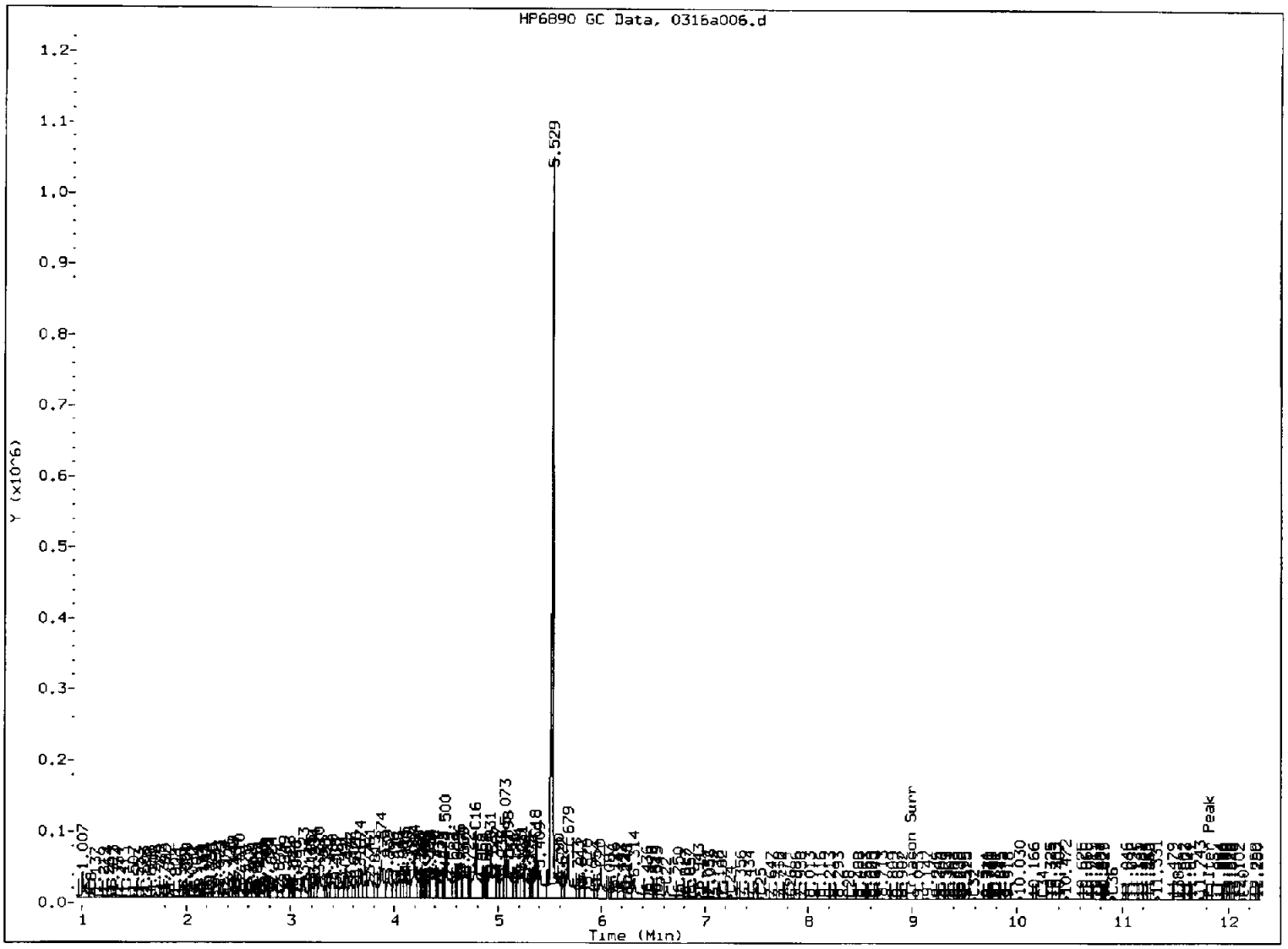
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: BD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a007.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL4
Client ID:
Injection: 16-MAR-2015 12:37

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	9789	22443	WATPHG	(Tol-C12)	2221537	90.00
C8	1.090	-0.011	10890	23406	WATPHD	(C12-C24)	8237059	497.98
C10	2.645	-0.002	34753	42046	WATPHM	(C24-C38)	118212	7.77
C12	3.522	0.000	81672	88424	AK102	(C10-C25)	9660628	491.29
C14	4.198	-0.002	129046	262842	AK103	(C25-C36)	85491	9.29
C16	4.787	0.001	193810	428069				
C18	5.373	0.002	158622	299833				
C20	5.996	-0.001	85093	230377				
C22	6.629	-0.002	36803	91268				
C24	7.247	0.000	12410	35420				
C25	7.543	-0.003	6233	19157				
C26	7.835	0.000	2888	7163				
C28	8.395	-0.001	503	1975				
C32	9.587	-0.027	1357	2150				
C34	10.252	-0.005	132	468				
Filter Peak	11.832	-0.010	446	1178				
C36	10.909	0.003	1531	4028				
C38	11.539	-0.003	404	1991				
C40	12.149	-0.013	1166	6246				
o-terph	5.537	0.013	1697294	2092105				
Triacon Surr	8.990	-0.007	119	266	NAS DIES	(C10-C24)	9639593	491.46

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2092105	90.8	201.8 M
Triacontane	266	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

BD 3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a007.d

Date : 16-MAR-2015 12:37

Client ID:

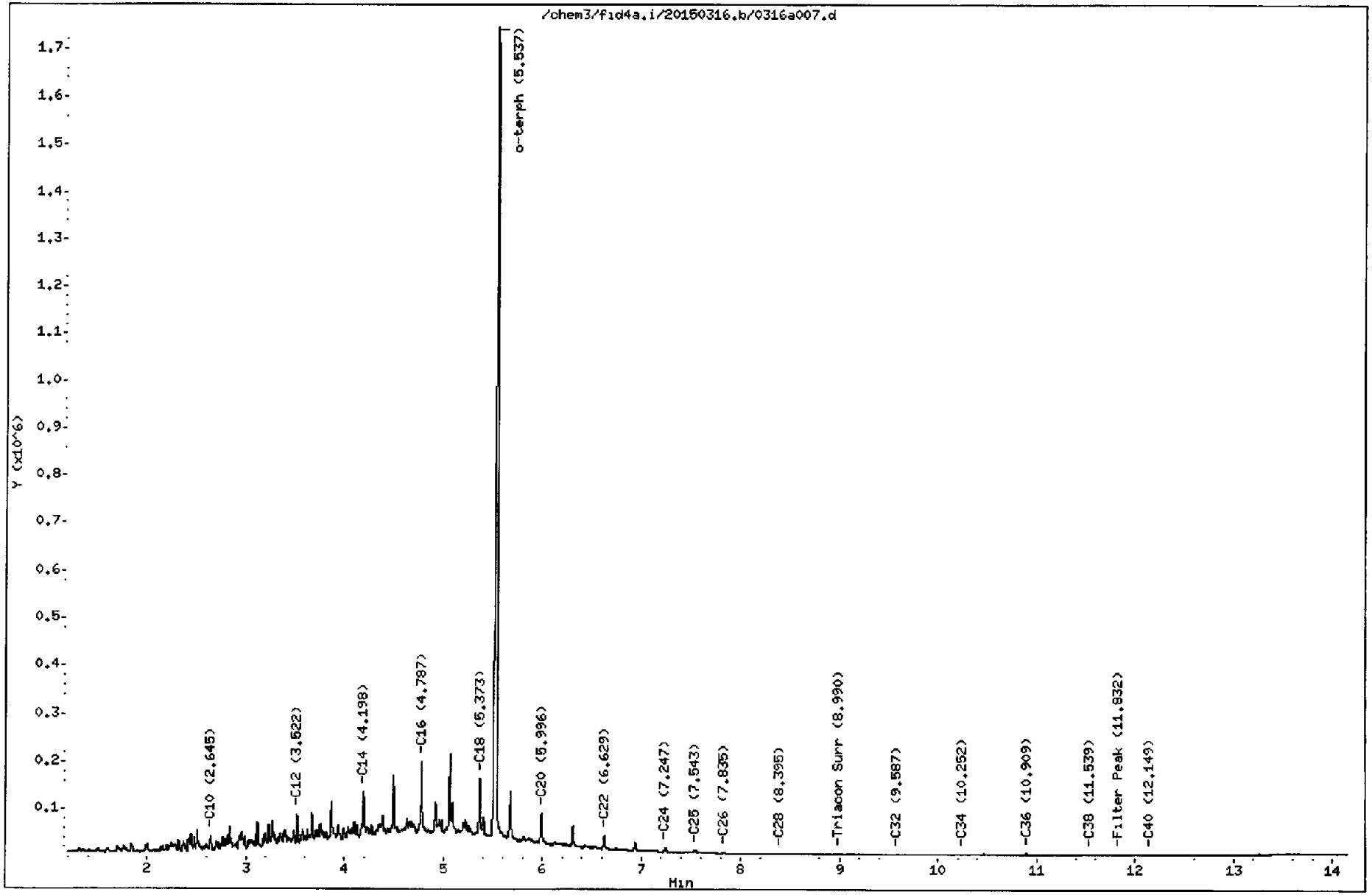
Sample Info: SDC0026-CAL4

Column phase: RTX-1

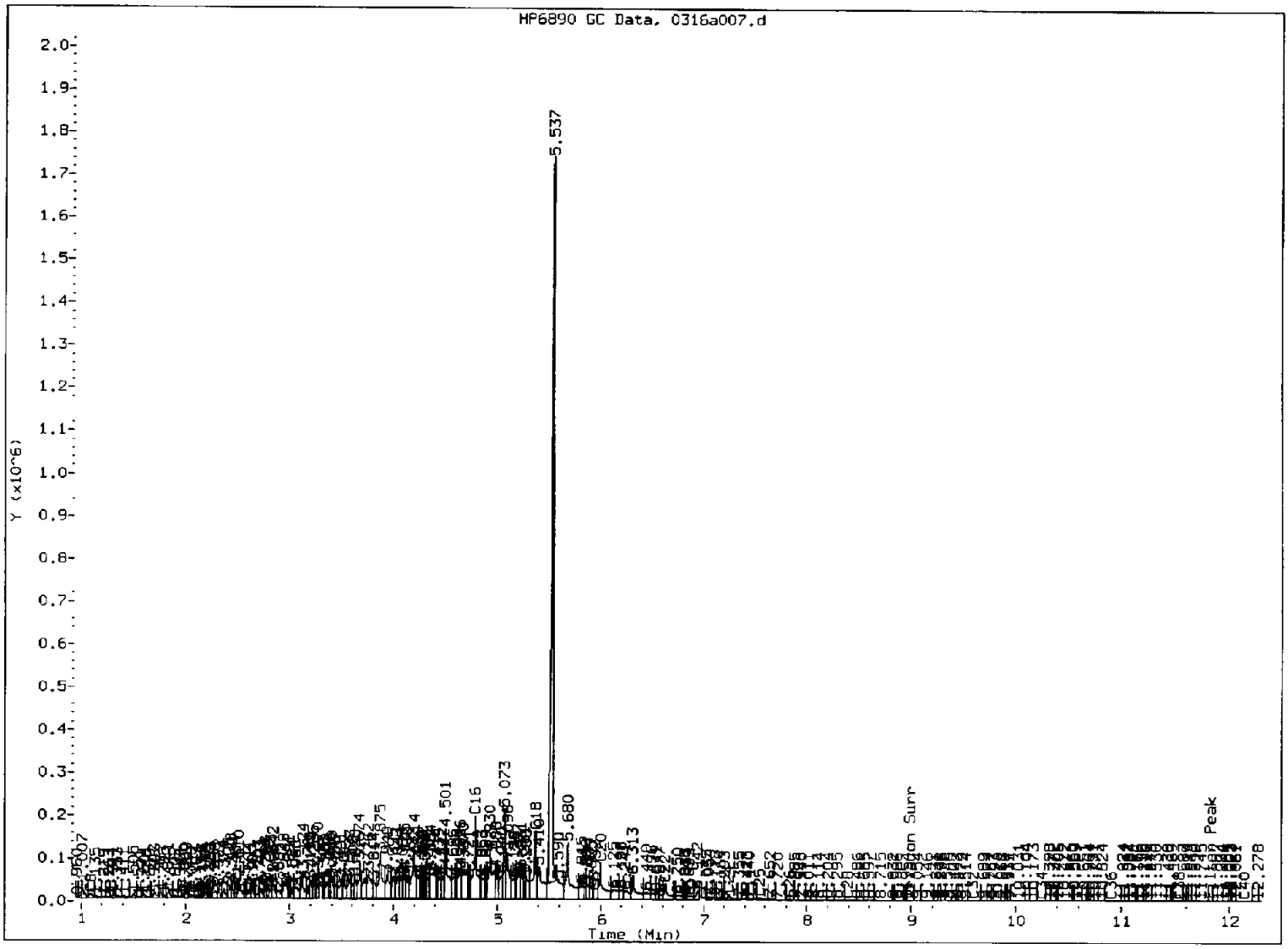
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a008.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL5
Client ID:
Injection: 16-MAR-2015 13:01

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.813	-0.004	13603	29478	WATPHG	(Tol-C12)	4321186	175.06
C8	1.088	-0.012	18330	35266	WATPHD	(C12-C24)	16073044	971.71
C10	2.647	-0.001	78011	87882	WATPHM	(C24-C38)	213169	14.00
C12	3.523	0.001	157046	172387	AK102	(C10-C25)	19009125	966.70
C14	4.200	0.001	237427	522999	AK103	(C25-C36)	144426	15.69
C16	4.789	0.003	359993	854658				
C18	5.375	0.004	299340	493779				
C20	5.996	-0.001	169597	339341				
C22	6.628	-0.002	77574	169827				
C24	7.244	-0.003	24334	72355				
C25	7.543	-0.004	13120	40977				
C26	7.833	-0.003	5818	19466				
C28	8.394	-0.002	1073	4099				
C32	9.586	-0.028	225	444				
C34	10.255	-0.002	84	228				
Filter Peak	11.853	0.011	356	994				
C36	10.907	0.001	308	1070				
C38	11.532	-0.010	292	1697				
C40	12.149	-0.013	608	3455				
o-terph	5.548	0.024	2664742	4130212				
Triacon Surr	8.983	-0.014	204	636	NAS DIES	(C10-C24)	18948014	966.05

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4130212	179.2	398.3 M
Triacontane	636	0.0	0.1

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a008.d

Date : 16-MAR-2015 13:01

Client ID:

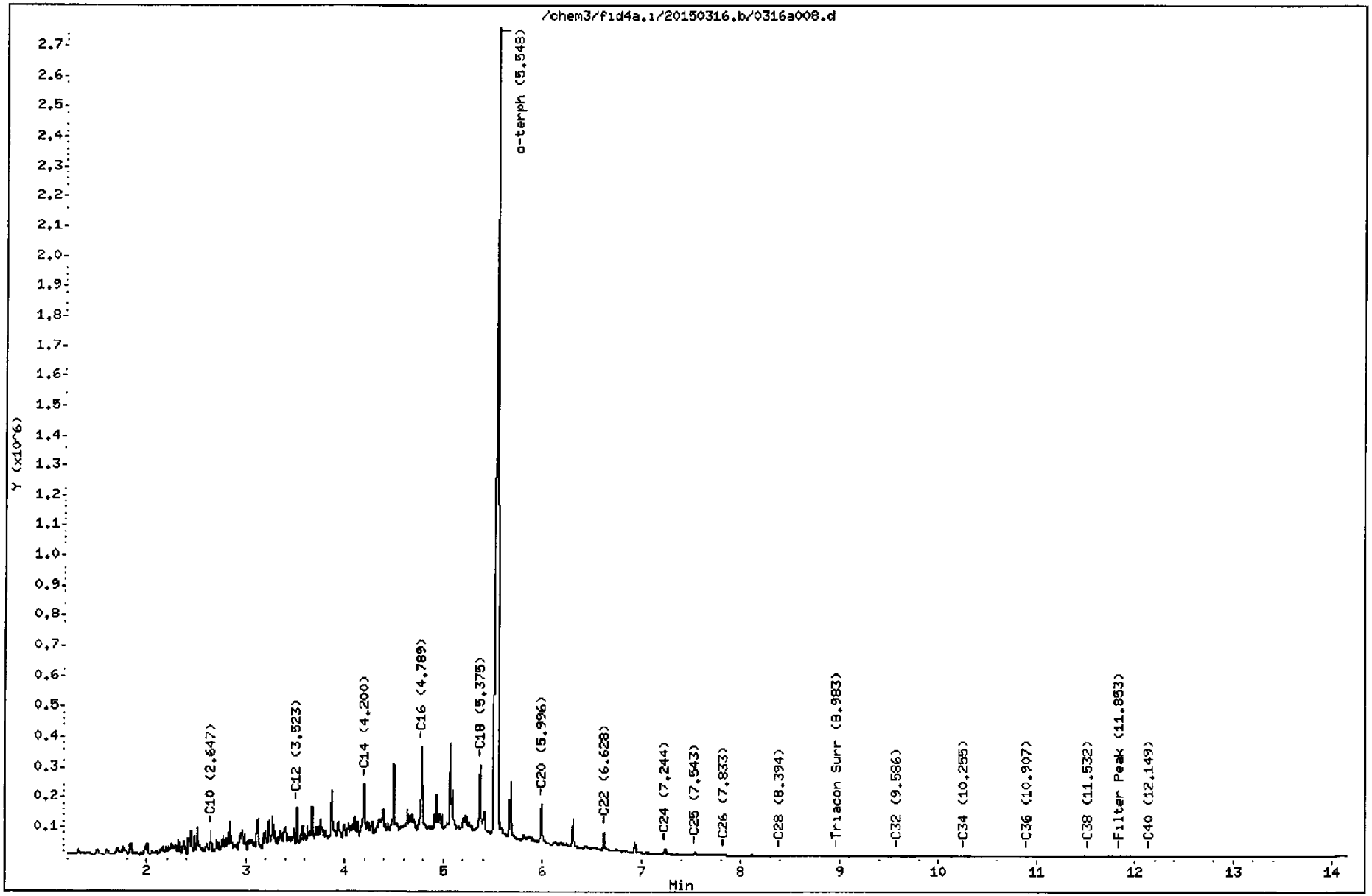
Sample Info: SDC0026-CAL5

Column phase: RTX-1

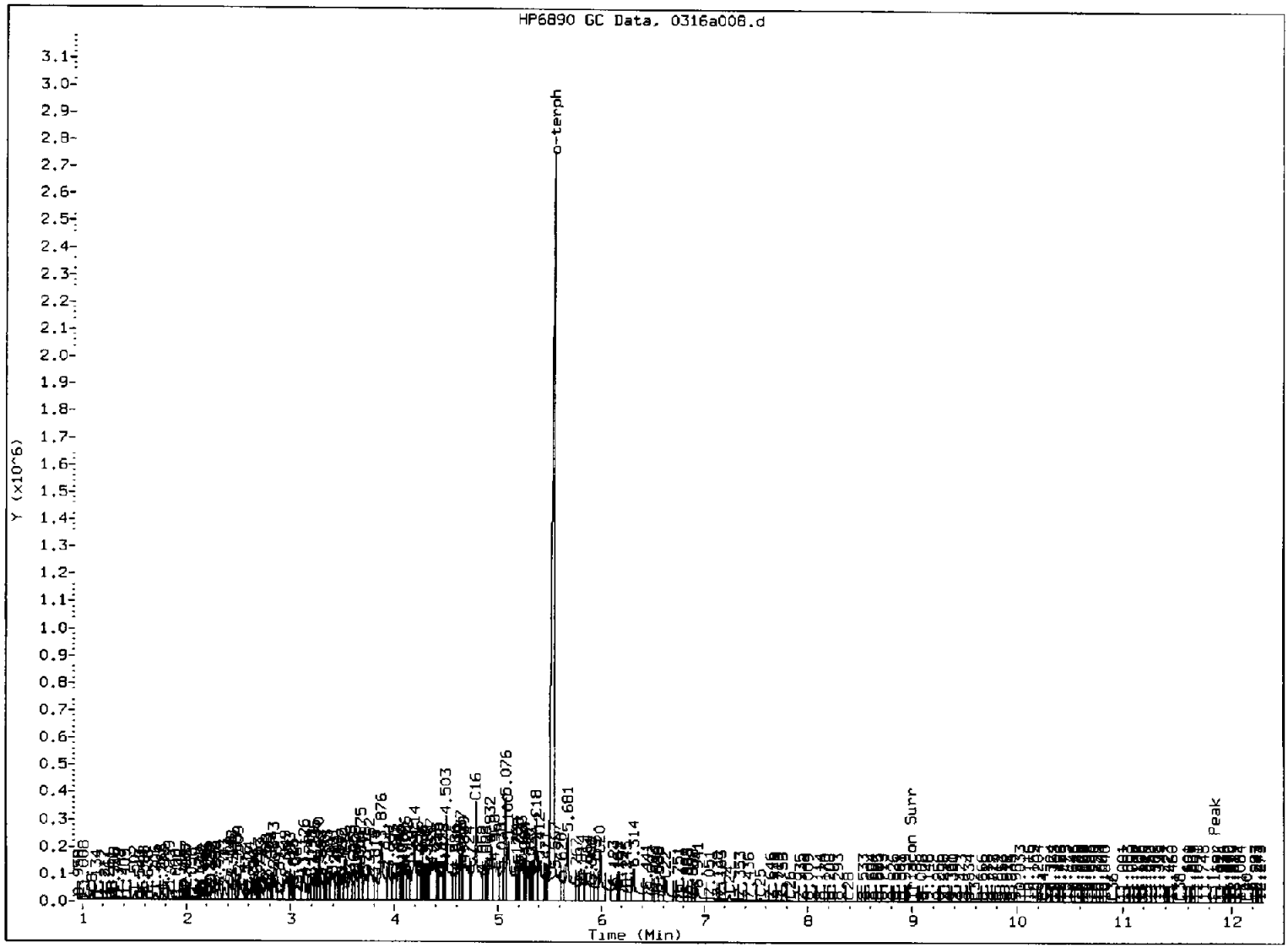
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL5 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JU Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a009.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL6
Client ID:
Injection: 16-MAR-2015 13:25

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.816	-0.001	29150	35783	WATPHG	(Tol-C12)	10202799	413.34
C8	1.091	-0.009	37019	69144	WATPHD	(C12-C24)	40787065	2465.82
C10	2.648	0.000	193473	251218	WATPHM	(C24-C38)	480634	31.57
C12	3.526	0.004	344566	454470	AK102	(C10-C25)	47778433	2429.74
C14	4.204	0.004	538770	1316926	AK103	(C25-C36)	343850	37.37
C16	4.795	0.009	804765	2067596				
C18	5.385	0.014	681210	1718480				
C20	6.001	0.004	404216	798030				
C22	6.632	0.002	179269	498716				
C24	7.246	-0.001	63273	156114				
C25	7.543	-0.003	30601	95942				
C26	7.830	-0.006	15091	37229				
C28	8.393	-0.003	2737	8970				
C32	9.584	-0.030	576	1157				
C34	10.251	-0.006	72	250				
Filter Peak	11.833	-0.009	235	300				
C36	10.909	0.004	598	1308				
C38	11.536	-0.006	197	737				
C40	12.147	-0.015	618	2633				
o-terph	5.571	0.046	4249209	9299672				
Triacon Surr	8.981	-0.016	547	1767	NAS DIES	(C10-C24)	47646190	2429.19

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9299672	403.6	896.9 M
Triacontane	1767	0.1	0.2

JR 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a009.d

Date : 16-MAR-2015 13:25

Client ID:

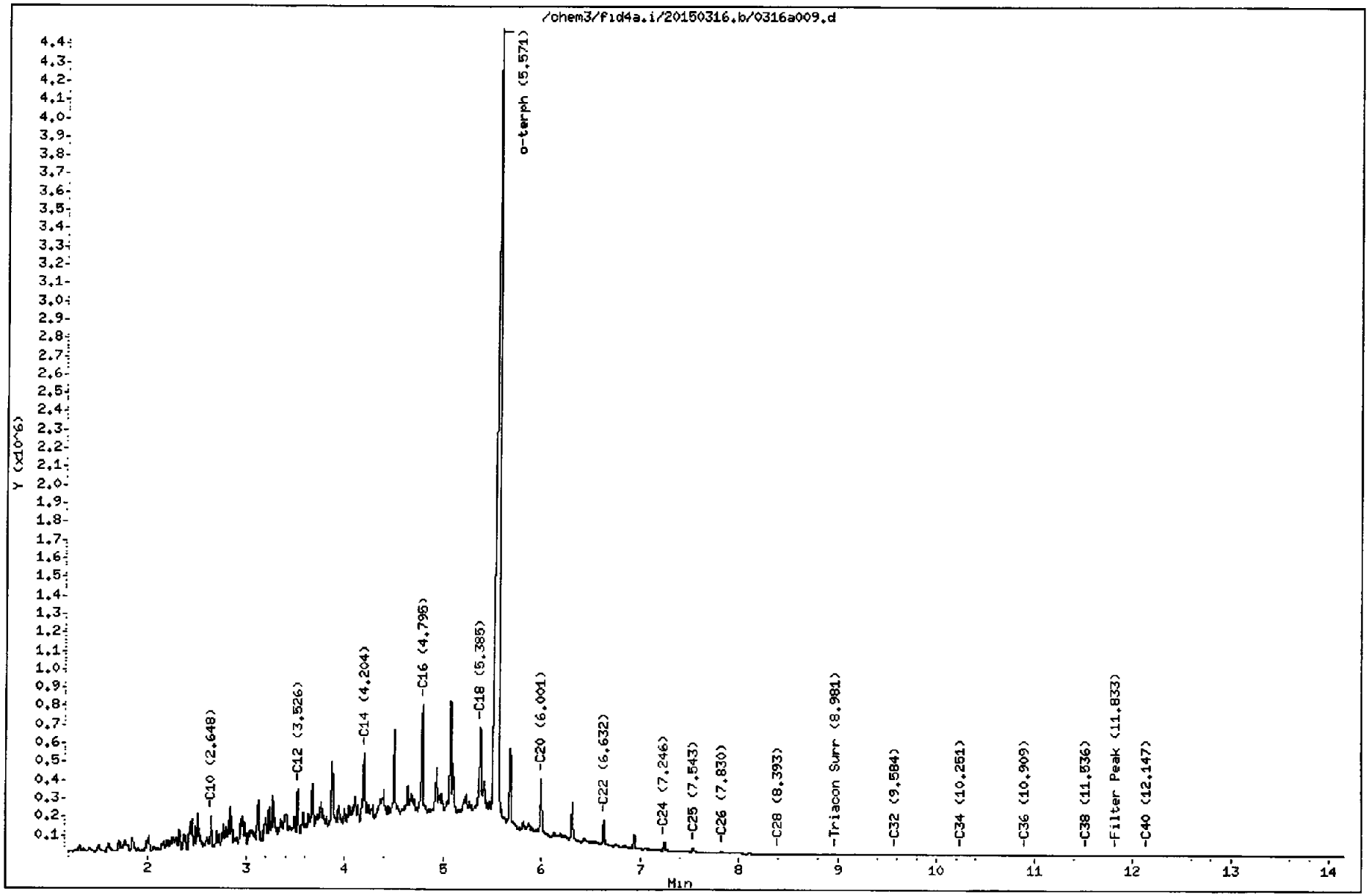
Sample Info: SDC0026-CAL6

Column phase: RTX-1

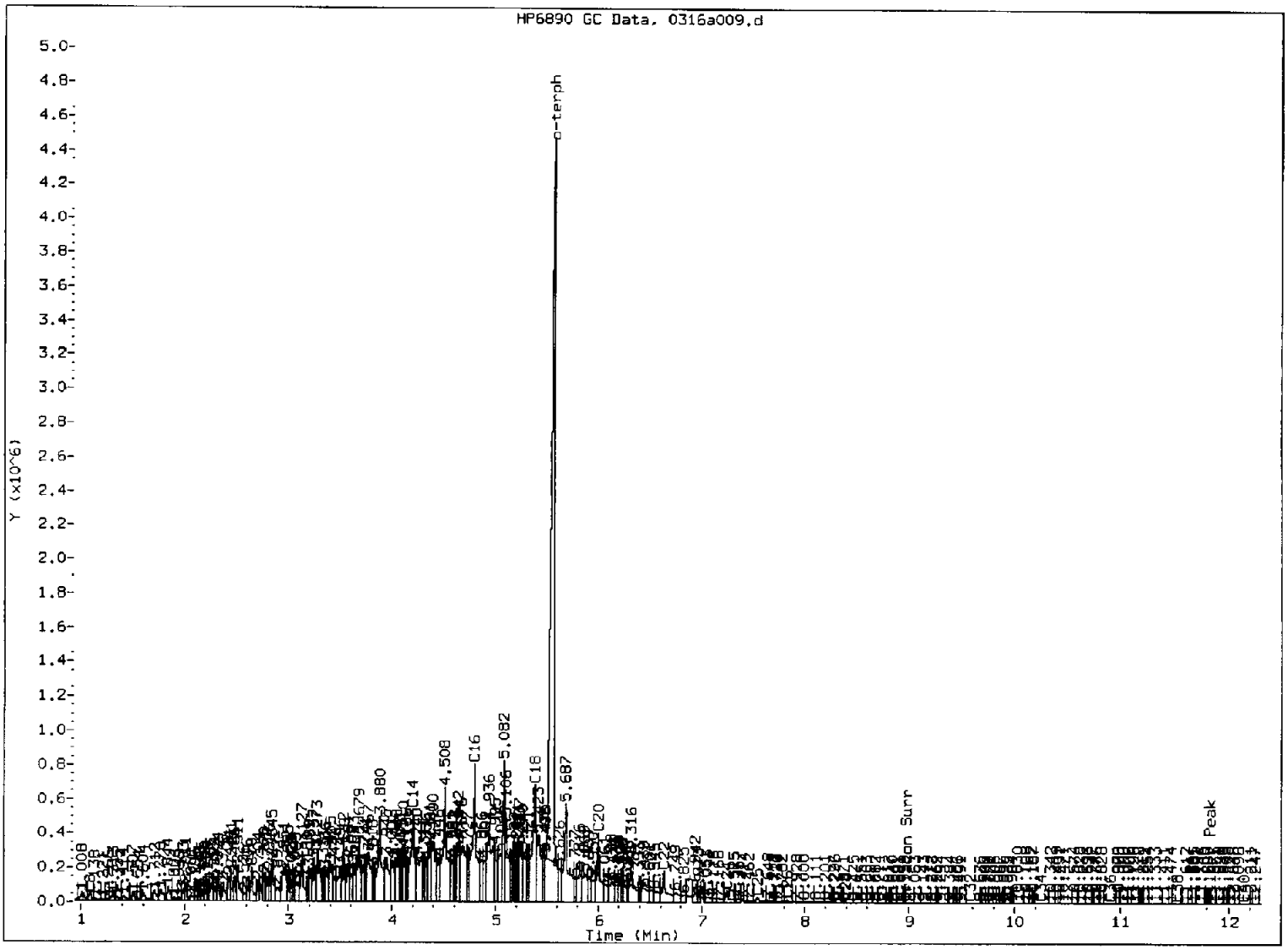
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL6 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: TJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a010.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-SCV1
Client ID:
Injection: 16-MAR-2015 13:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	13263	18973	WATPHG	(Tol-C12)	1642275	66.53
C8	1.097	-0.003	16128	28301	WATPHD	(C12-C24)	4647345	280.96
C10	2.646	-0.002	53339	49232	WATPHM	(C24-C38)	53361	3.51
C12	3.522	0.000	109943	101349	AK102	(C10-C25)	5728420	291.32
C14	4.198	-0.001	110229	165834	AK103	(C25-C36)	37554	4.08
C16	4.786	0.000	100399	226030				
C18	5.370	-0.001	61427	87103				
C20	5.994	-0.003	27126	79434				
C22	6.629	-0.001	6583	24413				
C24	7.251	0.004	1684	4975				
C25	7.547	0.001	938	3069				
C26	7.836	0.001	398	719				
C28	8.362	-0.034	111	221				
C32	9.590	-0.024	1129	1966				
C34	10.259	0.002	170	322				
Filter Peak	11.818	-0.024	321	541				
C36	10.907	0.002	1426	3477				
C38	11.535	-0.007	255	550				
C40	12.148	-0.013	759	2643				
o-terph	5.530	0.006	1160020	1172803				
Triacon Surr	8.986	-0.011	207	219	NAS DIES	(C10-C24)	5721259	291.69

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1172803	50.9	113.1 M
Triacontane	219	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

JV
3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a010.d

Date : 16-MAR-2015 13:49

Client ID:

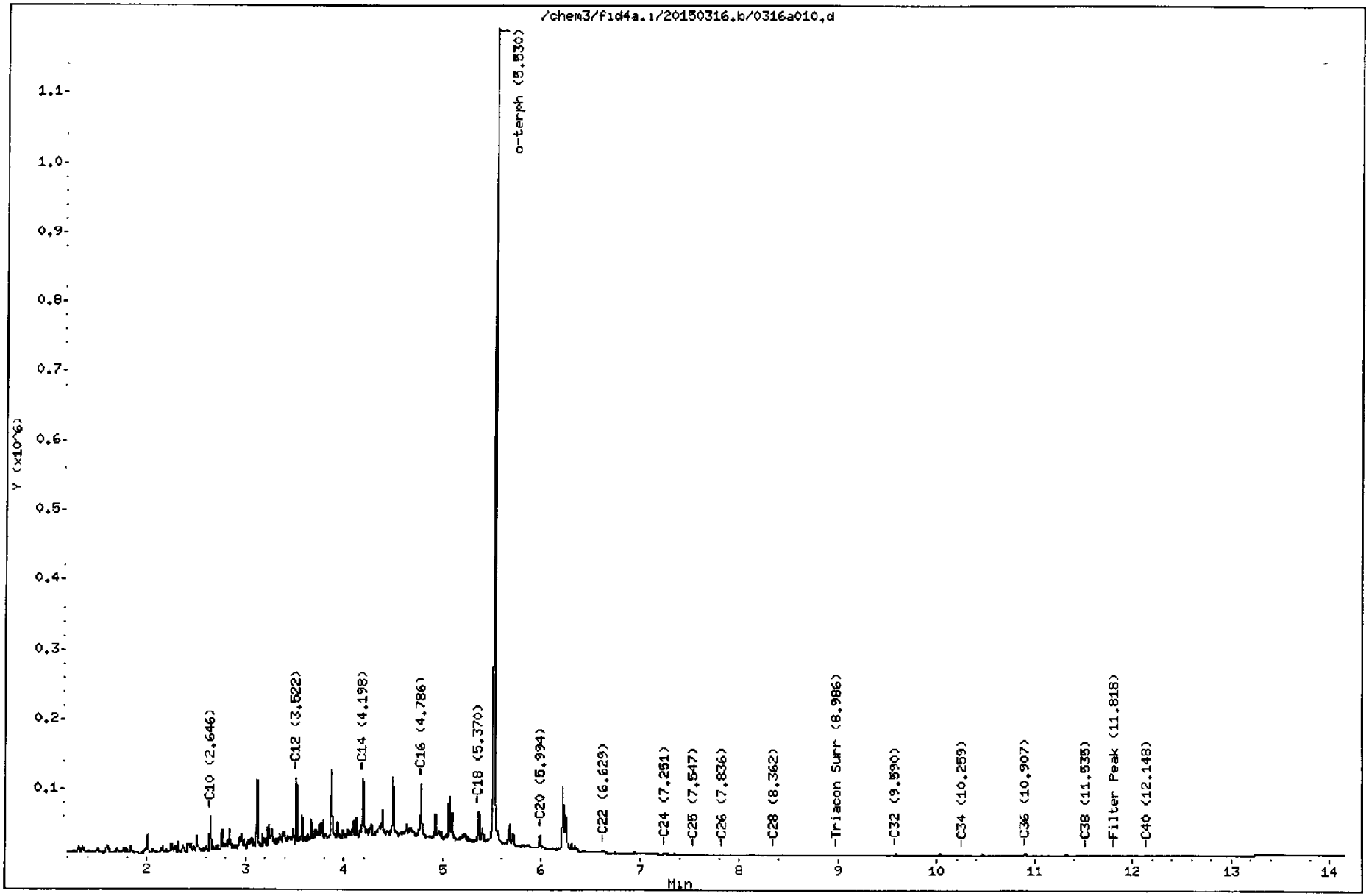
Sample Info: SDC0026-SCV1

Column phase: RTX-1

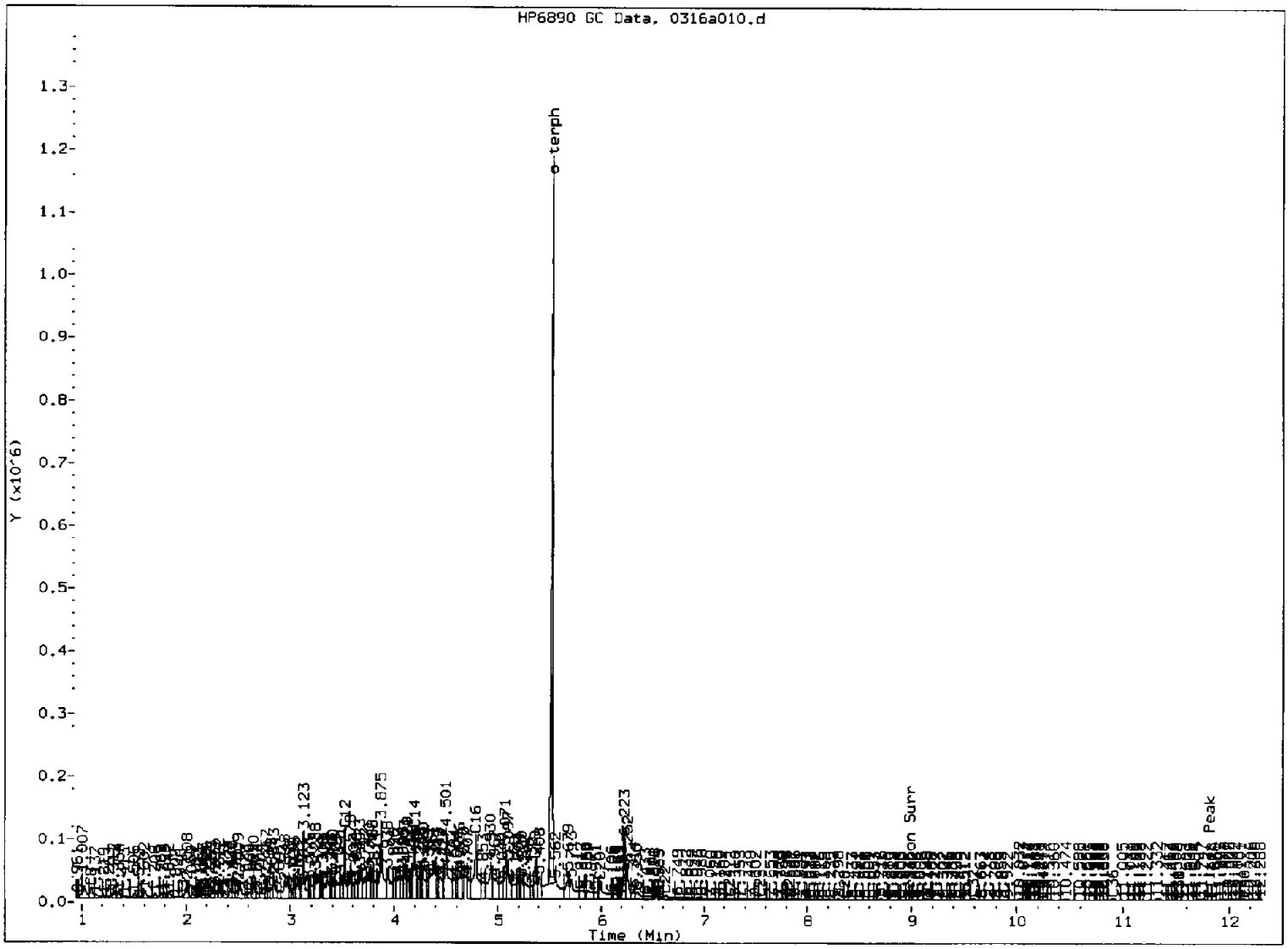
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-SCV1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: [signature] Date: 3/16/15

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150316

Instrument: FID4A.I Project:

Calibration Date: 16-MAR-2015 SDG No.: 20150316

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	16578	15811	15675	15221	14468	13582	15222	7.0
Triac Surr	20574	20462	20163	20117	19665	19261	20040	2.5

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0316a011.d	16-MAR-2015 14:12
0316a012.d	16-MAR-2015 14:36
0316a013.d	16-MAR-2015 15:00
0316a014.d	16-MAR-2015 15:24
0316a015.d	16-MAR-2015 15:48
0316a016.d	16-MAR-2015 16:12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0316a011	0316a012	0316a013	0316a014	0316a015	0316a016
INJ.DATE:	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015
INJ.TIME:	14:12	14:36	15:00	15:24	15:48	16:12

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Toluene	+++++	0.717	0.717	0.717	0.717	0.718	0.817	0.717-0.917	0.717	0.000
	40 Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.023	0.973-1.073	+++++	+++++
	39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.542	0.492-0.592	+++++	+++++
	36 JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.794	0.744-0.844	+++++	+++++
	37 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.729	0.679-0.779	+++++	+++++
	38 Hydraulic Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.197	1.147-1.247	+++++	+++++
	2 C8	1.007	1.006	1.076	1.007	1.151	1.030	1.100	1.000-1 200	1.046	0.058
	3 C10	2.656	2.647	2.637	2.655	2.648	2.645	2.648	2.598-2.698	2.648	0.007
	4 C12	+++++	+++++	+++++	+++++	3.520	3.523	3.522	3.472-3.572	3.522	0.002
	5 C14	4.183	4.206	4.208	4.208	4.184	4.183	4.199	4.149-4.249	4.195	0.013
	6 C16	4.793	4.797	4.766	4.786	4.757	4.786	4.786	4.736-4.836	4.781	0.016
	7 C18	5.380	5.372	5.370	5.370	5.370	5.369	5.371	5.321-5.421	5.372	0.004
$	8 o-terph	5.519	5.518	5.516	5.517	5.520	5 519	5.524	5.474-5.574	5.518	0.002
	9 C20	5.984	5.981	5.982	5.981	5.981	5.983	5.997	5.947-6.047	5.982	0.001
	10 C22	6.633	6.662	6.668	6.660	6.646	6.629	6.630	6.580-6.680	6.650	0.016
	11 C24	7.236	7.244	7.264	7.261	7.238	7.224	7.247	7.197-7.297	7.245	0.015
	12 C25	7.546	7.542	7.544	7.555	7.555	7.562	7.546	7.496-7.596	7.551	0.008

Reviewer 1 _____ Date: 3/16/15
Reviewer 2 _____ Date: 3/17/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.838	7.844	7.827	7.817	7.840	7.838	7.835	7.785-7.885	7.834	0.010
14 C28	8.392	8.388	8.412	8.391	8.381	8.410	8.396	8.346-8.446	8.396	0.012
$ 15 Triacon Surr	8.983	8.990	9.004	9.021	9.055	9.096	8.997	8.947-9.047	9.025	0.043
16 C32	9.610	9.605	9.610	9.619	9.600	9.602	9.614	9.564-9.664	9.608	0.007
17 C34	10.253	10.236	10.247	10.237	10.251	10.259	10.257	10.207-10.307	10.247	0.009
18 Filter Peak	11.847	11.841	11.843	11.844	11.826	11.837	11.842	11.742-11.942	11.840	0.007
19 C36	10.898	10.892	10.895	10.915	10.902	10.927	10.905	10.855-10.955	10.905	0.013
20 C38	11.557	11.533	11.544	11.529	11.548	11.519	11.542	11.492-11.592	11.538	0.014
21 C40	12.176	12.145	12.152	12.164	12.130	12.160	12.162	12.112-12.212	12.154	0.016
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.683	0.633-0.733	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0 499	0.449-0.549	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.662	0.612-0.712	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.615	0.565-0.665	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a011.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL7
Client ID:
Injection: 16-MAR-2015 14:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	175903	7.13
C8	1.007	-0.093	35827	44475	WATPHD	(C12-C24)	162137	9.80
C10	2.656	0.008	1327	1965	WATPHM	(C24-C38)	1657760	108.91
C12	----				AK102	(C10-C25)	256814	13.06
C14	4.183	-0.016	26	86	AK103	(C25-C36)	1383896	150.39
C16	4.793	0.007	46	132				
C18	5.380	0.009	151	461				
C20	5.984	-0.013	404	1043				
C22	6.633	0.002	1262	1820				
C24	7.236	-0.011	4451	5824				
C25	7.546	0.000	5986	23585				
C26	7.838	0.003	6905	19574				
C28	8.392	-0.004	7811	15272				
C32	9.610	-0.003	8197	24463				
C34	10.253	-0.004	7109	33787				
Filter Peak	11.847	0.005	5359	19333				
C36	10.898	-0.008	6464	7199				
C38	11.557	0.015	5574	8385				
C40	12.176	0.014	4872	5985				
o-terph	5.519	-0.005	256	851				
Triacon Surr	8.983	-0.013	150428	185168	NAS DIES	(C10-C24)	195118	9.95

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	851	0.0	0.1
Triacontane	185168	9.2	20.5 M

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a011.d

Date : 16-MAR-2015 14:12

Client ID:

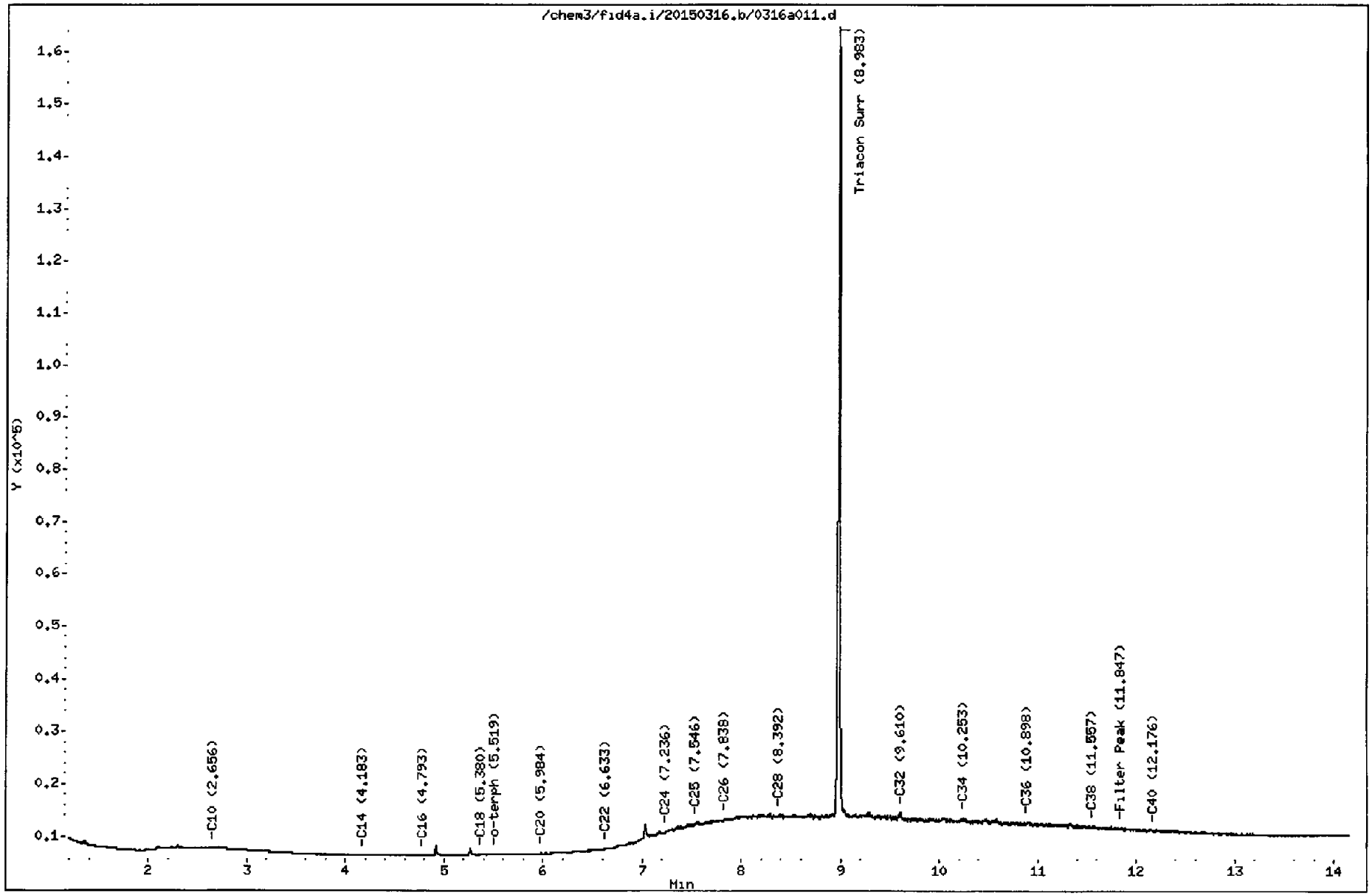
Sample Info: SDC0026-CAL7

Column phase: RTX-1

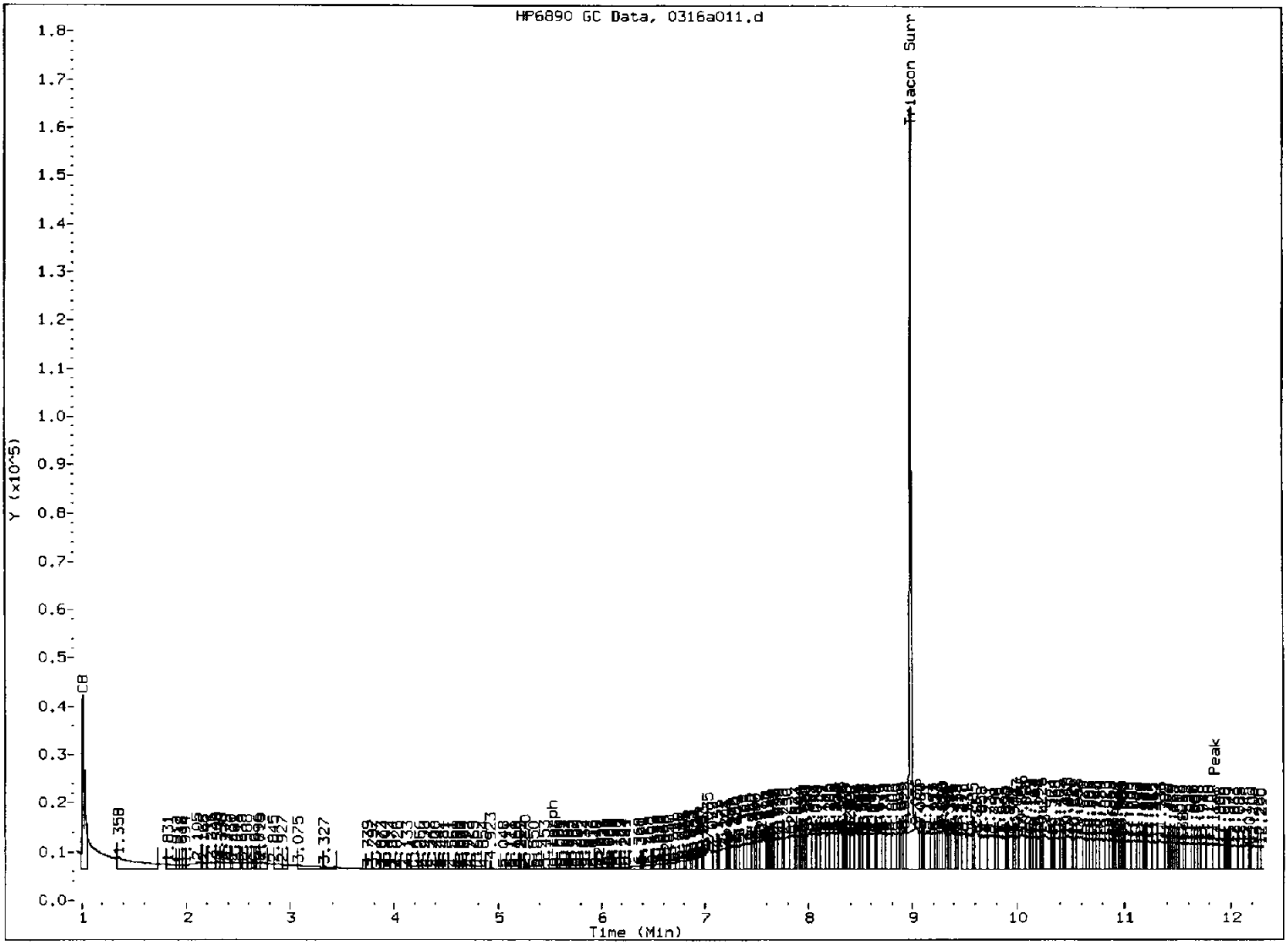
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL7 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JV Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a012.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL8
Client ID:
Injection: 16-MAR-2015 14:36

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8127	89443	WATPHG	(Tol-C12)	162068	6.57
C8	1.006	-0.094	36058	44590	WATPHD	(C12-C24)	376959	22.79
C10	2.647	-0.001	1280	2412	WATPHM	(C24-C38)	3952743	259.67
C12	----				AK102	(C10-C25)	553602	28.15
C14	4.206	0.007	94	258	AK103	(C25-C36)	3338658	362.82
C16	4.797	0.011	77	319				
C18	5.372	0.001	254	1339				
C20	5.981	-0.016	1005	2389				
C22	6.662	0.032	3342	15919				
C24	7.244	-0.003	10905	11791				
C25	7.542	-0.004	14570	24432				
C26	7.844	0.009	17160	45369				
C28	8.388	-0.008	18370	18816				
C32	9.605	-0.009	20693	72554				
C34	10.236	-0.021	16994	49599				
Filter Peak	11.841	-0.001	11992	42251				
C36	10.892	-0.013	14691	15925				
C38	11.533	-0.009	12987	17645				
C40	12.145	-0.017	10987	34778				
o-terph	5.518	-0.006	426	1432				
Triacon Surr	8.990	-0.007	373621	460394	NAS DIES	(C10-C24)	406254	20.71

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1432	0.1	0.1
Triacontane	460394	23.0	51.1 M

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a012.d

Date : 16-MAR-2015 14:36

Client ID:

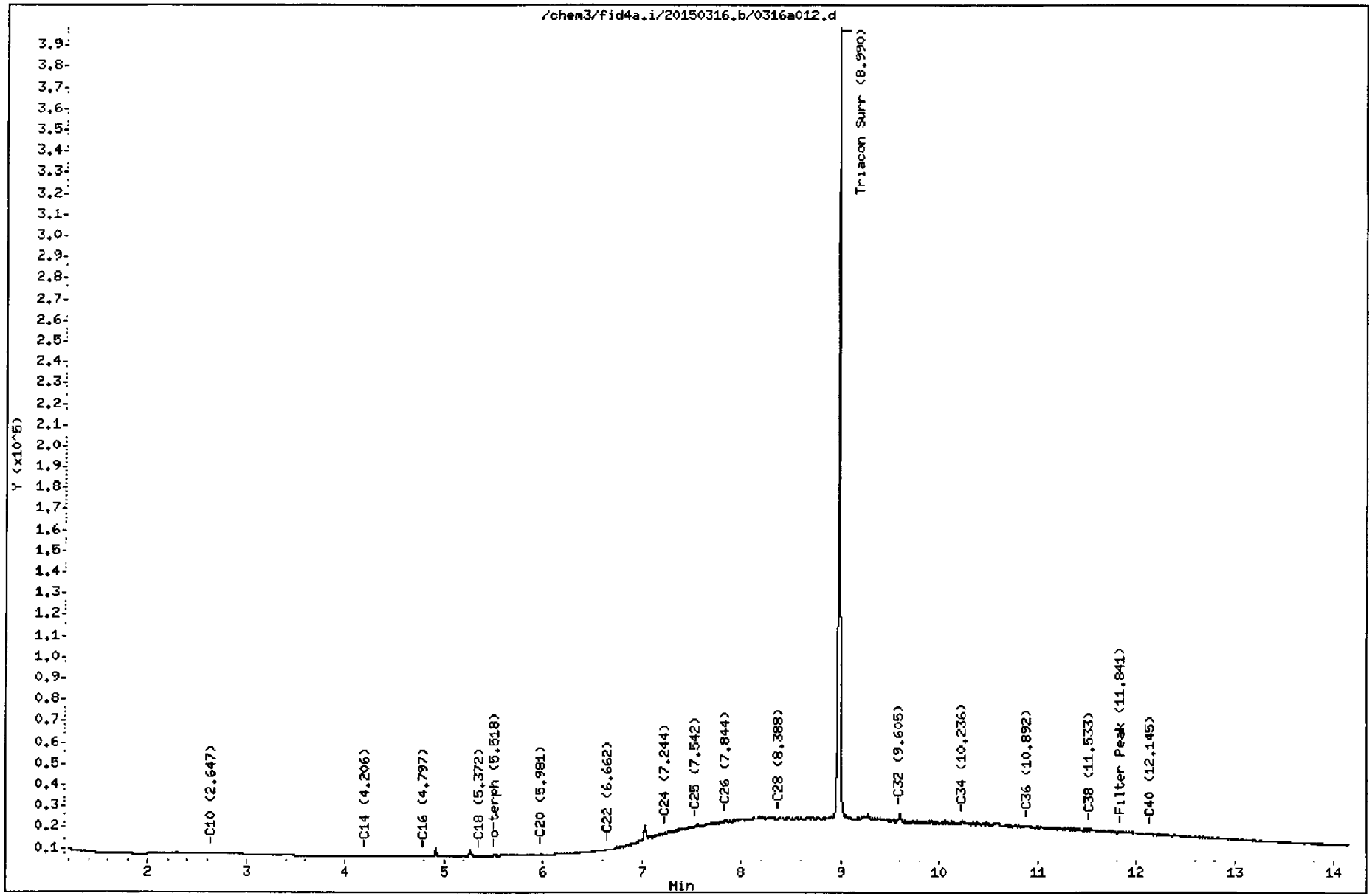
Instrument: fid4a.i

Sample Info: SDC0026-CAL8

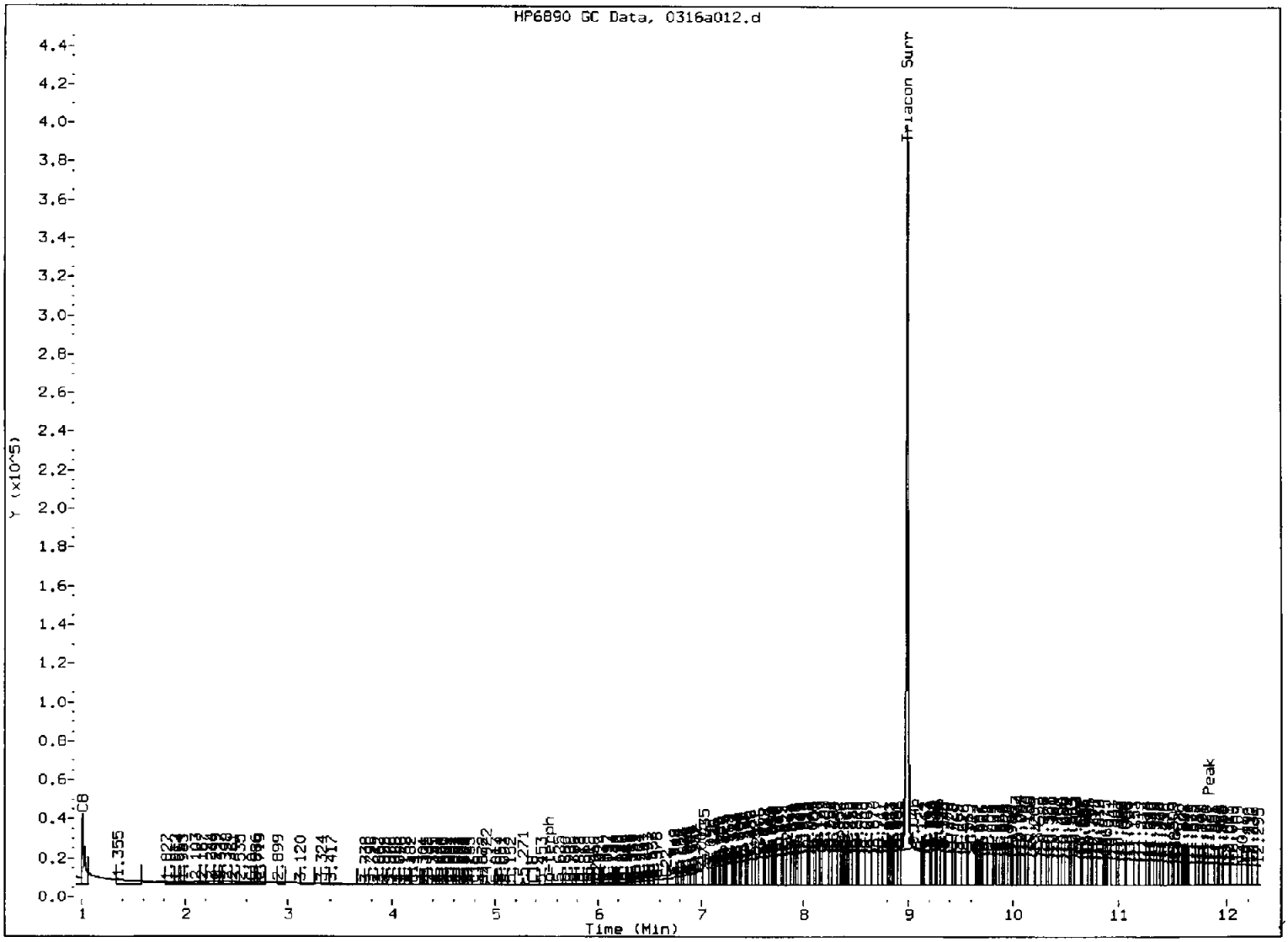
Operator: JR/VTS/JW

Column phase: RTX-1

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL8 FID:4A SIGNAL



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a013.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL9
Client ID:
Injection: 16-MAR-2015 15:00

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8088	88618	WATPHG	(Tol-C12)	239934	9.72
C8	1.076	-0.025	5850	53954	WATPHD	(C12-C24)	750186	45.35
C10	2.637	-0.011	1300	3344	WATPHM	(C24-C38)	7837555	514.88
C12	----				AK102	(C10-C25)	1087595	55.31
C14	4.208	0.009	84	181	AK103	(C25-C36)	6583725	715.46
C16	4.766	-0.020	155	715				
C18	5.370	-0.001	453	1606				
C20	5.982	-0.015	2013	4765				
C22	6.668	0.038	6620	37489				
C24	7.264	0.017	21719	37750				
C25	7.544	-0.002	27913	24660				
C26	7.827	-0.008	32426	39331				
C28	8.412	0.015	36641	88487				
C32	9.610	-0.004	39722	165067				
C34	10.247	-0.010	33468	64584				
Filter Peak	11.843	0.001	22799	28804				
C36	10.895	-0.010	27864	88699				
C38	11.544	0.002	24574	73134				
C40	12.152	-0.010	21153	67559				
o-terph	5.516	-0.009	761	1891				
Triacon Surr	9.004	0.007	597788	907315	NAS DIES	(C10-C24)	791330	40.35

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1891	0.1	0.2
Triacontane	907315	45.3	100.6 M

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a013.d

Page 1

Date : 16-MAR-2015 15:00

Client ID:

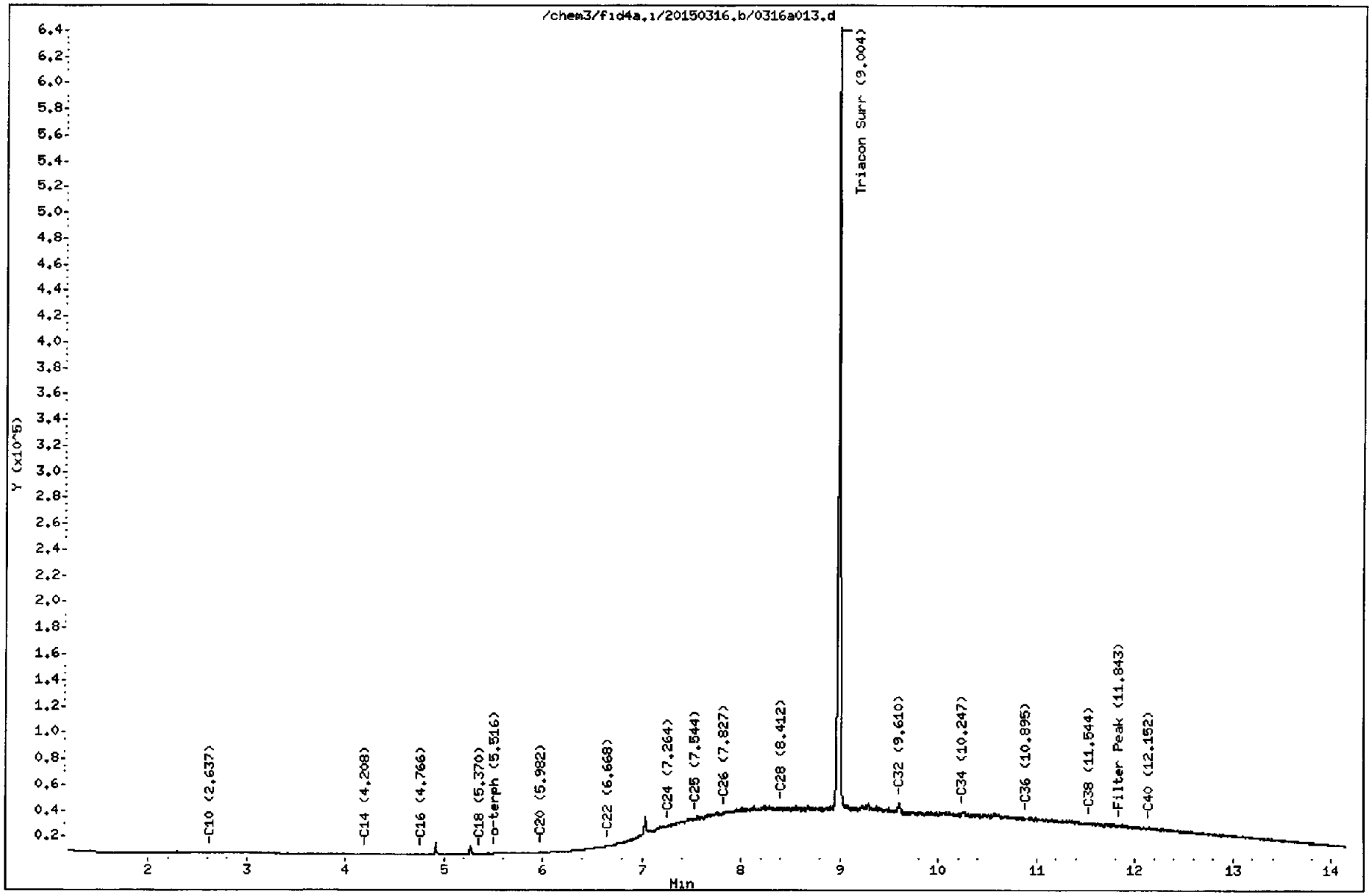
Instrument: fid4a.i

Sample Info: SDC0026-CAL9

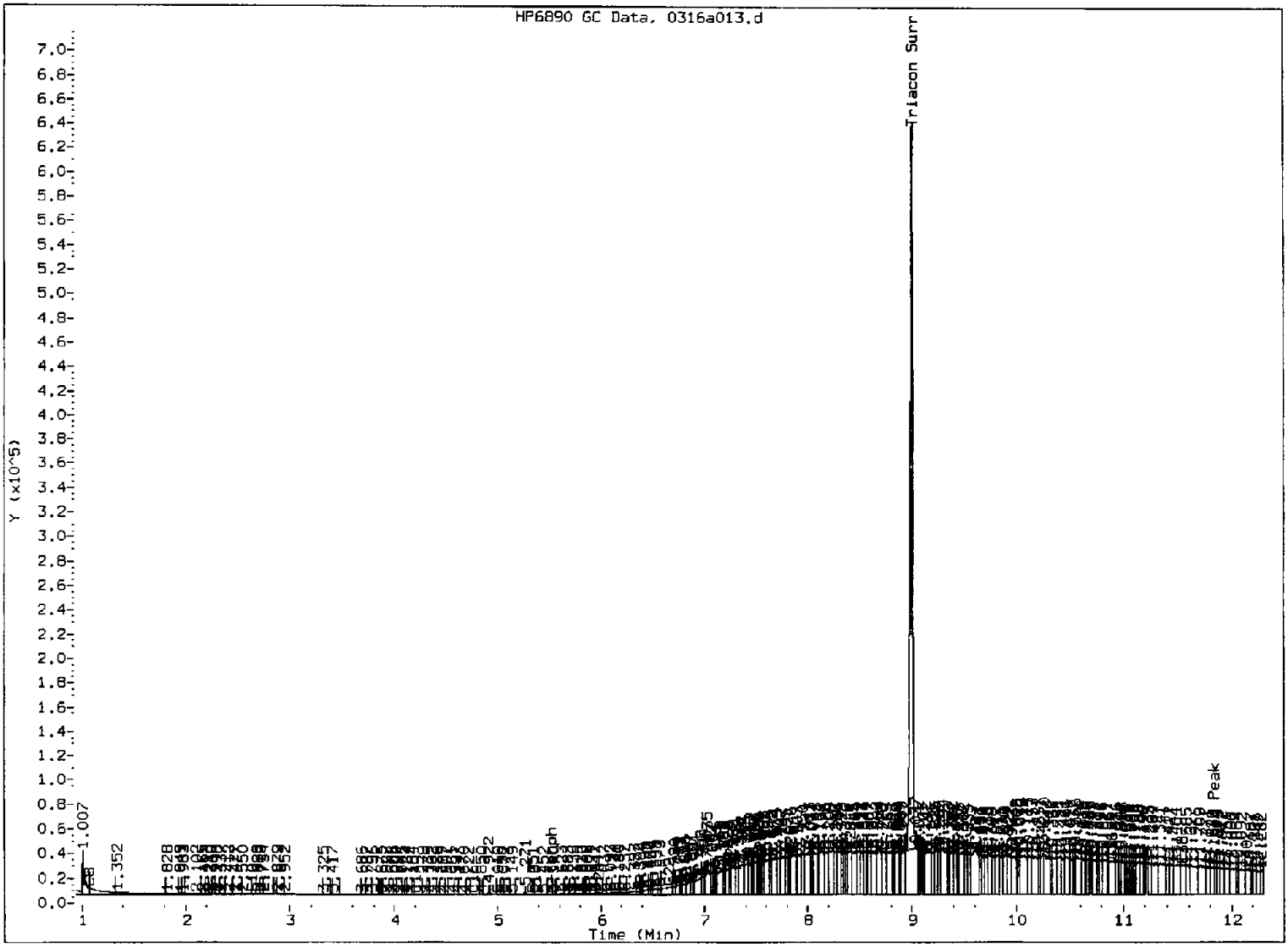
Operator: JR/VTS/JW

Column phase: RTX-1

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL9 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: BD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a014.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALA
Client ID:
Injection: 16-MAR-2015 15:24

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	9173	32337	WATPHG	(Tol-C12)	201906	8.18
C8	1.007	-0.093	36329	49023	WATPHD	(C12-C24)	1420698	85.89
C10	2.655	0.007	1266	4524	WATPHM	(C24-C38)	15220922	999.93
C12	----				AK102	(C10-C25)	2054092	104.46
C14	4.208	0.009	124	280	AK103	(C25-C36)	12803700	1391.39
C16	4.786	-0.001	278	690				
C18	5.370	-0.001	815	1619				
C20	5.981	-0.016	4139	8678				
C22	6.660	0.029	12974	52100				
C24	7.261	0.014	42810	114120				
C25	7.555	0.009	56053	127534				
C26	7.817	-0.018	61392	57887				
C28	8.391	-0.005	71076	88590				
C32	9.619	0.005	75990	379521				
C34	10.237	-0.020	62999	265946				
Filter Peak	11.844	0.002	43108	93868				
C36	10.915	0.009	54804	106847				
C38	11.529	-0.013	46170	102524				
C40	12.164	0.002	39021	99082				
o-terph	5.517	-0.007	1311	5093				
Triacon Surr	9.021	0.024	1019275	1810555	NAS DIES	(C10-C24)	1461307	74.50

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	5093	0.2	0.5
Triacontane	1810555	90.3	200.8 M

BW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a014.d

Date : 16-MAR-2015 15:24

Client ID:

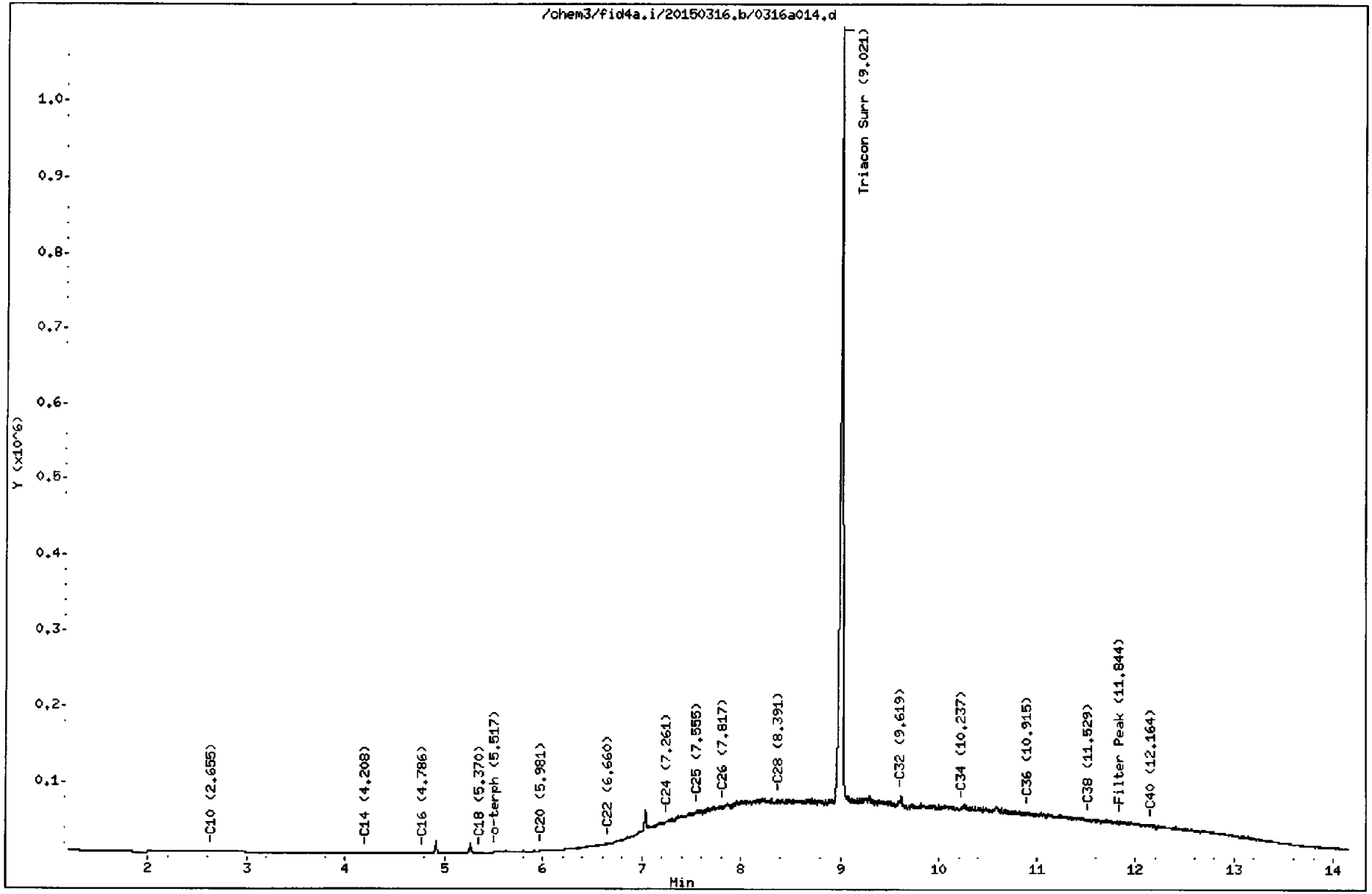
Sample Info: SDC0026-CALA

Column phase: RTX-1

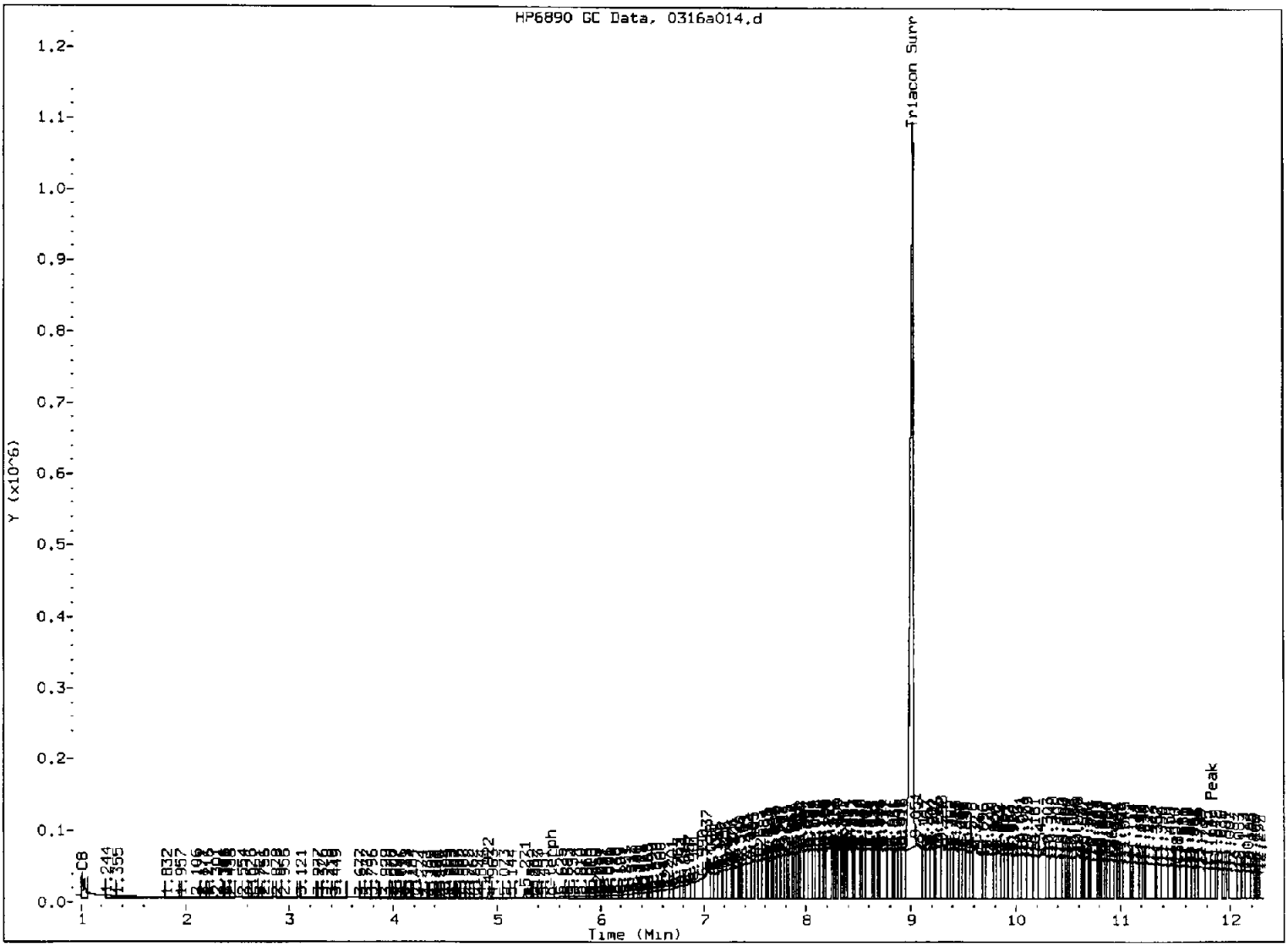
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CALA FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JCJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a015.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALB
Client ID:
Injection: 16-MAR-2015 15:48

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8971	31721	WATPHG	(Tol-C12)	201022	8.14
C8	1.151	0.051	5062	33352	WATPHD	(C12-C24)	3522009	212.93
C10	2.648	0.000	1289	6013	WATPHM	(C24-C38)	36171166	2376.24
C12	3.520	-0.002	258	1584	AK102	(C10-C25)	4904311	249.41
C14	4.184	-0.016	333	763	AK103	(C25-C36)	30877194	3355.46
C16	4.757	-0.029	702	2938				
C18	5.370	-0.001	2017	8735				
C20	5.981	-0.016	9149	23537				
C22	6.646	0.016	30102	85638				
C24	7.238	-0.009	99644	119637				
C25	7.555	0.009	137853	361484				
C26	7.840	0.005	153016	209507				
C28	8.381	-0.015	170730	256636				
C32	9.600	-0.013	160377	374221				
C34	10.251	-0.006	146265	331351				
Filter Peak	11.826	-0.016	91875	116053				
C36	10.902	-0.003	129503	218387				
C38	11.548	0.006	108616	139890				
C40	12.130	-0.032	71337	216636				
o-terph	5.520	-0.005	3338	10152				
Triacon Surr	9.055	0.058	1745025	4424652	NAS DIES	(C10-C24)	3562875	181.65

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	10152	0.4	1.0
Triacontane	4424652	220.8	490.6 M

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a015.d

Date : 16-MAR-2015 15:48

Client ID:

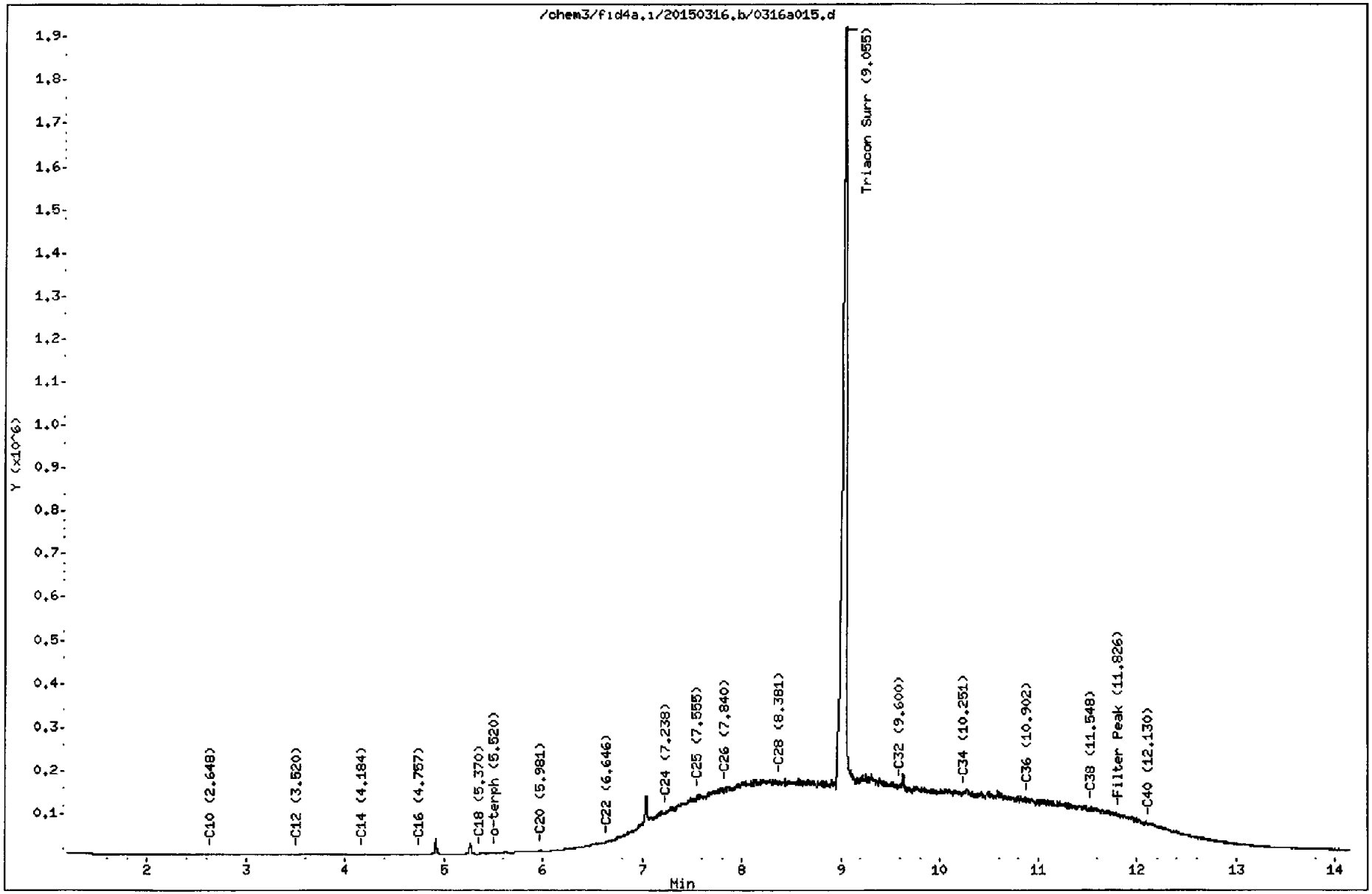
Sample Info: SDC0026-CALB

Column phase: RTX-1

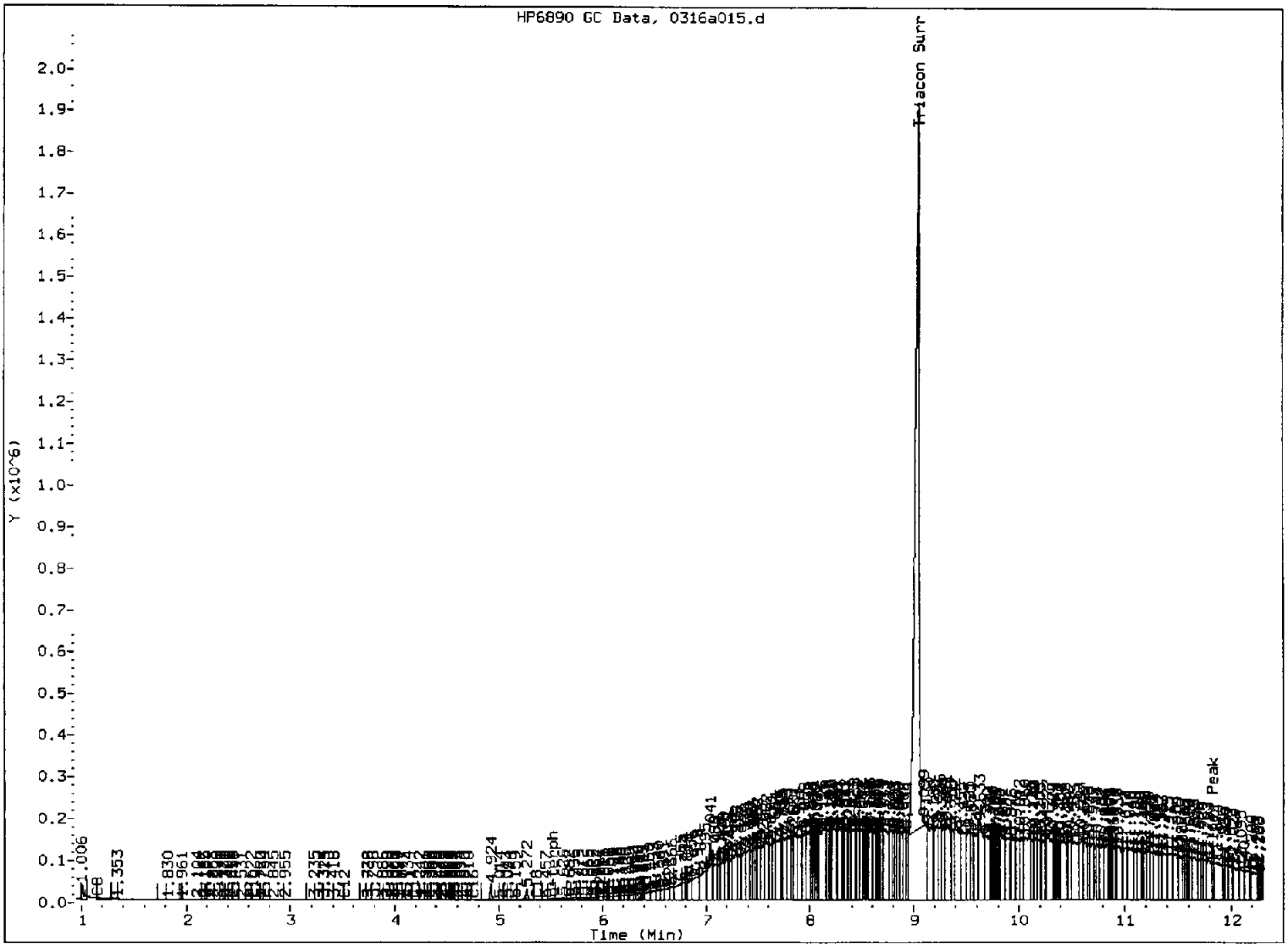
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CALB FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JW Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a016.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALC
Client ID:
Injection: 16-MAR-2015 16:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.718	-0.099	12115	42003	WATPHG	(Tol-C12)	336210	13.62
C8	1.030	-0.070	35402	126115	WATPHD	(C12-C24)	6889079	416.49
C10	2.645	-0.003	1366	4479	WATPHM	(C24-C38)	67908846	4461.23
C12	3.523	0.001	246	1215	AK102	(C10-C25)	9231142	469.44
C14	4.183	-0.017	565	1258	AK103	(C25-C36)	59168074	6429.86
C16	4.786	0.000	1421	2951				
C18	5.369	-0.002	4005	6298				
C20	5.983	-0.014	15546	40665				
C22	6.629	-0.002	52336	53925				
C24	7.224	-0.023	189085	223616				
C25	7.562	0.016	258942	542063				
C26	7.838	0.002	301059	351434				
C28	8.410	0.014	332999	525125				
C32	9.602	-0.012	310912	588333				
C34	10.259	0.002	280952	963982				
Filter Peak	11.837	-0.005	82642	148160				
C36	10.927	0.022	232651	910564				
C38	11.519	-0.023	129354	479628				
C40	12.160	-0.002	57168	248067				
o-terph	5.519	-0.005	6442	24643				
Triacon Surr	9.096	0.099	2549003	8667625	NAS DIES	(C10-C24)	6926803	353.16

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	24643	1.1	2.4
Triacontane	8667625	432.5	961.1 M

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a016.d

Page 1

Date : 16-MAR-2015 16:12

Client ID:

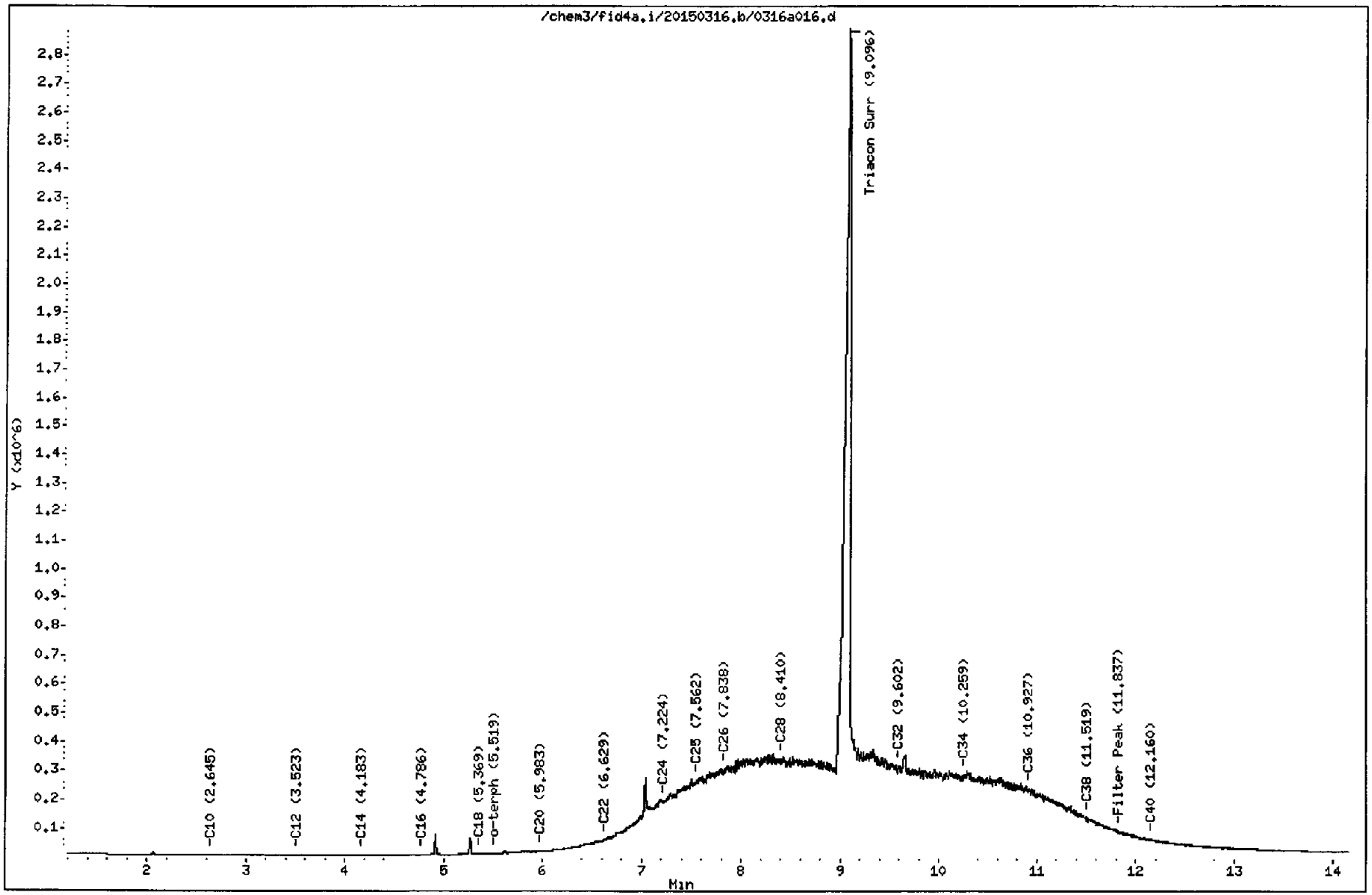
Instrument: fid4a.i

Sample Info: SDC0026-CALC

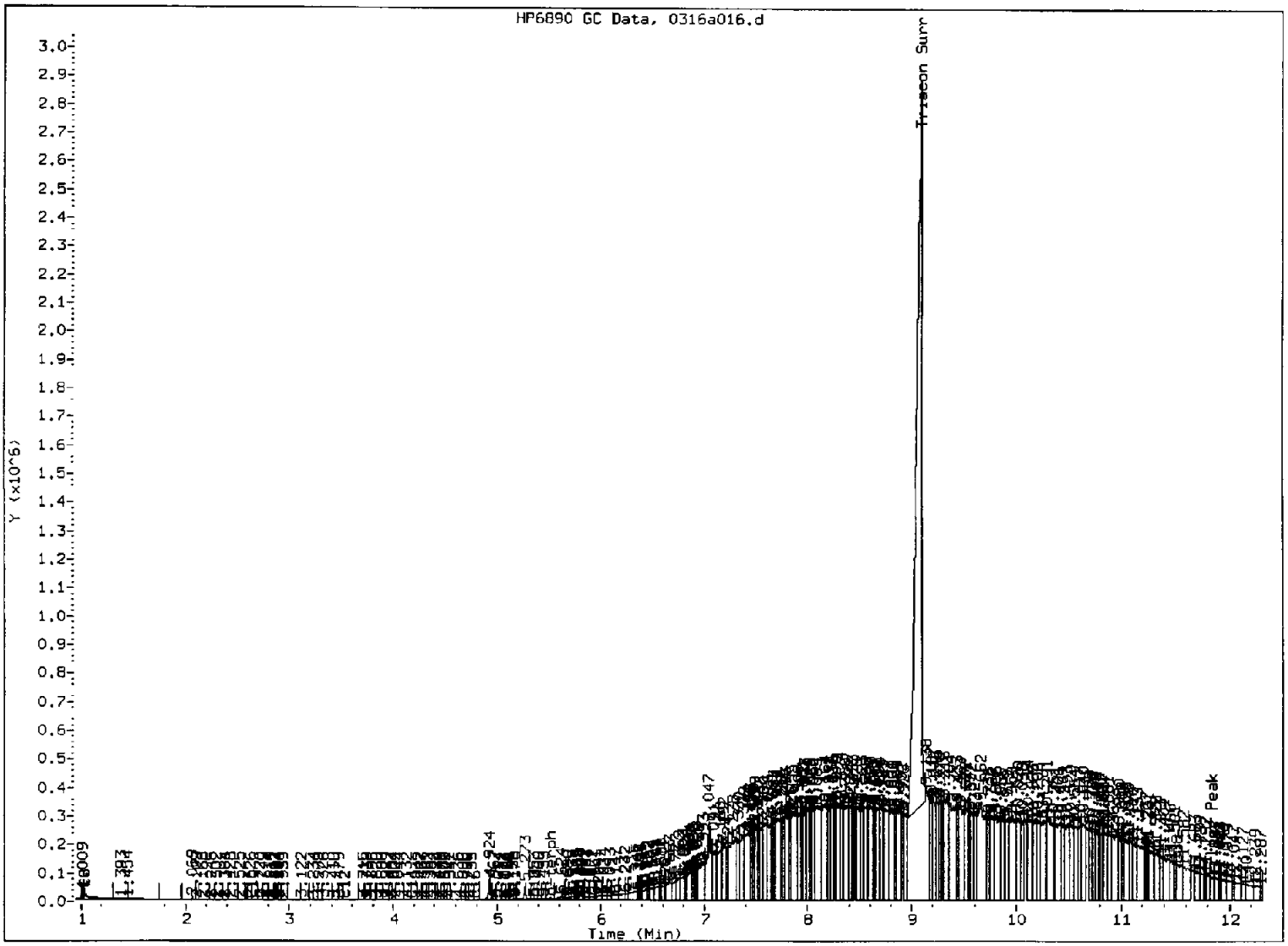
Operator: JR/VTS/JW

Column phase: RTX-1

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CALC FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JW Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a017.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-SCV2
Client ID:
Injection: 16-MAR-2015 16:36

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.777	-0.040	6706	64223	WATPHG	(Tol-C12)	241207	9.77
C8	1.008	-0.092	36106	45124	WATPHD	(C12-C24)	755274	45.66
C10	2.653	0.005	1278	5454	WATPHM	(C24-C38)	7418717	487.37
C12	----				AK102	(C10-C25)	1059387	53.87
C14	4.209	0.009	136	442	AK103	(C25-C36)	6208817	674.72
C16	4.787	0.001	578	2257				
C18	5.381	0.010	769	3088				
C20	5.982	-0.015	1668	2625				
C22	6.627	-0.003	5654	10852				
C24	7.260	0.013	21209	38400				
C25	7.557	0.011	27359	24047				
C26	7.846	0.011	32233	42096				
C28	8.385	-0.011	34414	53867				
C32	9.612	-0.001	37607	123698				
C34	10.279	0.022	31549	88251				
Filter Peak	11.871	0.029	23186	33698				
C36	10.896	-0.010	29045	28058				
C38	11.536	-0.006	25008	78009				
C40	12.148	-0.014	21972	64374				
o-terph	5.519	-0.006	909	1708				
Triacon Surr	9.001	0.004	515476	745296	NAS DIES	(C10-C24)	792647	40.41

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1708	0.1	0.2
Triacontane	745296	37.2	82.6 M

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a017.d

Date : 16-MAR-2015 16:36

Client ID:

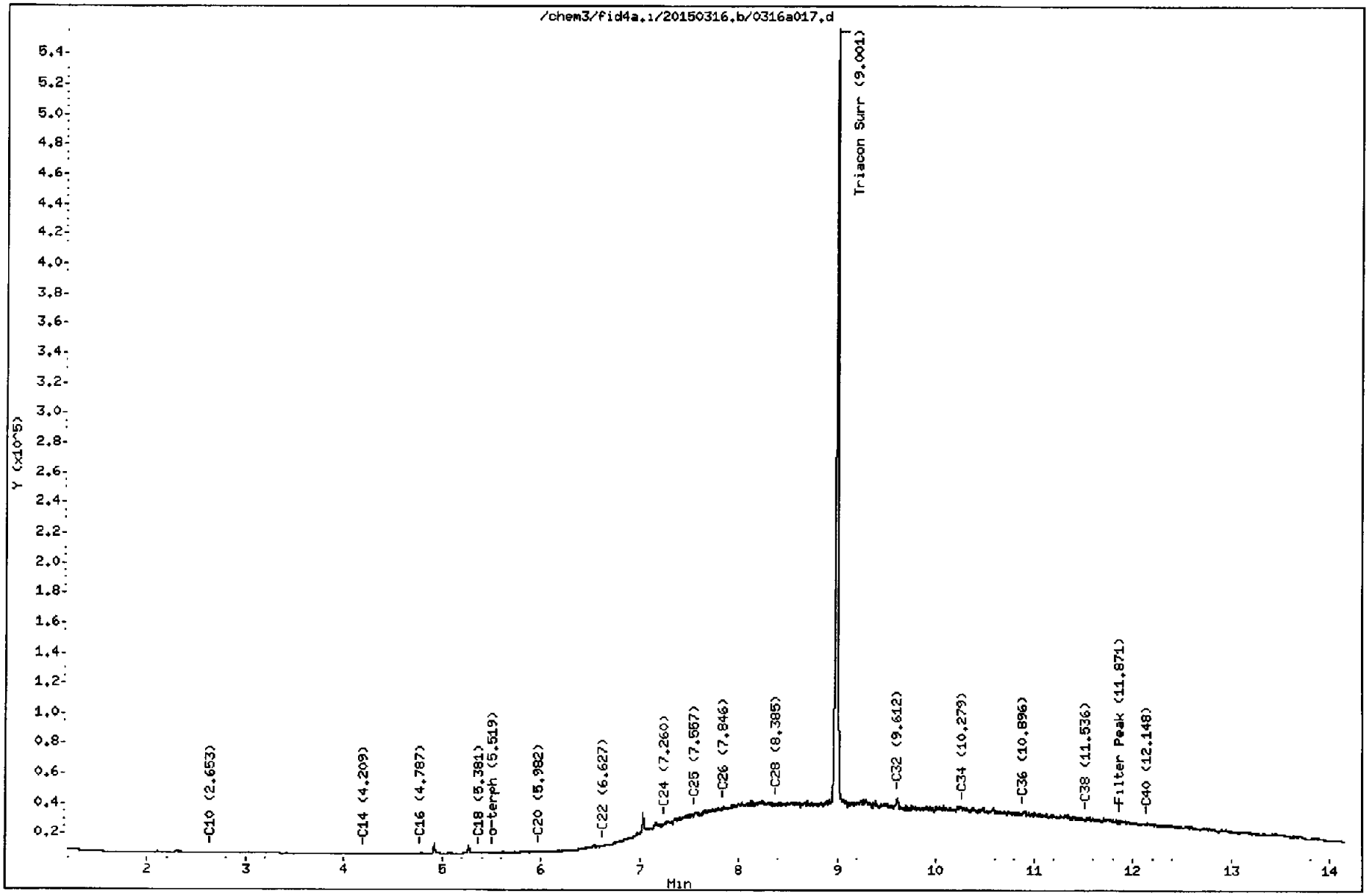
Sample Info: SDC0026-SCW2

Column phase: RTX-1

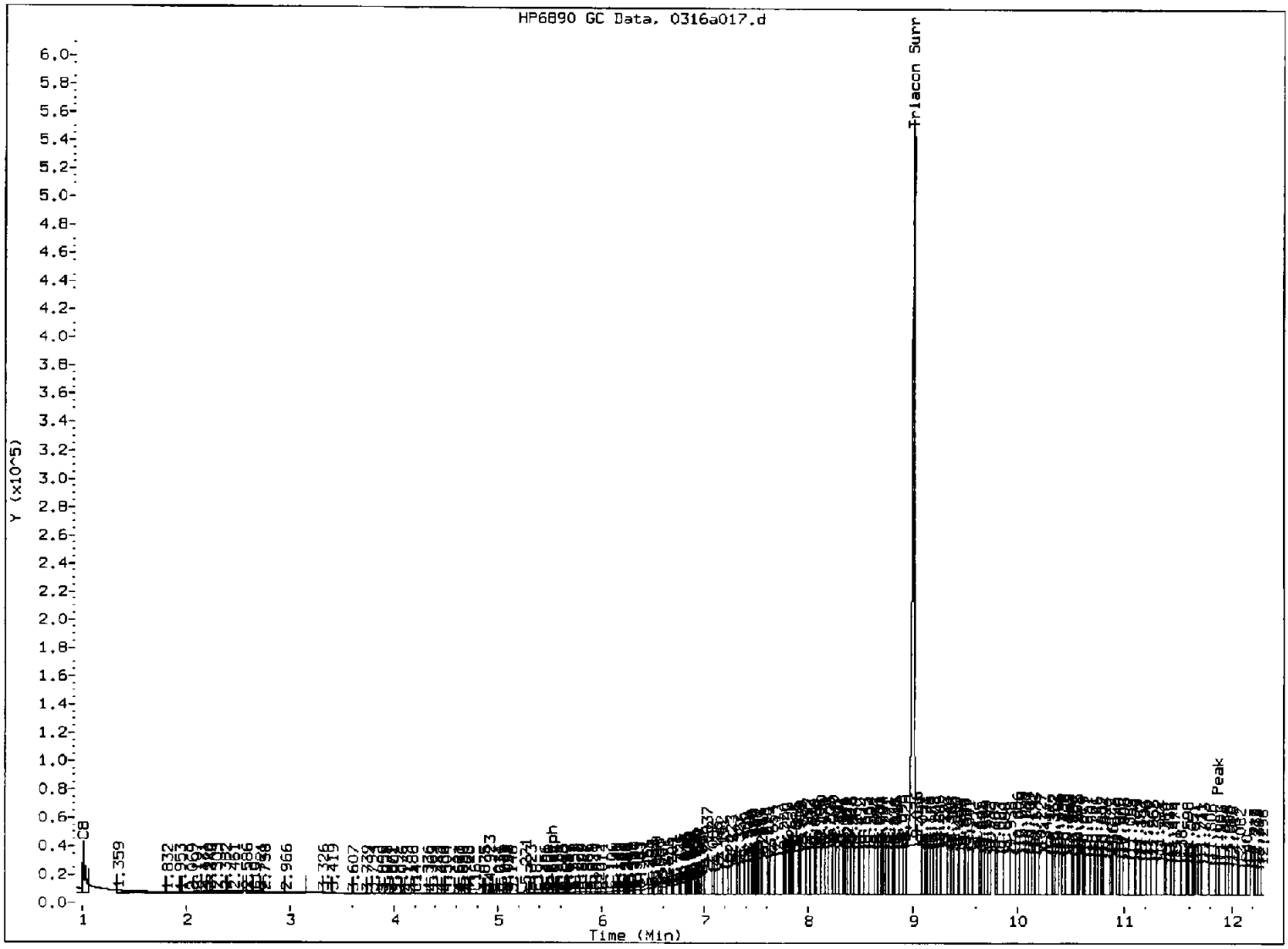
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-SCV2 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JJ Date: 3/16/15

Analysis	Matrix	Method
TPH (Extractables)	Solid	NWTPH-Dx
TPH Solids (Extractables) (Ac/Si)	Solid	NWTPH-Dx
TPH Solids 10mL FEV (Extractables)	Solid	NWTPH-Dx
TPH Solids 10mL FEV (Extractables) (Ac/Si)	Solid	NWTPH-Dx

Checklist: Initial Calibration Checklist-FID

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	MDL	05/21/2015
	Comments: *YE00027 - FID9 NWTPHD/Motor Oil Curve*			
2	ICal %RSD < 20%	YES	MDL	05/21/2015
3	Manual integrations include before/after pictures	YES	MDL	05/21/2015
4	All SCV within +/- 20% (DOD)	NO	MDL	05/21/2015
	Comments: *SCV2 Triacontane surrogate failing low at 71.3% rec.*			
5	All SCV within +/- 30%	YES	MDL	05/21/2015
6	NO Linear or Quadratic fits used	YES	MDL	05/21/2015
7	NO Calibration points dropped	YES	MDL	05/21/2015
8	Additonal Notes	YES	MDL	05/21/2015
	Comments: *CALC Triacontane surrogate outside 0.05min shift window due to saturation. Surrogate never spiked at this concentration. No corrective action taken.*			
9	Reviewer Approval (Reviewer)	YES	BB	05/21/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SDE0049

Printed: 5/20/2015 4:22:41PM

Instrument: FID9
Calibration ID: UNASSIGNED
MS Energy:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SDE0049-IBL1	Retention Time Std	QC		1	D000116		
SDE0049-IBL2	Instrument Blank	QC		2	D000115		
SDE0049-CAL1	Diesel 50	QC		3	D000830		
SDE0049-CAL2	Diesel 100	QC		4	D000831		
SDE0049-CAL3	Diesel 250	QC		5	D000832		
SDE0049-CAL4	Diesel 500	QC		6	D000833		
SDE0049-CAL5	Diesel 1000	QC		7	D000834		
SDE0049-CAL6	Diesel 2500	QC		8	D000821		
SDE0049-SCV1	Diesel SCV 250	QC		9	C003250		
SDE0049-CAL7	Moil 100	QC		10	D002164		
SDE0049-CAL8	Moil 250	QC		11	D002165		
SDE0049-CAL9	Moil 500	QC		12	D002166		
SDE0049-CALA	Moil 1000	QC		13	D002167		
SDE0049-CALB	Moil 2500	QC		14	D002168		
SDE0049-CALC	Moil 5000	QC		15	D001872		
SDE0049-SCV2	Moil SCV 500	QC		16	D000209		

MC 5/20/15
Samples Loaded By Date

5/21/15 MC
Data Processed By Date

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150520

Instrument: FID9.I Project:

Calibration Date: 20-MAY-2015 SDG No.: 20150520

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	18660	17772	16466	16978	17515	17079	17412	4.4
AK Diesel	20995	20425	18918	19828	20369	19865	20067	3.5
OR Diesel	21403	20596	19068	19965	20505	19985	20254	3.9
Cal Diesel	20881	20329	18840	19760	20309	19809	19988	3.5
o-Terph	19203	22044	22123	22324	22968	23064	21954	6.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.970-7.460)
AK Diesel C10-C25 (2.984-7.712)
OR Diesel C10-C28 (2.984-8.406)
Cal Diesel C10-C24 (2.984-7.460)

Calibration Files	Analysis Time
15052009.d	20-MAY-2015 17:25
15052010.d	20-MAY-2015 17:46
15052011.d	20-MAY-2015 18:08
15052012.d	20-MAY-2015 18:29
15052013.d	20-MAY-2015 18:50
15052014.d	20-MAY-2015 19:12

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150520

Instrument: FID9.I Project:

Calibration Date: 20-MAY-2015 SDG No.: 20150520

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	15206	14015	14211	14189	14255	13758	14273	3.5
Triac Surr	13043	14500	15844	17434	18319	18364	16251	13.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
15052016.d	20-MAY-2015 19:54
15052017.d	20-MAY-2015 20:15
15052018.d	20-MAY-2015 20:36
15052019.d	20-MAY-2015 20:58
15052020.d	20-MAY-2015 21:19
15052021.d	20-MAY-2015 21:40

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client:

SDG No.: 20150520 Project:

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.97 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		SDE0049-IBL1	05/20/15	1642	5.97	8.82
02		SDE0049-IBL2	05/20/15	1703	5.96	8.81
03		SDE0049-CAL1	05/20/15	1725	5.95	8.81
04		SDE0049-CAL2	05/20/15	1746	5.96	8.82
05		SDE0049-CAL3	05/20/15	1808	5.97	8.82
06		SDE0049-CAL4	05/20/15	1829	5.97	8.81
07		SDE0049-CAL5	05/20/15	1850	5.99	8.82
08		SDE0049-CAL6	05/20/15	1912	6.02	8.82
09		SDE0049-SCV1	05/20/15	1933	5.96	8.81
10		SDE0049-CAL7	05/20/15	1954	5.98	8.81
11		SDE0049-CAL8	05/20/15	2015	5.97	8.81
12		SDE0049-CAL9	05/20/15	2036	5.97	8.82
13		SDE0049-CALA	05/20/15	2058	5.96	8.83
14		SDE0049-CALB	05/20/15	2119	5.97	8.85
15		SDE0049-CALC	05/20/15	2140	5.96	8.89*
16		SDE0049-SCV2	05/20/15	2201	5.96	8.82

	QC LIMITS
TERPH = o-terph	(+/- 0.05 MINUTES)
TRIAC = Triacon Surr	(+/- 0.05 MINUTES)

* Values outside of QC limits.

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid9.i/20150520curve.b

ARI Job No.: SDE0 Method: ftphfid9a.m Instrument: fid9.i Date: 20-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1642	15052007.d	SDE0049-IBL1		1	NO MANUAL INTEGRATION
1703	15052008.d	SDE0049-IBL2		1	NO MANUAL INTEGRATION
1725	15052009.d	SDE0049-CAL1		1	o-terph,
1746	15052010.d	SDE0049-CAL2		1	o-terph,
1808	15052011.d	SDE0049-CAL3		1	o-terph,
1829	15052012.d	SDE0049-CAL4		1	o-terph,
1850	15052013.d	SDE0049-CAL5		1	o-terph,
1912	15052014.d	SDE0049-CAL6		1	o-terph,
1933	15052015.d	SDE0049-SCV1		1	o-terph,
1954	15052016.d	SDE0049-CAL7		1	Triacon Surr,
2015	15052017.d	SDE0049-CAL8		1	Triacon Surr,
2036	15052018.d	SDE0049-CAL9		1	Triacon Surr,
2058	15052019.d	SDE0049-CALA		1	Triacon Surr,
2119	15052020.d	SDE0049-CALB		1	Triacon Surr,
2140	15052021.d	SDE0049-CALC		1	Triacon Surr,
2201	15052022.d	SDE0049-SCV2		1	Triacon Surr,

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
FILENAME:	15052007	15052008	15052009	15052010	15052011	15052012	15052013	15052014	15052015	15052016
INJ.DATE:	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015
INJ.TIME:	16:42	17:03	17:25	17:46	18:08	18:29	18:50	19:12	19:33	19:54

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
	1 Toluene	1.071	1.123	1.073	1.075	1.046	1.052	1.047	1.049	1.049	+++++
	37 JET-A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	2 C8	1.288	1.261	1.254	1.261	1.259	1.263	1.260	1.261	1.261	1.287
	3 C10	2.984	2.997	3.004	3.007	3.000	2.996	2.992	2.994	2.996	2.999
	4 C12	3.970	3.965	3.963	3.973	3.970	3.965	3.964	3.968	3.964	3.972
	5 C14	4.657	4.660	4.659	4.645	4.654	4.651	4.652	4.660	4.651	4.655
	6 C16	5.245	5.245	5.254	5.244	5.241	5.239	5.243	5.250	5.240	5.241
	7 C18	5.812	5.804	5.807	5.805	5.804	5.805	5.811	5.792	5.804	5.807
$	8 o-terph	5.968	5.962	5.952	5.956	5.966	5.973	5.989	6.015	5.964	5.955
	9 C20	6.378	6.374	6.375	6.377	6.379	6.373	6.374	6.381	6.384	6.374
	10 C22	6.933	6.926	6.928	6.933	6.930	6.932	6.928	6.929	6.927	6.932
	11 C24	7.460	7.459	7.457	7.448	7.450	7.452	7.445	7.458	7.451	7.455
	12 C25	7.712	7.708	7.705	7.705	7.696	7.702	7.710	7.714	7.712	7.707
	13 C26	7.953	7.943	7.953	7.953	7.951	7.951	7.951	7.941	7.943	7.949
	14 C28	8.406	8.386	8.398	8.400	8.402	8.395	8.406	8.401	8.401	8.400
$	15 Triacon Surr	6.823	8.813	8.813	8.818	8.817	8.813	8.817	8.823	8.812	8.807
	16 C32	9.185	9.178	9.180	9.181	9.181	9.183	9.184	9.184	9.183	9.181

Reviewer 1 _____ Date: 5/21/15

Reviewer 2 _____ Date: 5/21/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
17 C34	9.529	9.524	9.521	9.524	9.518	9.526	9.525	9.519	9.522	9.526
18 Filter Peak	9.658	9.654	9.655	9.655	9.657	9.657	9.657	9.652	9.651	9.656
19 C36	9.849	9.857	9.860	9.849	9.849	9.844	9.852	9.849	9.850	9.842
20 C38	10.150	10.132	10.143	10.147	10.144	10.145	10.147	10.143	10.147	10.145
21 C40	10.446	10.442	10.436	10.442	10.436	10.443	10.440	10.439	10.437	10.442
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 OR MOil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

ID:	RT11	RT12	RT13	RT14	RT15	RT16
FILENAME:	15052017	15052018	15052019	15052020	15052021	15052022
INJ.DATE:	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015
INJ.TIME:	20:15	20:36	20:58	21:19	21:40	22:01

	Compound	RT11	RT12	RT13	RT14	RT15	RT16	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	1 Toluene	+++++	+++++	1.107	+++++	1.109	+++++	1.071	0.971-1.171	1.073	0.028
	37 JET-A	+++++	+++++	+++++	+++++	+++++	+++++	1.069	1.019-1.119	+++++	+++++
	2 C8	1.249	1.244	1.292	1.295	1.294	1.283	1.288	1.188-1.388	1.269	0.017
	3 C10	2.991	2.994	2.995	2.993	3.000	2.996	2.984	2.934-3.034	2.996	0.005
	4 C12	3.968	3.963	3.964	3.968	3.967	3.967	3.970	3.920-4.020	3.967	0.003
	5 C14	4.654	4.657	4.645	4.652	4.653	4.659	4.657	4.607-4.707	4.654	0.005
	6 C16	5.240	5.240	5.244	5.241	5.247	5.245	5.245	5.195-5.295	5.244	0.004
	7 C18	5.803	5.803	5.804	5.800	5.806	5.808	5.812	5.762-5.862	5.805	0.005
$	8 o-terph	5.955	5.956	5.958	5.956	5.961	5.961	5.968	5.918-6.018	5.965	0.016
	9 C20	6.373	6.371	6.369	6.377	6.370	6.370	6.378	6.328-6.428	6.375	0.004
	10 C22	6.924	6.928	6.925	6.929	6.929	6.928	6.933	6.883-6.983	6.929	0.003
	11 C24	7.455	7.454	7.453	7.458	7.454	7.452	7.460	7.410-7.510	7.454	0.004
	12 C25	7.707	7.707	7.711	7.709	7.710	7.711	7.712	7.662-7.762	7.708	0.004
	13 C26	7.943	7.943	7.945	7.952	7.945	7.942	7.953	7.903-8.003	7.948	0.004
	14 C28	8.403	8.402	8.404	8.397	8.398	8.403	8.406	8.356-8.456	8.400	0.005
$	15 Triacon Surr	8.810	8.819	8.833	8.854	8.888	8.816	8.823	8.773-8.873	8.824	0.020
	16 C32	9.185	9.178	9.181	9.187	9.183	9.178	9.185	9.135-9.235	9.182	0.003
	17 C34	9.523	9.523	9.522	9.526	9.526	9.523	9.529	9.479-9.579	9.524	0.003
	18 Filter Peak	9.659	9.656	9.652	9.659	9.652	9.656	9.658	9.558-9.758	9.655	0.003
	19 C36	9.847	9.845	9.843	9.849	9.846	9.844	9.849	9.799-9.899	9.848	0.005

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

Compound	RT11	RT12	RT13	RT14	RT15	RT16	EXPEC RT	RT WINDOW	AVG RT	STD DEV
20 C38	10.144	10.146	10.143	10.148	10.143	10.152	10.150	10.100-10.200	10.145	0.004
21 C40	10.442	10.441	10.439	10.439	10.437	10.442	10.446	10.396-10.496	10.440	0.003
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.001	0.951-1.051	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.690	0.640-0.740	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.004	0.954-1.054	+++++	+++++
34 OR MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.003	0.953-1.053	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	1.002	0.952-1.052	+++++	+++++
38 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.705	0.655-0.755	+++++	+++++
39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.550	0.500-0.600	+++++	+++++

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052007.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-IBL1
Client ID:
Injection: 20-MAY-2015 16:42
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.071	0.000	194761	127162	GAS (Tol-C12)	1688176	68.12
C8	1.288	0.000	174654	157576	DIESEL (C12-C24)	2726471	156.59
C10	2.984	0.000	292	152	M.OIL (C24-C38)	2842290	199.18
C12	3.970	0.000	208126	198600	AK-102 (C10-C25)	3502524	174.54
C14	4.657	0.000	199965	218348	AK-103 (C25-C36)	2407743	154.34
C16	5.245	0.000	267432	371700	OR.DIES (C10-C28)	4639216	229.05
C18	5.812	0.000	432838	295563			
C20	6.378	0.000	263184	220697			
C22	6.933	0.000	263261	301632			
C24	7.460	0.000	340588	349316			
C25	7.712	0.000	366367	343173			
C26	7.953	0.000	279299	368483			
C28	8.406	0.000	314783	359152	IT.DIES (C10-C24)	3474779	173.84
C32	9.185	0.000	371051	357938			
C34	9.529	0.000	427329	371515			
Filter Peak	9.658	0.000	2047	3603			
C36	9.849	0.000	454386	391040			
C38	10.150	0.000	438443	369494			
C40	10.446	0.000	278872	376641			
o-terph	5.968	0.000	1072472	943866	JET-A (C10-C18)	2106662	128.08
Triacon Surr	8.823	0.000	894002	809023			

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	943866	43.0	95.5
Triacontane	809023	49.8	110.6

ML
5/21/15

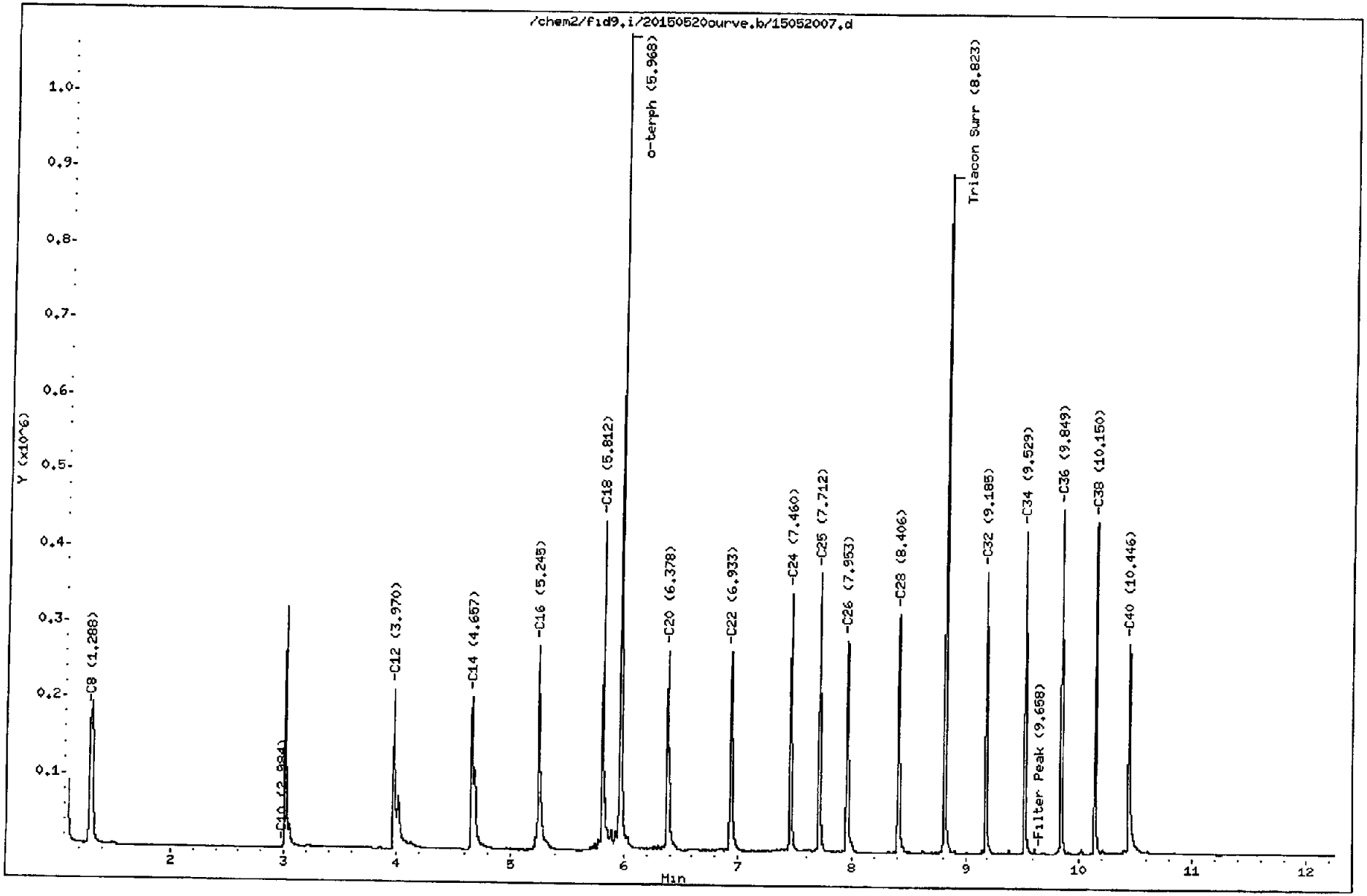
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150520curve.b/15052007.d
Date : 20-MAY-2015 16:42
Client ID:
Sample Info: SDE0049-IBL1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052008.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-IBL2
Client ID:
Injection: 20-MAY-2015 17:03
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.123	0.052	1999	7758	GAS (Tol-C12)	37887	1.53
C8	1.261	-0.026	1033	1380	DIESEL (C12-C24)	150755	8.66
C10	2.997	0.013	182	161	M.OIL (C24-C38)	224361	15.72
C12	3.965	-0.005	101	77	AK-102 (C10-C25)	161319	8.04
C14	4.660	0.003	73	27	AK-103 (C25-C36)	190449	12.21
C16	5.245	0.000	41	8	OR.DIES (C10-C28)	173769	8.58
C18	5.804	-0.007	160	98			
C20	6.374	-0.004	903	282			
C22	6.926	-0.007	141	100			
C24	7.459	-0.002	60	26			
C25	7.708	-0.005	86	44			
C26	7.943	-0.010	155	130			
C28	8.386	-0.020	306	137	IT.DIES (C10-C24)	159731	7.99
C32	9.178	-0.006	1567	1130			
C34	9.524	-0.006	1106	723			
Filter Peak	9.654	-0.003	1183	443			
C36	9.857	0.008	1309	260			
C38	10.132	-0.018	1890	4615			
C40	10.442	-0.004	2318	1469			
o-terph	5.962	-0.006	1111336	967013	JET-A (C10-C18)	23069	1.40
Triacon Surr	8.813	-0.010	734566	730596			

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	967013	44.0	97.9
Triacontane	730596	45.0	99.9

mc
5/21/15

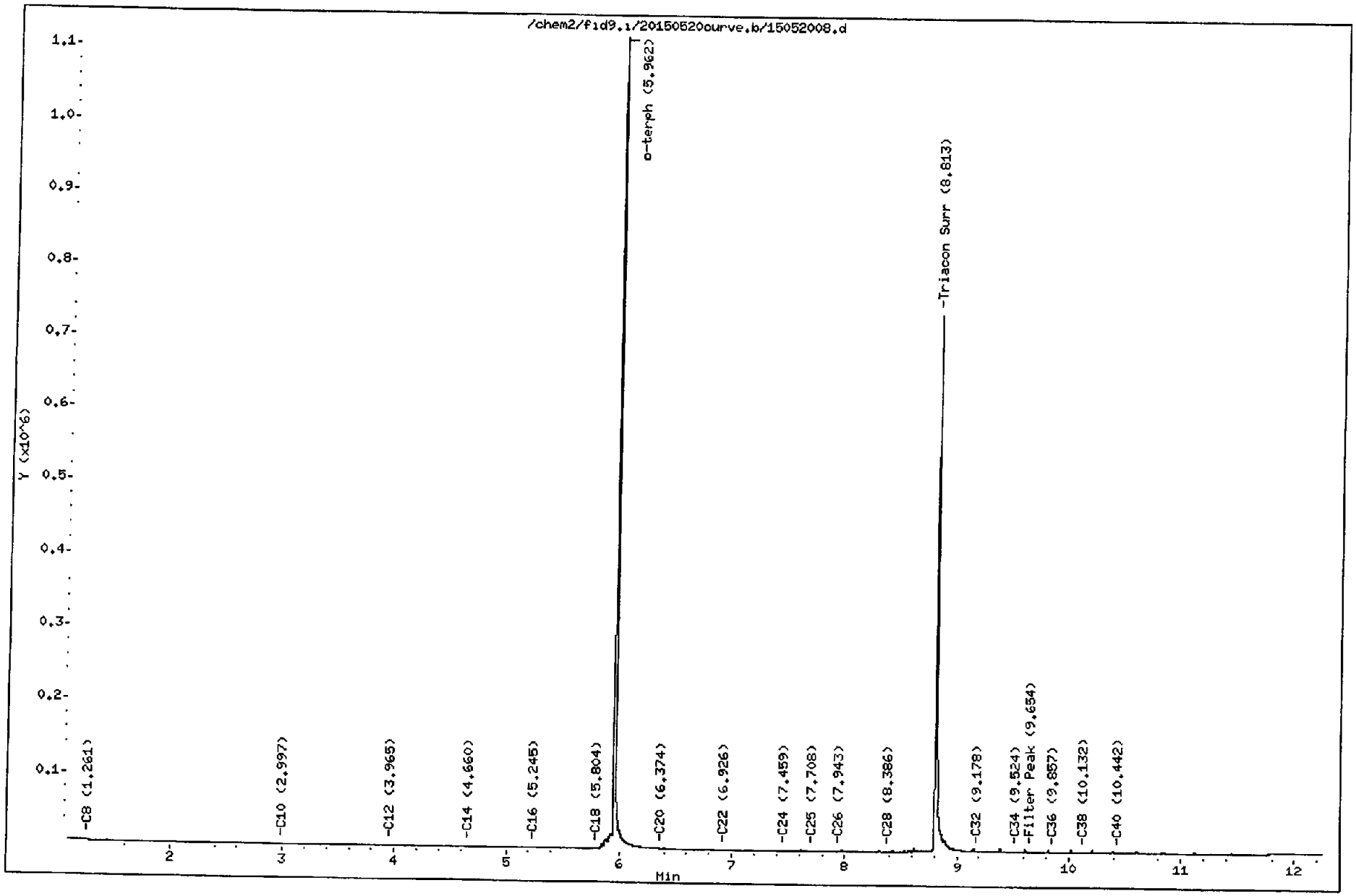
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150520curve.b/15052008.d
Date : 20-MAY-2015 17:03
Client ID:
Sample Info: SDE0049-IBL2

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052009.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL1
Client ID:
Injection: 20-MAY-2015 17:25
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.073	0.002	2852	4711	GAS (Tol-C12)	174943	7.06
C8	1.254	-0.034	1413	3465	DIESEL (C12-C24)	933009	53.58
C10	3.004	0.021	740	918	M.OIL (C24-C38)	145802	10.22
C12	3.963	-0.006	2791	1547	AK-102 (C10-C25)	1049774	52.31 M
C14	4.659	0.002	5649	2740	AK-103 (C25-C36)	111866	7.17
C16	5.254	0.009	8267	13292	OR.DIES (C10-C28)	1070135	52.84 M
C18	5.807	-0.004	8517	14024			
C20	6.375	-0.004	3559	2156			
C22	6.928	-0.005	1777	1050			
C24	7.457	-0.003	777	640			
C25	7.705	-0.007	522	465			
C26	7.953	-0.001	366	199			
C28	8.398	-0.008	157	128	IT.DIES (C10-C24)	1044028	52.23 M
C32	9.180	-0.005	338	272			
C34	9.521	-0.008	509	187			
Filter Peak	9.655	-0.003	642	315			
C36	9.860	0.011	875	450			
C38	10.143	-0.007	1303	721			
C40	10.436	-0.010	1914	2335			
o-terph	5.952	-0.016	168239	172831	JET-A (C10-C18)	731302	44.46
Triacon Surr	8.813	-0.010	187	96			

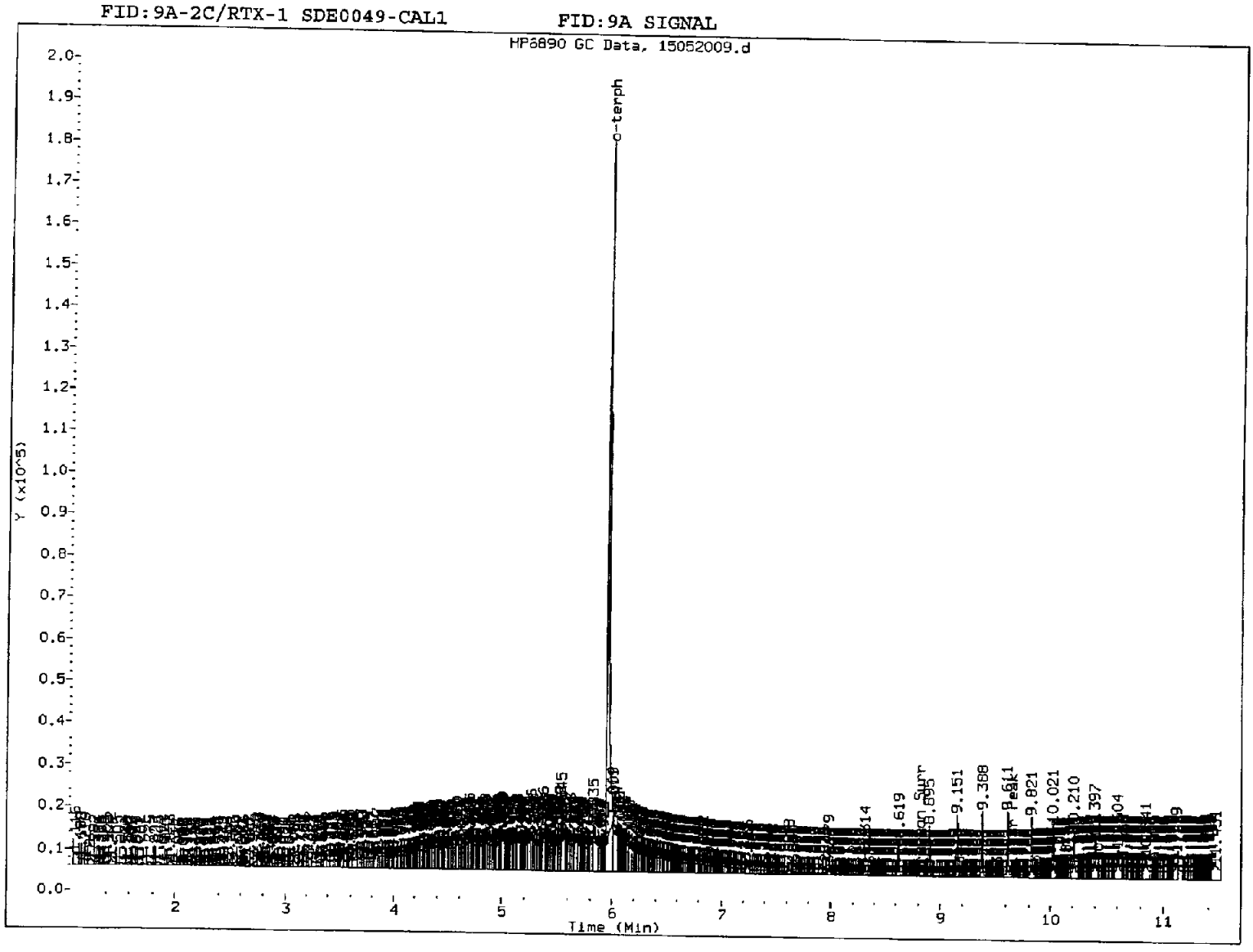
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	172831	7.9	17.5
Triacontane	96	0.0	0.0

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

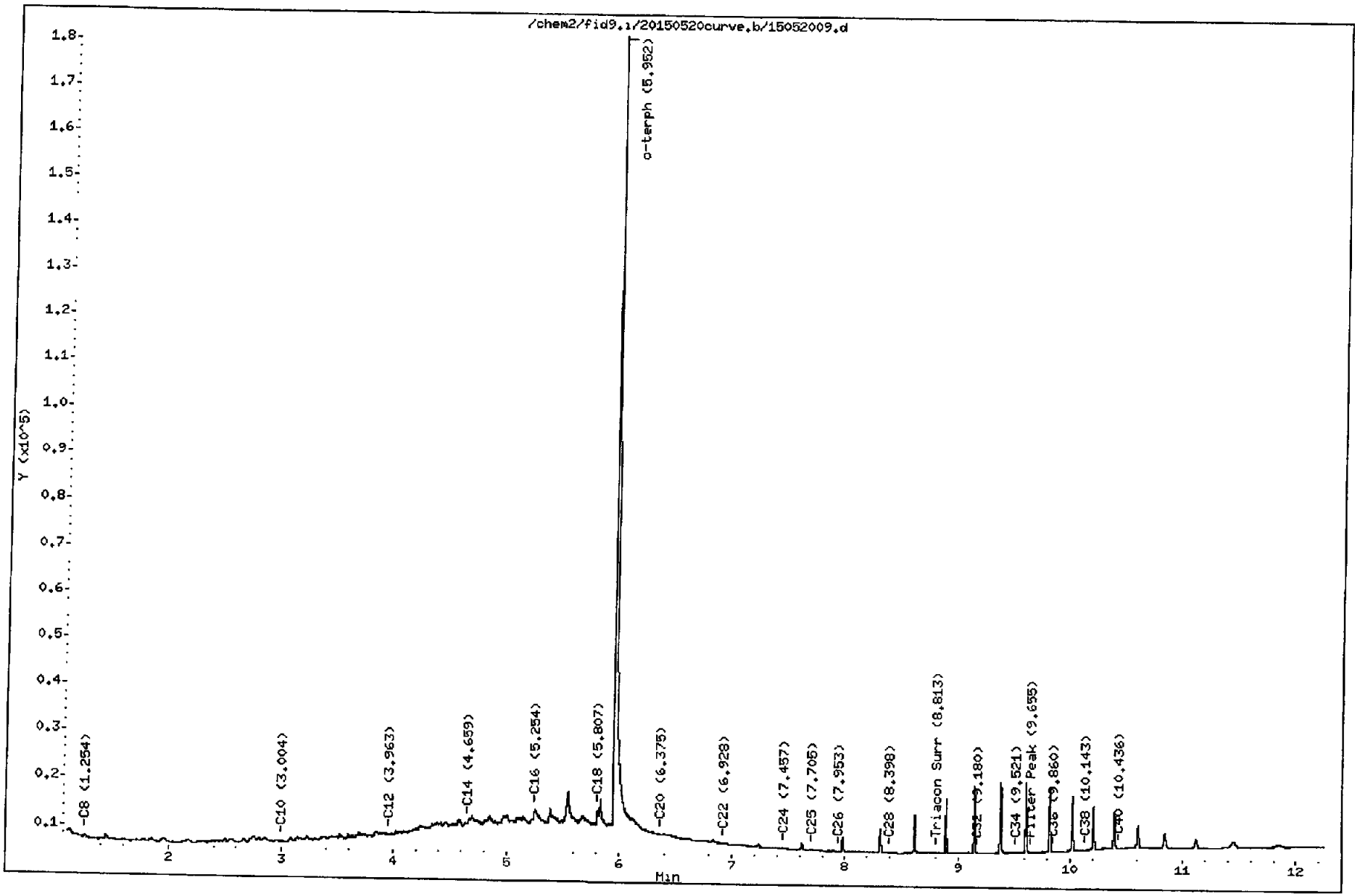
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052009.d
Date : 20-MAY-2015 17:25
Client ID:
Sample Info: SDE0049-CAL1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052010.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL2
Client ID:
Injection: 20-MAY-2015 17:46
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.075	0.004	7971	15416	GAS (Tol-C12)	478645	19.31	
C8	1.261	-0.027	4638	15022	DIESEL (C12-C24)	1777224	102.07	
C10	3.007	0.023	2198	2926	M.OIL (C24-C38)	68264	4.78	
C12	3.973	0.003	6695	14071	AK-102 (C10-C25)	2042473	101.78	M
C14	4.645	-0.013	11047	6582	AK-103 (C25-C36)	41857	2.68	
C16	5.244	0.000	20294	13181	OR.DIES (C10-C28)	2059611	101.69	M
C18	5.805	-0.007	26699	38091				
C20	6.377	-0.001	6715	3402				
C22	6.933	0.000	2962	585				
C24	7.448	-0.012	1306	1060				
C25	7.705	-0.008	793	513				
C26	7.953	0.000	464	447				
C28	8.400	-0.005	140	25	IT.DIES (C10-C24)	2032938	101.71	M
C32	9.181	-0.004	107	59				
C34	9.524	-0.005	268	109				
Filter Peak	9.655	-0.003	393	100				
C36	9.849	0.000	623	392				
C38	10.147	-0.003	1065	357				
C40	10.442	-0.003	1589	314				
o-terph	5.956	-0.012	487003	396783	JET-A (C10-C18)	1498305	91.09	
Triacon Surr	8.818	-0.005	35	18				

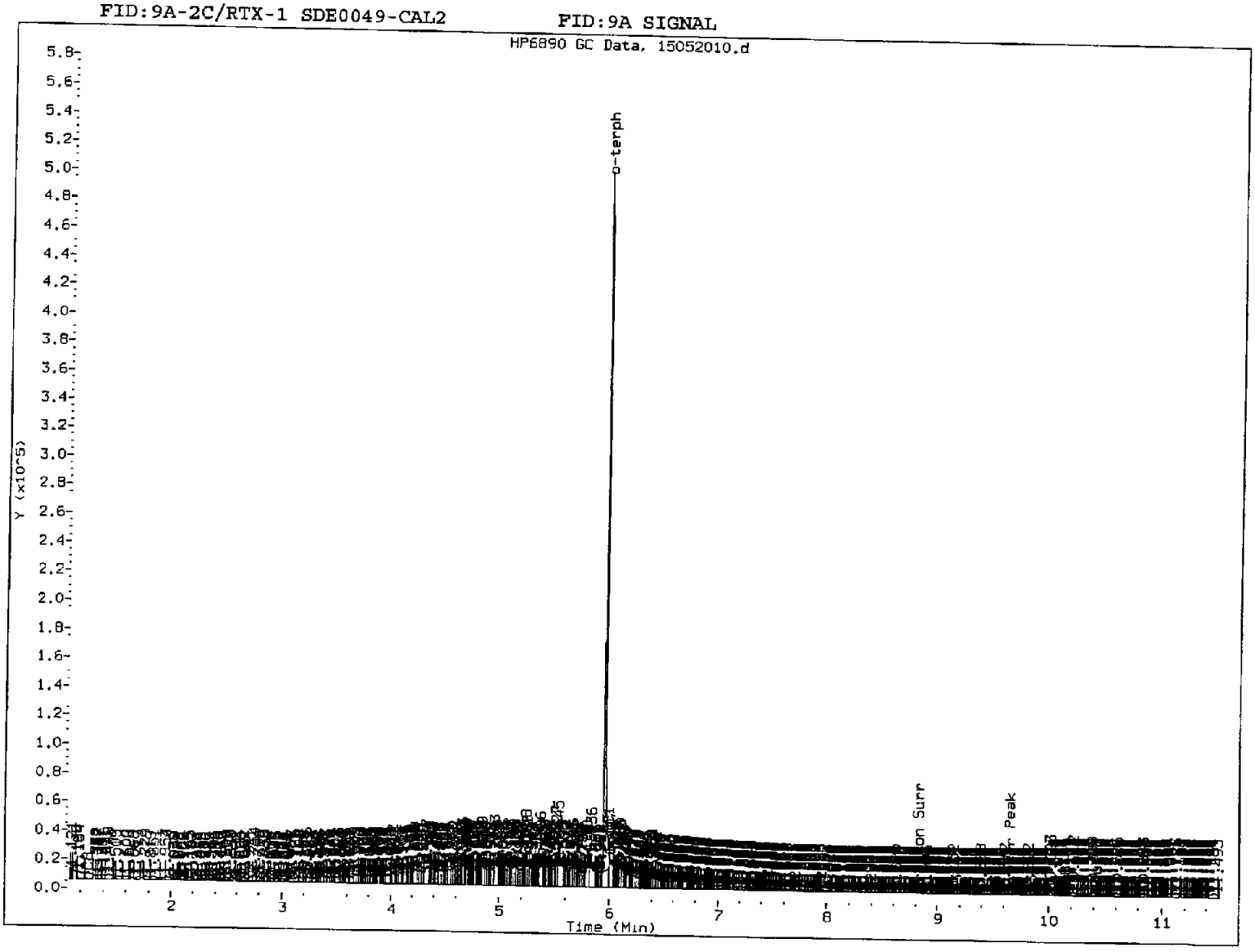
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	396783	18.1	40.2
Triacontane	18	0.0	0.0

MC
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

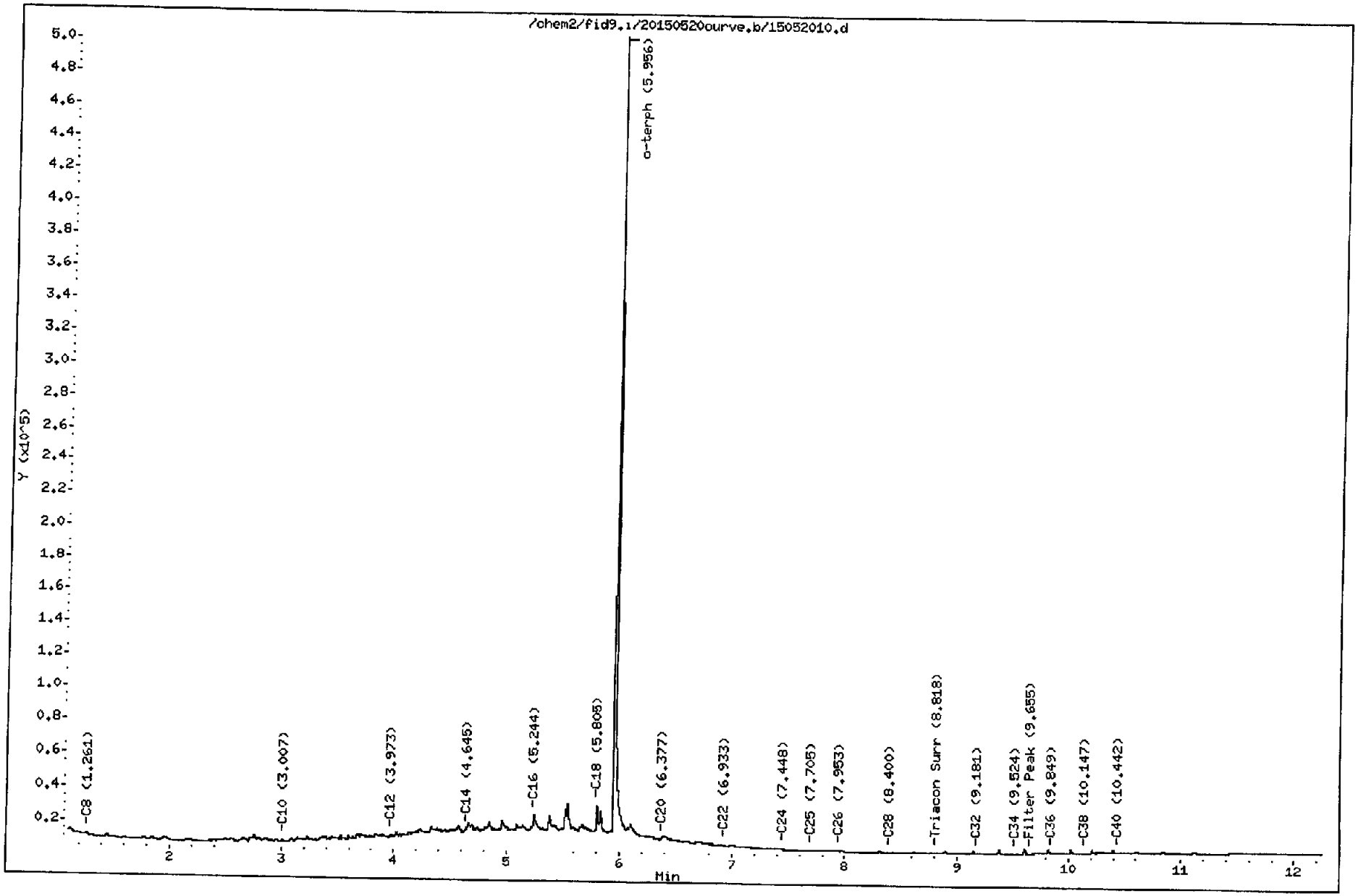
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052010.d
Date : 20-MAY-2015 17:46
Client ID:
Sample Info: SDE0049-CAL2

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052011.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL3
Client ID:
Injection: 20-MAY-2015 18:08
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.046	-0.025	5888	10045	GAS (Tol-C12)	891273	35.96	
C8	1.259	-0.028	4619	7725	DIESEL (C12-C24)	4116382	236.41	
C10	3.000	0.016	5892	9432	M.OIL (C24-C38)	92656	6.49	
C12	3.970	0.000	19930	35472	AK-102 (C10-C25)	4729550	235.69	M
C14	4.654	-0.003	42419	52224	AK-103 (C25-C36)	58375	3.74	
C16	5.241	-0.003	70851	115679	OR.DIES (C10-C28)	4767041	235.36	M
C18	5.804	-0.008	88321	104663				
C20	6.379	0.001	29684	71055				
C22	6.930	-0.003	6504	2546				
C24	7.450	-0.010	2617	1178				
C25	7.696	-0.017	1680	2287				
C26	7.951	-0.002	960	833				
C28	8.402	-0.003	306	197	IT.DIES (C10-C24)	4709890	235.64	M
C32	9.181	-0.004	95	35				
C34	9.518	-0.011	184	122				
Filter Peak	9.657	0.000	317	172				
C36	9.849	0.000	508	100				
C38	10.144	-0.006	934	620				
C40	10.436	-0.009	1463	405				
o-terph	5.966	-0.002	1234896	995554	JET-A (C10-C18)	3546413	215.61	
Triacon Surr	8.817	-0.006	40	12				

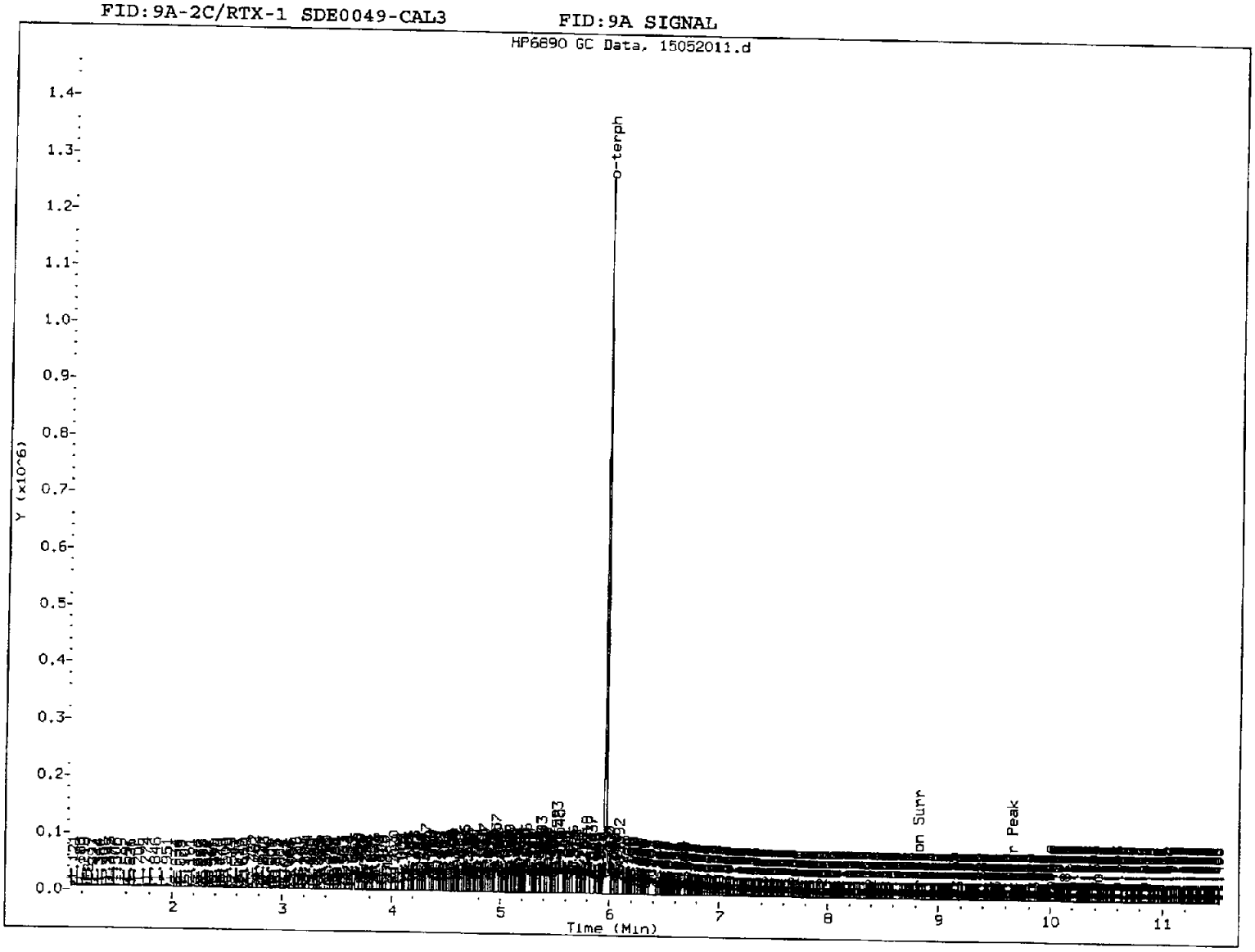
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	995554	45.3	100.8
Triacontane	12	0.0	0.0

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL3 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

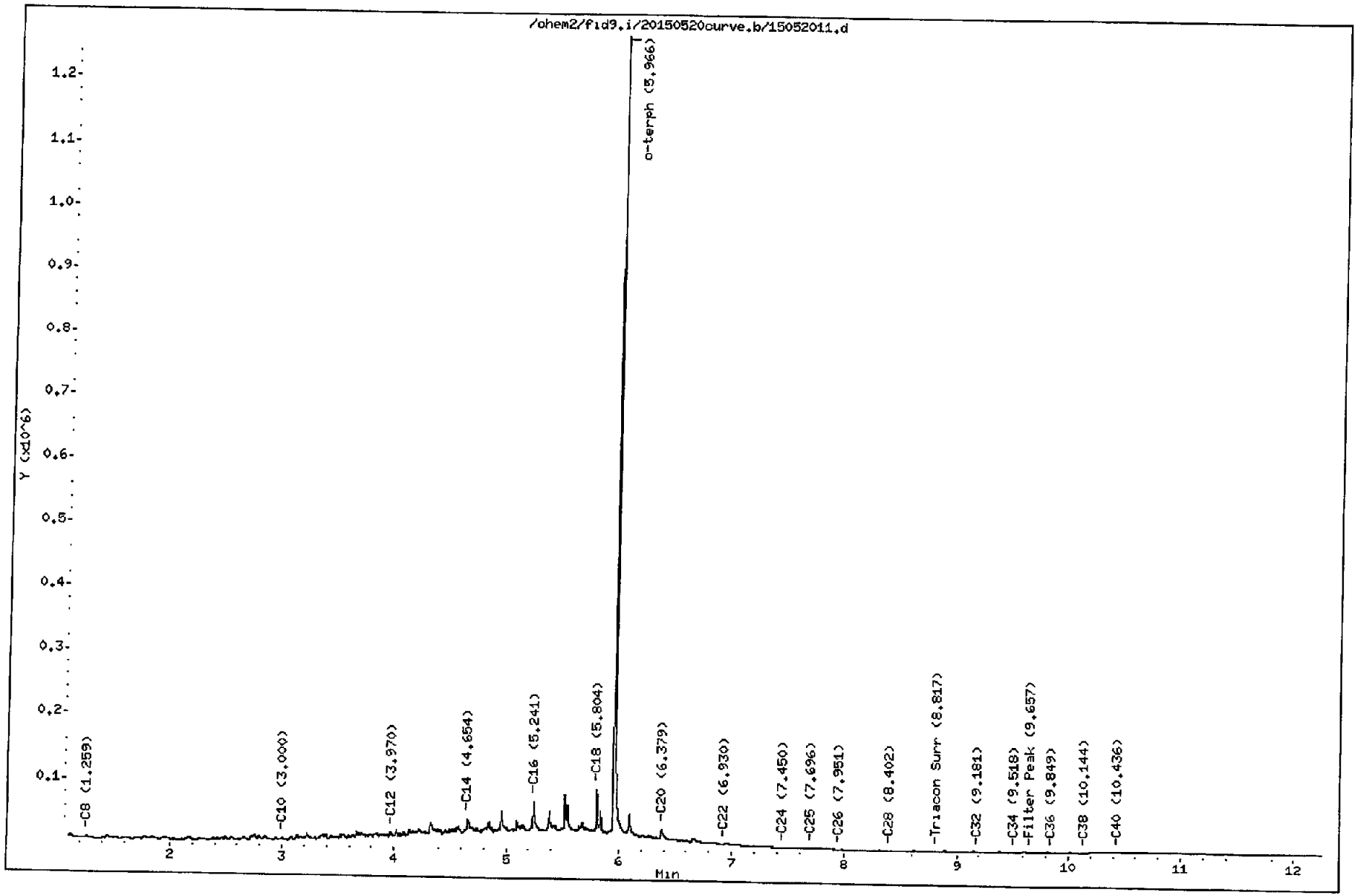
Analyst: _____ Date: _____

Data File: /chem2/fid9.i/20150520curve.b/15052011.d
Date : 20-MAY-2015 18:08
Client ID:
Sample Info: SDE0049-CAL3

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052012.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL4
Client ID:
Injection: 20-MAY-2015 18:29
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.052	-0.019	13367	24628	GAS (Tol-C12)	2175177	87.77
C8	1.263	-0.025	10489	21711	DIESEL (C12-C24)	8489118	487.54
C10	2.996	0.012	17430	41128	M.OIL (C24-C38)	135071	9.47
C12	3.965	-0.005	54944	78905	AK-102 (C10-C25)	9914056	494.05 M
C14	4.651	-0.006	115080	177081	AK-103 (C25-C36)	88254	5.66
C16	5.239	-0.005	177892	186149	OR.DIES (C10-C28)	9982488	492.87 M
C18	5.805	-0.007	204432	234043			
C20	6.373	-0.005	82787	142456			
C22	6.932	-0.001	24340	60821			
C24	7.452	-0.009	4766	2055			
C25	7.702	-0.010	2958	1809			
C26	7.951	-0.002	1800	1343			
C28	8.395	-0.011	558	462	IT.DIES (C10-C24)	9880216	494.31 M
C32	9.183	-0.001	58	34			
C34	9.526	-0.003	122	85			
Filter Peak	9.657	0.000	214	101			
C36	9.844	-0.005	404	211			
C38	10.145	-0.005	810	287			
C40	10.443	-0.003	1293	1274			
o-terph	5.973	0.005	1843497	2009161	JET-A (C10-C18)	7517917	457.07
Triacon Surr	8.813	-0.010	105	45			

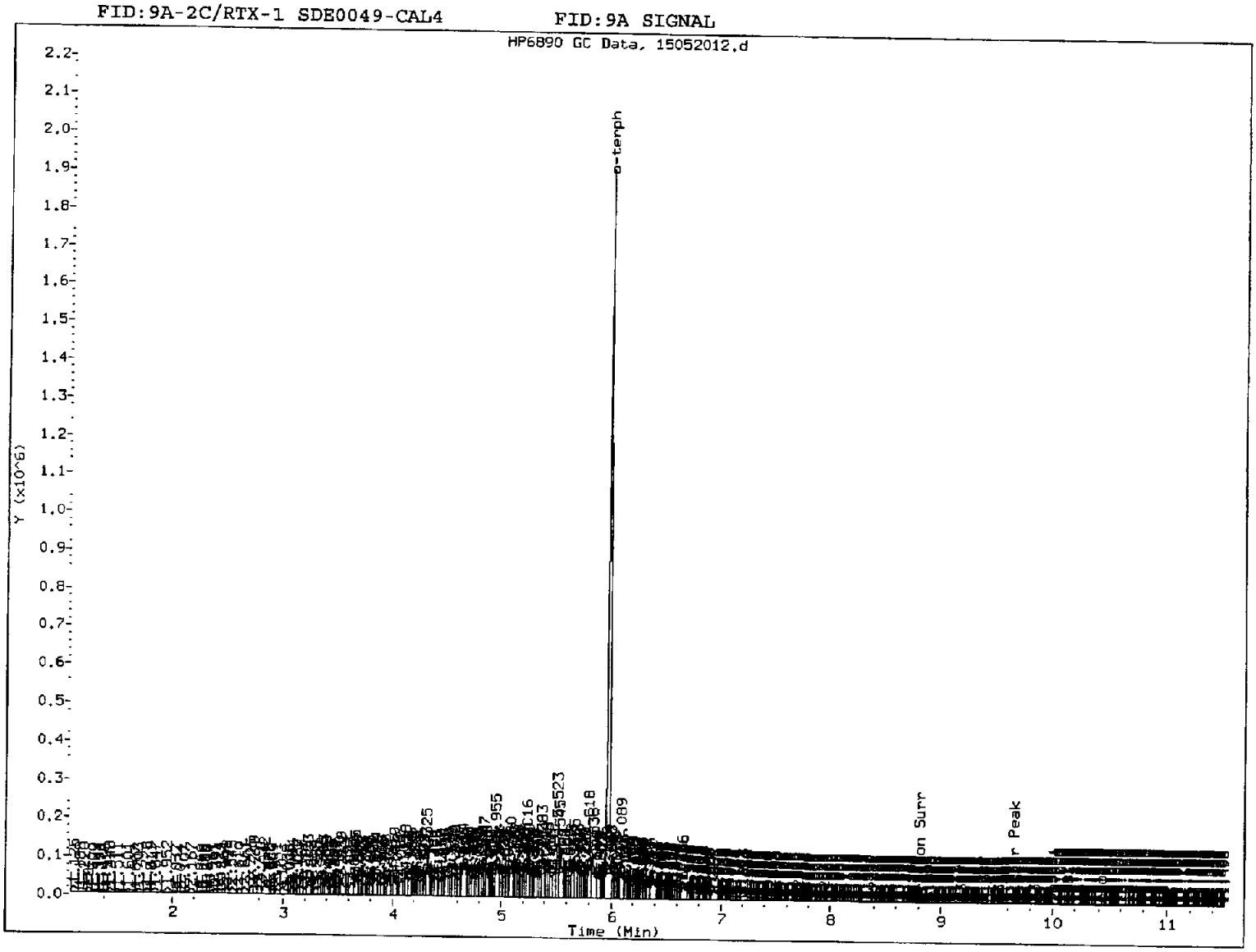
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2009161	91.5	203.4
Triacontane	45	0.0	0.0

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL4 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

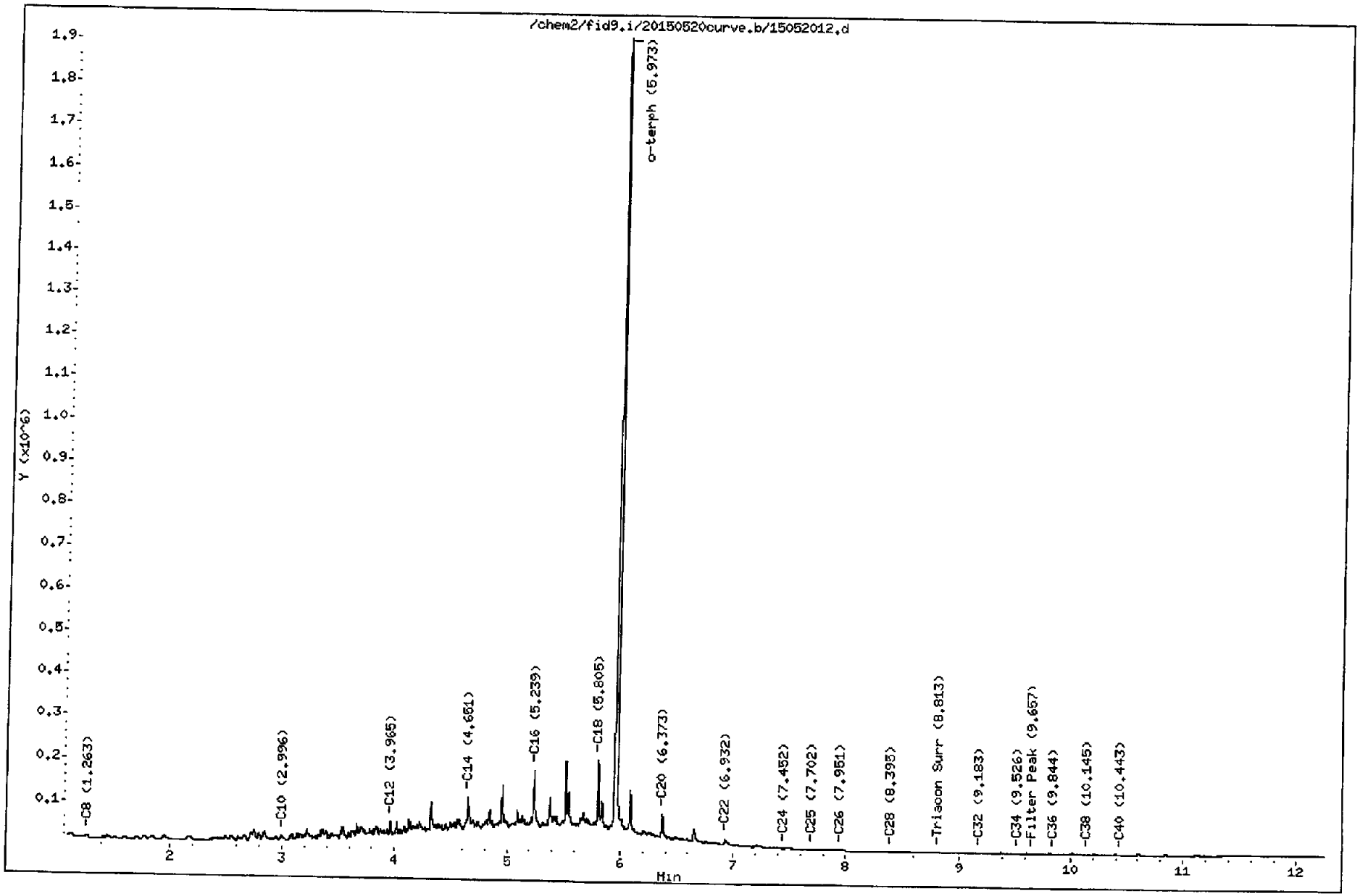
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052012.d
Date : 20-MAY-2015 18:29
Client ID:
Sample Info: SDE0049-CAL4

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052013.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL5
Client ID:
Injection: 20-MAY-2015 18:50
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.047	-0.024	14126	19199	GAS (Tol-C12)	4010341	161.82	
C8	1.260	-0.028	17516	23932	DIESEL (C12-C24)	17514821	1005.91	✓
C10	2.992	0.008	44059	97668	M.OIL (C24-C38)	249055	17.45	
C12	3.964	-0.005	130376	167920	AK-102 (C10-C25)	20368990	1015.05	M
C14	4.652	-0.005	263037	305709	AK-103 (C25-C36)	175145	11.23	
C16	5.243	-0.001	415175	388605	OR.DIES (C10-C28)	20504578	1012.37	M
C18	5.811	0.000	398159	471841				
C20	6.374	-0.004	207081	279006				
C22	6.928	-0.005	69246	118346				
C24	7.445	-0.015	9383	3874				
C25	7.710	-0.002	5677	2961				
C26	7.951	-0.002	3190	1935				
C28	8.406	0.000	1025	1146	IT.DIES (C10-C24)	20308655	1016.04	M
C32	9.184	-0.001	76	30				
C34	9.525	-0.004	58	11				
Filter Peak	9.657	0.000	158	51				
C36	9.852	0.003	329	162				
C38	10.147	-0.004	674	315				
C40	10.440	-0.006	1164	850				
o-terph	5.989	0.021	2860351	4134206	JET-A (C10-C18)	15620949	949.72	
Triacon Surr	8.817	-0.006	257	74				

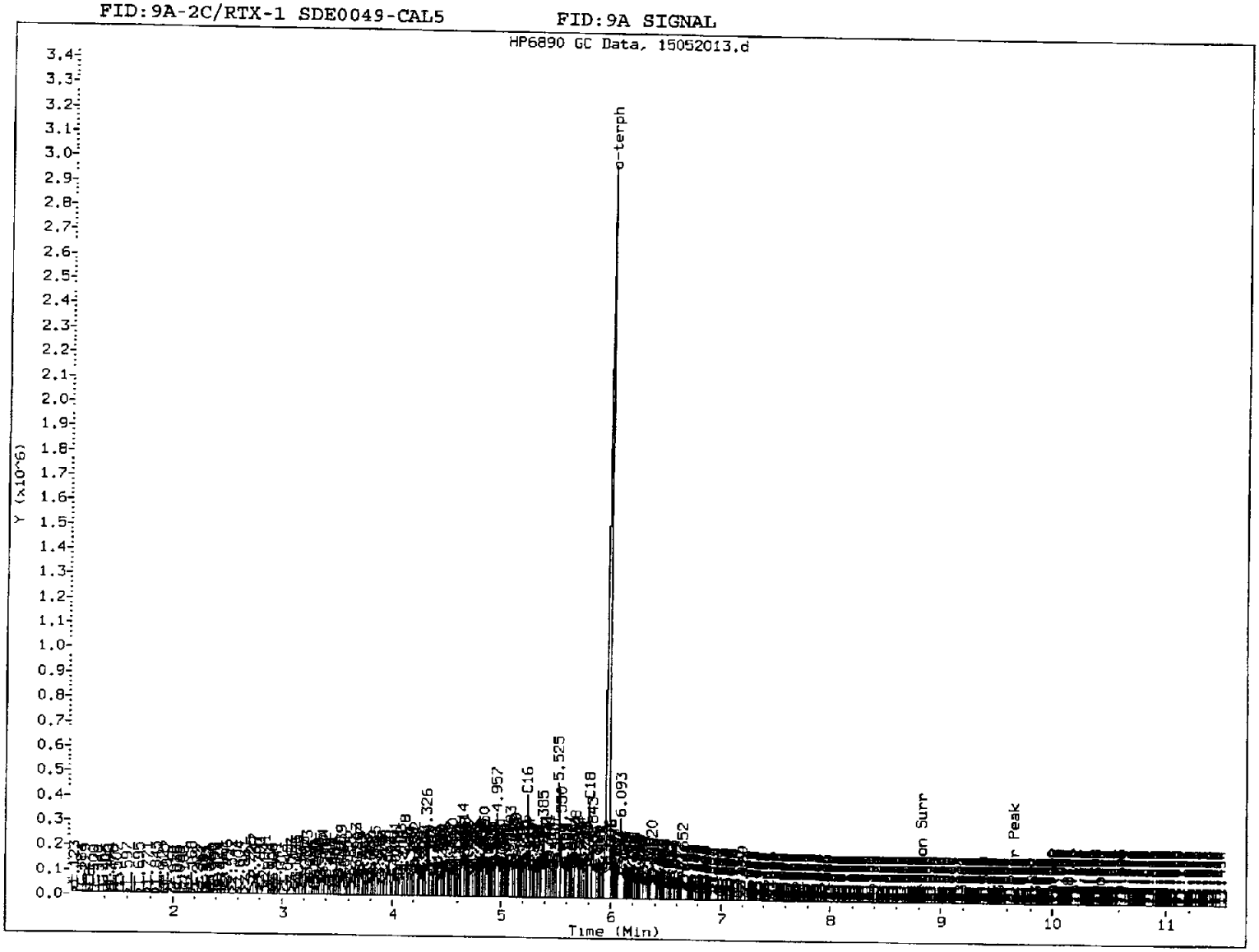
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec	
o-Terphenyl	4134206	188.3	418.5	✓
Triacontane	74	0.0	0.0	

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL5 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

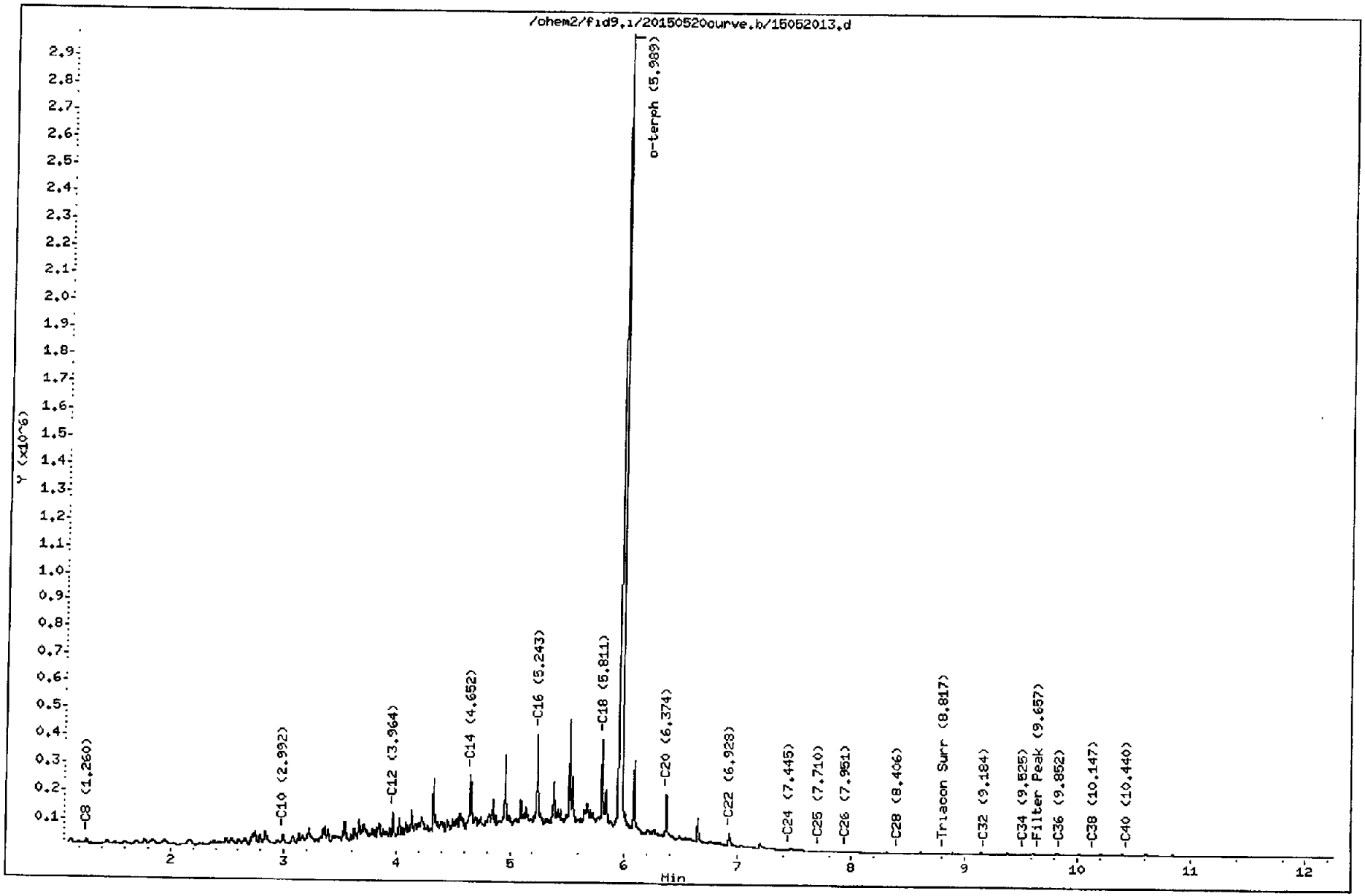
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052013.d
Date : 20-MAY-2015 18:50
Client ID:
Sample Info: SDE0049-CAL5

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052014.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL6
Client ID:
Injection: 20-MAY-2015 19:12
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.049	-0.022	28094	35216	GAS (Tol-C12)	9849625	397.44
C8	1.261	-0.026	36948	54803	DIESEL (C12-C24)	42698301	2452.23
C10	2.994	0.010	128984	234973	M.OIL (C24-C38)	489315	34.29
C12	3.968	-0.002	331632	437505	AK-102 (C10-C25)	49661261	2474.77 M
C14	4.660	0.002	618881	810329	AK-103 (C25-C36)	341847	21.91
C16	5.250	0.005	984411	972988	OR.DIES (C10-C28)	49962821	2466.81 M
C18	5.792	-0.019	312196	294527			
C20	6.381	0.003	525093	591484			
C22	6.929	-0.004	220606	262696			
C24	7.458	-0.003	53532	87416			
C25	7.714	0.001	21595	52057			
C26	7.941	-0.012	6995	1377			
C28	8.401	-0.005	2253	1404	IT.DIES (C10-C24)	49521618	2477.57 M
C32	9.184	-0.001	183	143			
C34	9.519	-0.010	41	18			
Filter Peak	9.652	-0.006	88	47			
C36	9.849	0.000	194	164			
C38	10.143	-0.007	492	86			
C40	10.439	-0.007	913	743			
o-terph	6.015	0.047	4684553	10378899	JET-A (C10-C18)	38179793	2321.24
Triacon Surr	8.823	0.000	623	418			

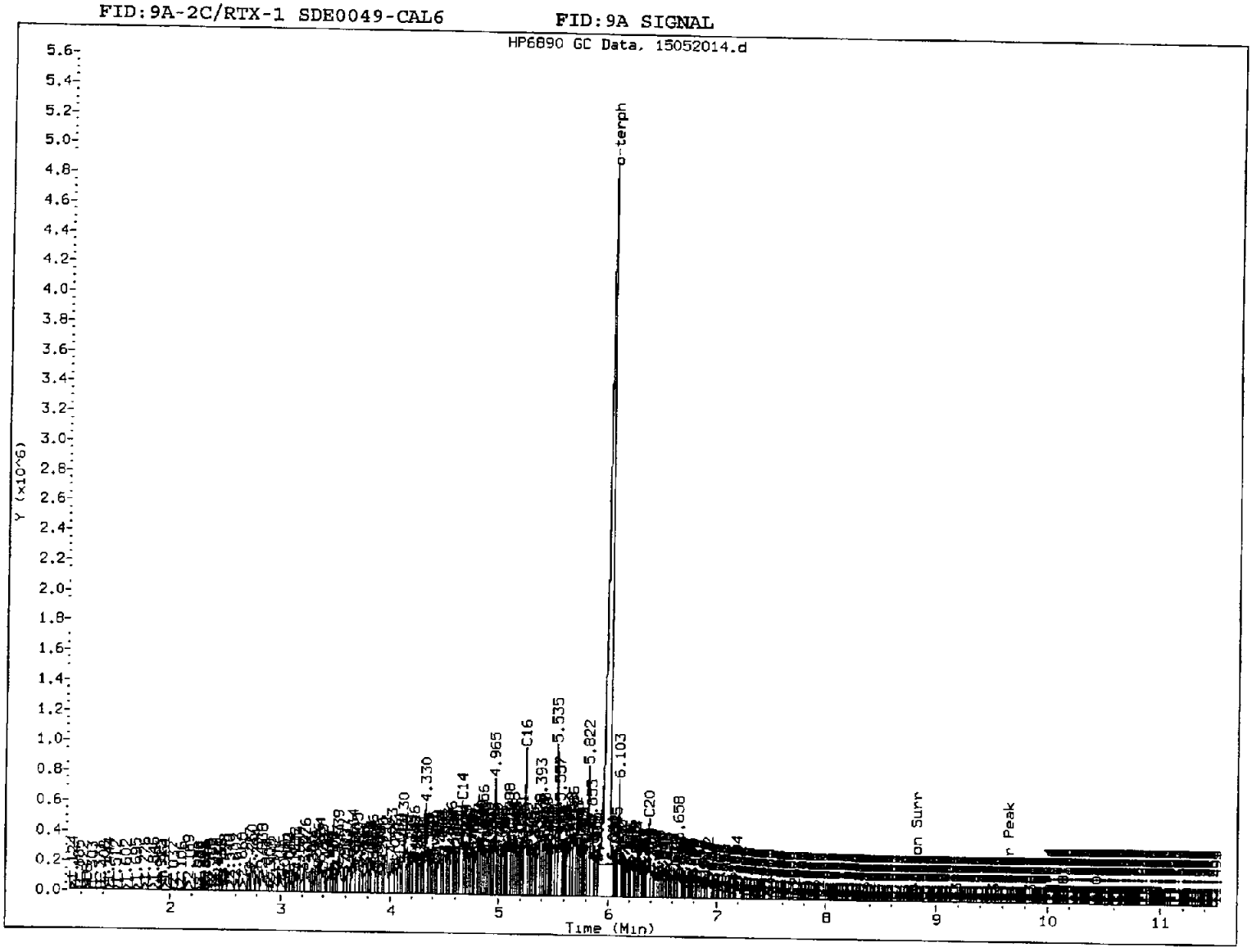
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	10378899	472.7	1050.6
Triacontane	418	0.0	0.1

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL6 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

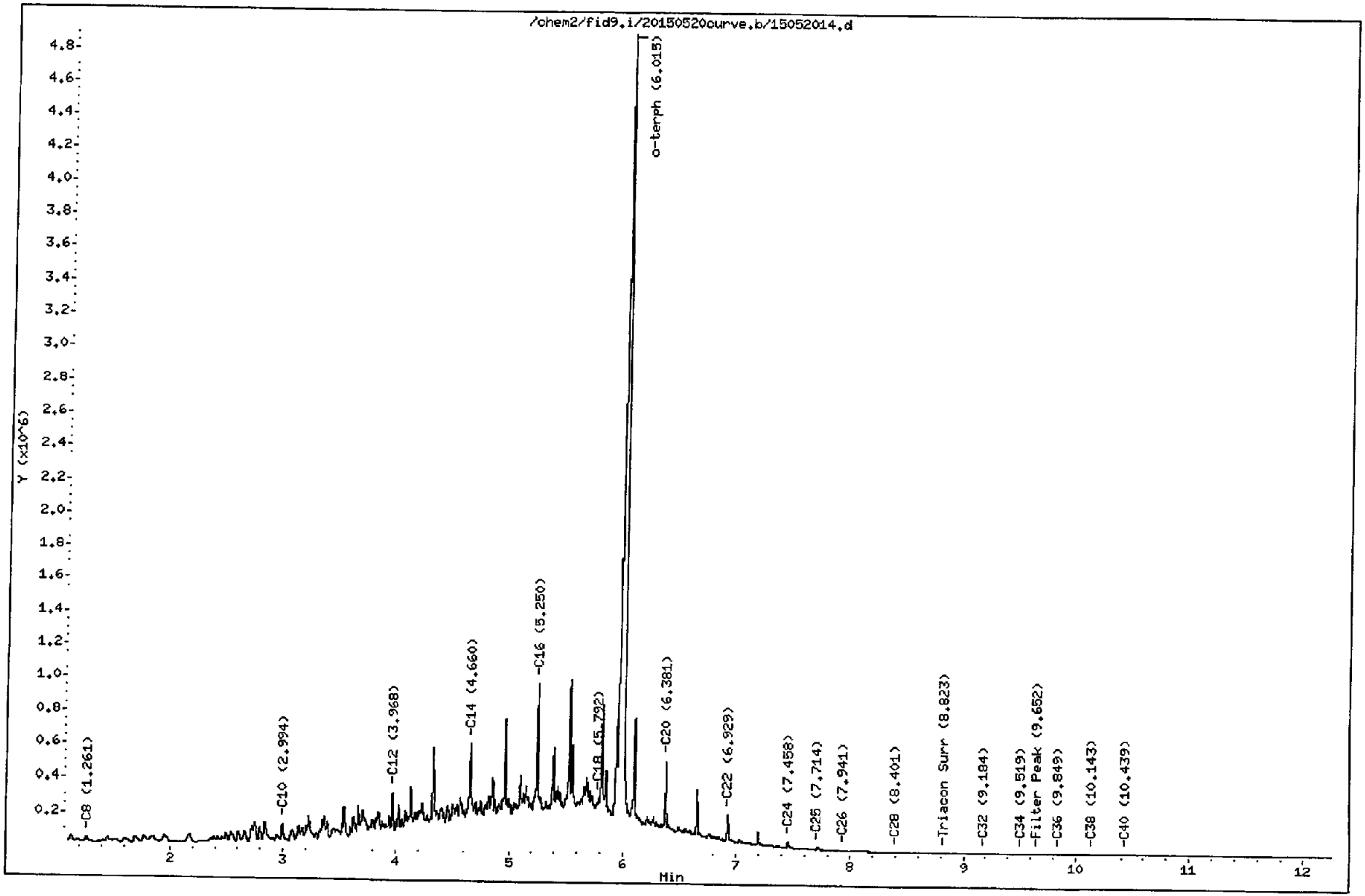
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052014.d
Date : 20-MAY-2015 19:12
Client ID:
Sample Info: SDE0049-CAL6

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052015.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-SCV1
Client ID:
Injection: 20-MAY-2015 19:33
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.049	-0.022	12691	21145	GAS (Tol-C12)	1273662	51.39
C8	1.261	-0.027	13298	24776	DIESEL (C12-C24)	3970818	228.05
C10	2.996	0.012	18041	32707	M.OIL (C24-C38)	105345	7.38
C12	3.964	-0.006	48481	66839	AK-102 (C10-C25)	4859194	242.15 M
C14	4.651	-0.007	65130	120718	AK-103 (C25-C36)	72106	4.62
C16	5.240	-0.005	62216	115265	OR.DIES (C10-C28)	4880509	240.97 M
C18	5.804	-0.008	58930	72525			
C20	6.384	0.005	17853	35741			
C22	6.927	-0.006	4456	3311			
C24	7.451	-0.010	1462	578			
C25	7.712	-0.001	854	522			
C26	7.943	-0.010	537	595			
C28	8.401	-0.005	113	59	IT.DIES (C10-C24)	4847419	242.52 M
C32	9.183	-0.002	93	59			
C34	9.522	-0.008	199	92			
Filter Peak	9.651	-0.007	296	196			
C36	9.850	0.001	472	415			
C38	10.147	-0.004	883	623			
C40	10.437	-0.009	1448	1304			
o-terph	5.964	-0.004	1190952	940892	JET-A (C10-C18)	3904207	237.37
Triacon Surr	8.812	-0.011	80	30			

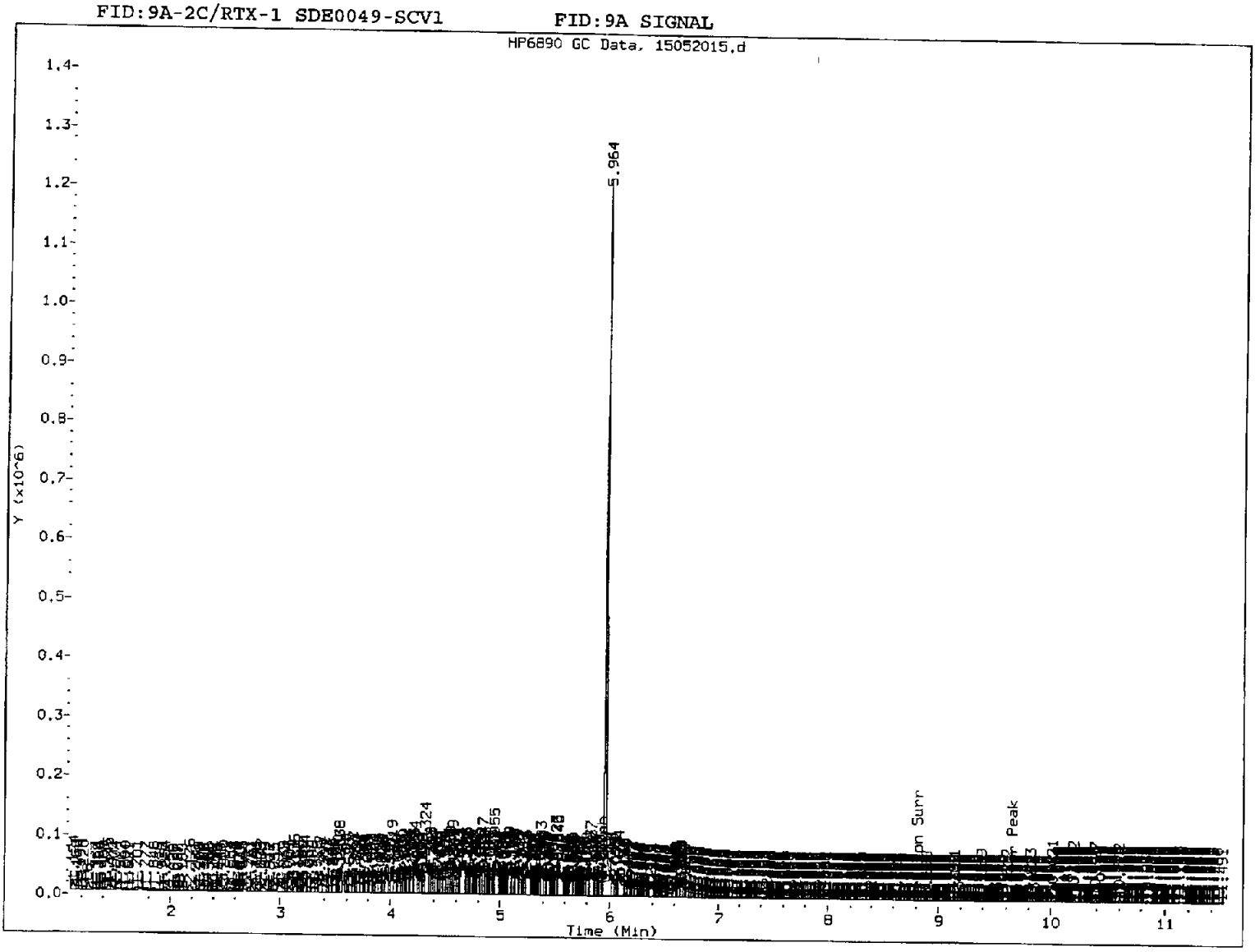
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	940892	42.9	95.2
Triacontane	30	0.0	0.0

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-SCV1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

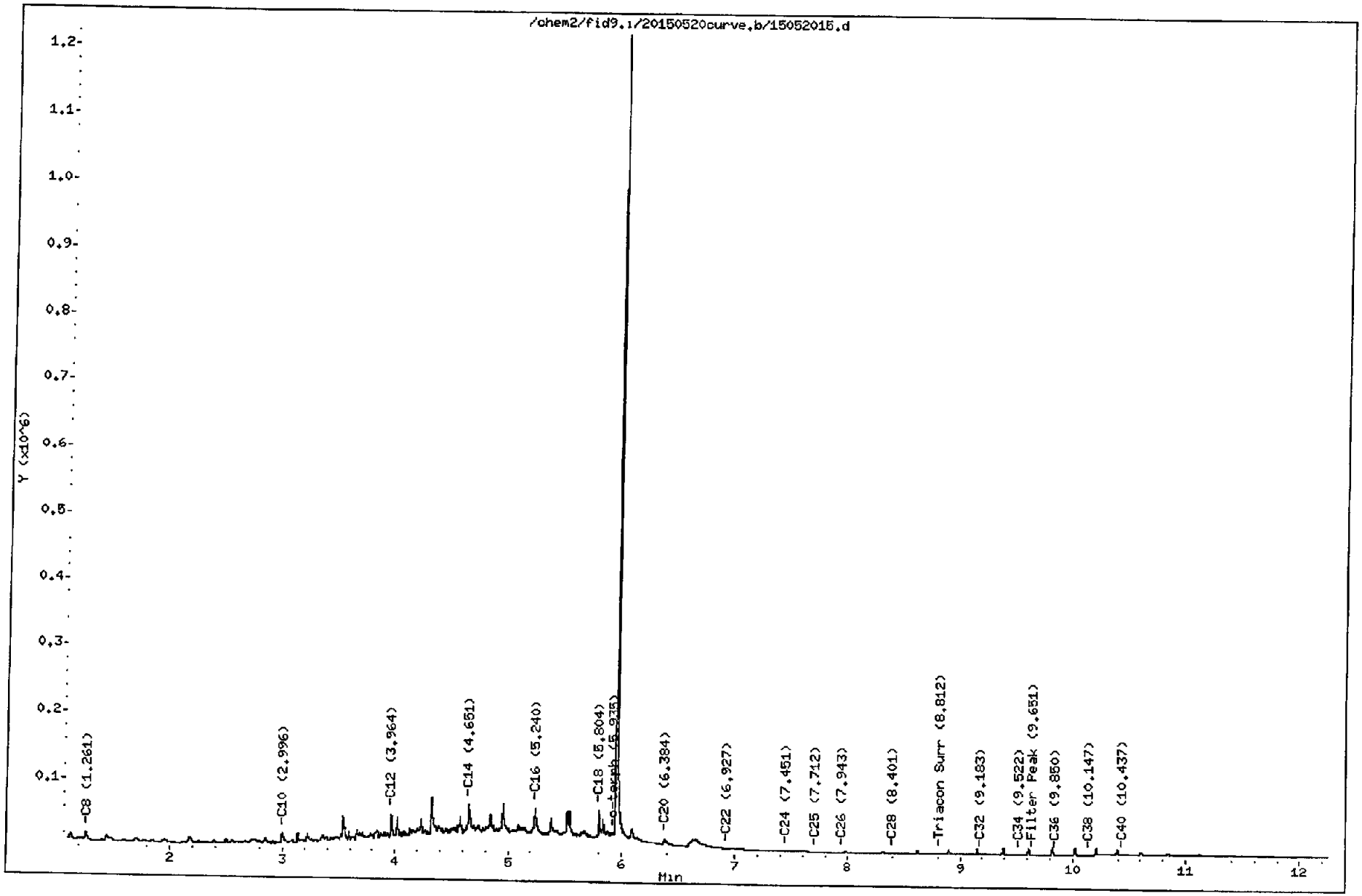
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052015.d
Date : 20-MAY-2015 19:33
Client ID:
Sample Info: SDE0049-SCV1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052016.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL7
Client ID:
Injection: 20-MAY-2015 19:54
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	43633	2
C8	1.287	-0.001	1295	1017	DIESEL (C12-C24)	144802	8.32
C10	2.999	0.015	167	152	M.OIL (C24-C38)	1510523	105.85
C12	3.972	0.002	54	23	AK-102 (C10-C25)	207678	10.35
C14	4.655	-0.002	66	22	AK-103 (C25-C36)	1267817	81.27 M
C16	5.241	-0.004	64	39	OR.DIES (C10-C28)	560672	27.68
C18	5.807	-0.004	124	45			
C20	6.374	-0.004	292	167			
C22	6.932	-0.001	1261	415			
C24	7.455	-0.006	5003	1473			
C25	7.707	-0.006	6518	2446			
C26	7.949	-0.005	7532	3813			
C28	8.400	-0.006	8773	3962	IT.DIES (C10-C24)	152142	7.61
C32	9.181	-0.004	11724	8036			
C34	9.526	-0.003	11189	2887			
Filter Peak	9.656	-0.002	10882	5391			
C36	9.842	-0.007	10551	7404			
C38	10.145	-0.005	10443	5925			
C40	10.442	-0.003	8542	7239			
o-terph	5.955	-0.013	320	290	JET-A (C10-C18)	15844	0.96
Triacon Surr	8.807	-0.016	117096	127492			

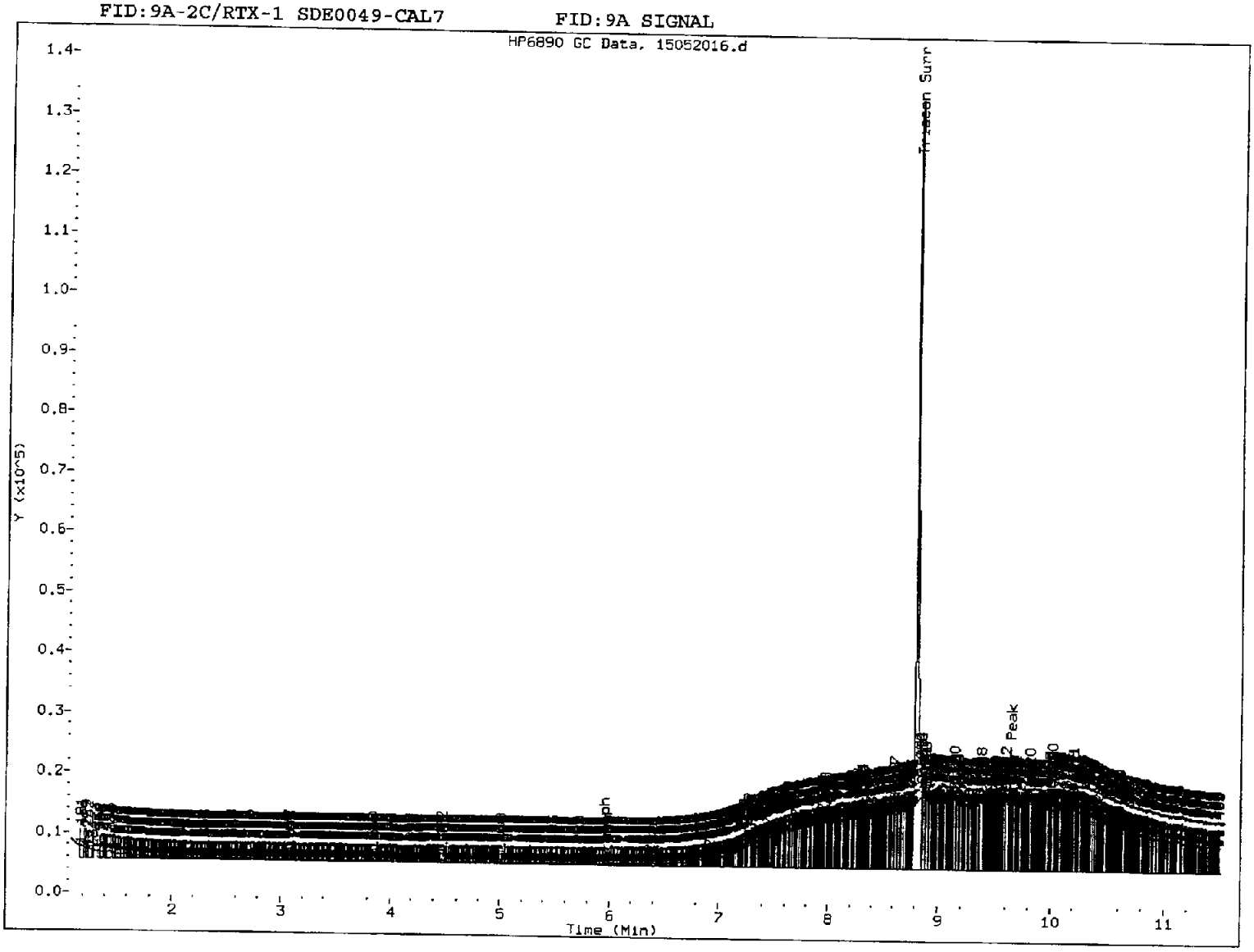
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	290	0.0	0.0
Triacontane	127492	7.8	17.4

MC
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL7 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

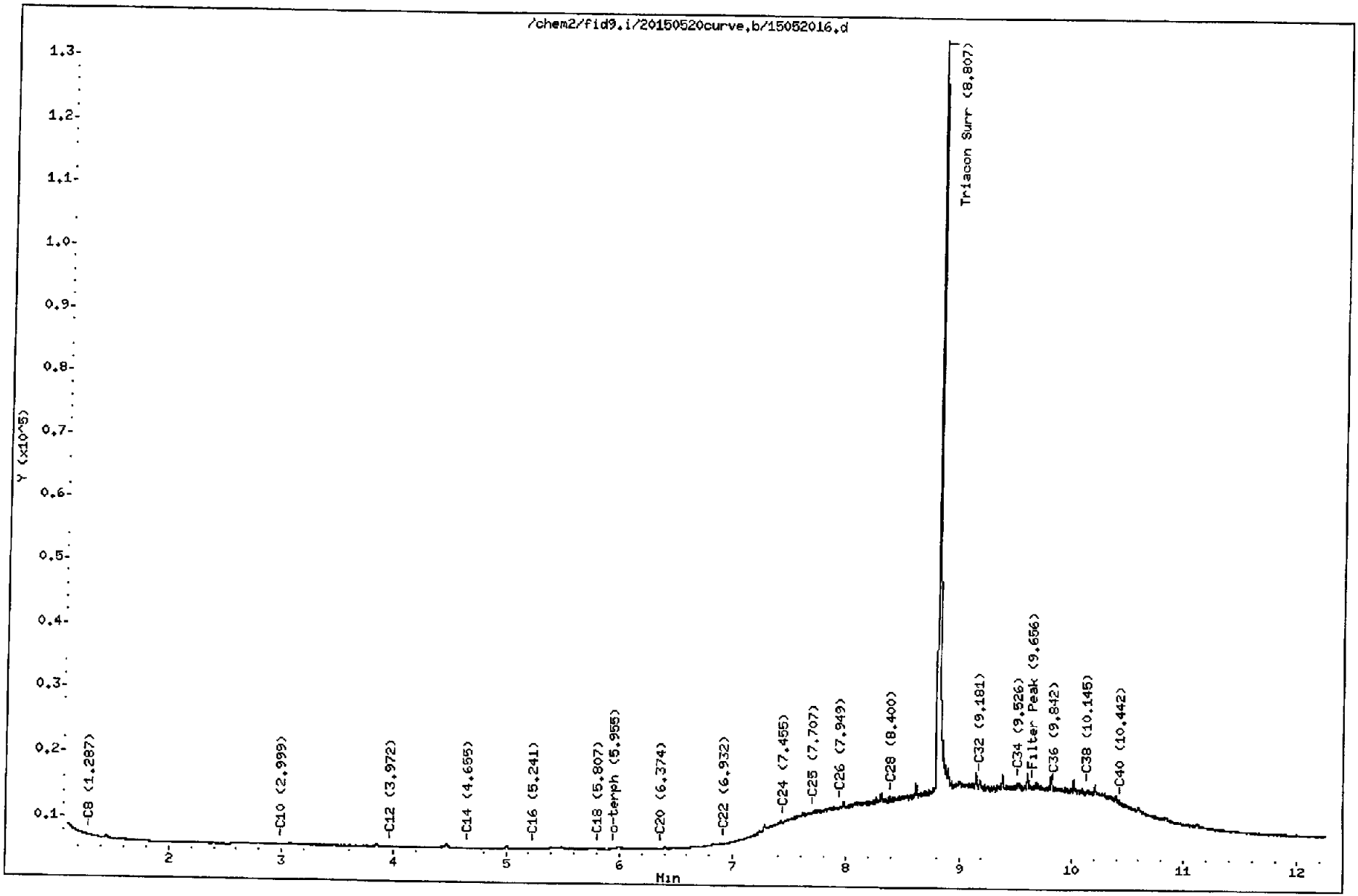
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052016.d
Date : 20-MAY-2015 19:54
Client ID:
Sample Info: SDE0049-CAL7

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052017.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL8
Client ID:
Injection: 20-MAY-2015 20:15
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	31691	1
C8	1.249	-0.038	1221	3281	DIESEL (C12-C24)	359945	20.67
C10	2.991	0.008	150	97	M.OIL (C24-C38)	3494908	244.91
C12	3.968	-0.002	45	9	AK-102 (C10-C25)	491811	24.51
C14	4.654	-0.003	45	26	AK-103 (C25-C36)	2977636	190.87 M
C16	5.240	-0.004	74	17	OR.DIES (C10-C28)	1361450	67.22
C18	5.803	-0.009	192	65			
C20	6.373	-0.005	823	641			
C22	6.924	-0.009	3344	658			
C24	7.455	-0.005	12474	6164			
C25	7.707	-0.005	16255	9832			
C26	7.943	-0.010	18020	7757			
C28	8.403	-0.002	20342	4396	IT.DIES (C10-C24)	365916	18.31
C32	9.185	0.001	27906	21191			
C34	9.523	-0.006	27127	6814			
Filter Peak	9.659	0.002	24928	11476			
C36	9.847	-0.002	24541	7729			
C38	10.144	-0.006	23569	10203			
C40	10.442	-0.003	19028	10208			
o-terph	5.955	-0.013	479	455	JET-A (C10-C18)	15494	0.94
Triacon Surr	8.810	-0.013	426166	335109			

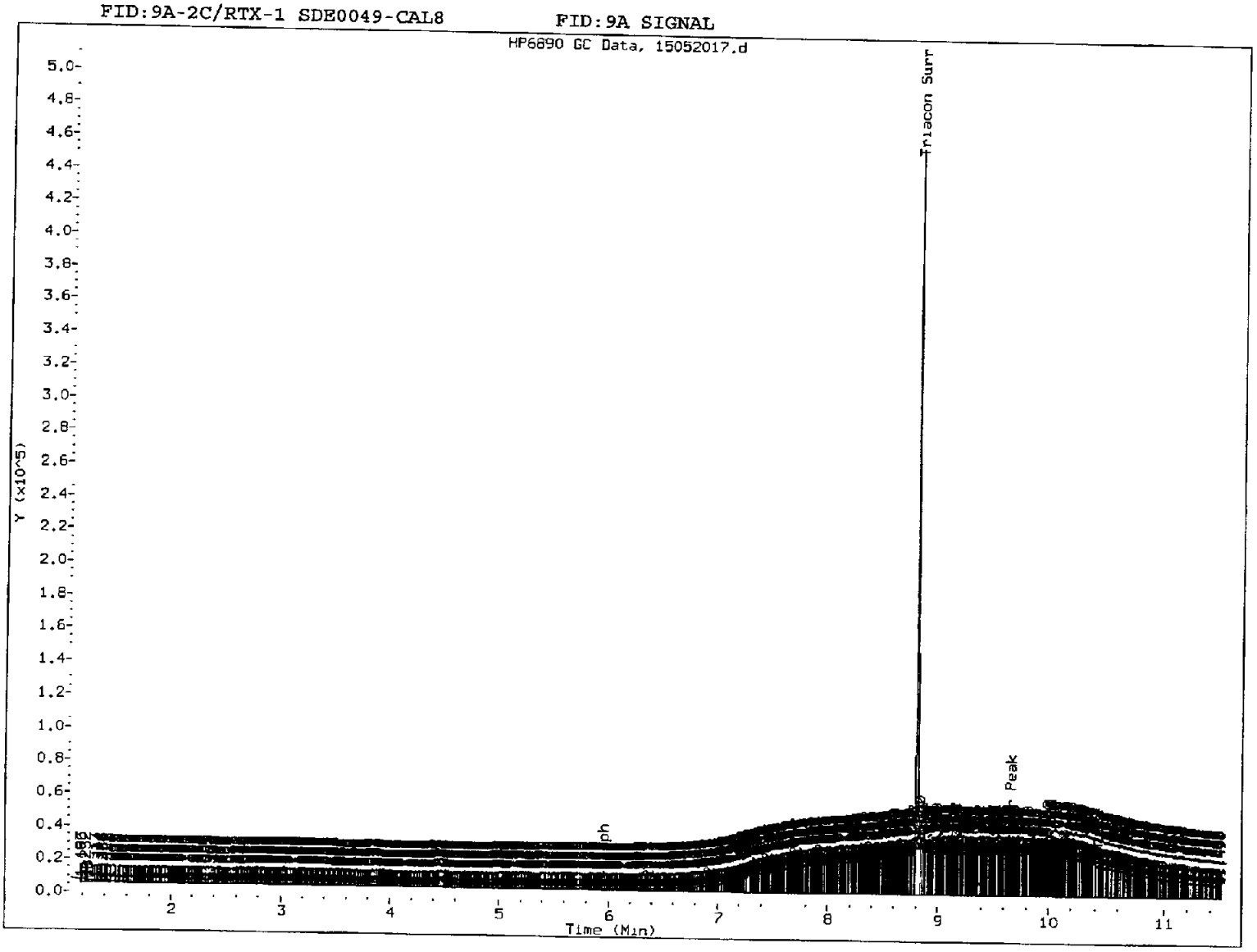
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	455	0.0	0.0
Triacontane	335109	20.6	45.8

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL8 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

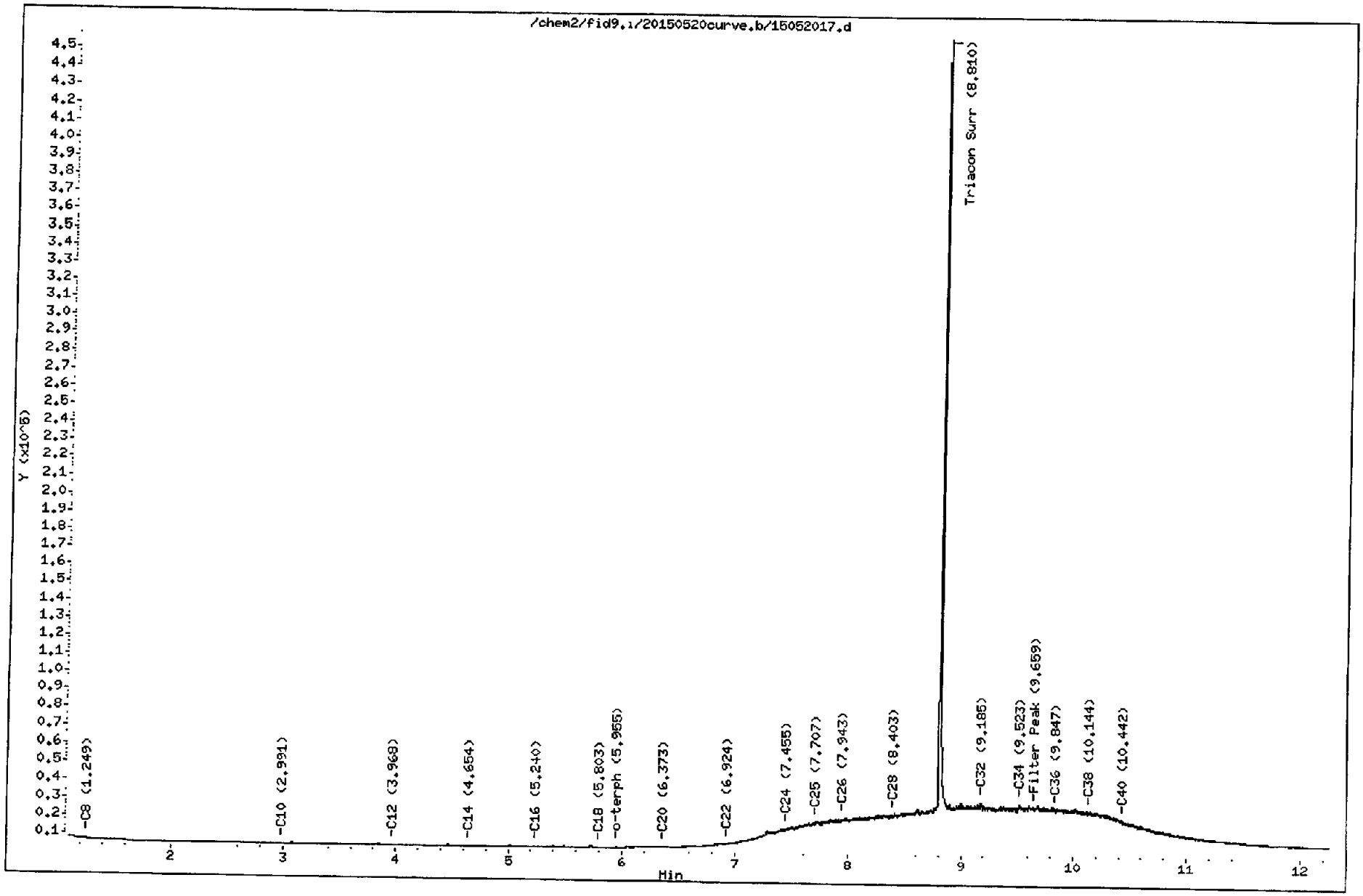
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052017.d
Date : 20-MAY-2015 20:15
Client ID:
Sample Info: SDE0049-CAL8

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052018.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL9
Client ID:
Injection: 20-MAY-2015 20:36
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	89265	4
C8	1.244	-0.044	3400	10141	DIESEL (C12-C24)	727049	41.76
C10	2.994	0.010	301	113	M.OIL (C24-C38)	7101011	497.62
C12	3.963	-0.006	68	57	AK-102 (C10-C25)	997003	49.68
C14	4.657	-0.001	69	13	AK-103 (C25-C36)	6020814	385.95 M
C16	5.240	-0.004	71	47	OR.DIES (C10-C28)	2714845	134.04
C18	5.803	-0.008	326	111			
C20	6.371	-0.007	1925	2622			
C22	6.928	-0.006	7060	2234			
C24	7.454	-0.007	24705	8261			
C25	7.707	-0.005	32354	17088			
C26	7.943	-0.010	34985	11109			
C28	8.402	-0.003	41409	12311	IT.DIES (C10-C24)	738426	36.94
C32	9.178	-0.006	58860	43592			
C34	9.523	-0.006	55765	44707			
Filter Peak	9.656	-0.002	51370	10201			
C36	9.845	-0.004	52656	33613			
C38	10.146	-0.005	47157	13912			
C40	10.441	-0.005	37342	19515			
o-terph	5.956	-0.012	606	775	JET-A (C10-C18)	25987	1.58
Triacon Surr	8.819	-0.004	840384	717661			

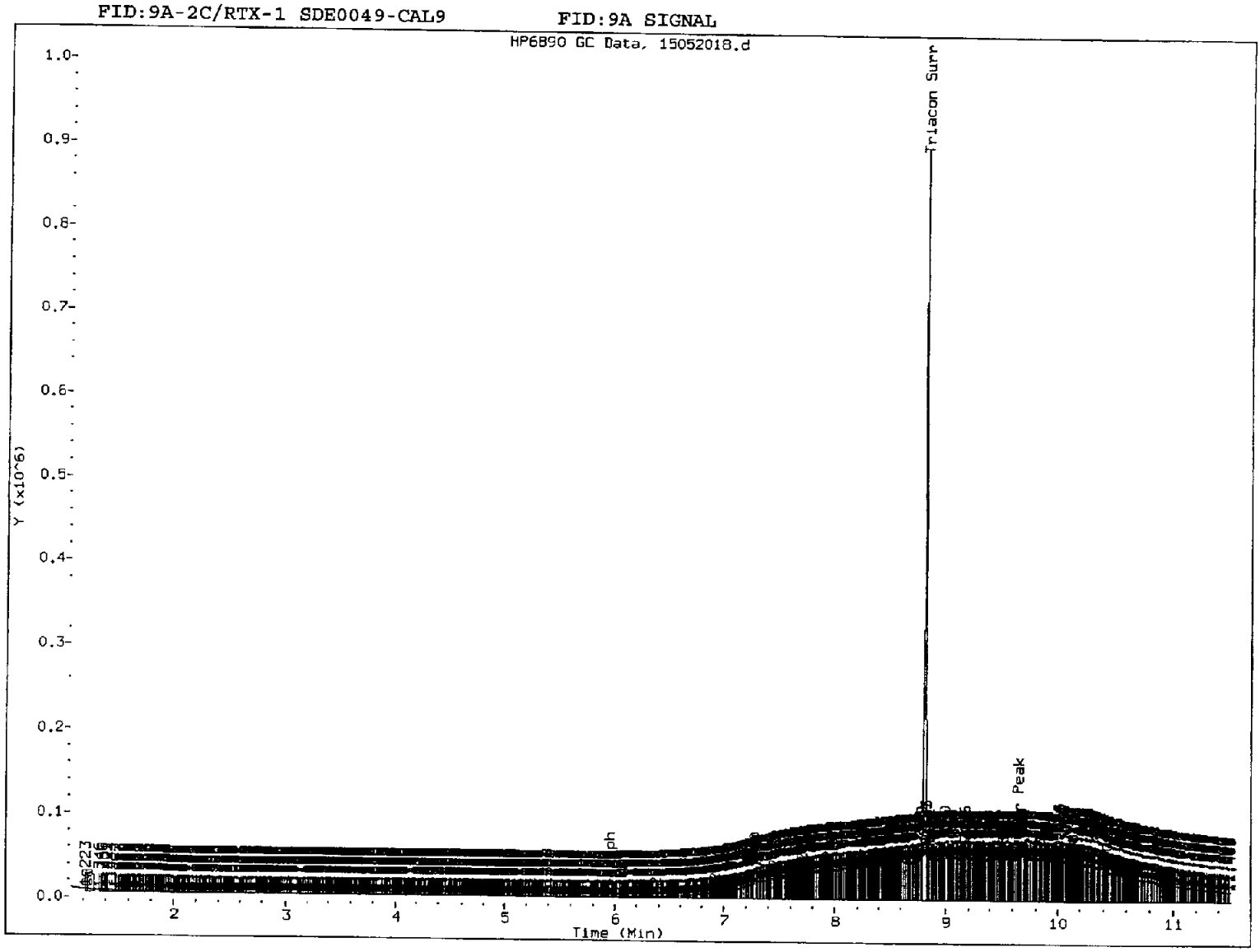
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	775	0.0	0.1
Triacontane	717661	44.2	98.1

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL9 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
(5) Surrogate Skimmed

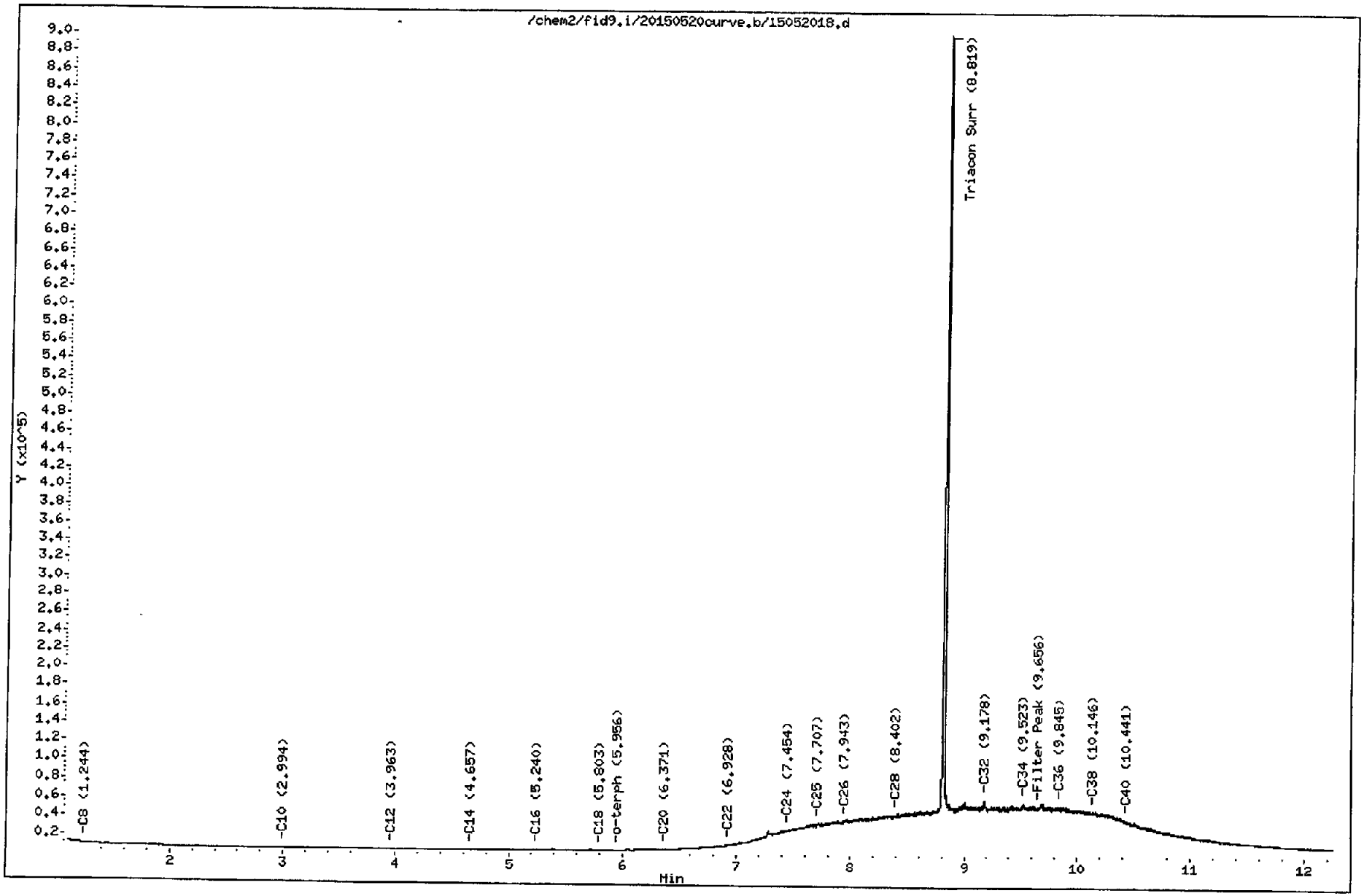
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052018.d
Date : 20-MAY-2015 20:36
Client ID:
Sample Info: SDE0049-CAL9

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052019.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALA
Client ID:
Injection: 20-MAY-2015 20:58
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.107	0.036	2446	8856	GAS (Tol-C12)	45055	1.82	
C8	1.292	0.004	1027	729	DIESEL (C12-C24)	1482627	85.15	
C10	2.995	0.011	146	18	M.OIL (C24-C38)	14179121	993.63	
C12	3.964	-0.006	58	18	AK-102 (C10-C25)	1992744	99.30	
C14	4.645	-0.012	177	203	AK-103 (C25-C36)	11902736	763.00	M
C16	5.244	-0.001	240	68	OR.DIES (C10-C28)	5306995	262.02	
C18	5.804	-0.007	808	382				
C20	6.369	-0.009	4379	6995				
C22	6.925	-0.008	15032	2968				
C24	7.453	-0.008	49309	12539				
C25	7.711	-0.001	62221	33770				
C26	7.945	-0.008	70707	59183				
C28	8.404	-0.002	85270	58306	IT.DIES (C10-C24)	1489587	74.52	
C32	9.181	-0.004	127420	139271				
C34	9.522	-0.007	116552	91399				
Filter Peak	9.652	-0.006	108111	91739				
C36	9.843	-0.006	105234	60217				
C38	10.143	-0.008	94126	16841				
C40	10.439	-0.007	76488	51578				
o-terph	5.958	-0.010	1460	2909	JET-A (C10-C18)	44080	2.68	
Triacon Surr	8.833	0.010	1445472	1579391				

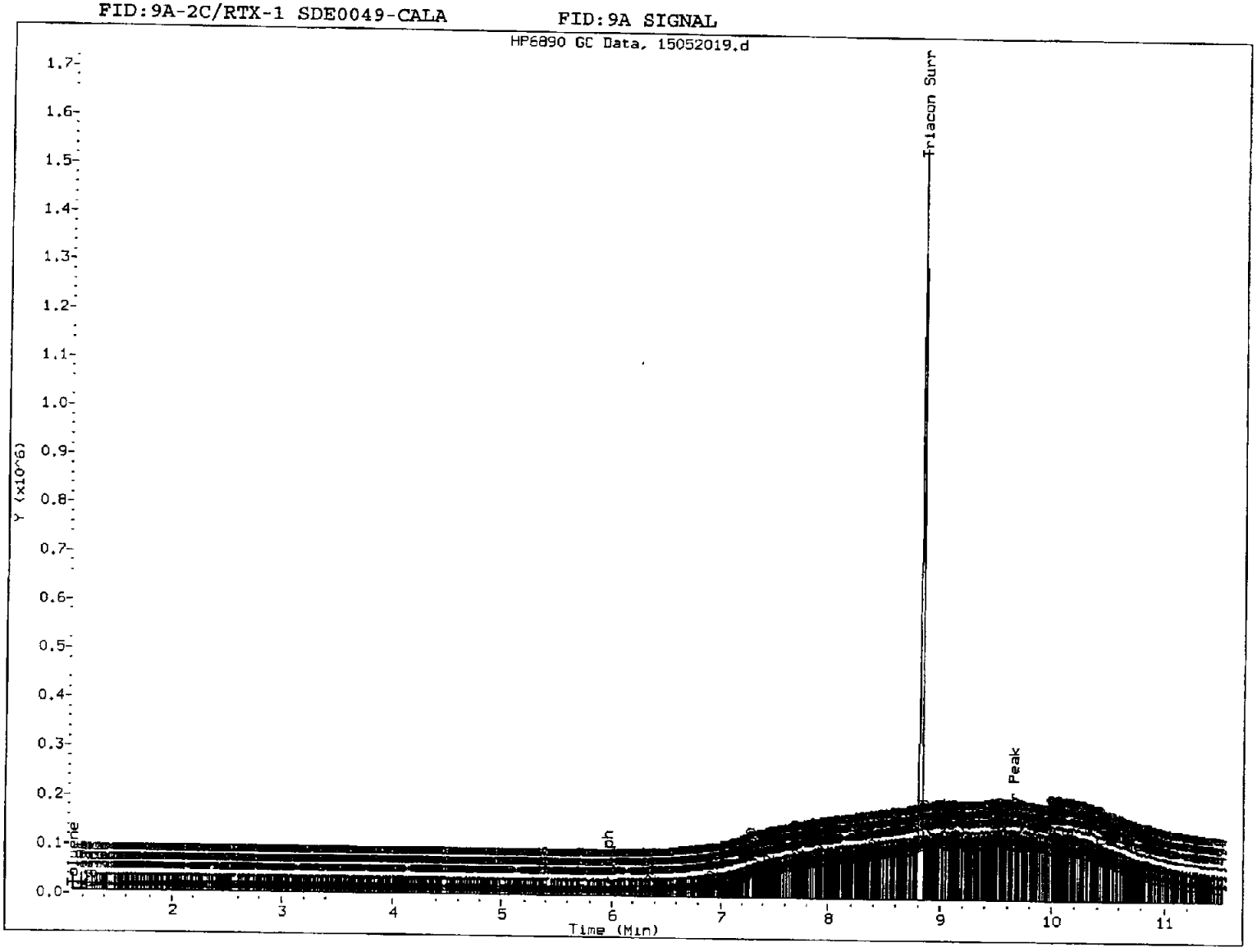
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2909	0.1	0.3
Triacontane	1579391	97.2	216.0

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALA FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 5/21/15

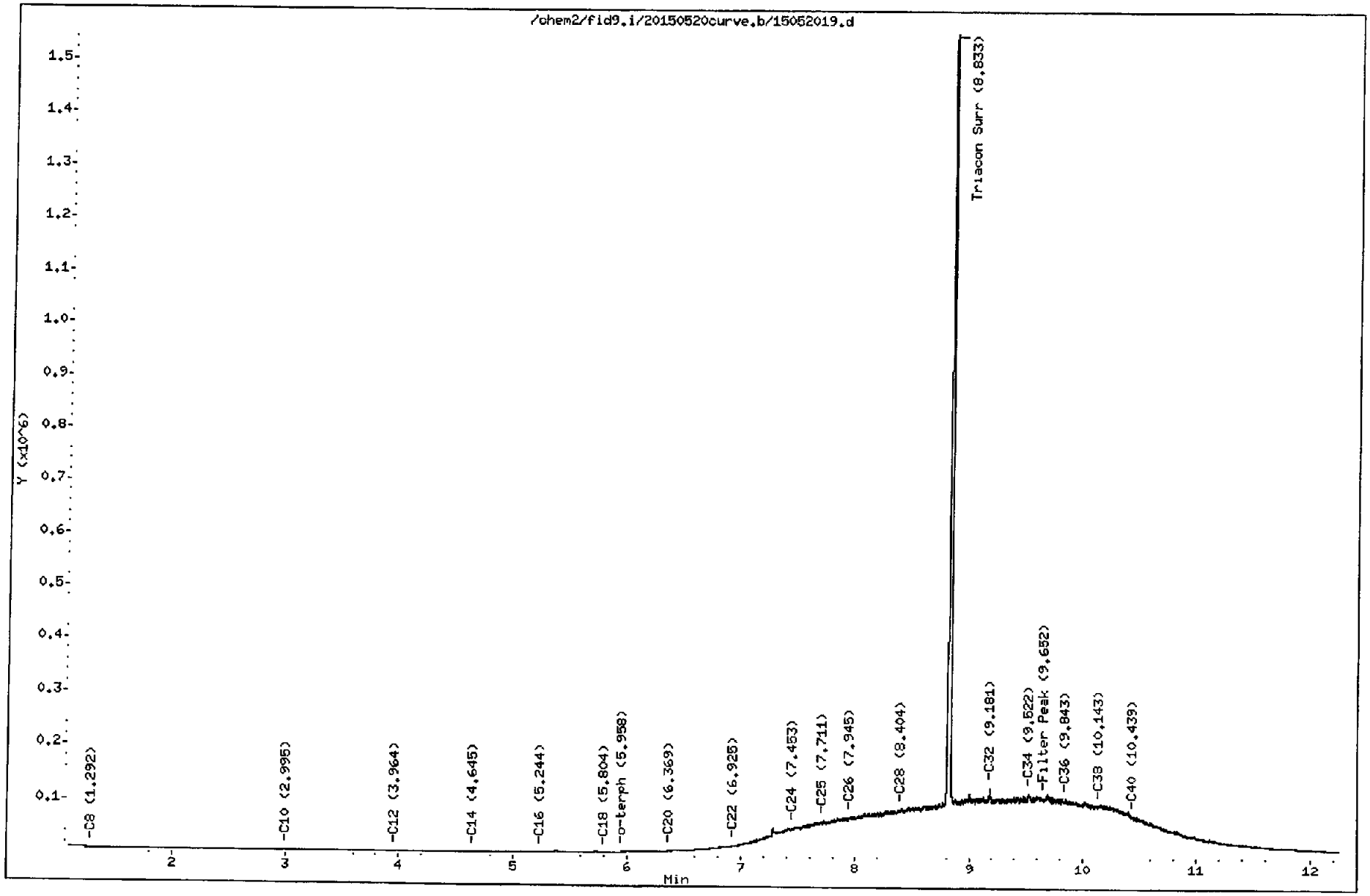
AGAS : 81808

Data File: /chem2/fid9.i/20150520curve.b/15052019.d
Date : 20-MAY-2015 20:58
Client ID:
Sample Info: SDE0049-CALA

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052020.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALB
Client ID:
Injection: 20-MAY-2015 21:19
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	----				GAS (Tol-C12)	67596	3	
C8	1.295	0.007	2365	3010	DIESEL (C12-C24)	3552271	204.01	
C10	2.993	0.009	215	142	M.OIL (C24-C38)	35716727	2502.92	
C12	3.968	-0.002	32	4	AK-102 (C10-C25)	4718921	235.16	
C14	4.652	-0.006	254	146	AK-103 (C25-C36)	30396383	1948.49	M
C16	5.241	-0.004	537	115	OR.DIES (C10-C28)	13121010	647.82	
C18	5.800	-0.012	1922	598				
C20	6.377	-0.002	9572	5663				
C22	6.929	-0.005	36742	15725				
C24	7.458	-0.002	115018	70169				
C25	7.709	-0.004	149427	66924				
C26	7.952	-0.001	175869	95998				
C28	8.397	-0.009	205980	36388	IT.DIES (C10-C24)	3559997	178.11	
C32	9.187	0.002	332103	335065				
C34	9.526	-0.004	285052	199051				
Filter Peak	9.659	0.001	273604	321344				
C36	9.849	0.000	266042	156891				
C38	10.148	-0.003	236966	79853				
C40	10.439	-0.006	175920	175954				
o-terph	5.956	-0.013	3451	4867	JET-A (C10-C18)	88055	5.35	
Triacon Surr	8.854	0.031	2507849	4115878				

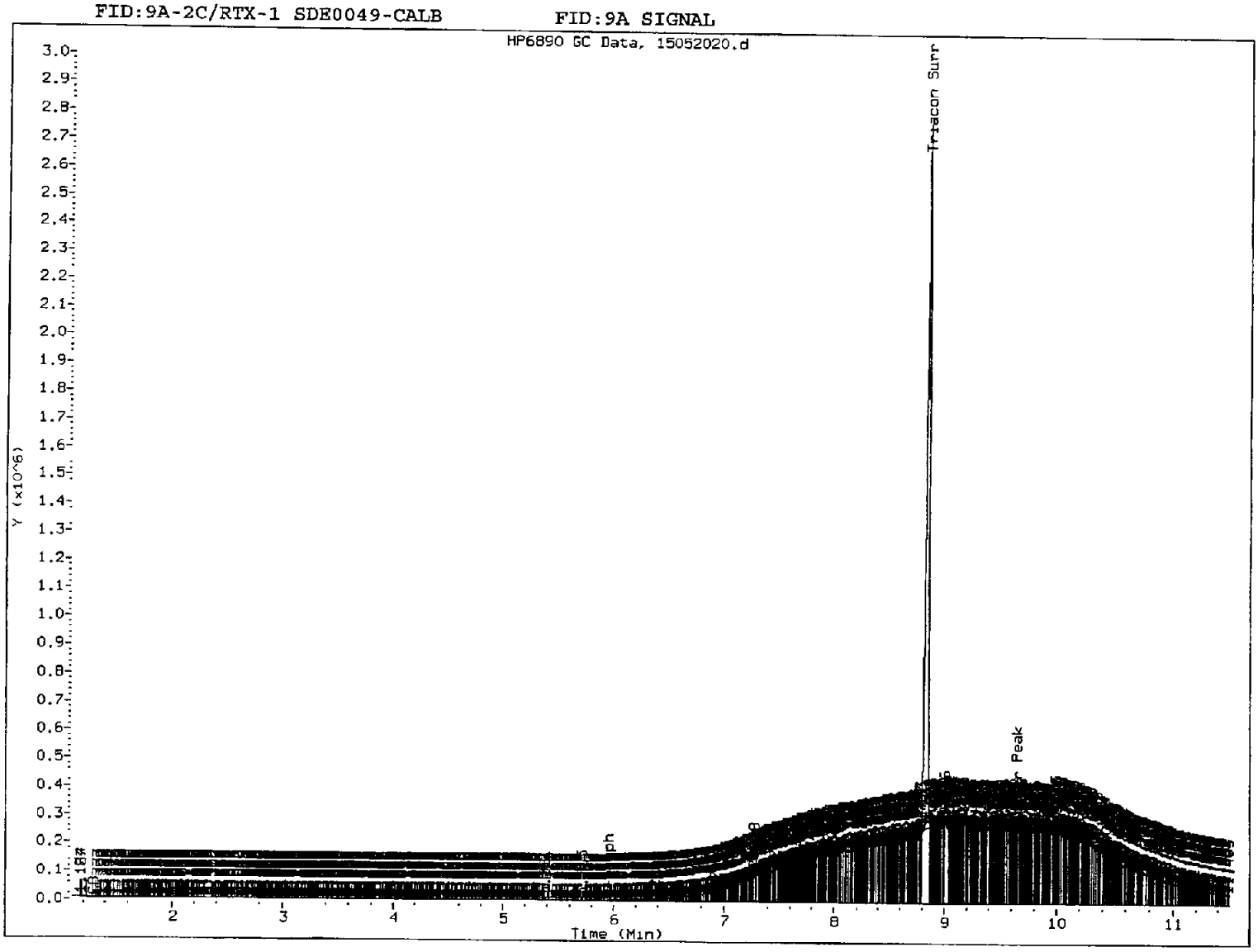
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4867	0.2	0.5
Triacontane	4115878	253.3	562.8

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALB FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

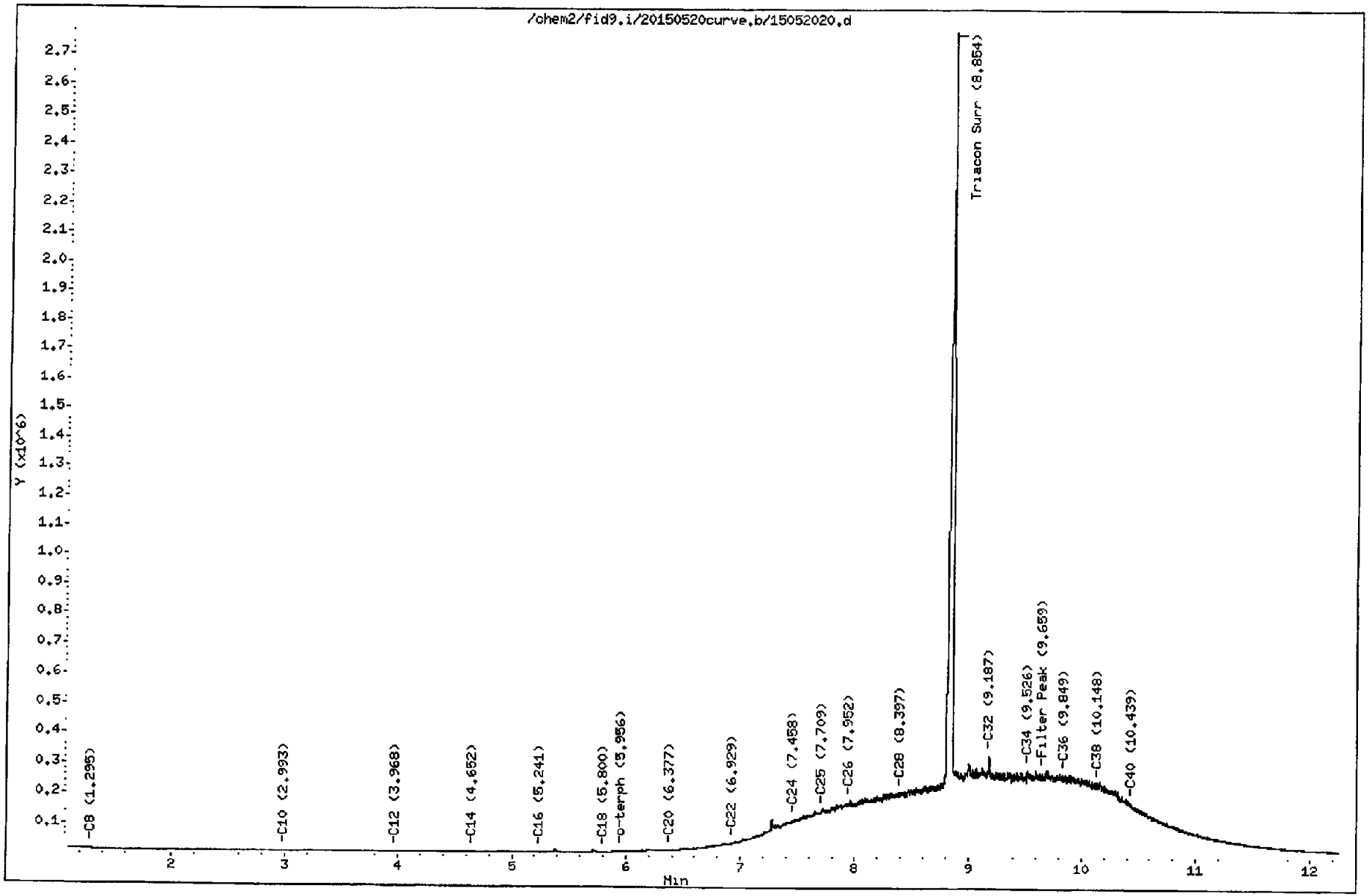
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052020.d
Date : 20-MAY-2015 21:19
Client ID:
Sample Info: SDE0049-CALB

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052021.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALC
Client ID:
Injection: 20-MAY-2015 21:40
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.109	0.038	3021	5527	GAS (Tol-C12)	59266	2.39	
C8	1.294	0.007	1353	482	DIESEL (C12-C24)	6658004	382.38	
C10	3.000	0.016	256	406	M.OIL (C24-C38)	69330181	4858.46	
C12	3.967	-0.003	91	44	AK-102 (C10-C25)	8934274	445.22	
C14	4.653	-0.004	603	221	AK-103 (C25-C36)	58835711	3771.52	M
C16	5.247	0.002	1141	488	OR.DIES (C10-C28)	25093477	1238.94	
C18	5.806	-0.006	4110	4212				
C20	6.370	-0.008	18937	10808				
C22	6.929	-0.004	66287	42957				
C24	7.454	-0.006	213604	83484				
C25	7.710	-0.003	274816	86876				
C26	7.945	-0.008	336765	195931				
C28	8.398	-0.007	417552	284006	IT.DIES (C10-C24)	6667412	333.57	
C32	9.183	-0.002	512567	191674				
C34	9.526	-0.004	553927	252083				
Filter Peak	9.652	-0.005	543160	370491				
C36	9.846	-0.003	502010	118452				
C38	10.143	-0.007	454955	314485				
C40	10.437	-0.009	316167	199324				
o-terph	5.961	-0.007	6866	5311	JET-A (C10-C18)	175691	10.68	
Triacon Surr	8.888	0.065	3606957	8090371				

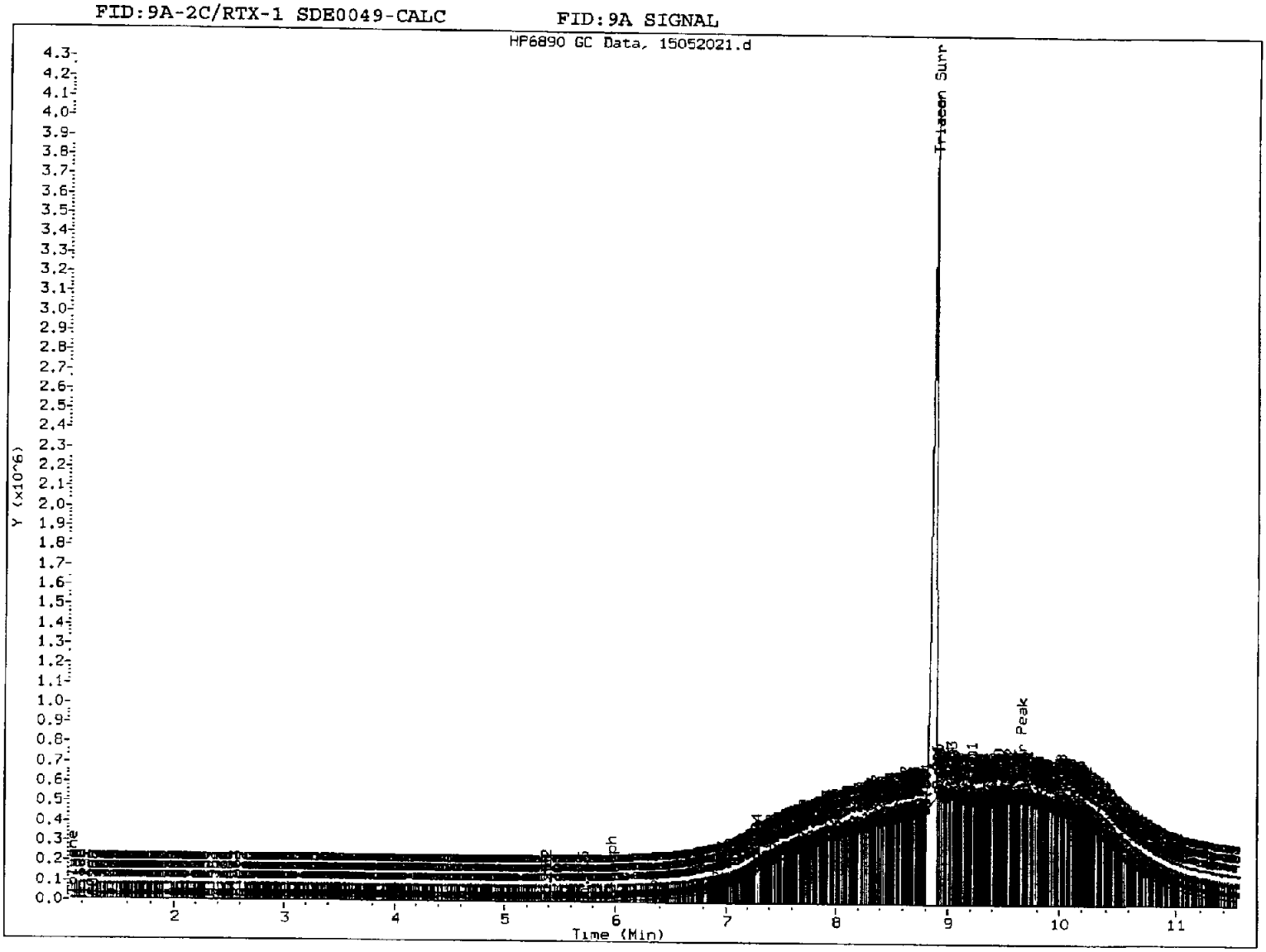
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	5311	0.2	0.5
Triacontane	8090371	497.8	1106.3

ML 5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALC FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: Mc Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052021.d

Date : 20-MAY-2015 21:40

Client ID:

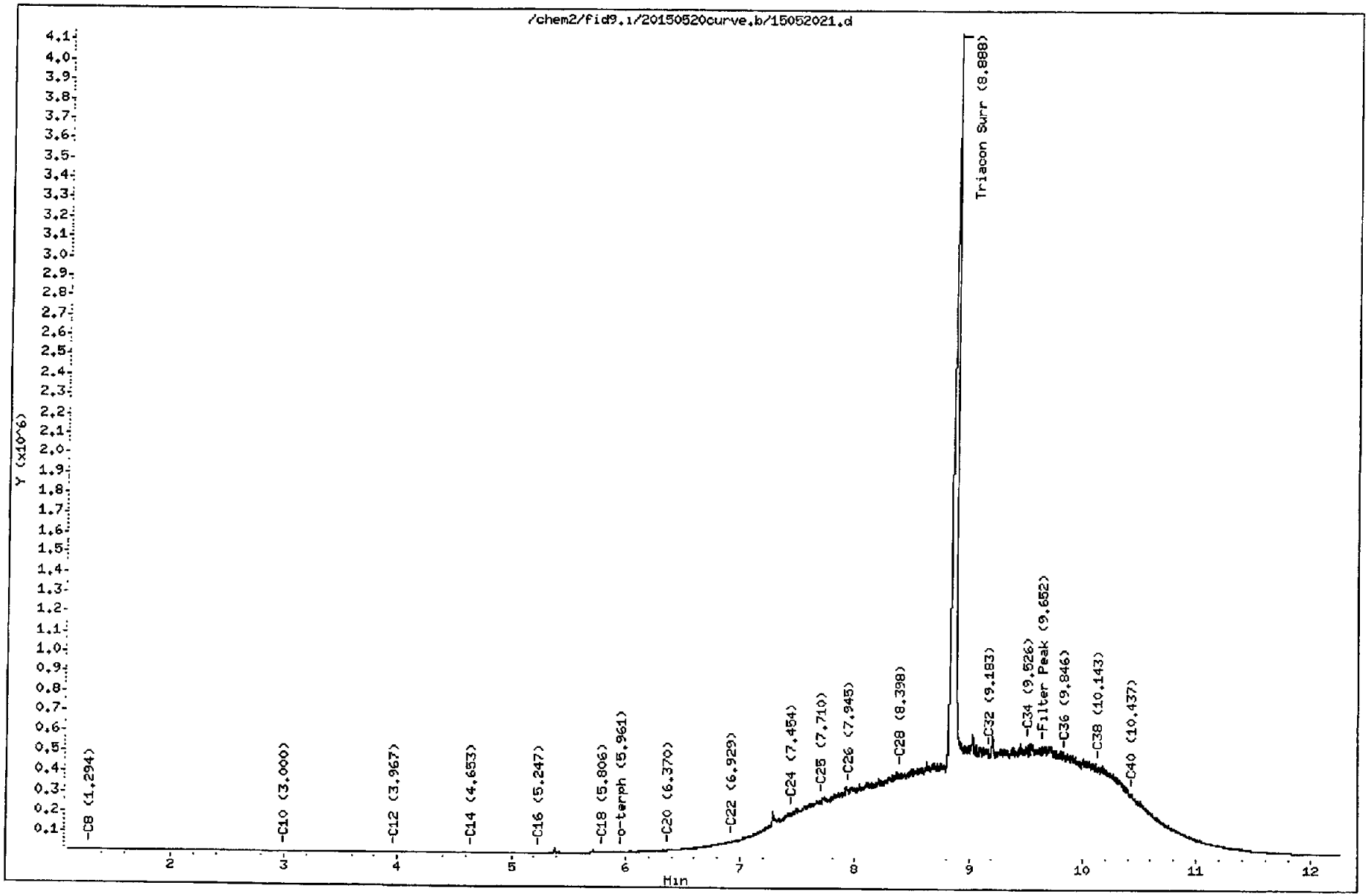
Sample Info: SDE0049-CALC

Column phase: RTX-1

Instrument: fid9.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052022.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-SCV2
Client ID:
Injection: 20-MAY-2015 22:01
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	33438	1
C8	1.283	-0.005	1102	757	DIESEL (C12-C24)	874295	50.21
C10	2.996	0.012	150	43	M.OIL (C24-C38)	7657691	536.63
C12	3.967	-0.003	87	33	AK-102 (C10-C25)	1154370	57.53
C14	4.659	0.001	148	56	AK-103 (C25-C36)	6454022	413.72 M
C16	5.245	0.000	336	119	OR.DIES (C10-C28)	2956775	145.98
C18	5.808	-0.004	890	210			
C20	6.370	-0.008	2159	1145			
C22	6.928	-0.006	7880	2789			
C24	7.452	-0.009	25901	6710			
C25	7.711	-0.002	34464	19694			
C26	7.942	-0.011	38656	6061			
C28	8.403	-0.003	45076	12438	IT.DIES (C10-C24)	881105	44.08
C32	9.178	-0.007	63636	81892			
C34	9.523	-0.007	62674	10943			
Filter Peak	9.656	-0.002	60495	21951			
C36	9.844	-0.005	58599	33241			
C38	10.152	0.001	52967	21819			
C40	10.442	-0.004	40442	10397			
o-terph	5.961	-0.007	1301	1470	JET-A (C10-C18)	54938	3.34
Triacon Surr	8.816	-0.008	654546	521425			

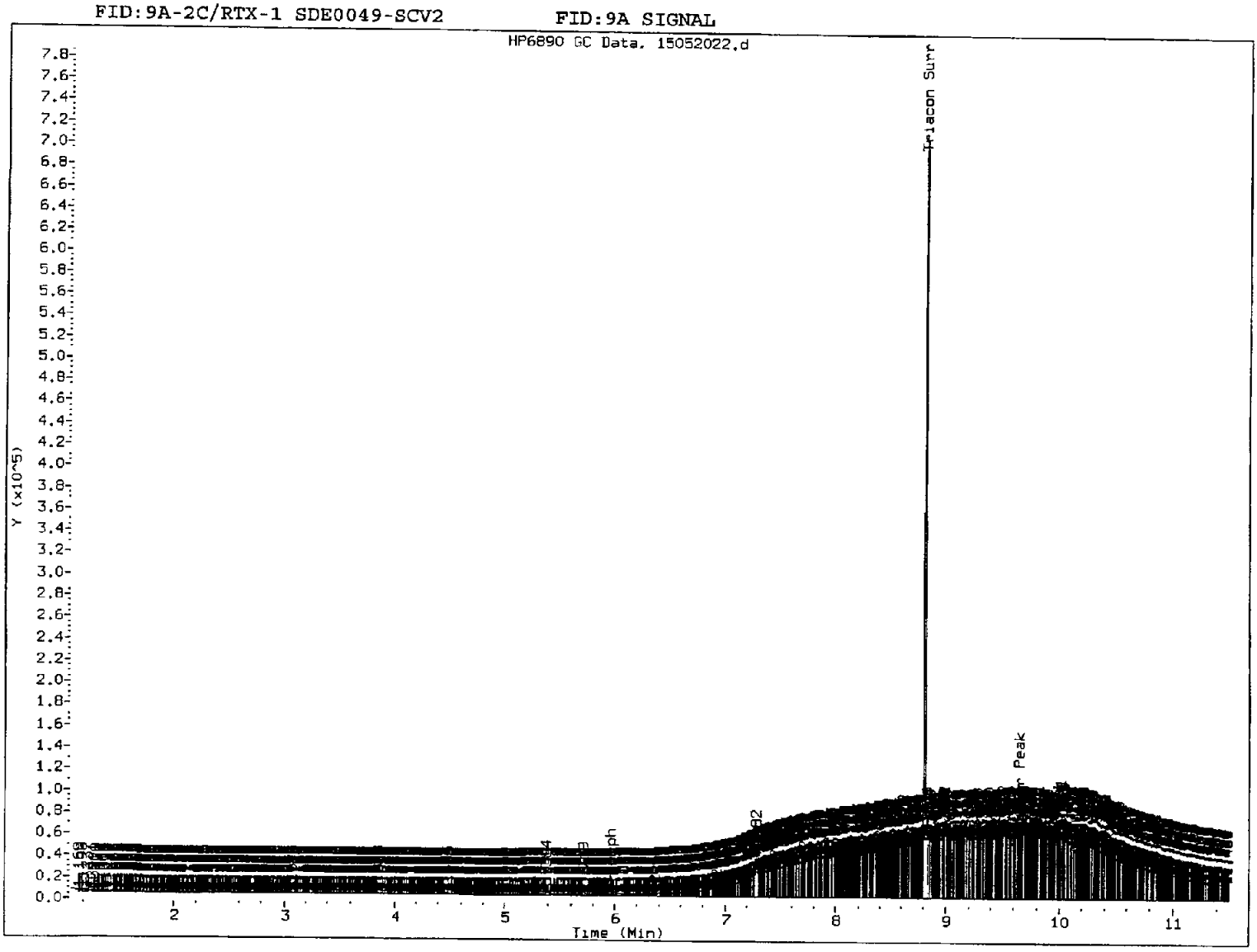
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1470	0.1	0.1
Triacontane	521425	32.1	71.3

MC
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-SCV2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

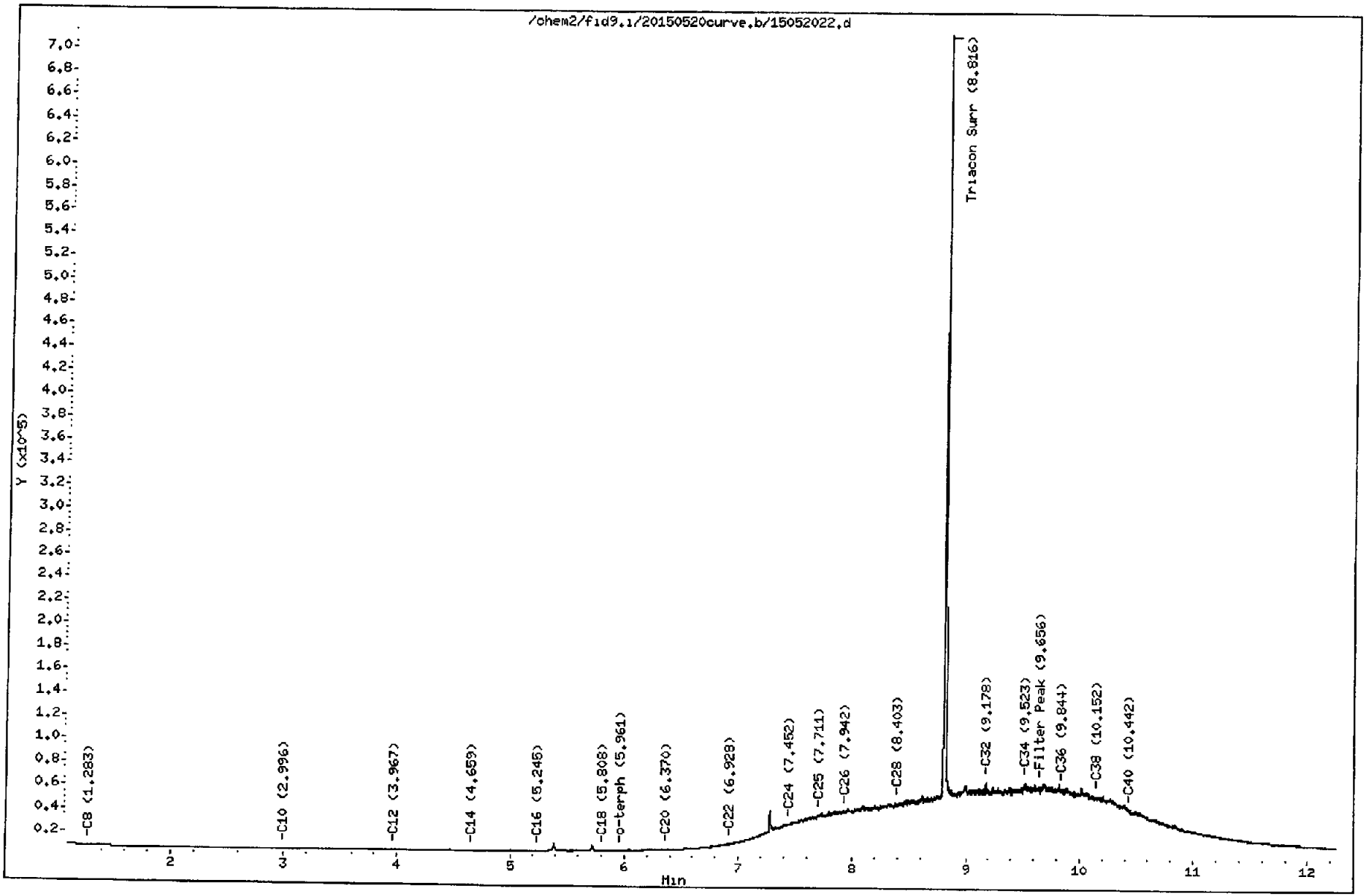
Analyst: Mc Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052022.d
Date : 20-MAY-2015 22:01
Client ID:
Sample Info: SDE0049-SCV2

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



TPHD Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGA8

AGAS 8101

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AGA8/AGC9 ~~AGA8/9~~ Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B (FID-4A) FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: 4C00022 Analysis Start Date: 5/26/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	(NA) / Y / N / ✓	Method Blank in Control?	(Y) / N / ✓
Retention times within Windows?	(Y) / N / ✓	BS/BSD Recovery in Control?	(Y) / N / ✓
ICV/CCV met %D Criteria?	(Y) / N / ✓	~~BS/BSD RPD~~ ≤30%?	NA / BS Only
Surrogate Recovery in Control?	(Y) / N / ✓	MS / MSD Recovery in Control?	(Y) / N / ✓
Internal STD. within 50-200%?	(NA) / Y / N / ✓	MS / MSD RPD ≤30%?	NA / 21%
Manual Integrations?	(Y) / N / ✓	Samples Diluted?	(Y) / N / ✓
Integration Summary?	(Y) / N / ✓	Special Analysis Request?	(Y) / N / ✓

Detail problems, corrective actions and/or other pertinent information below

- Samples batched together.
- MS(D) ran on AGA8F and AGC9H.
- AGA8F, MS+MSD were diluted (5x)
- AGC9C was brought to 5FEV due to high viscosity, diluted a further 10x. Surrogates marked D due to dilution.
- samples contain DRO, diesel, RRO and motor oil.
- Samples dual logged and reported in LIMS as well as Element.

(Review 1) Analyst: MC **Date:** 5/27/15

(Review 2) Reviewer: [signature] **Date:** 5/28/15

Analytical Resources Inc.: Organics Instrument Log
FID-4A Serial No.: US00003247

Date: 5/26/15 Analysis: NWTPHD Analyst: ML

Column 1 Serial No.: B000117 Column Type: RTX-1

Column 2 Serial No.: — Column Type: —

GC Method: TPH ICal Date: 4C00022 Injection Volume: 1µL

IS	Ical/Ccal	ICV
	D000115	
	D000116	
	D000121	
	D000 1872	

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	26-MAY-2015 11:02	15052601.d	1	RT0526	
2	26-MAY-2015 11:25	15052602.d	1	IB0526	
3	26-MAY-2015 11:49	15052603.d	1	DIESEL#1	
4	26-MAY-2015 12:12	15052604.d	1	MOIL#1	
5	26-MAY-2015 12:54	15052605.d	1	AGE1MBW1	AGE1MBW1
6	26-MAY-2015 13:18	15052606.d	1	AGE1LCSW1	AGE1LCSW1
7	26-MAY-2015 13:42	15052607.d	1	AGE1LCSDW1	AGE1LCSDW1
8	26-MAY-2015 14:06	15052608.d	1	AGE1QLS	
9	26-MAY-2015 14:30	15052609.d	1	AGE1A	Ershigs-1D-0515
10	26-MAY-2015 14:54	15052610.d	1	AGE1B	Ershigs-1S-0515
11	26-MAY-2015 15:18	15052611.d	1	AGE1C	MW-24D-0515
12	26-MAY-2015 15:42	15052612.d	1	AGE1D	MW-240D-0515
13	26-MAY-2015 16:06	15052613.d	1	AGE1E	MW-33D-0515
14	26-MAY-2015 16:30	15052614.d	1	AGE1F	MW-100D-0515
15	26-MAY-2015 16:53	15052615.d	1	DIESEL#2	
16	26-MAY-2015 17:17	15052616.d	1	MOIL#2	
17	26-MAY-2015 17:41	15052617.d	1	AGE1G	MW-100S-0515
18	26-MAY-2015 18:05	15052618.d	1	AGE1H	MW-50-0515
19	26-MAY-2015 18:29	15052619.d	1	AGE1I	MW-2D-0515
20	26-MAY-2015 18:52	15052620.d	1	AGE1IMS	MW-2D-0515 MS
21	26-MAY-2015 19:16	15052621.d	1	AGE1IMSD	MW-2D-0515 MSD
22	26-MAY-2015 19:39	15052622.d	1	AGE1J	MW-35D-0515
23	26-MAY-2015 20:03	15052623.d	1	AGE1K	MW-3D-0515
24	26-MAY-2015 20:26	15052624.d	1	AGA8MBS1	AGA8MBS1
25	26-MAY-2015 20:50	15052625.d	1	AGA8LCSS1	AGA8LCSS1
26	26-MAY-2015 21:13	15052626.d	1	AGA8B	SDP-10(15.5-16.5)
27	26-MAY-2015 21:37	15052627.d	1	AGA8E	SDP-08(12.0-13.5)
28	26-MAY-2015 22:00	15052628.d	5	AGA8F	SDP-07(1.5-3.0)
29	26-MAY-2015 22:23	15052629.d	5	AGA8FMS	SDP-07(1.5-3.0) MS
30	26-MAY-2015 22:47	15052630.d	5	AGA8FMSD	SDP-07(1.5-3.0) MSD
31	26-MAY-2015 23:10	15052631.d	1	AGA8H	SDP-06(12.5-13.5)
32	26-MAY-2015 23:33	15052632.d	1	DIESEL#3	
33	26-MAY-2015 23:56	15052633.d	1	MOIL#3	
34	27-MAY-2015 00:20	15052634.d	1	AGA8I	SDP-06(10.0-11.0)
35	27-MAY-2015 00:43	15052635.d	10	AGC9C	SDP-02(16.0-17.5)
36	27-MAY-2015 01:07	15052636.d	1	AGC9D	SDP-02(18.5-19.5)
37	27-MAY-2015 01:30	15052637.d	1	AGC9E	SDP-02(22.0-23.5)
38	27-MAY-2015 01:54	15052638.d	1	AGC9H	SDP-04(1.5-3.0)
39	27-MAY-2015 02:17	15052639.d	1	AGC9HMS	SDP-04(1.5-3.0) MS
40	27-MAY-2015 02:40	15052640.d	1	AGC9HMSD	SDP-04(1.5-3.0) MSD
41	27-MAY-2015 03:04	15052641.d	1	AGC9I	SDP-04(10.5-12.0)
42	27-MAY-2015 03:27	15052642.d	1	DIESEL#4	
43	27-MAY-2015 03:51	15052643.d	1	MOIL#4	
44	27-MAY-2015 04:14	15052644.d	1	AGM9MBS1	AGM9MBS1
45	27-MAY-2015 04:38	15052645.d	1	AGM9LCSS1	AGM9LCSS1
46	27-MAY-2015 05:01	15052646.d	1	AGM9LCSDS1	AGM9LCSDS1
47	27-MAY-2015 05:24	15052647.d	1	AGM9A	B-1A
48	27-MAY-2015 05:48	15052648.d	1	AGM9B	B-1B
49	27-MAY-2015 06:11	15052649.d	1	AGM9C	B-2A
50	27-MAY-2015 06:35	15052650.d	1	AGM9D	B-2B

	Inject Date/Time	Filename	DF	LabID	ClientID
51	27-MAY-2015 06:58	15052651.d	1	AGM9E	B-3A
52	27-MAY-2015 07:22	15052652.d	1	AGM9F	B-3B
53	27-MAY-2015 07:46	15052653.d	1	AGM9G	B-3C
54	27-MAY-2015 08:09	15052654.d	1	AGM9H	B-4A
55	27-MAY-2015 08:33	15052655.d	1	AGM9I	B-4B
56	27-MAY-2015 08:58	15052656.d	1	AGM9J	B-4C
57	27-MAY-2015 09:21	15052657.d	1	DIESEL#5	
58	27-MAY-2015 09:45	15052658.d	1	MOIL#5	

entries legible.
ance Tasks In StarLIMS

AGAB 91613

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

ARI Job No.: RT05 Method: ftphfid4a.m Instrument: fid4a.i Date: 26-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1102	15052601.d	RT0526		1	NO MANUAL INTEGRATION
1125	15052602.d	IB0526		1	NO MANUAL INTEGRATION
1149	15052603.d	DIESEL#1	POS Silver	1	o-terph,
1212	15052604.d	MOIL#1	POS Silver	1	Triacon Surr,
1653	15052615.d	DIESEL#2	POS Silver	1	o-terph,
1717	15052616.d	MOIL#2	POS Silver	1	Triacon Surr,
2026	15052624.d	AGA8MBS1	AGA8MBS1	1	NO MANUAL INTEGRATION
2050	15052625.d	AGA8LCSS1	AGA8LCSS1	1	o-terph,
2113	15052626.d	AGA8B	SDP-10(15.	1	o-terph, Triacon Surr,
2137	15052627.d	AGA8E	SDP-08(12.	1	NO MANUAL INTEGRATION
2200	15052628.d	AGA8F	SDP-07(1.5	5	o-terph, Triacon Surr,
2223	15052629.d	AGA8FMS	SDP-07(1.5	5	o-terph, Triacon Surr,
2247	15052630.d	AGA8FMSD	SDP-07(1.5	5	o-terph, Triacon Surr,
2310	15052631.d	AGA8H	SDP-06(12.	1	o-terph, Triacon Surr,
2333	15052632.d	DIESEL#3	POS Silver	1	o-terph,
2356	15052633.d	MOIL#3	POS Silver	1	Triacon Surr,
0020	15052634.d	AGA8I	SDP-06(10.	1	Triacon Surr,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0043	15052635.d	AGC9C	SDP-02(16.	10	NO MANUAL INTEGRATION
0107	15052636.d	AGC9D	SDP-02(18.	1	o-terph, Triacon Surr,
0130	15052637.d	AGC9E	SDP-02(22.	1	o-terph, Triacon Surr,
0154	15052638.d	AGC9H	SDP-04(1.5	1	o-terph, Triacon Surr,
0217	15052639.d	AGC9HMS	SDP-04(1.5	1	o-terph, Triacon Surr,
0240	15052640.d	AGC9HMSD	SDP-04(1.5	1	o-terph, Triacon Surr,
0304	15052641.d	AGC9I	SDP-04(10.	1	o-terph,
0327	15052642.d	DIESEL#4	POS Silver	1	o-terph,
0351	15052643.d	MOIL#4	POS Silver	1	Triacon Surr,

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052601.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: RT0526
Client ID:
Injection: 26-MAY-2015 11:02
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.728	0.000	545278	2111191	WATPHG	(Tol-C12)	4115590	166.73
C8	0.989	0.000	357143	778664	WATPHD	(C12-C24)	2528238	152.85
C10	2.571	0.000	410597	356457	WATPHM	(C24-C38)	2992624	196.60
C12	3.450	0.000	394722	400945	AK102	(C10-C25)	3368606	171.31
C14	4.125	0.000	495416	399226	AK103	(C25-C36)	2575154	279.84
C16	4.710	0.000	400865	405486				
C18	5.283	0.000	326321	398275				
C20	5.898	0.000	276150	391131	JET-A	(C10-C18)	2050229	111.63
C22	6.529	0.000	267325	391450				
C24	7.147	0.000	251756	365496				
C25	7.444	0.000	223495	379068				
C26	7.738	0.000	236474	326334				
C28	8.295	0.000	239490	353116				
C32	9.506	0.000	184643	393844				
C34	10.148	0.000	153399	396309				
Filter Peak	10.467	0.000	947	3888				
C36	10.800	0.000	131528	419475				
C38	11.449	0.000	107350	379335				
C40	12.073	0.000	122121	409857				
o-terph	5.433	0.000	807651	1015843				
Triacon Surr	8.898	0.000	381305	857755				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

mc
5/27/15

Surrogate	Area	Amount	%Rec
o-Terphenyl	1015843	44.1	98.0
Triacontane	857755	42.8	95.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGAB : 81815

Data File: /chem3/fid4a.i/20150526.b/15052601.d

Date : 26-MAY-2015 11:02

Client ID:

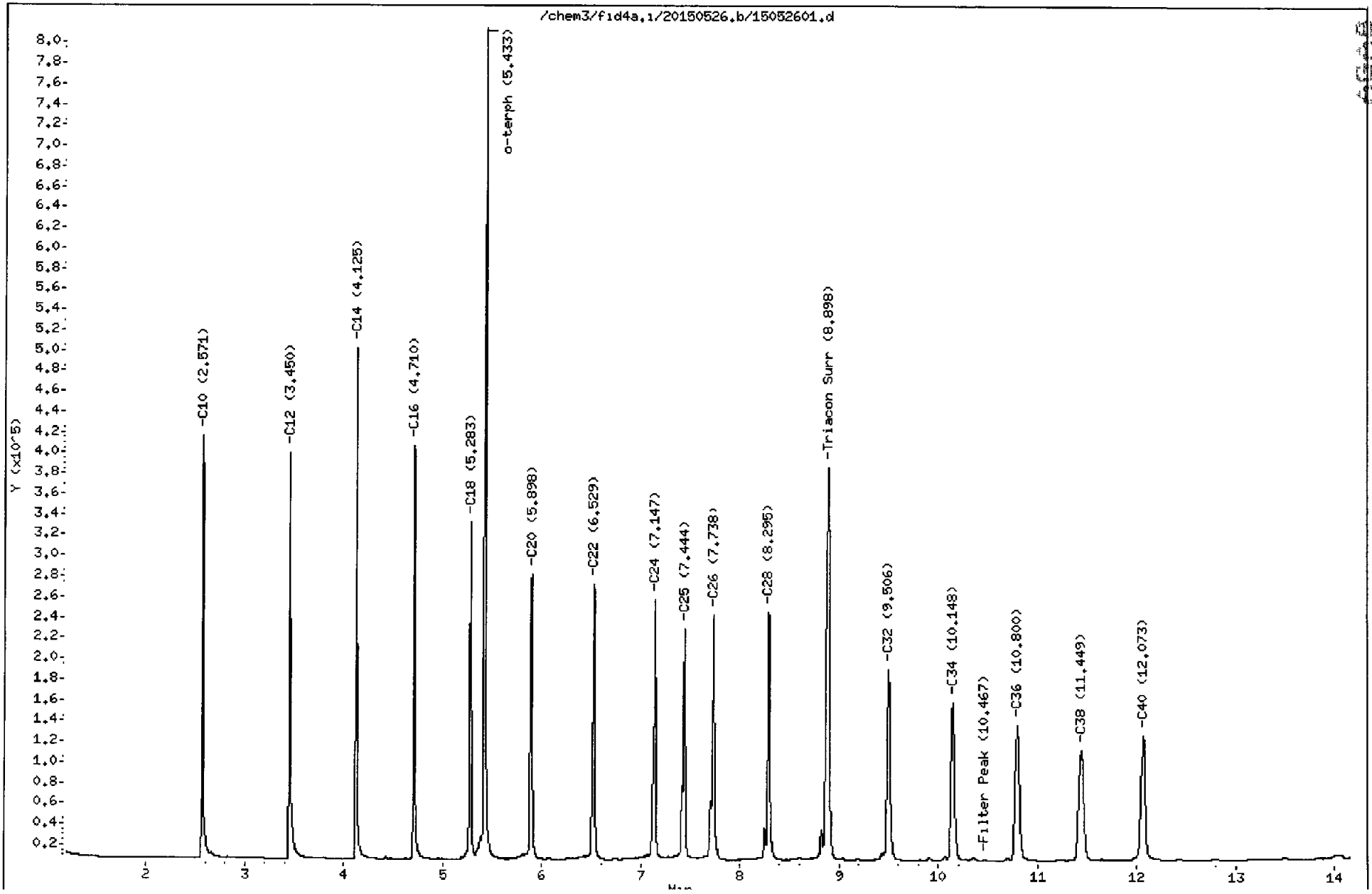
Sample Info: RT0526

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052602.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: IB0526
Client ID:
Injection: 26-MAY-2015 11:25
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	357944	14.50
C8	0.995	0.006	92234	323847	WATPHD	(C12-C24)	19636	1.19
C10	2.549	-0.022	658	3471	WATPHM	(C24-C38)	147431	9.69
C12	3.439	-0.011	194	492	AK102	(C10-C25)	36571	1.86
C14	4.142	0.017	94	194	AK103	(C25-C36)	118433	12.87
C16	4.723	0.013	96	402				
C18	5.281	-0.001	236	269				
C20	5.885	-0.013	361	819	JET-A	(C10-C18)	25517	1.39
C22	6.548	0.019	115	420				
C24	7.124	-0.023	26	25				
C25	7.426	-0.019	30	34				
C26	7.756	0.018	161	299				
C28	8.316	0.021	656	2368				
C32	9.529	0.023	1711	11888				
C34	10.133	-0.015	414	1045				
Filter Peak	10.479	0.012	470	942				
C36	10.796	-0.004	2269	15915				
C38	11.477	0.028	891	7578				
C40	12.041	-0.032	2508	20732				
o-terph	5.431	-0.001	888610	1071323				
Triacon Surr	8.893	-0.004	457308	925090				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1071323	46.5	103.3
Triacontane	925090	46.2	102.6

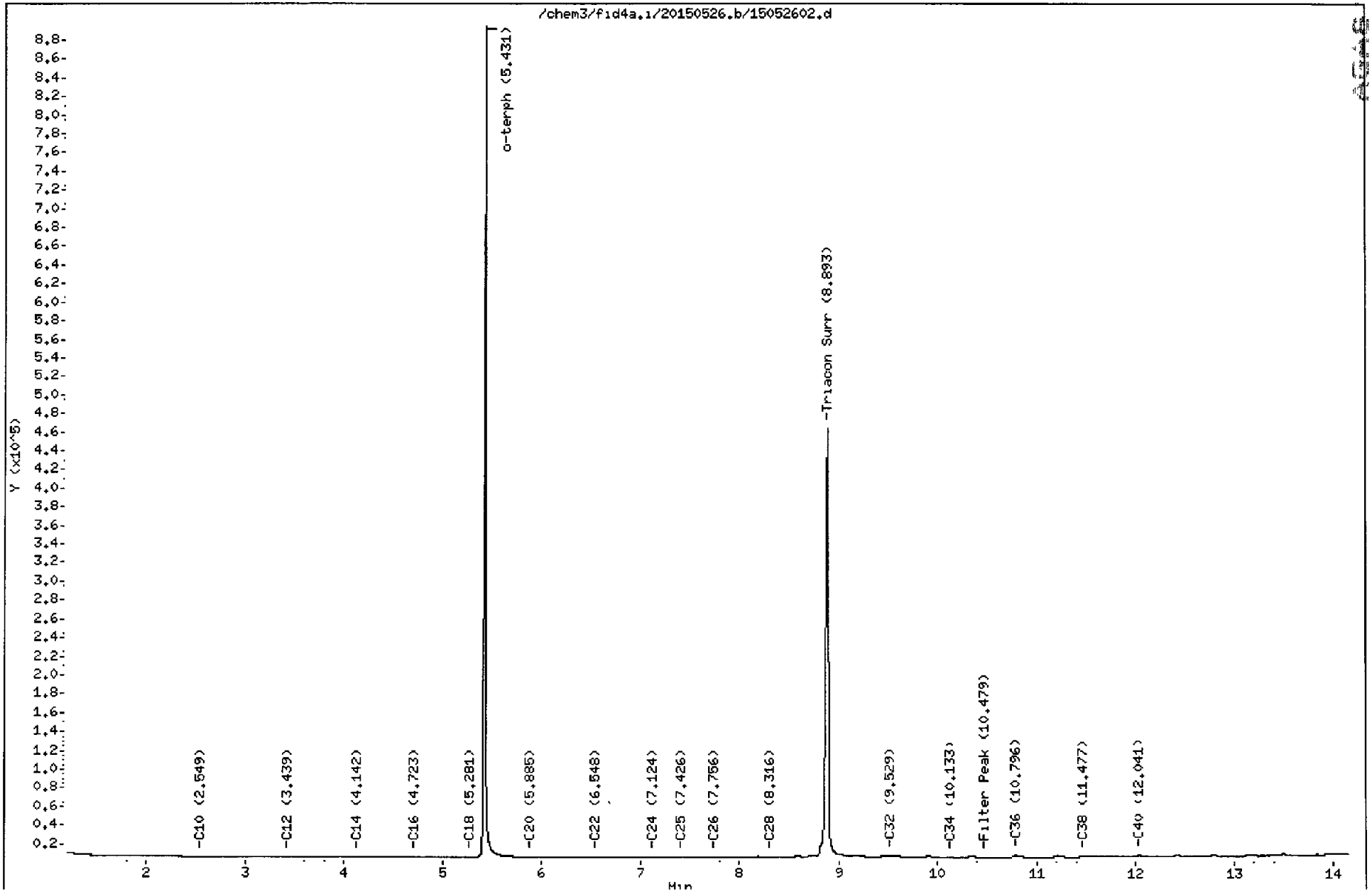
MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

Data File: /chem3/fid4a.i/20150526.b/15052602.d
Date : 26-MAY-2015 11:25
Client ID:
Sample Info: IB0526

Instrument: fid4a.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052603.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#1
Client ID:
Injection: 26-MAY-2015 11:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	2111635	85.55
C8	0.993	0.004	78252	203096	WATPHD	(C12-C24)	4006487	242.22
C10	2.601	0.030	4864	4166	WATPHM	(C24-C38)	77658	5.10
C12	3.450	0.000	34959	40632	AK102	(C10-C25)	4720175	240.04
C14	4.125	0.000	54971	129361	AK103	(C25-C36)	52770	5.73
C16	4.711	0.001	78712	208741				
C18	5.281	-0.001	73856	112935				
C20	5.899	0.002	33034	118386	JET-A	(C10-C18)	3666632	199.64
C22	6.536	0.007	10672	51403				
C24	7.161	0.014	2912	22357				
C25	7.433	-0.011	1321	2015				
C26	7.690	-0.047	803	2334				
C28	8.293	-0.002	192	384				
C32	9.468	-0.038	597	1454				
C34	10.132	-0.016	112	246				
Filter Peak	10.460	-0.006	180	390				
C36	10.783	-0.017	918	3972				
C38	11.418	-0.031	466	2556				
C40	12.043	-0.030	1411	10026				
o-terph	5.432	-0.001	825869	1020814				
Triacon Surr	8.879	-0.018	32	60				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

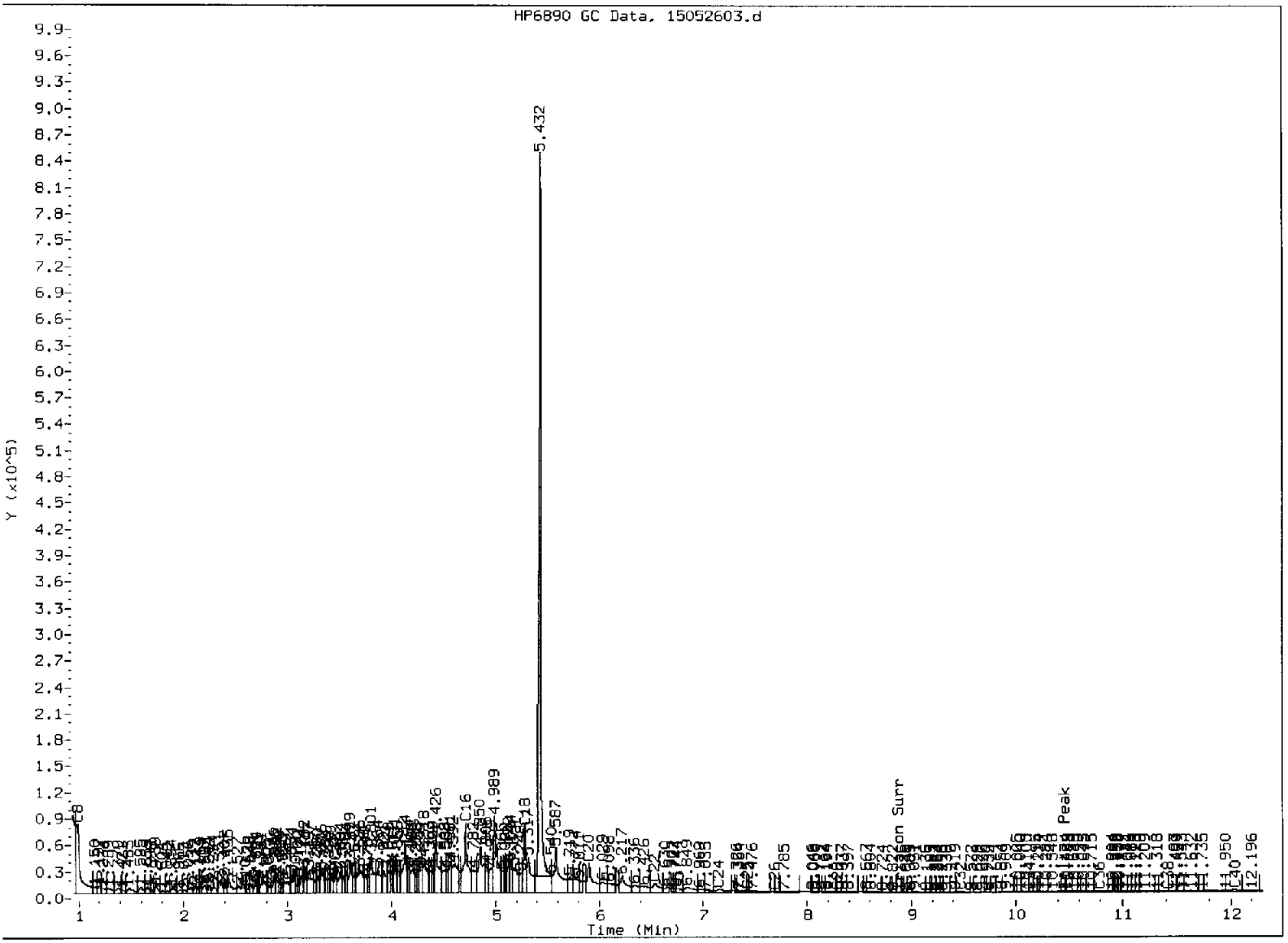
Surrogate	Area	Amount	%Rec
o-Terphenyl	1020814	44.3	98.4 M
Triacontane	60	0.0	0.0

ML
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 DIESEL#1 FID:4A SIGNAL



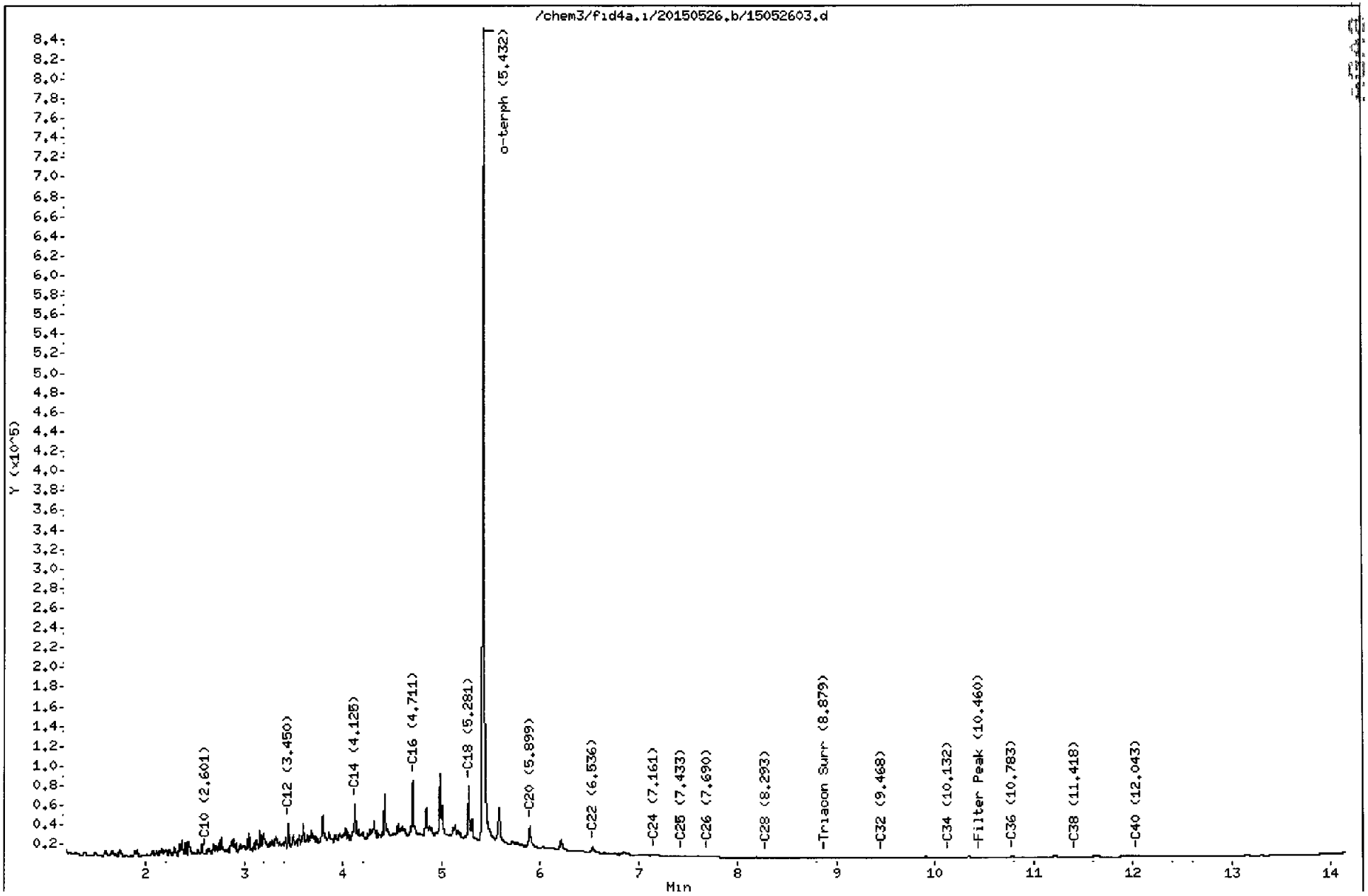
MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052603.d
Date : 26-MAY-2015 11:49
Client ID:
Sample Info: DIESEL#1

Instrument: fid4a.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052604.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#1
Client ID:
Injection: 26-MAY-2015 12:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	290387	11.76
C8	0.994	0.005	56883	238930	WATPHD	(C12-C24)	643067	38.88
C10	2.550	-0.021	570	1567	WATPHM	(C24-C38)	7084867	465.44
C12	3.495	0.045	112	236	AK102	(C10-C25)	867140	44.10
C14	4.111	-0.014	30	73	AK103	(C25-C36)	5995754	651.57
C16	4.724	0.014	228	771				
C18	5.297	0.015	357	765				
C20	5.886	-0.012	1588	3536	JET-A	(C10-C18)	38239	2.08
C22	6.496	-0.033	4761	5377				
C24	7.148	0.001	19328	50086				
C25	7.460	0.016	25240	128518				
C26	7.754	0.016	29081	95026				
C28	8.299	0.004	31951	81106				
C32	9.508	0.002	31413	107481				
C34	10.156	0.008	27885	80158				
Filter Peak	10.466	-0.001	27232	138922				
C36	10.808	0.008	24818	77767				
C38	11.440	-0.010	22026	71170				
C40	12.068	-0.005	19468	33495				
o-terph	5.438	0.005	848	2887				
Triacon Surr	8.892	-0.005	330429	810530				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2887	0.1	0.3
Triacontane	810530	40.4	89.9 M

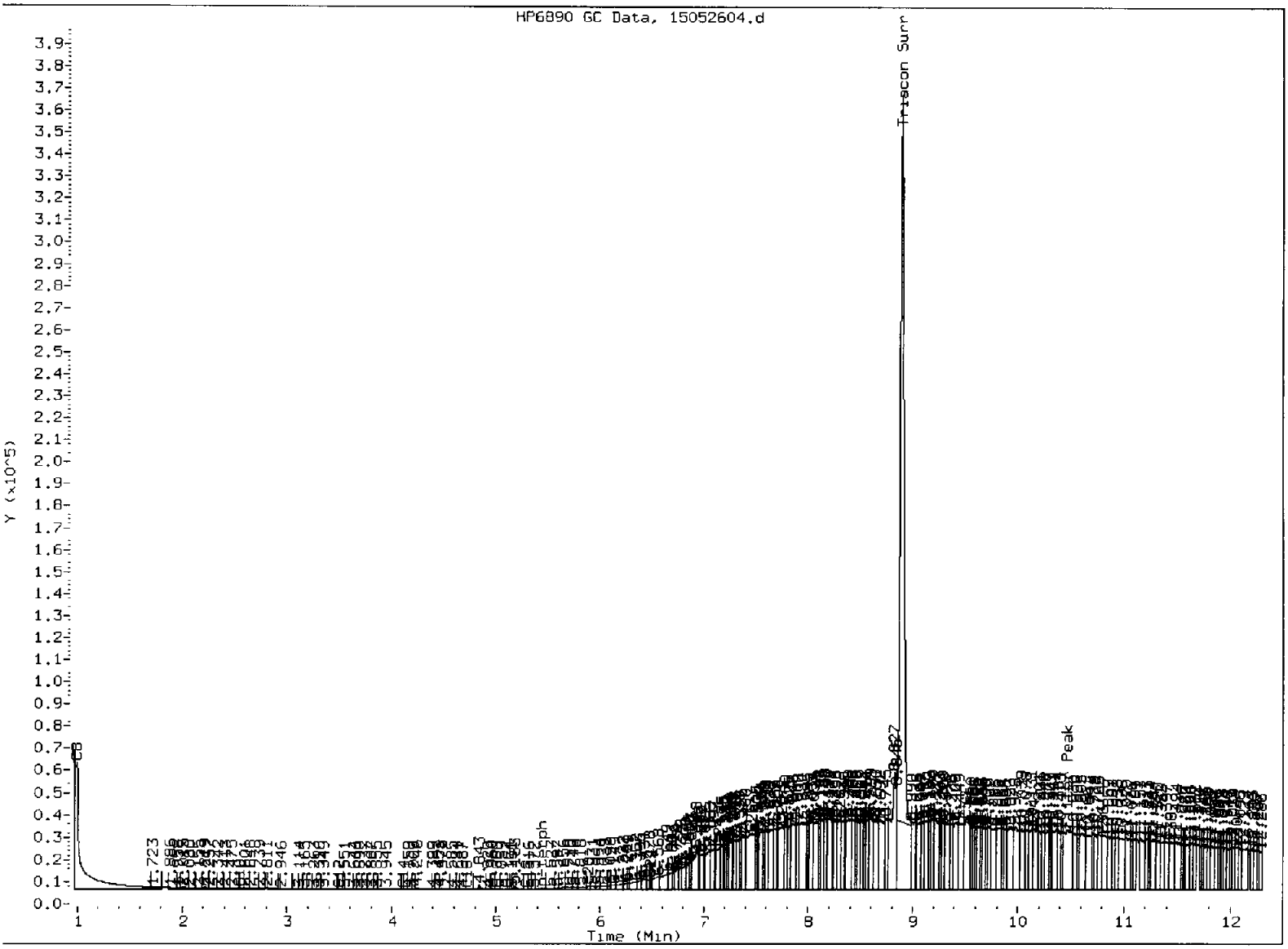
ML
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGAB : 81623

FID:4A-2C/RTX-1 MOIL#1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052604.d

Page 1

Date : 26-MAY-2015 12:12

Client ID:

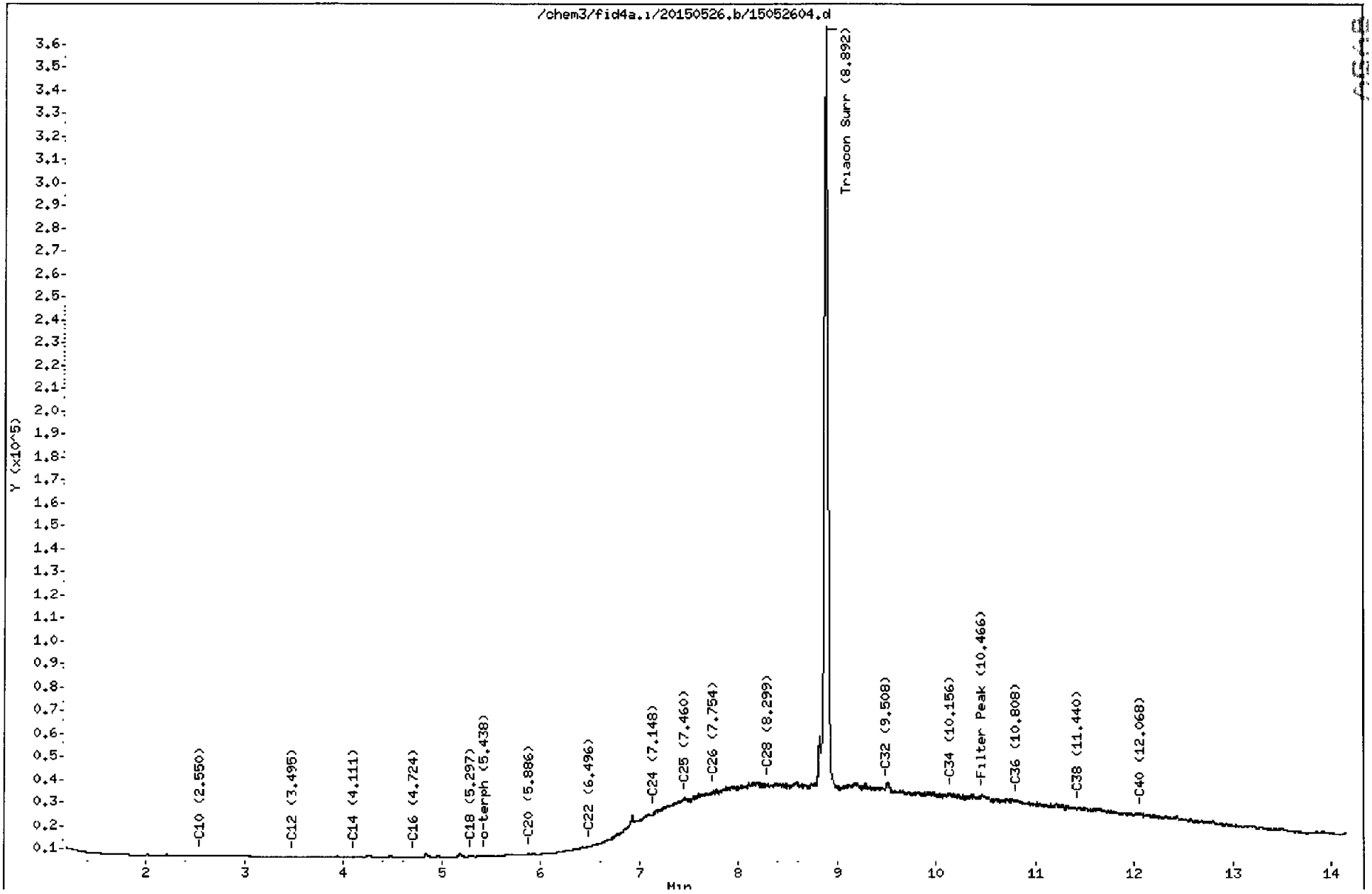
Instrument: fid4a.i

Sample Info: MOIL#1

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052615.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#2
Client ID:
Injection: 26-MAY-2015 16:53
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	2005434	81.24
C8	0.994	0.005	83051	220446	WATPHD	(C12-C24)	4168075	251.98
C10	2.572	0.001	12954	19113	WATPHM	(C24-C38)	84686	5.56
C12	3.450	0.000	34152	40641	AK102	(C10-C25)	4896793	249.02
C14	4.125	0.000	54337	129861	AK103	(C25-C36)	61144	6.64
C16	4.712	0.002	79204	216372				
C18	5.283	0.000	75327	118696				
C20	5.900	0.003	30757	122367	JET-A	(C10-C18)	3773027	205.43
C22	6.534	0.005	10221	53638				
C24	7.166	0.020	2998	27452				
C25	7.474	0.030	1597	13758				
C26	7.780	0.043	1540	6681				
C28	8.320	0.025	223	1415				
C32	9.459	-0.047	1229	2348				
C34	10.169	0.020	91	97				
Filter Peak	10.453	-0.014	127	224				
C36	10.794	-0.006	1342	5416				
C38	11.401	-0.048	427	941				
C40	12.034	-0.039	1935	9308				
o-terph	5.435	0.002	903173	1025118				
Triacon Surr	8.885	-0.013	52	98				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

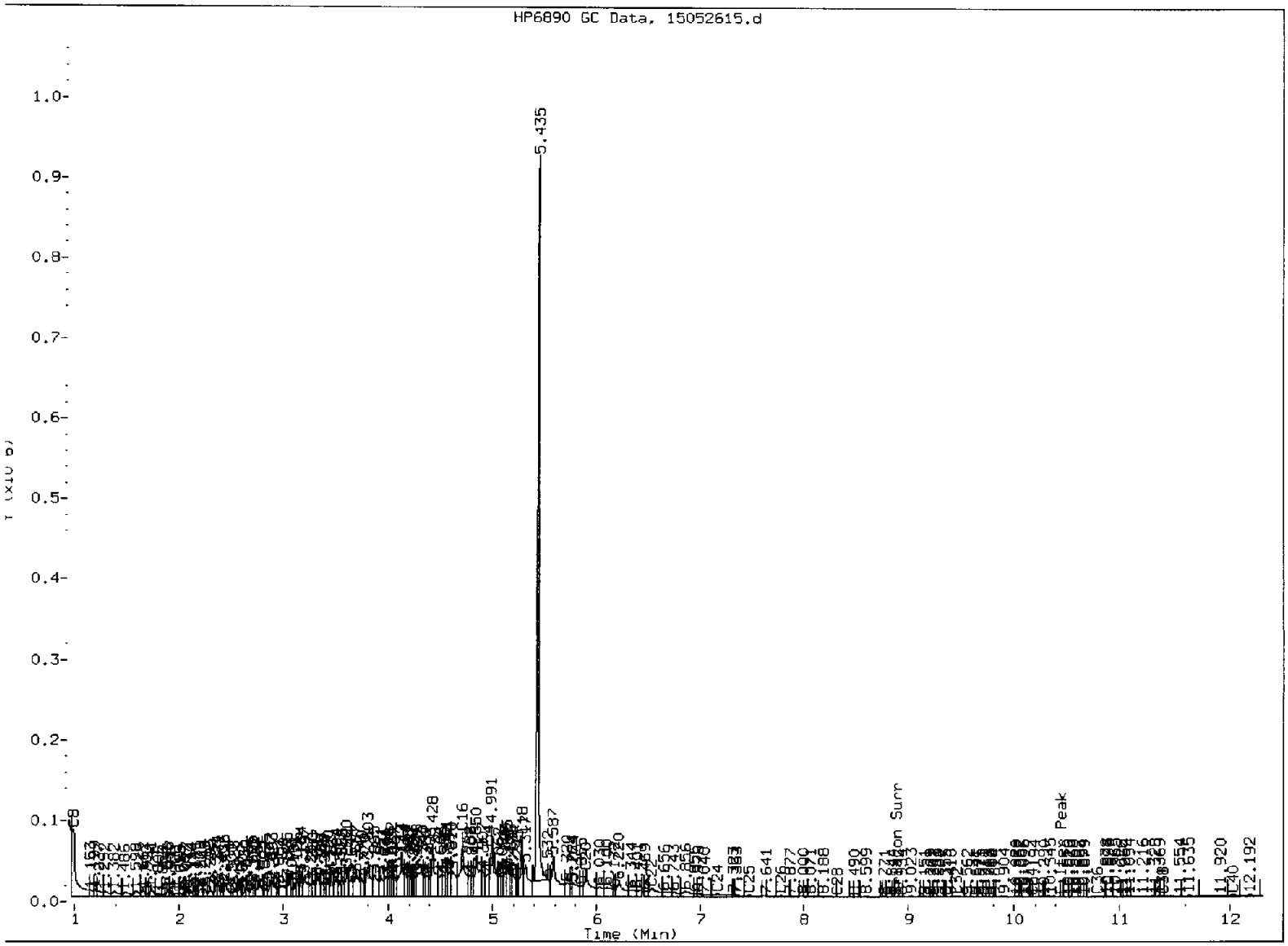
Surrogate	Area	Amount	%Rec
o-Terphenyl	1025118	44.5	98.9 M
Triacontane	98	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

MC 5/26/15 27

FID:4A-2C/RTX-1 DIESEL#2 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052615.d

Date : 26-MAY-2015 16:53

Client ID:

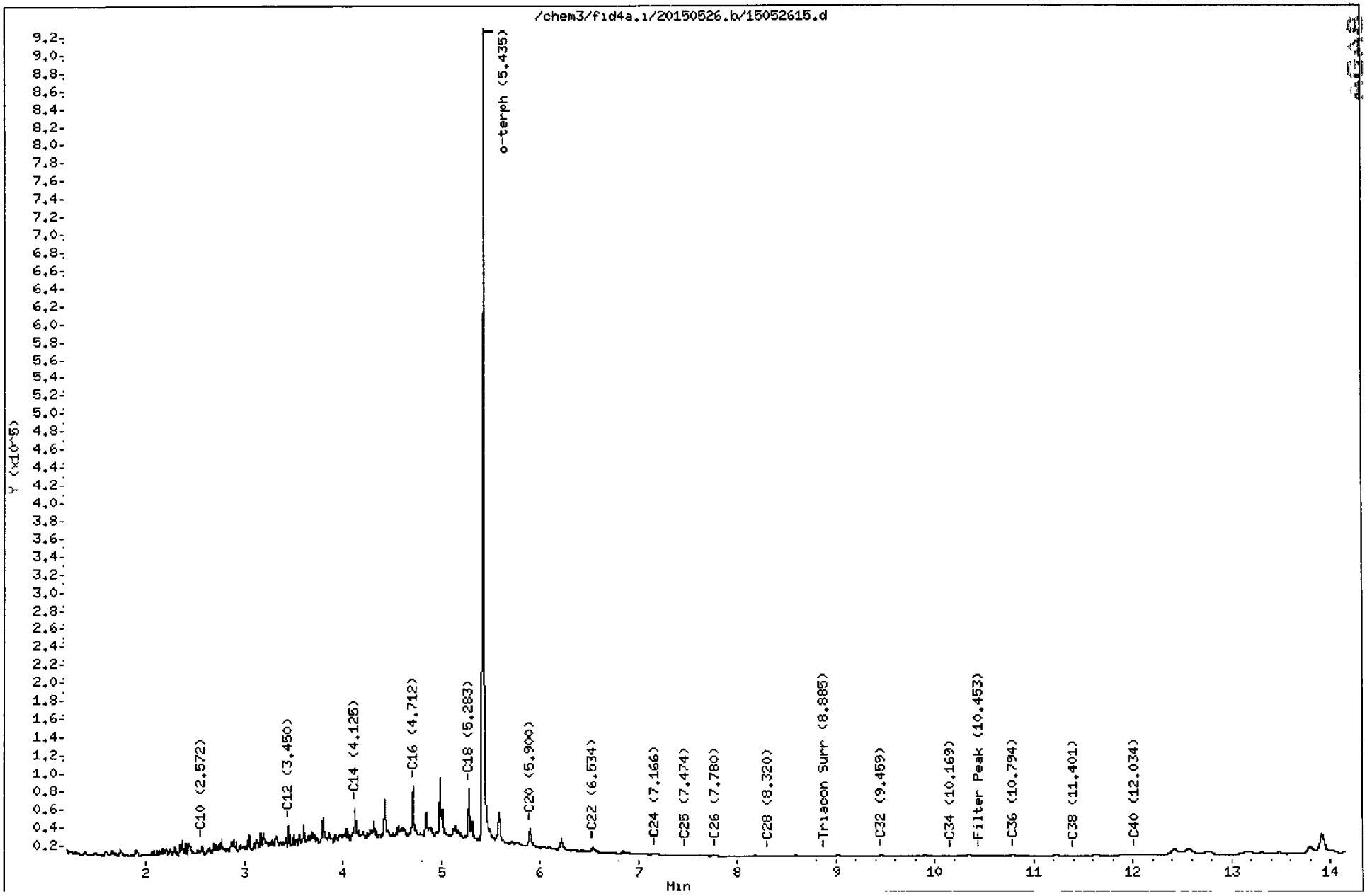
Sample Info: DIESEL#2

Instrument: fid4a.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052616.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#2
Client ID:
Injection: 26-MAY-2015 17:17
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	345541	14.00
C8	0.994	0.005	82468	281831	WATPHD	(C12-C24)	635713	38.43
C10	2.537	-0.034	703	2626	WATPHM	(C24-C38)	6594975	433.25
C12	3.448	-0.002	163	565	AK102	(C10-C25)	916504	46.61
C14	4.141	0.016	38	66	AK103	(C25-C36)	5460684	593.42
C16	4.725	0.015	164	632				
C18	5.259	-0.024	243	279				
C20	5.885	-0.013	1847	3623	JET-A	(C10-C18)	37822	2.06
C22	6.505	-0.025	4800	5860				
C24	7.146	0.000	19269	16133				
C25	7.461	0.017	25788	84994				
C26	7.748	0.010	29399	119649				
C28	8.302	0.007	32611	53657				
C32	9.495	-0.010	33021	132378				
C34	10.160	0.011	28879	56185				
Filter Peak	10.485	0.018	27209	61519				
C36	10.816	0.016	25061	75181				
C38	11.461	0.012	21331	29577				
C40	12.060	-0.013	18968	66446				
o-terph	5.441	0.009	682	2083				
Triacon Surr	8.895	-0.003	365595	800381				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2083	0.1	0.2
Triacontane	800381	39.9	88.8 M

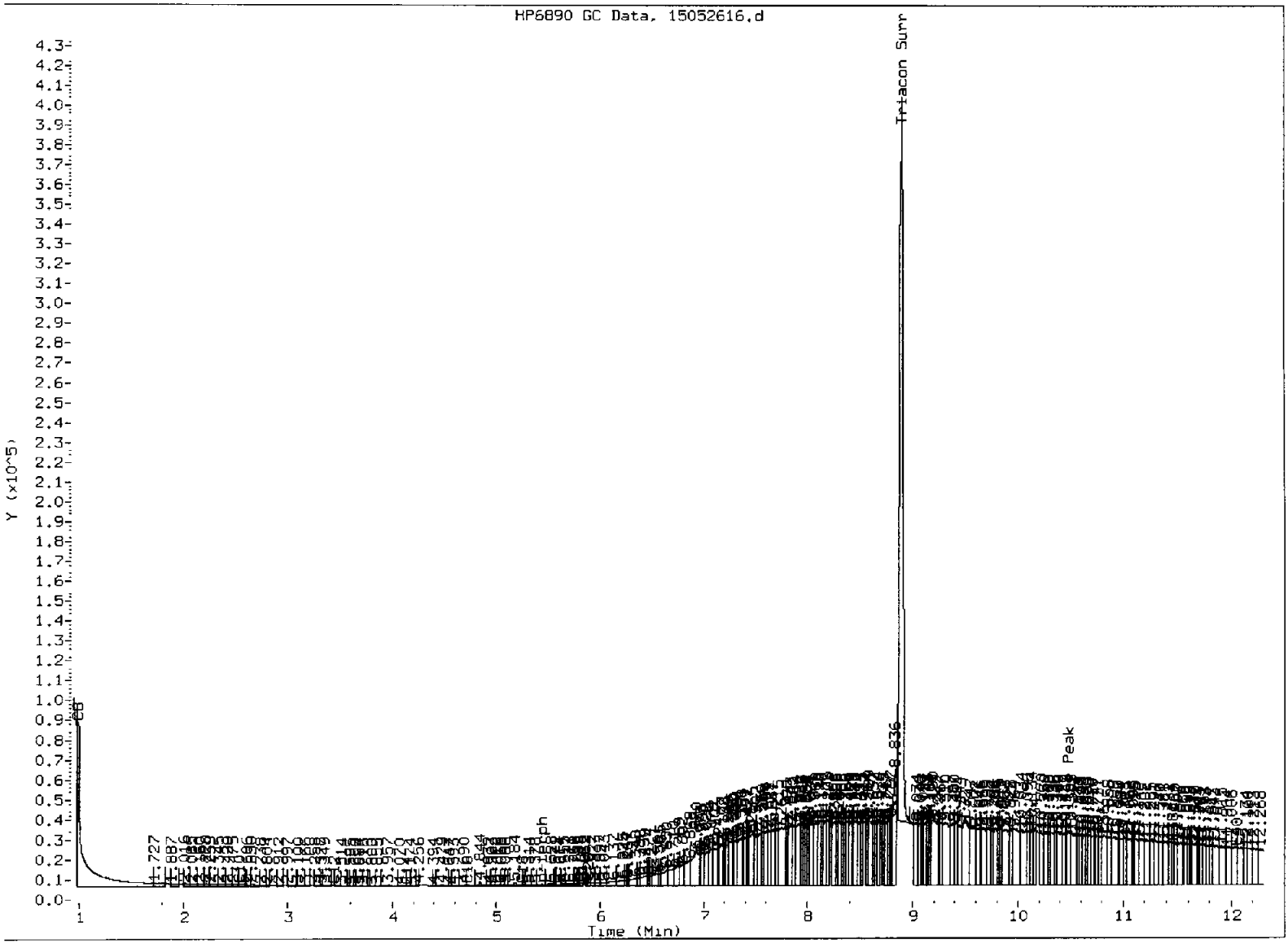
mc
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGAB 81029

FID:4A-2C/RTX-1 MOIL#2 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052616.d

Page 1

Date : 26-MAY-2015 17:17

Client ID:

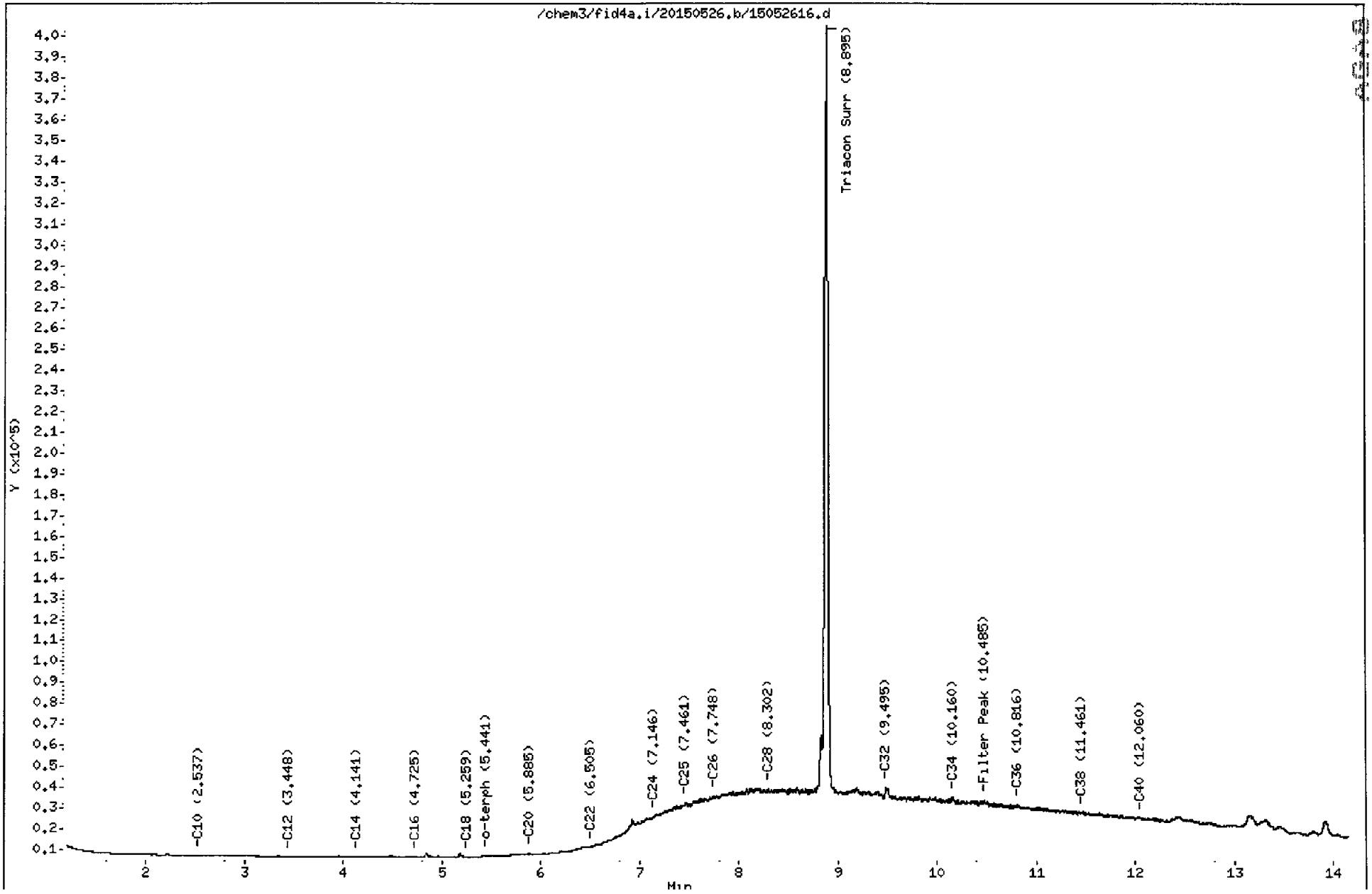
Instrument: fid4a.i

Sample Info: MOIL#2

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052624.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8MBS1
Client ID: AGA8MBS1
Injection: 26-MAY-2015 20:26

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	392140	15.89
C8	0.979	-0.011	87687	287698	WATPHD	(C12-C24)	44090	2.67
C10	2.564	-0.007	1019	3744	WATPHM	(C24-C38)	90757	5.96
C12	----				AK102	(C10-C25)	79620	4.05
C14	4.143	0.018	209	361	AK103	(C25-C36)	69326	7.53
C16	4.680	-0.031	372	1340				
C18	5.257	-0.026	633	1293				
C20	5.901	0.004	668	547	JET-A	(C10-C18)	58425	3.18
C22	6.495	-0.035	346	2168				
C24	7.110	-0.036	127	645				
C25	7.480	0.036	163	651				
C26	7.780	0.043	492	822				
C28	8.312	0.017	2557	6465				
C32	9.535	0.029	1556	10704				
C34	10.149	0.000	276	361				
Filter Peak	10.491	0.024	372	2015				
C36	10.773	-0.027	664	2653				
C38	11.438	-0.011	635	1700				
C40	----							
o-terph	5.430	-0.002	846536	954139				
Triacon Surr	8.875	-0.022	498541	801911				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	954139	41.4	92.0
Triacontane	801911	40.0	88.9

MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 . 81902

Data File: /chem3/fid4a.i/20150526.b/15052624.d

Date : 26-MAY-2015 20:26

Client ID: AGA8MBS1

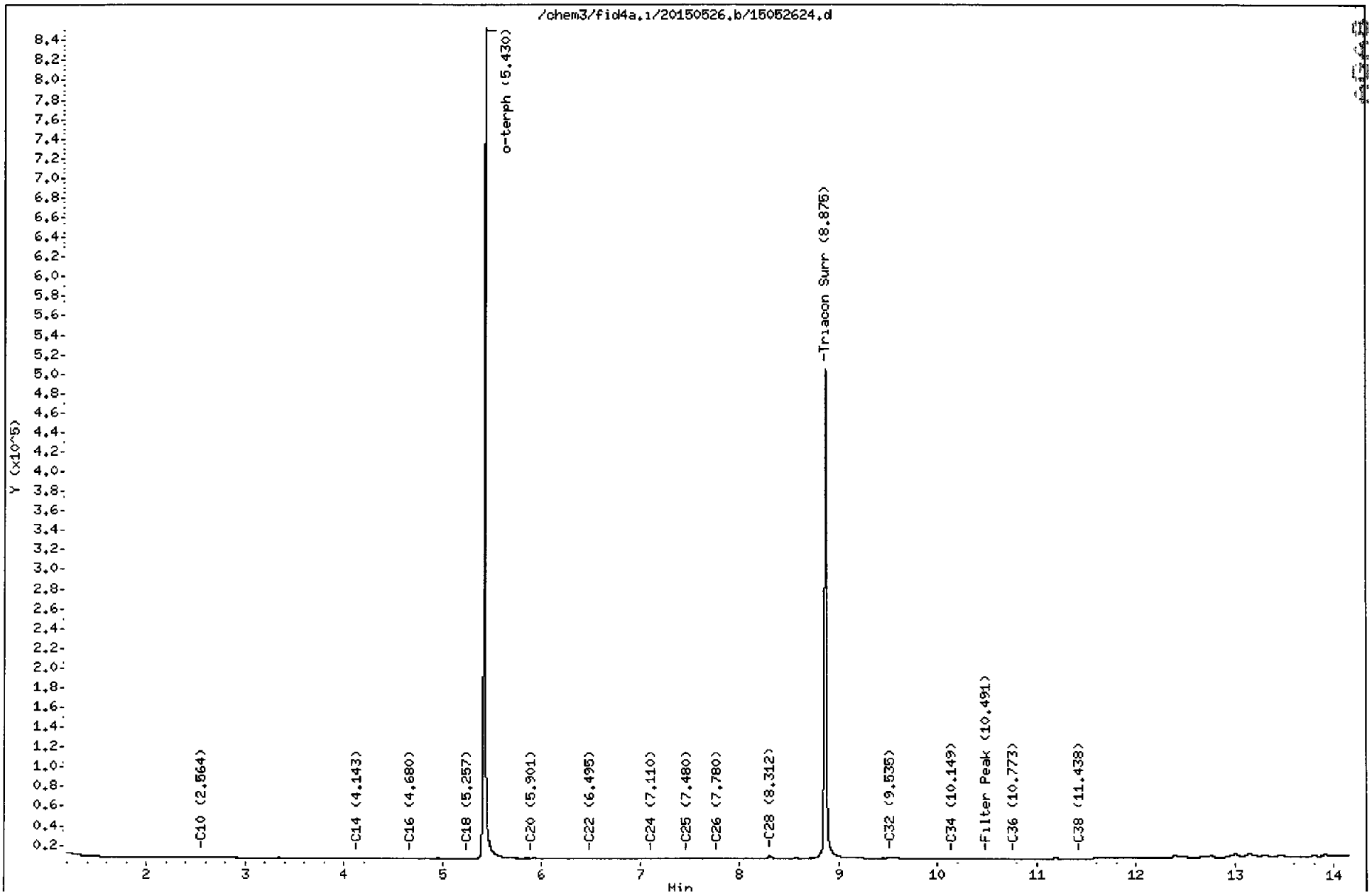
Sample Info: AGA8MBS1

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052625.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8LCSS1
Client ID: AGA8LCSS1
Injection: 26-MAY-2015 20:50
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.743	0.015	116721	577901	WATPHG	(Tol-C12)	6885702	278.95
C8	0.994	0.005	77393	156992	WATPHD	(C12-C24)	22313673	1348.99
C10	2.573	0.002	97670	110330	WATPHM	(C24-C38)	369873	24.30
C12	3.453	0.003	206977	234864	AK102	(C10-C25)	26115864	1328.11
C14	4.129	0.004	316741	730367	AK103	(C25-C36)	274171	29.79
C16	4.716	0.006	439592	1147010				
C18	5.289	0.006	375370	639431				
C20	5.901	0.004	205840	676200	JET-A	(C10-C18)	20160097	1097.67
C22	6.530	0.000	82177	274814				
C24	7.147	0.000	26431	103087				
C25	7.445	0.000	12093	59073				
C26	7.740	0.003	5985	14814				
C28	8.310	0.015	2437	11567				
C32	9.528	0.022	1189	4646				
C34	10.180	0.032	36	39				
Filter Peak	10.462	-0.005	40	40				
C36	10.773	-0.027	2422	5891				
C38	11.447	-0.002	268	688				
C40	----							
o-terph	5.437	0.005	767285	955313				
Triacon Surr	8.875	-0.022	458248	741011				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	955313	41.5	92.1 M
Triacontane	741011	37.0	82.2

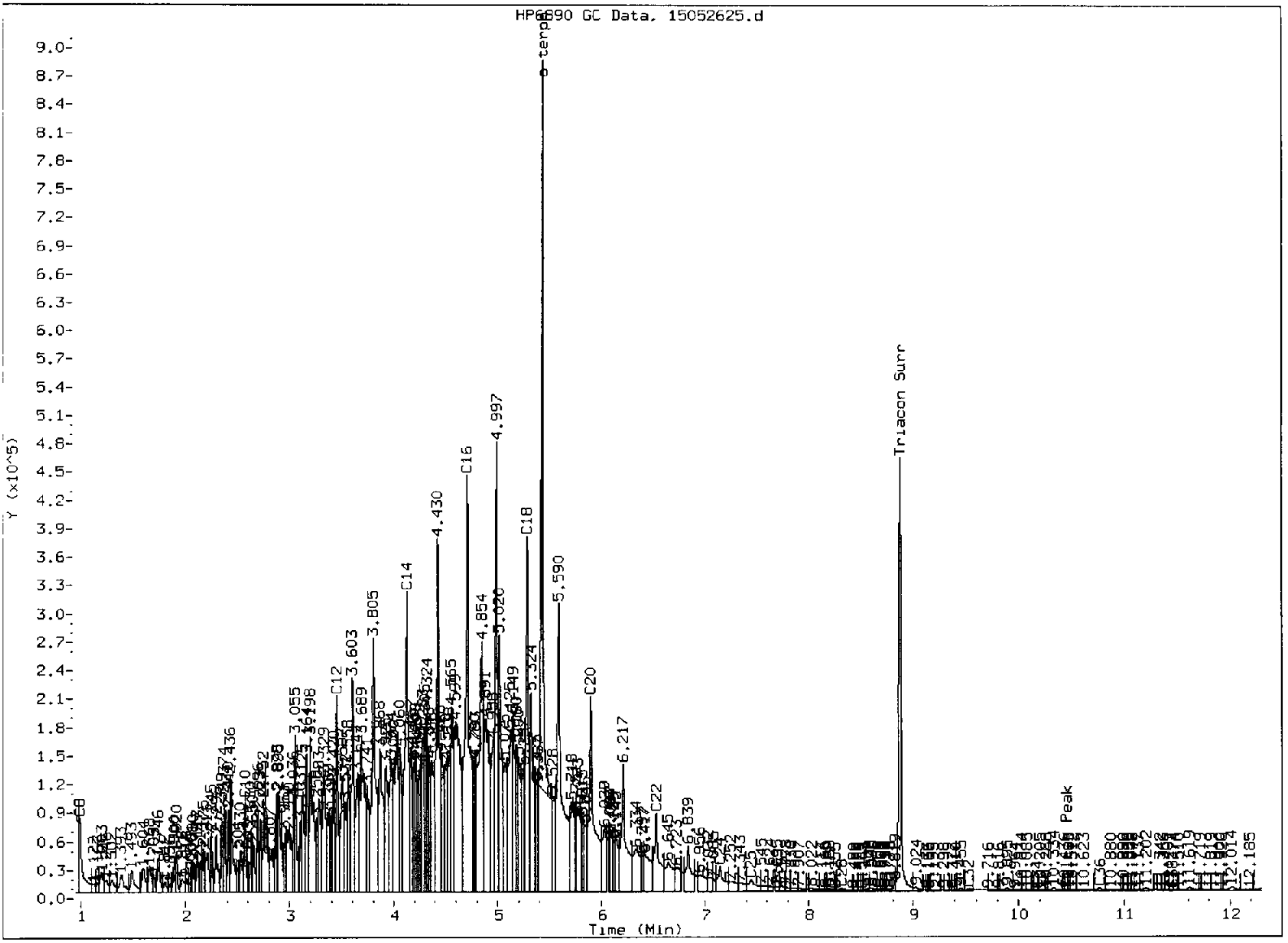
ML
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 - 8180W

FID:4A-2C/RTX-1 AGA8LCSS1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: ML Date: 5/27/15

AGA8 8185

Data File: /chem3/fid4a.i/20150526.b/15052625.d

Date : 26-MAY-2015 20:50

Client ID: AGA8LCSS1

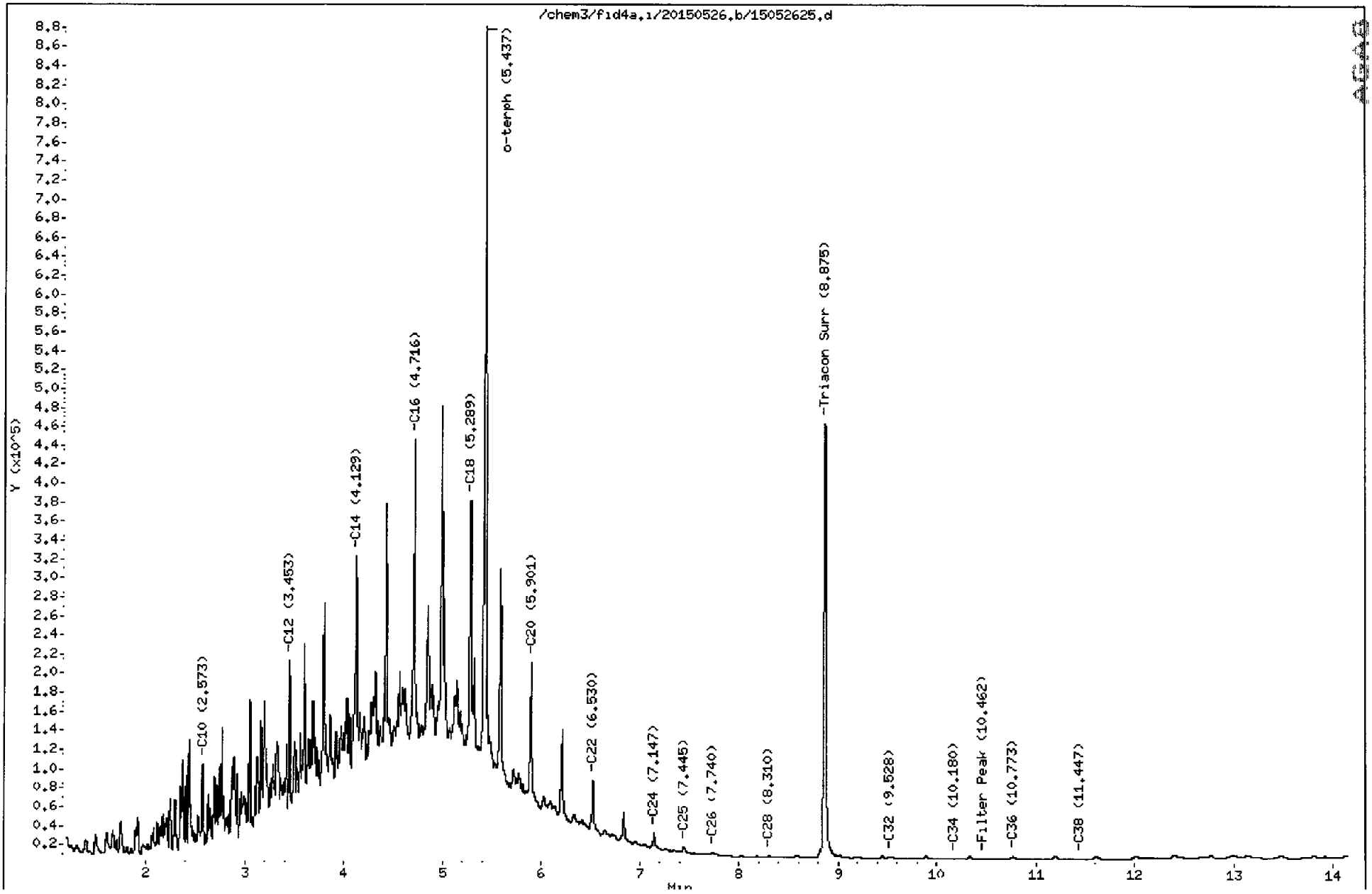
Sample Info: AGA8LCSS1

Instrument: fid4a.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052626.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8B
Client ID: SDP-10(15.5-16.5)
Injection: 26-MAY-2015 21:13
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.723	-0.004	95939	642365	WATPHG	(Tol-C12)	1533908	62.14
C8	0.978	-0.011	62494	159754	WATPHD	(C12-C24)	2604035	157.43
C10	2.568	-0.002	1797	4215	WATPHM	(C24-C38)	4601184	302.27
C12	3.448	-0.002	4429	5764	AK102	(C10-C25)	2958185	150.44
C14	4.155	0.030	7224	12160	AK103	(C25-C36)	4066278	441.89
C16	4.694	-0.016	9773	24044				
C18	5.278	-0.004	15147	19558				
C20	5.903	0.006	17627	66722	JET-A	(C10-C18)	1279366	69.66
C22	6.528	-0.002	12808	44289				
C24	7.167	0.020	20743	39138				
C25	7.437	-0.007	25193	60055				
C26	7.728	-0.010	21675	47804				
C28	8.273	-0.022	35652	142920				
C32	9.484	-0.022	25174	65047				
C34	10.173	0.024	20438	54267				
Filter Peak	10.483	0.017	15827	87588				
C36	10.782	-0.018	15656	70342				
C38	11.468	0.018	8423	25678				
C40	12.036	-0.037	10114	81834				
o-terph	5.435	0.003	674726	705434				
Triacon Surr	8.881	-0.017	366026	615218				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	705434	30.6	68.0 M
Triacontane	615218	30.7	68.2 M

mc 5/27/15

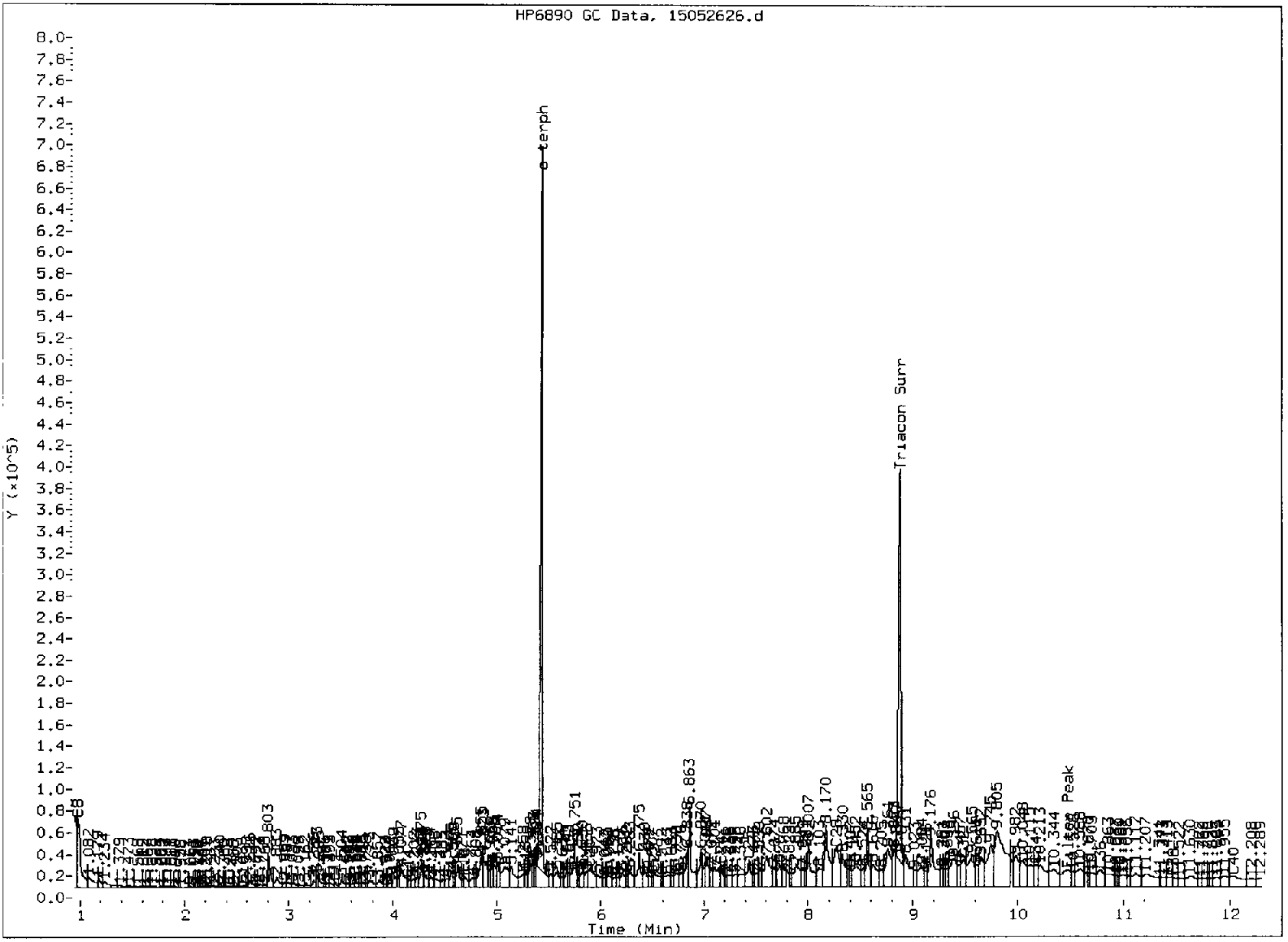
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 01837

FID:4A-2C/RTX-1 AGA8B

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052626.d

Date : 26-MAY-2015 21:13

Client ID: SDP-10(15.5-16.5)

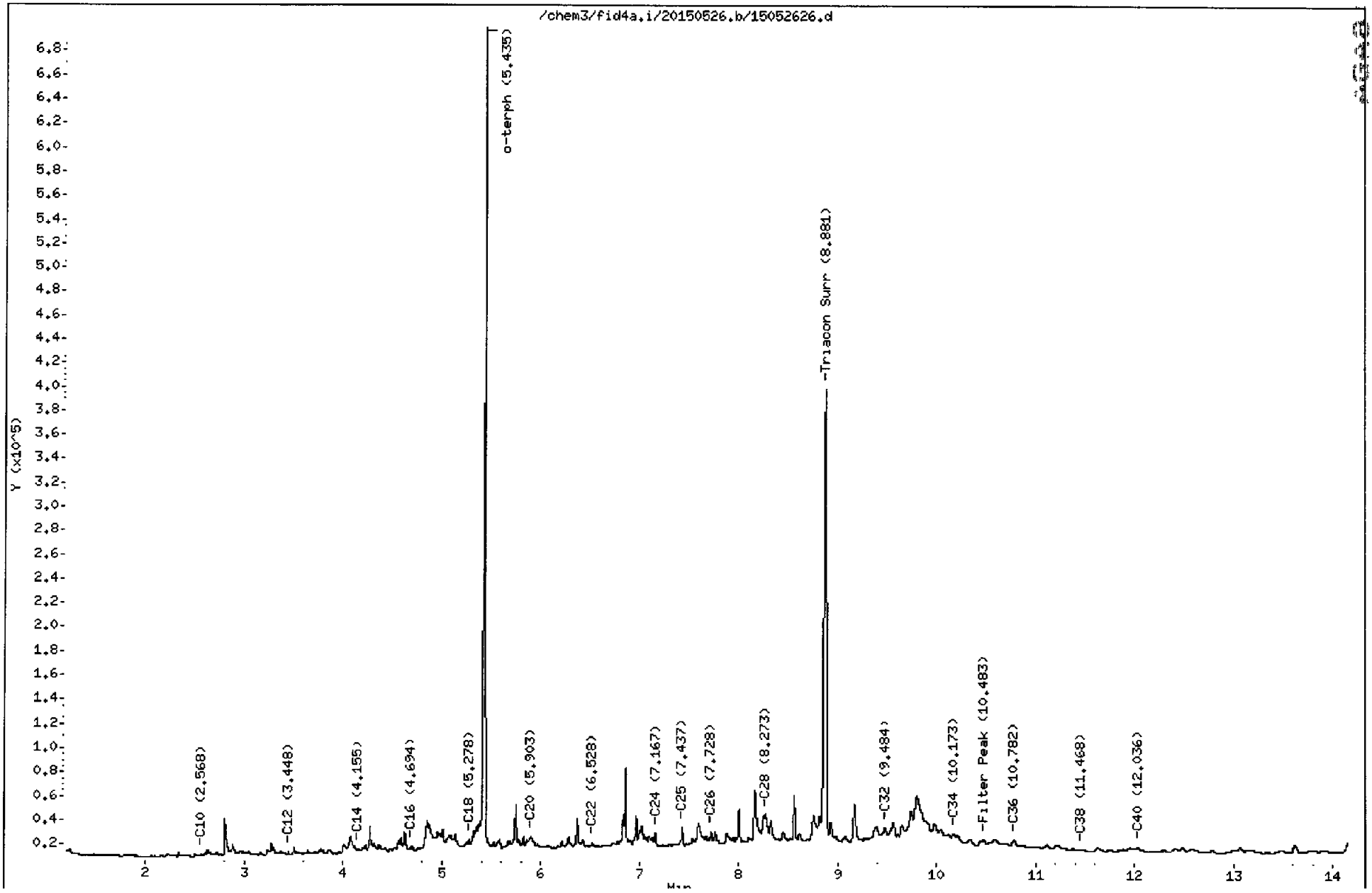
Sample Info: AGA8B

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052627.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8E
Client ID: SDP-08(12.0-13.5)
Injection: 26-MAY-2015 21:37
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	667818	27.05
C8	0.904	-0.085	93968	563825	WATPHD	(C12-C24)	186778	11.29
C10	2.563	-0.008	763	2812	WATPHM	(C24-C38)	448907	29.49
C12	3.485	0.035	330	983	AK102	(C10-C25)	220514	11.21
C14	4.110	-0.015	373	355	AK103	(C25-C36)	350480	38.09
C16	4.710	0.000	502	793				
C18	5.280	-0.003	1258	1514				
C20	5.910	0.012	1622	4637	JET-A	(C10-C18)	84927	4.62
C22	6.529	0.000	1651	6009				
C24	7.144	-0.003	2457	7987				
C25	7.440	-0.004	3736	11041				
C26	7.730	-0.008	4112	9343				
C28	8.282	-0.013	4718	11463				
C32	9.474	-0.032	6897	19804				
C34	10.161	0.012	2668	7609				
Filter Peak	10.435	-0.032	2176	9645				
C36	10.765	-0.035	2076	9102				
C38	11.451	0.002	2530	7576				
C40	----							
o-terph	5.432	-0.001	791451	903639				
Triacon Surr	8.878	-0.020	462811	784792				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	903639	39.2	87.1
Triacontane	784792	39.2	87.0

MC
5/27/15

M Indicates the peak was manually integrated

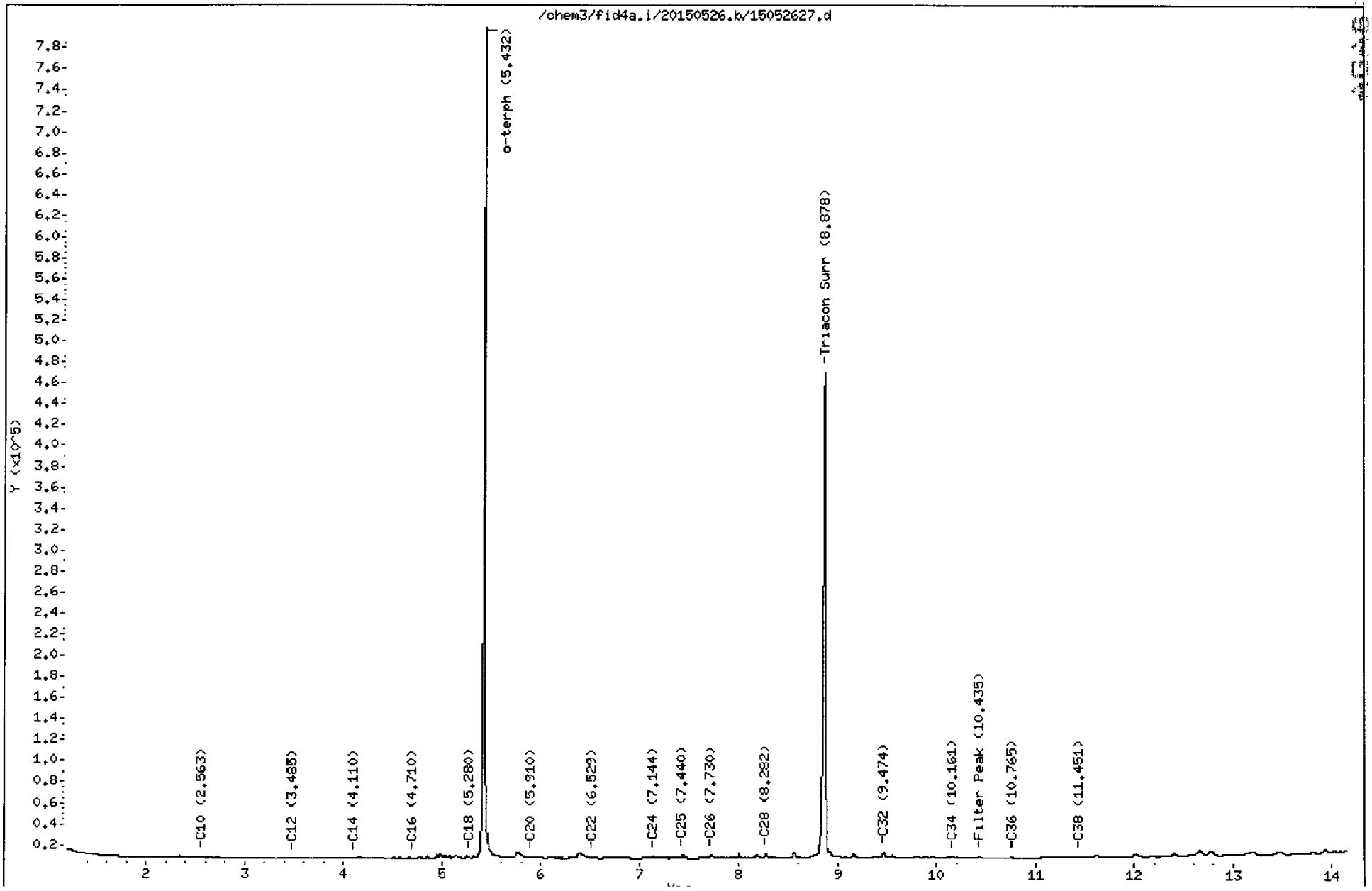
Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 . 8 1 8 U 3

Data File: /chem3/fid4a.i/20150526.b/15052627.d
Date : 26-MAY-2015 21:37
Client ID: SDP-08(12.0-13.5)
Sample Info: AGA8E

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052628.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8F
Client ID: SDP-07(1.5-3.0)
Injection: 26-MAY-2015 22:00

Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	492272	19.94
C8	0.894	-0.095	67357	383562	WATPHD	(C12-C24)	4353568	263.20
C10	2.570	-0.001	459	1222	WATPHM	(C24-C38)	7590659	498.66
C12	3.450	0.000	737	763	AK102	(C10-C25)	4713169	239.69
C14	4.123	-0.002	12658	14628	AK103	(C25-C36)	6469249	703.02
C16	4.711	0.001	25805	53484				
C18	5.282	-0.001	35197	86723				
C20	5.897	0.000	42115	81917	JET-A	(C10-C18)	1045864	56.94
C22	6.525	-0.004	46678	212186				
C24	7.141	-0.006	54337	204472				
C25	7.439	-0.005	59058	156740				
C26	7.726	-0.012	58724	177306				
C28	8.281	-0.014	60193	140054				
C32	9.477	-0.029	34474	169180				
C34	10.123	-0.025	29592	153692				
Filter Peak	10.440	-0.027	27704	122705				
C36	10.765	-0.035	25117	138168				
C38	11.457	0.008	20520	44338				
C40	12.084	0.011	20305	15140				
o-terph	5.425	-0.008	144064	155356				
Triacon Surr	8.864	-0.034	130806	170681				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	155356	6.7	74.9 M
Triacontane	170681	8.5	94.6 M

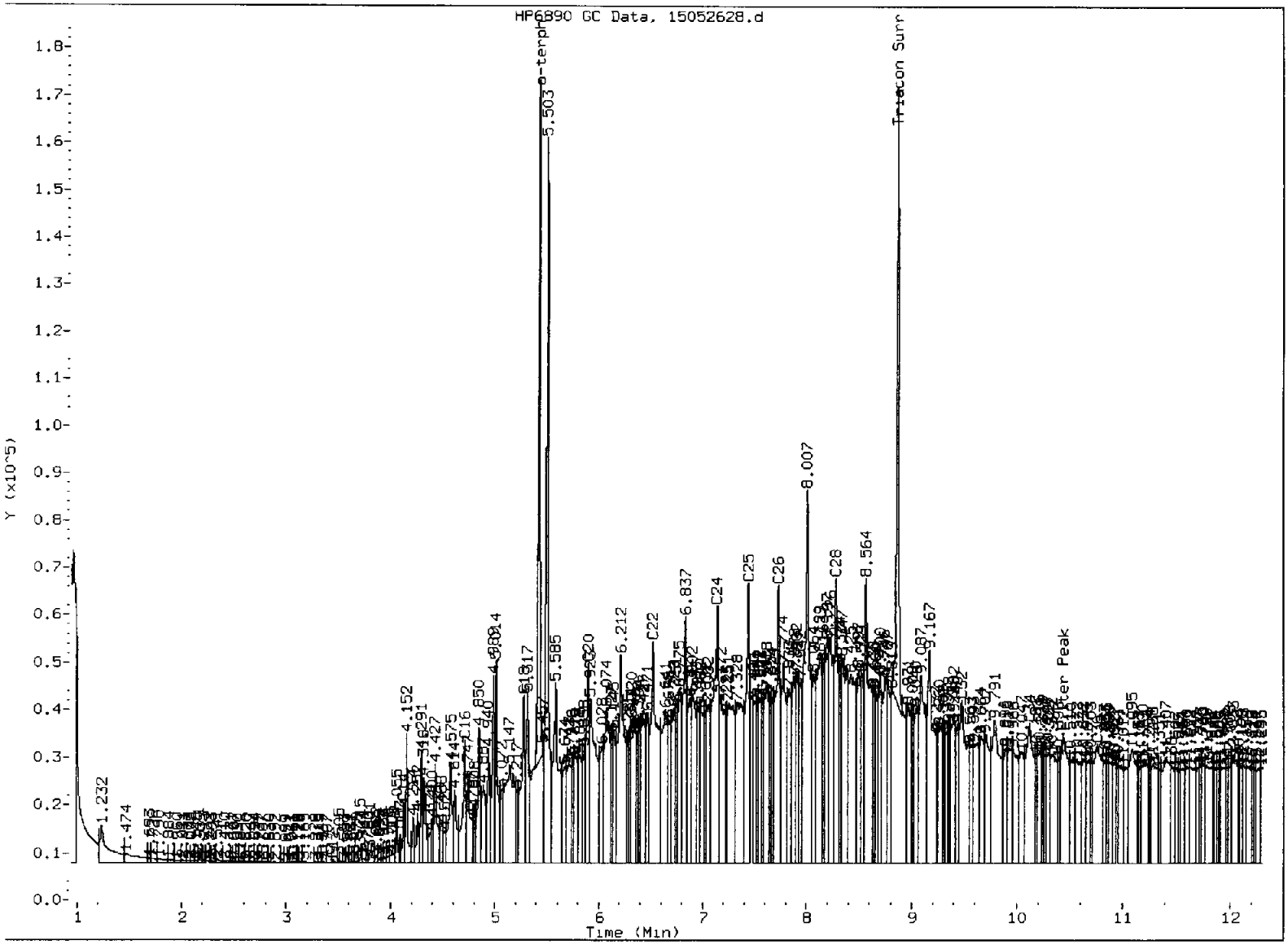
MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 81612

FID:4A-2C/RTX-1 AGA8F FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MM Date: 5/27/15

AGA-01003

Data File: /chem3/fid4a.i/20150526.b/15052628.d

Date : 26-MAY-2015 22:00

Client ID: SDP-07(1.5-3.0)

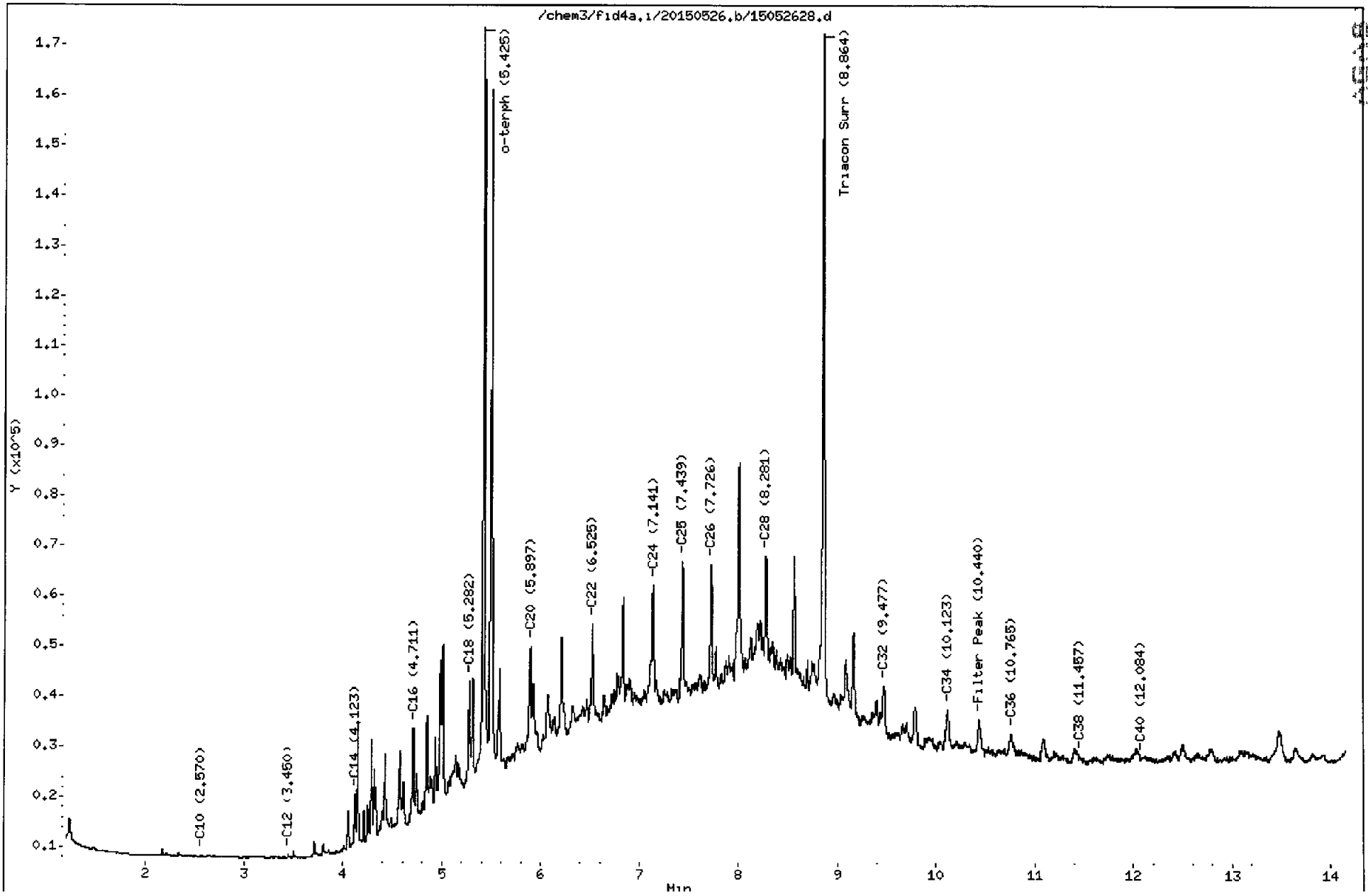
Sample Info: AGA8F,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052629.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8FMS
Client ID: SDP-07(1.5-3.0) MS
Injection: 26-MAY-2015 22:23

Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.823	0.095	94034	745839	WATPHG	(Tol-C12)	2003956	81.18
C8	0.973	-0.016	82122	264098	WATPHD	(C12-C24)	8976448	542.68
C10	2.569	-0.002	16124	18164	WATPHM	(C24-C38)	8420235	553.16
C12	3.449	-0.001	44114	46293	AK102	(C10-C25)	9966831	506.86
C14	4.124	-0.001	75018	148753	AK103	(C25-C36)	7120274	773.77
C16	4.713	0.003	111000	341438				
C18	5.283	0.001	109645	199953				
C20	5.899	0.002	84454	391124	JET-A	(C10-C18)	4992163	271.81
C22	6.527	-0.002	63894	240393				
C24	7.173	0.026	39974	133086				
C25	7.438	-0.007	64812	236843				
C26	7.729	-0.008	59622	193960				
C28	8.284	-0.011	62149	154550				
C32	9.478	-0.028	37887	140777				
C34	10.163	0.015	28936	38504				
Filter Peak	10.498	0.031	26417	83956				
C36	10.825	0.025	25818	51559				
C38	11.493	0.044	24871	79470				
C40	12.078	0.006	25360	74126				
o-terph	5.427	-0.006	143398	178236				
Triacon Surr	8.867	-0.031	133450	158618				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	178236	7.7	85.9 M
Triacontane	158618	7.9	87.9 M

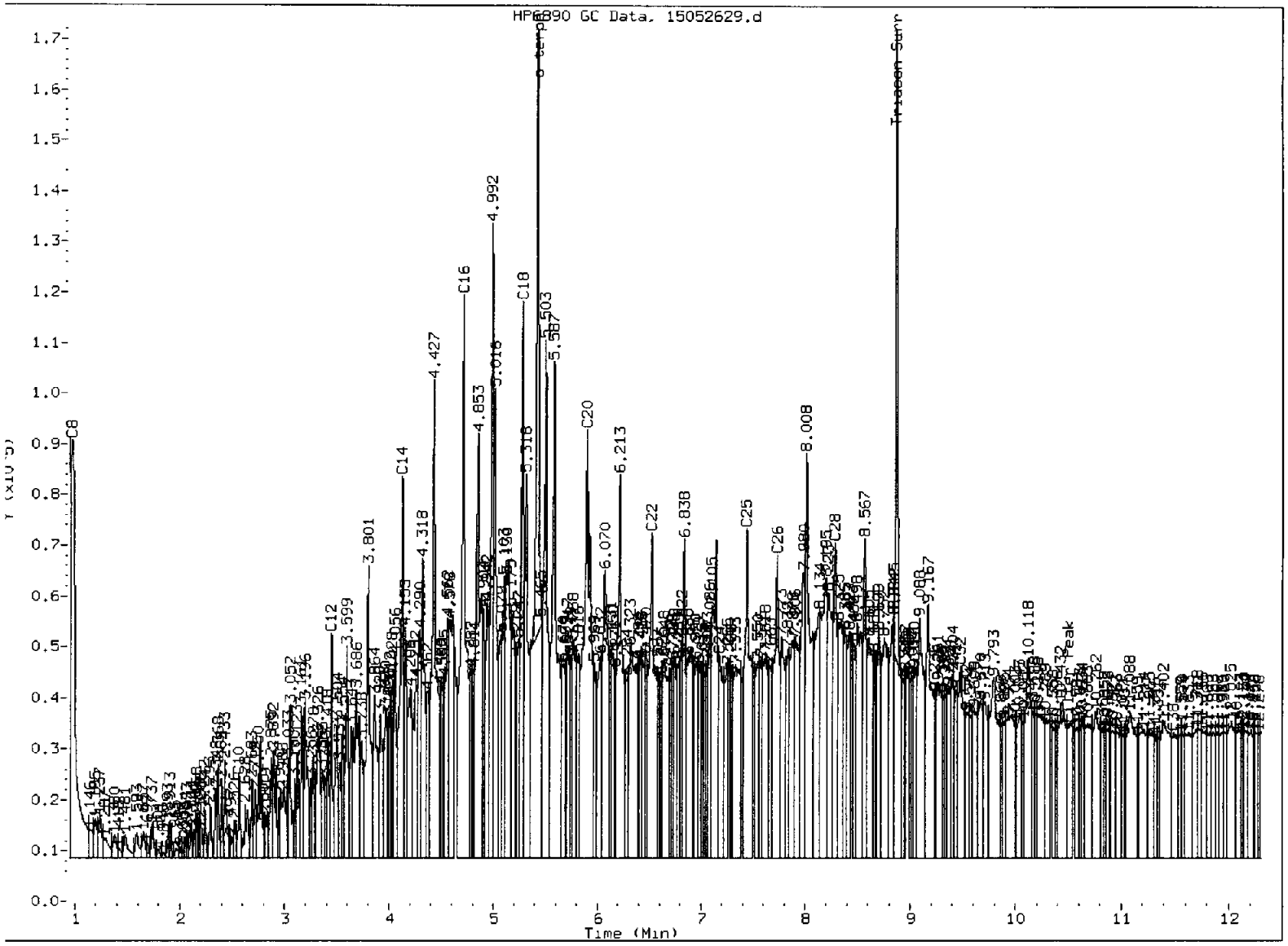
MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 - 0105

FID:4A-2C/RTX-1 AGA8FMS FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052629.d

Date : 26-MAY-2015 22:23

Client ID: SDP-07(1.5-3.0) MS

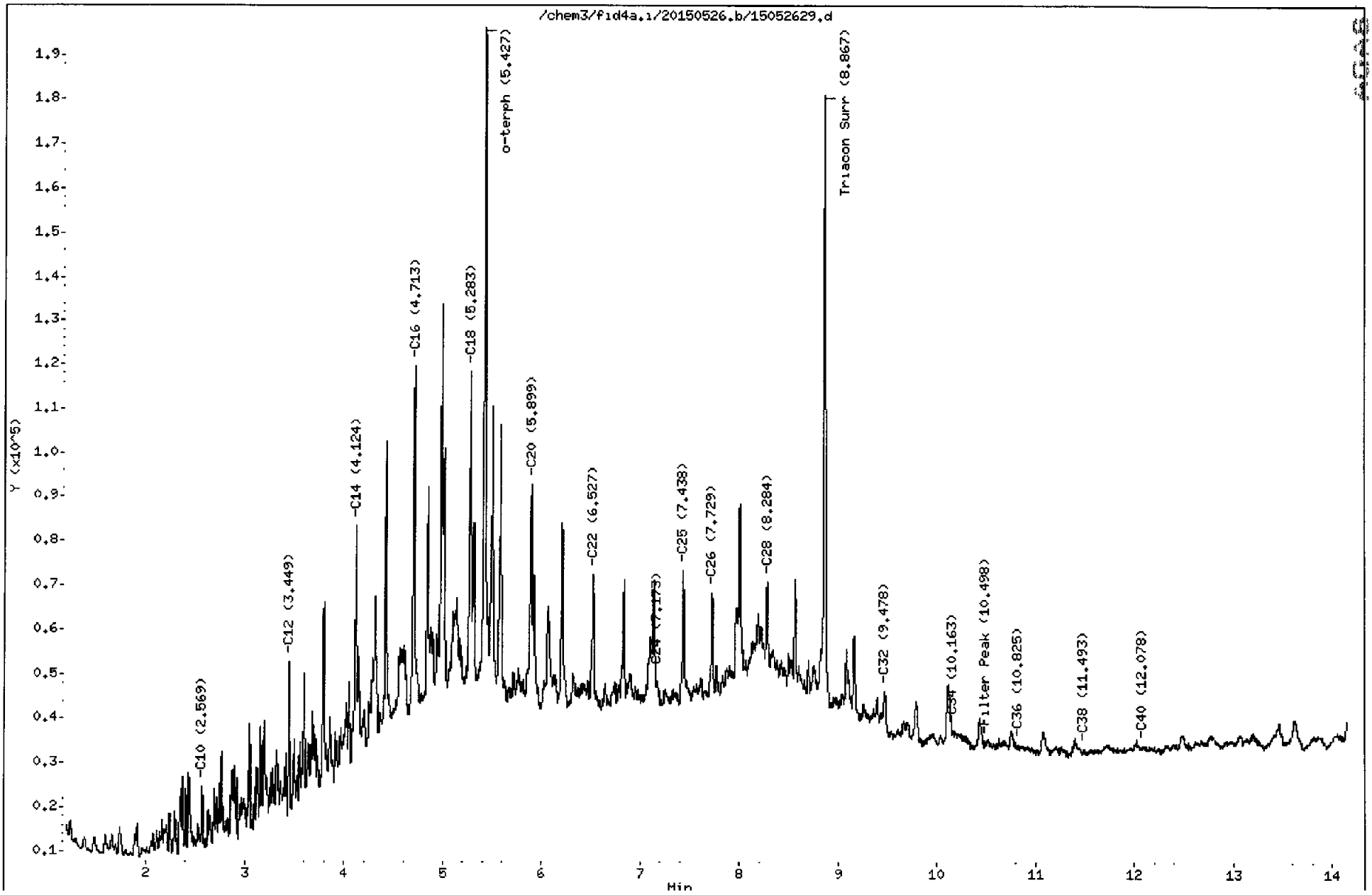
Sample Info: AGA8FMS,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052630.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8FMSD
Client ID: SDP-07(1.5-3.0) MSD
Injection: 26-MAY-2015 22:47

Dilution Factor: 5

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	1160840	47.03
C8	0.973	-0.016	80833	254208	WATPHD	(C12-C24)	7942507	480.17
C10	2.569	-0.002	14395	16192	WATPHM	(C24-C38)	7619218	500.54
C12	3.449	-0.001	38092	41258	AK102	(C10-C25)	8890074	452.10
C14	4.124	-0.001	67461	151752	AK103	(C25-C36)	6406076	696.16
C16	4.712	0.002	101683	282645				
C18	5.283	0.000	104652	230995				
C20	5.898	0.001	78624	225531	JET-A	(C10-C18)	4446116	242.08
C22	6.528	-0.001	63739	252951				
C24	7.142	-0.005	73101	312619				
C25	7.439	-0.005	70845	227389				
C26	7.729	-0.008	68325	188137				
C28	8.286	-0.009	61304	141820				
C32	9.532	0.026	24435	25430				
C34	10.109	-0.039	29479	139462				
Filter Peak	10.441	-0.026	27976	137899				
C36	10.766	-0.034	41982	184999				
C38	11.464	0.015	22478	57883				
C40	12.089	0.017	24859	58872				
o-terph	5.427	-0.006	135903	148353				
Triacon Surr	8.865	-0.032	112140	170859				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	148353	6.4	71.5 M
Triacontane	170859	8.5	94.7 M

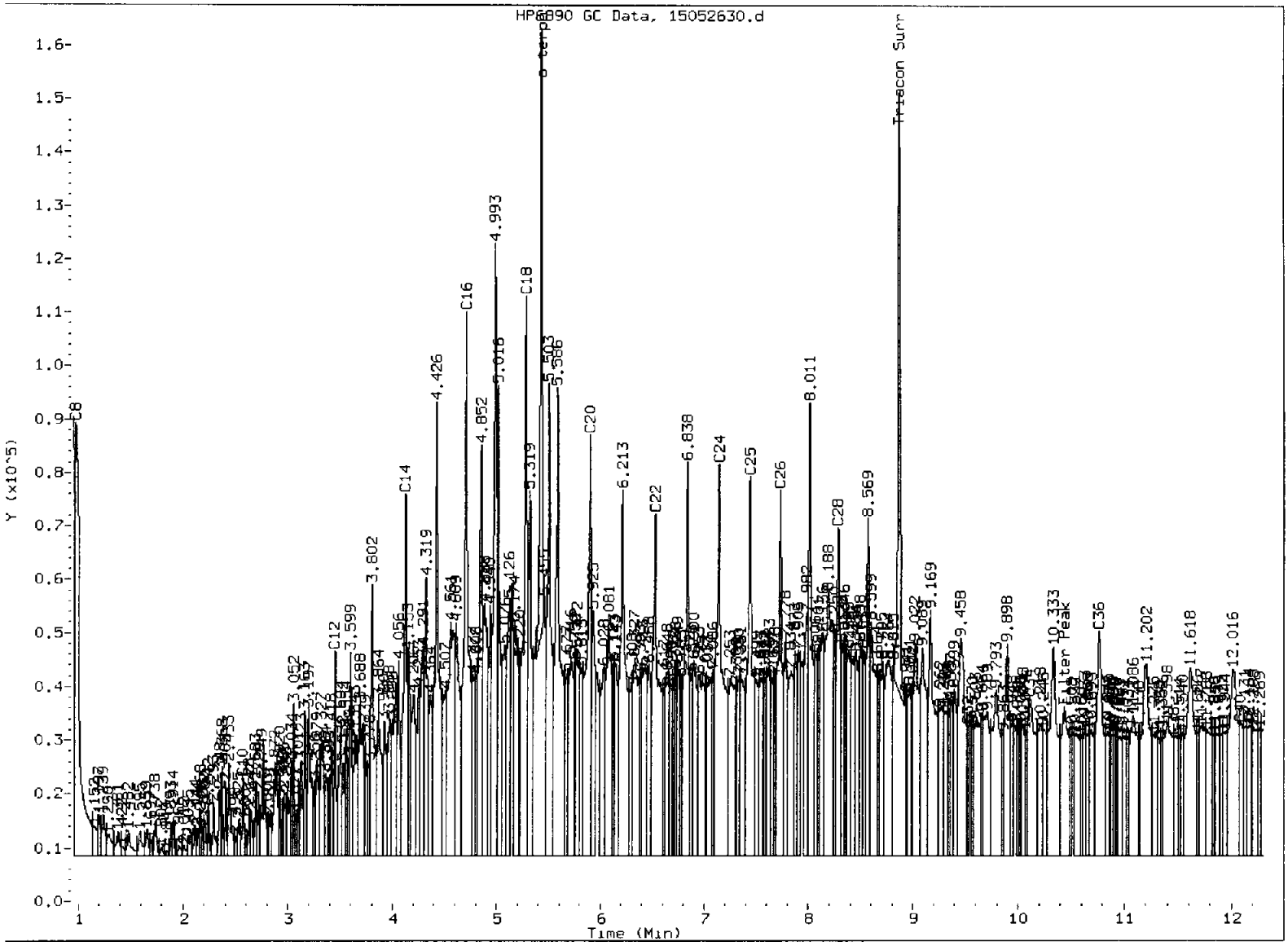
MC 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 : 01BU2

FID:4A-2C/RTX-1 AGA8FMSD FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

AGA8 : 0150

Data File: /chem3/fid4a.i/20150526.b/15052630.d

Date : 26-MAY-2015 22:47

Client ID: SDP-07(1.5-3.0) MSD

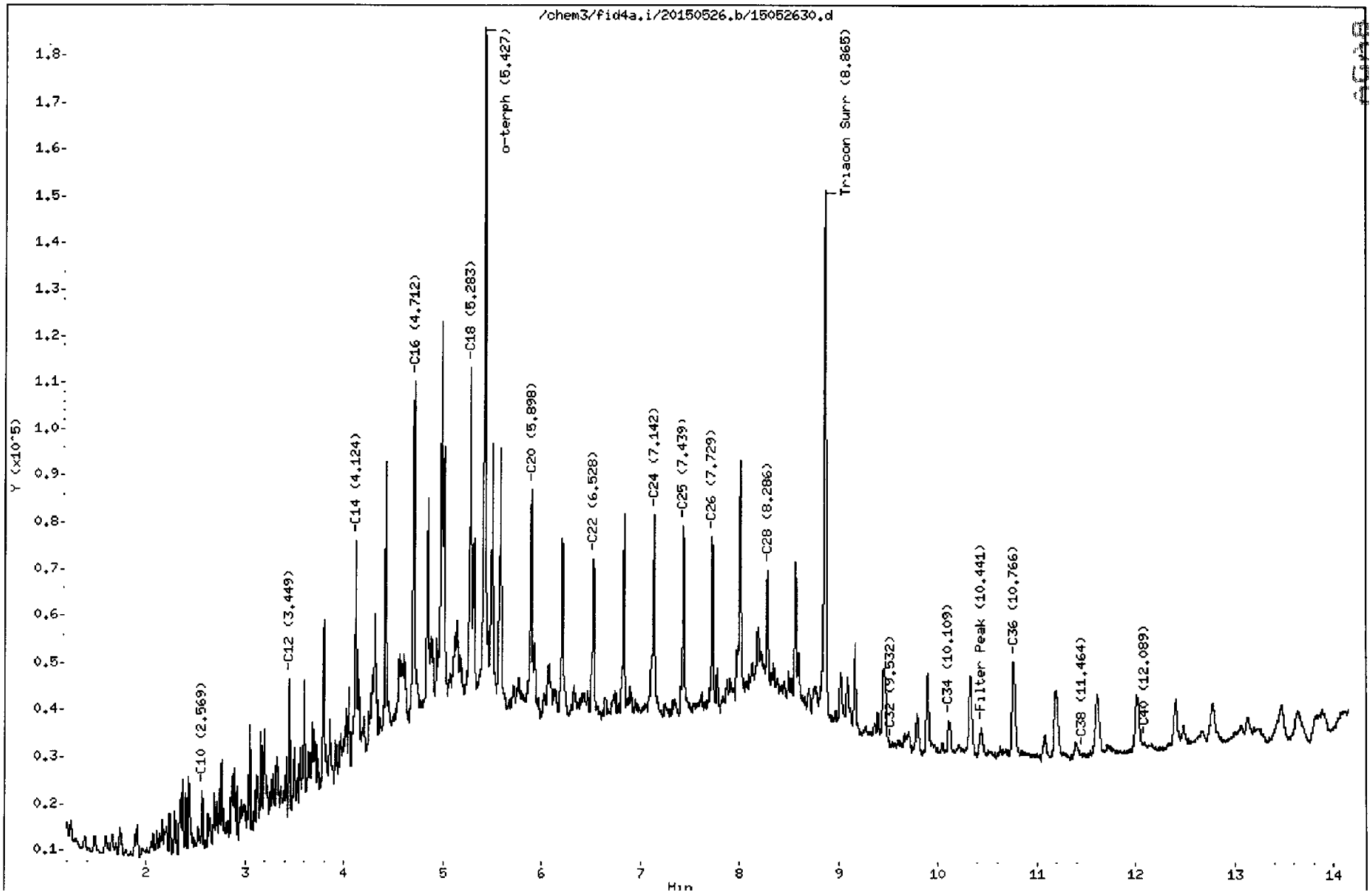
Sample Info: AGA8FMSD,5

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052631.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8H
Client ID: SDP-06(12.5-13.5)
Injection: 26-MAY-2015 23:10
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.800	0.072	76084	319199	WATPHG	(Tol-C12)	1540330	62.40
C8	0.979	-0.010	67130	118376	WATPHD	(C12-C24)	1947372	117.73
C10	2.583	0.012	6157	12860	WATPHM	(C24-C38)	6708457	440.71
C12	3.448	-0.002	5052	5118	AK102	(C10-C25)	2322523	118.11
C14	4.123	-0.002	5928	12647	AK103	(C25-C36)	5928649	644.27
C16	4.695	-0.015	7975	15456				
C18	5.277	-0.005	17831	20530				
C20	5.905	0.007	12751	21663	JET-A	(C10-C18)	1144516	62.32
C22	6.525	-0.004	8938	33569				
C24	7.139	-0.008	13974	18388				
C25	7.438	-0.006	39787	89743				
C26	7.725	-0.013	22046	41234				
C28	8.332	0.036	41899	112271				
C32	9.489	-0.017	32033	133648				
C34	10.157	0.009	31272	155879				
Filter Peak	10.472	0.006	30534	194443				
C36	10.796	-0.004	19397	62326				
C38	----							
C40	----							
o-terph	5.434	0.001	716299	717835				
Triacon Surr	8.881	-0.017	437588	655061				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	717835	31.2	69.2 M
Triacontane	655061	32.7	72.6 M

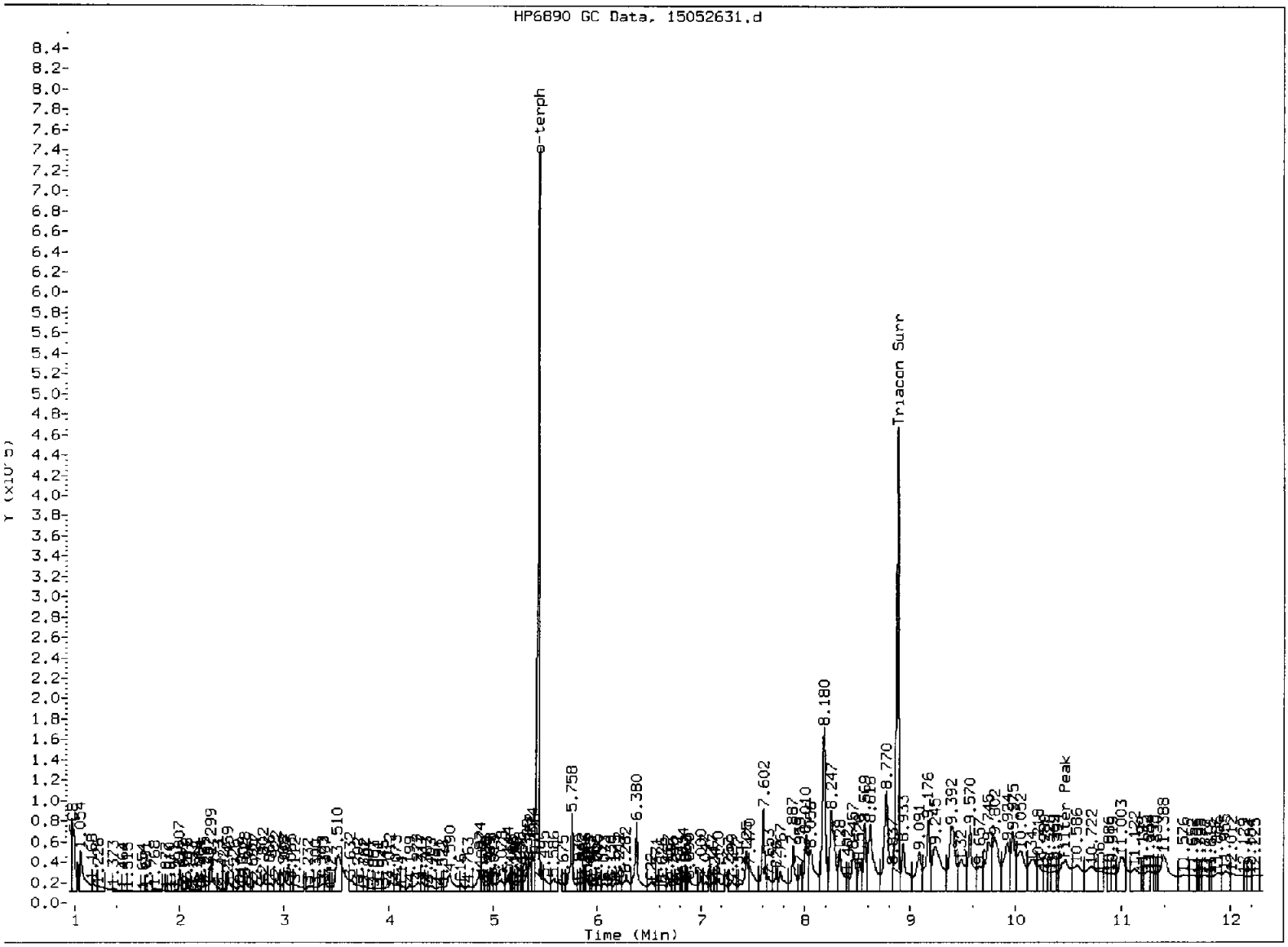
ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8:81951

FID:4A-2C/RTX-1 AGA8H FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052631.d

Date : 26-MAY-2015 23:10

Client ID: SDP-06(12.5-13.5)

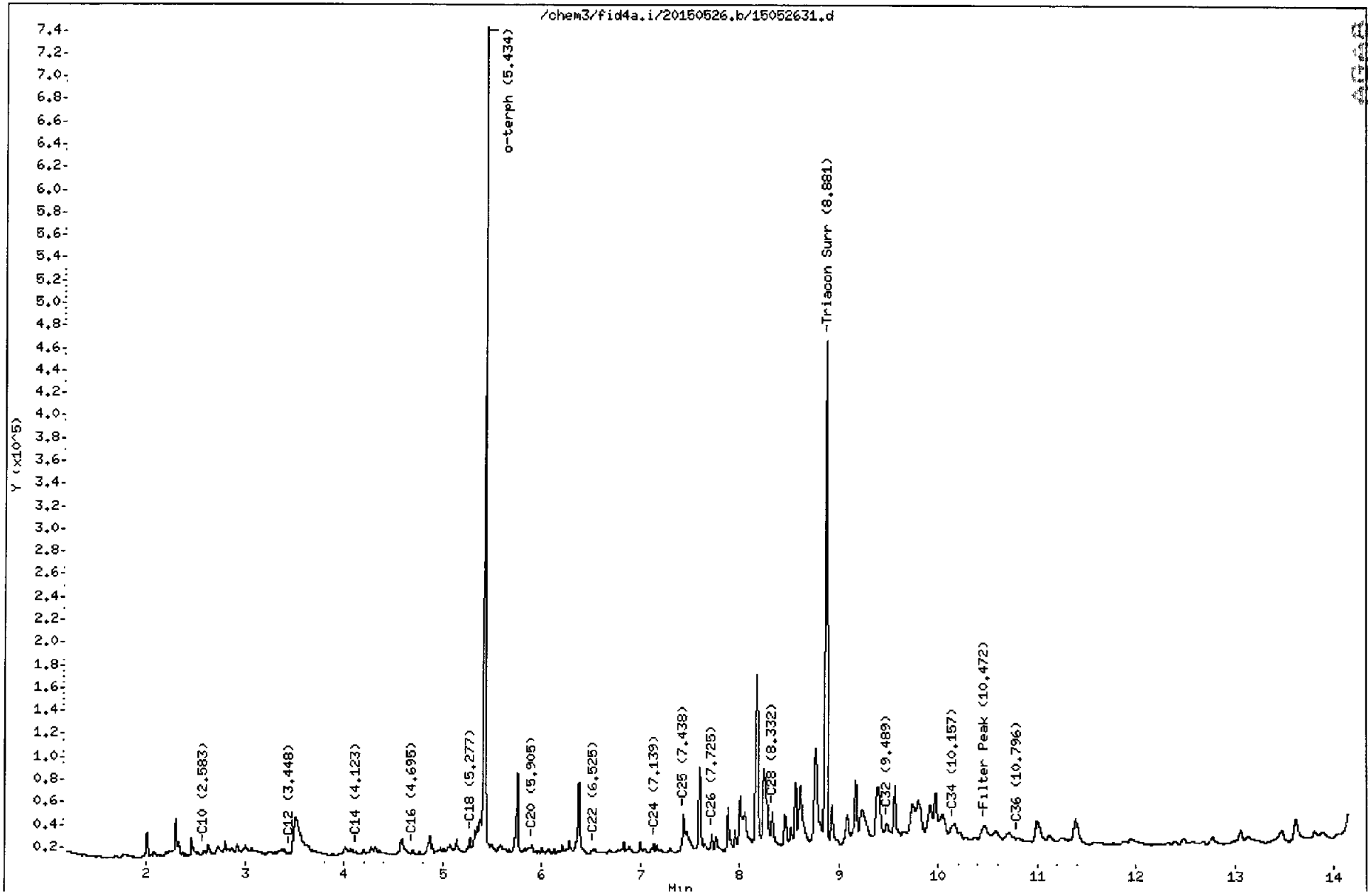
Sample Info: ACA8H

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052634.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGA8I
Client ID: SDP-06(10.0-11.0)
Injection: 27-MAY-2015 00:20

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	618961	25.08
C8	0.977	-0.012	110817	301940	WATPHD	(C12-C24)	559139	33.80
C10	2.551	-0.020	1543	2496	WATPHM	(C24-C38)	2604293	171.09
C12	3.451	0.001	1151	2003	AK102	(C10-C25)	633251	32.20
C14	4.123	-0.002	2787	5484	AK103	(C25-C36)	2227649	242.08
C16	4.706	-0.004	1759	3653				
C18	5.277	-0.006	5493	6293				
C20	5.898	0.001	6308	27074	JET-A	(C10-C18)	183145	9.97
C22	6.524	-0.005	4347	14143				
C24	7.139	-0.008	5877	9391				
C25	7.437	-0.008	12697	28991				
C26	7.725	-0.013	7637	20548				
C28	8.279	-0.016	12934	38046				
C32	9.458	-0.048	21106	83052				
C34	10.161	0.012	11032	29637				
Filter Peak	10.461	-0.006	11060	63228				
C36	10.772	-0.028	19046	73259				
C38	11.438	-0.011	7912	13671				
C40	----							
o-terph	5.432	0.000	802235	914835				
Triacon Surr	8.879	-0.018	429348	711207				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	914835	39.7	88.2
Triacontane	711207	35.5	78.9 M

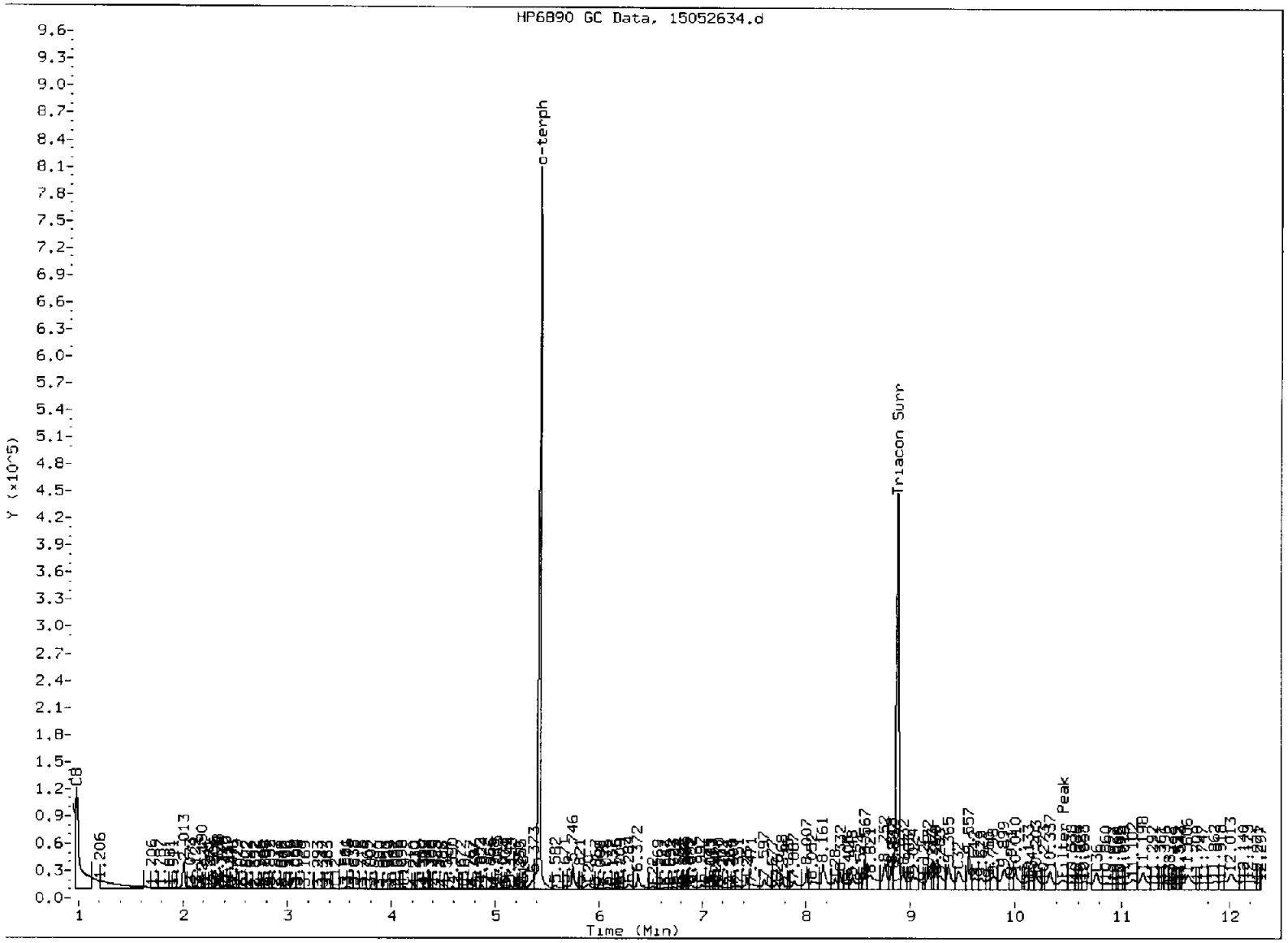
MC 5/20/15 27

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGA8 : 0105H

FID:4A-2C/RTX-1 AGA8I FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

AGA8 01405

Data File: /chem3/fid4a.i/20150526.b/15052634.d

Date : 27-MAY-2015 00:20

Client ID: SDP-06(10.0-11.0)

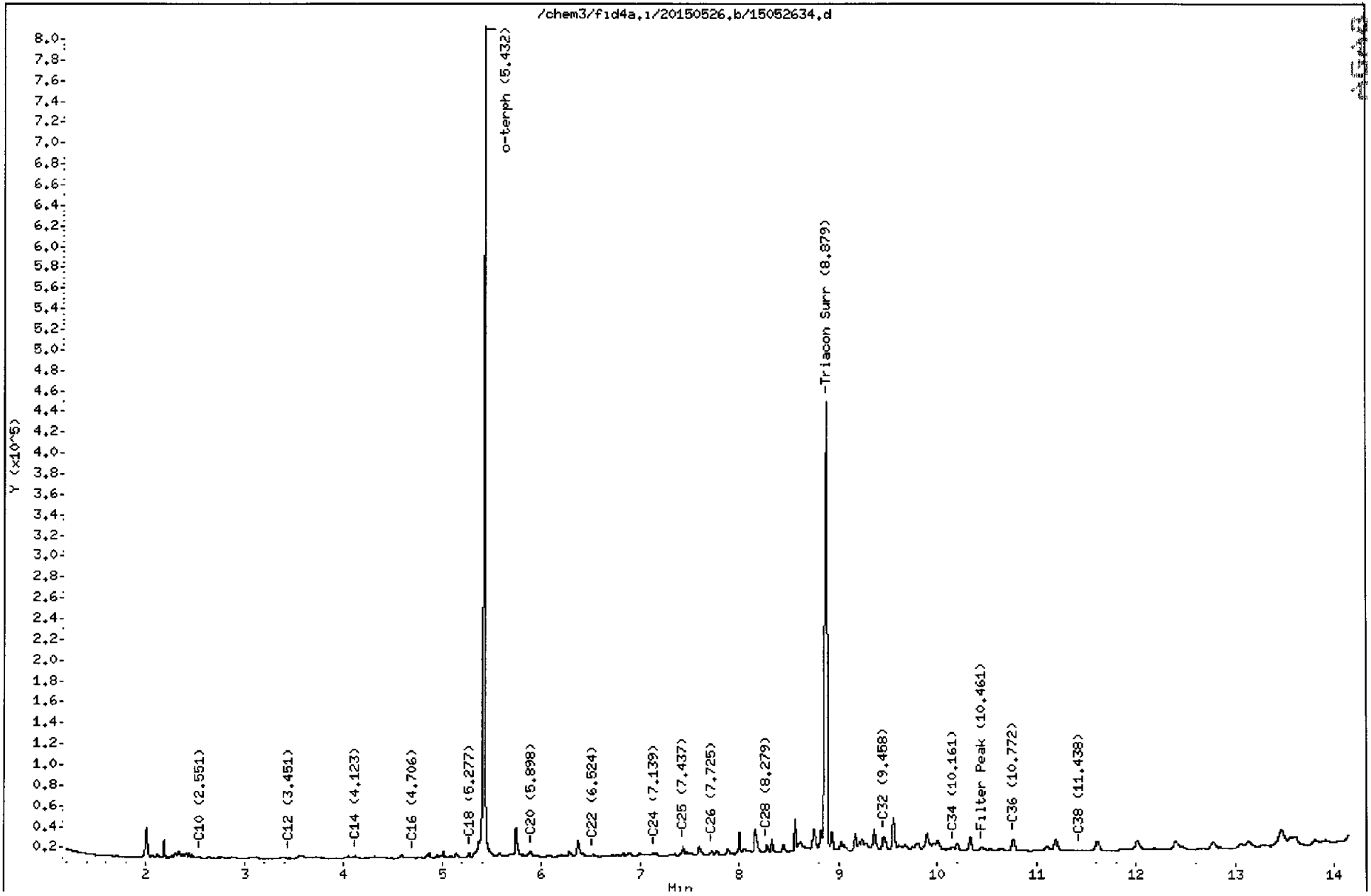
Sample Info: AGA8I

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052632.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#3
Client ID:
Injection: 26-MAY-2015 23:33

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.776	0.048	76583	167421	WATPHG	(Tol-C12)	1829452	74.11
C8	0.982	-0.008	55845	168313	WATPHD	(C12-C24)	4008260	242.32
C10	2.569	-0.002	14045	17132	WATPHM	(C24-C38)	364232	23.93
C12	3.450	0.000	38333	41751	AK102	(C10-C25)	4687715	238.39
C14	4.126	0.001	57869	128739	AK103	(C25-C36)	213380	23.19
C16	4.711	0.001	89658	210798				
C18	5.282	-0.001	81941	103691				
C20	5.897	0.000	37889	113327	JET-A	(C10-C18)	3645184	198.47
C22	6.529	0.000	13726	46054				
C24	7.144	-0.003	4156	14383				
C25	7.443	-0.001	1918	6396				
C26	7.737	0.000	827	1879				
C28	8.287	-0.009	253	794				
C32	----							
C34	10.138	-0.010	1482	3121				
Filter Peak	10.471	0.004	2136	7223				
C36	10.766	-0.034	5643	20504				
C38	11.437	-0.012	4254	17395				
C40	----							
o-terph	5.435	0.002	994154	1016971				
Triacon Surr	8.888	-0.009	781	1659				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

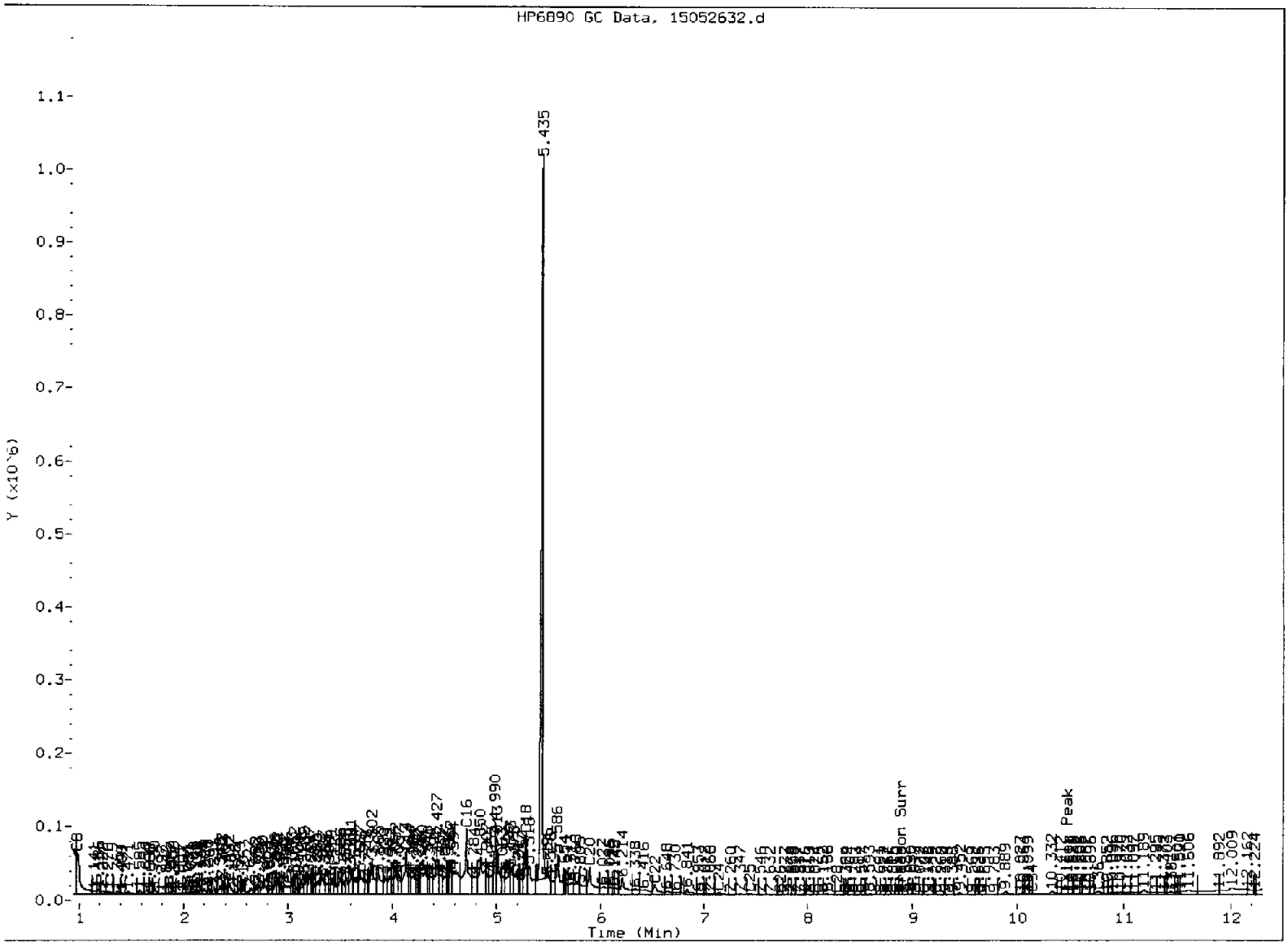
Surrogate	Area	Amount	%Rec
o-Terphenyl	1016971	44.1	98.1 M
Triacontane	1659	0.1	0.2

MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 DIESEL#3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

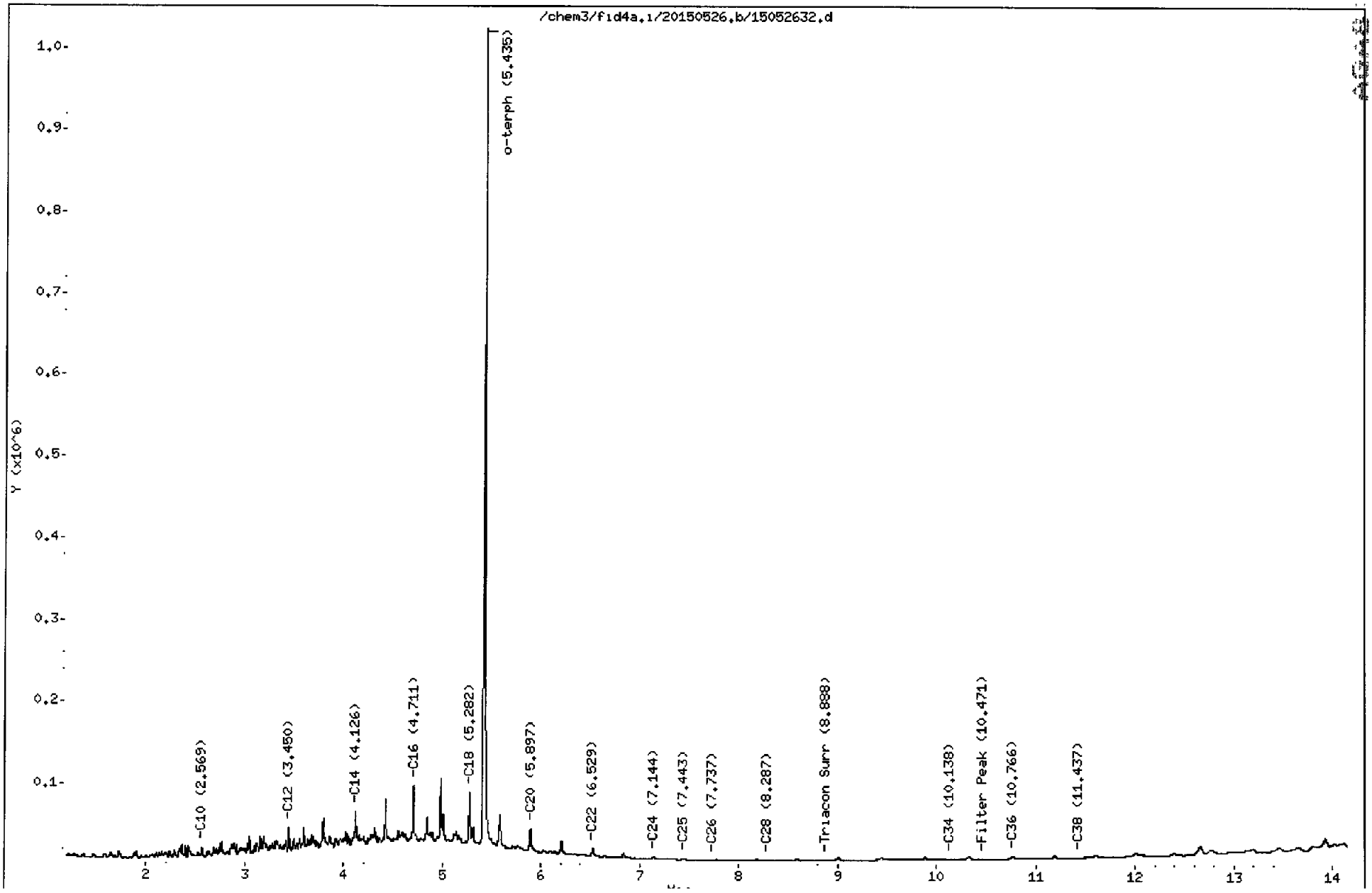
Analyst: mc Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052632.d
Date : 26-MAY-2015 23:33
Client ID:
Sample Info: DIESEL#3

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052633.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#3
Client ID:
Injection: 26-MAY-2015 23:56

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	285586	11.57
C8	0.993	0.004	53594	173658	WATPHD	(C12-C24)	657561	39.75
C10	2.570	-0.001	558	2150	WATPHM	(C24-C38)	7450659	489.47
C12	----				AK102	(C10-C25)	934059	47.50
C14	4.111	-0.014	37	75	AK103	(C25-C36)	6322318	687.05
C16	4.689	-0.021	203	781				
C18	5.293	0.011	382	1566				
C20	5.885	-0.013	1741	4205	JET-A	(C10-C18)	35027	1.91
C22	6.510	-0.019	5281	10961				
C24	7.144	-0.003	19715	23306				
C25	7.448	0.004	26206	60936				
C26	7.739	0.002	29273	31950				
C28	8.304	0.009	34488	93014				
C32	9.492	-0.013	36130	190437				
C34	10.132	-0.017	31303	103658				
Filter Peak	10.460	-0.007	29806	104695				
C36	10.776	-0.024	30868	149002				
C38	11.457	0.008	24284	85714				
C40	12.087	0.015	23851	54392				
o-terph	5.440	0.007	744	2970				
Triacon Surr	8.887	-0.010	467989	867580				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

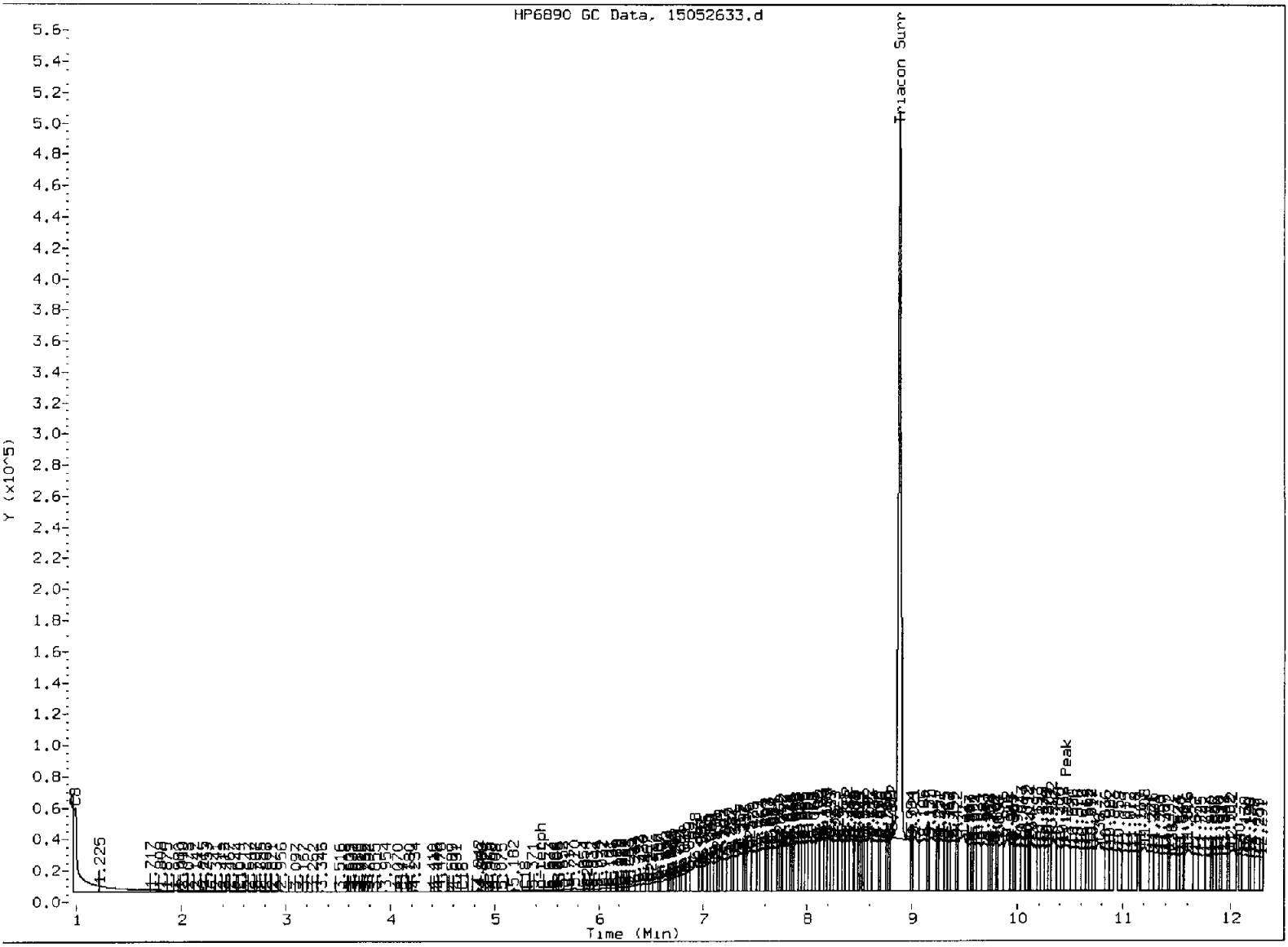
Surrogate	Area	Amount	%Rec
o-Terphenyl	2970	0.1	0.3
Triacontane	867580	43.3	96.2 M

ML
5/20/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 MOIL#3 FID:4A SIGNAL



MANUAL INTEGRATION

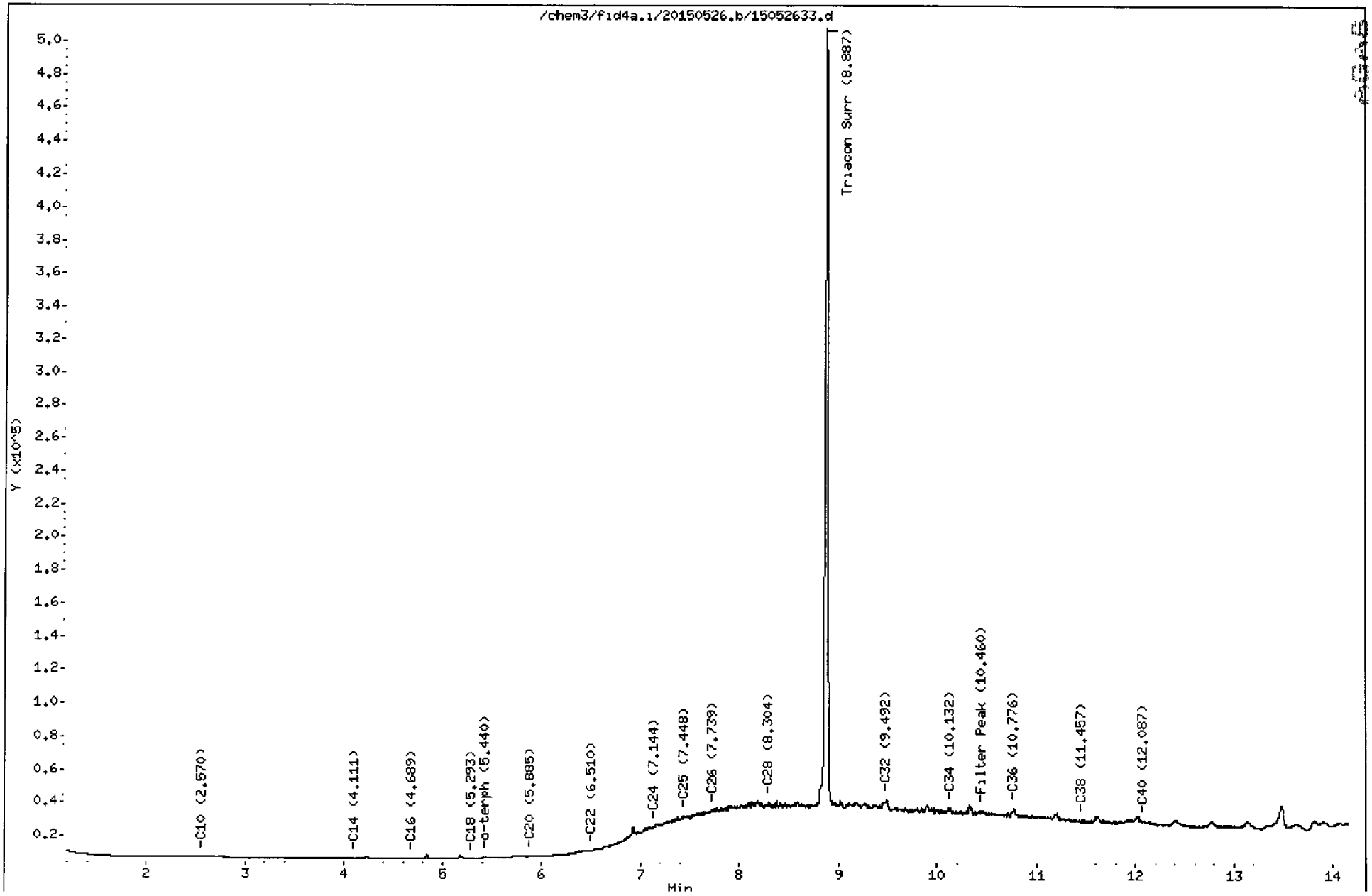
1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/20/15

Data File: /chem3/fid4a.i/20150526.b/15052633.d
Date : 26-MAY-2015 23:56
Client ID:
Sample Info: MOIL#3

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052642.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#4
Client ID:
Injection: 27-MAY-2015 03:27
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.783	0.056	99958	204022	WATPHG	(Tol-C12)	2146440	86.96
C8	0.993	0.003	74827	200793	WATPHD	(C12-C24)	4034577	243.91
C10	2.571	0.000	14570	16719	WATPHM	(C24-C38)	1109559	72.89
C12	3.451	0.001	38381	40698	AK102	(C10-C25)	4707321	239.39
C14	4.126	0.001	57589	130908	AK103	(C25-C36)	671483	72.97
C16	4.713	0.003	82366	205572				
C18	5.286	0.003	80667	147090				
C20	5.902	0.004	36662	115414	JET-A	(C10-C18)	3537090	192.59
C22	6.533	0.004	14418	47997				
C24	7.148	0.001	4865	18363				
C25	7.444	0.000	2788	11543				
C26	7.731	-0.007	1755	4749				
C28	8.288	-0.007	1628	7006				
C32	9.525	0.019	3508	9110				
C34	10.172	0.023	5614	21916				
Filter Peak	10.486	0.019	6621	16279				
C36	10.820	0.020	8688	11174				
C38	11.413	-0.037	12725	11406				
C40	12.062	-0.011	19049	37751				
o-terph	5.438	0.006	951154	1002308				
Triacon Surr	8.861	-0.037	2355	15074				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

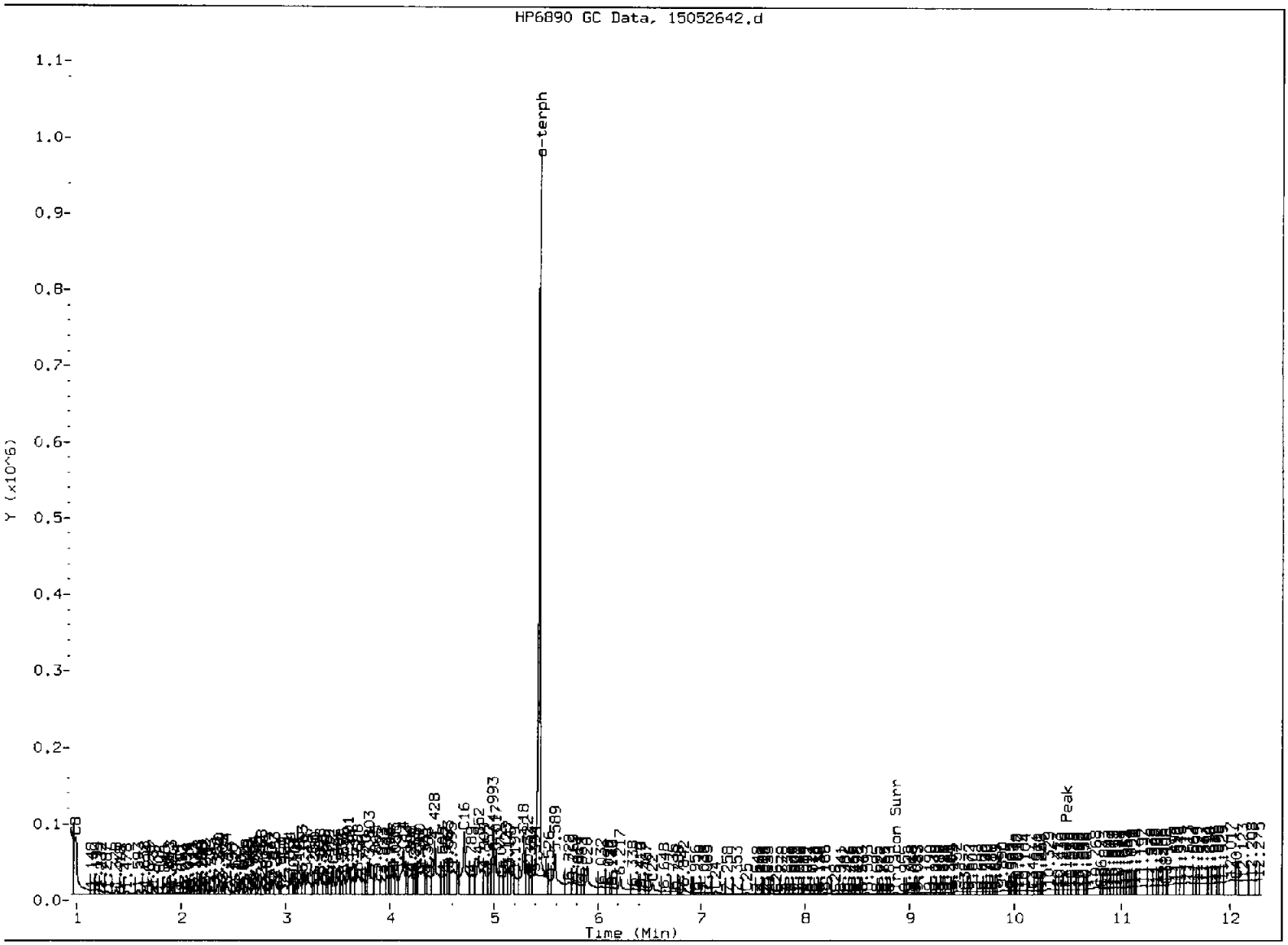
Surrogate	Area	Amount	%Rec
o-Terphenyl	1002308	43.5	96.7 M
Triacontane	15074	0.8	1.7

mc 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 DIESEL#4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MM Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052642.d

Date : 27-MAY-2015 03:27

Client ID:

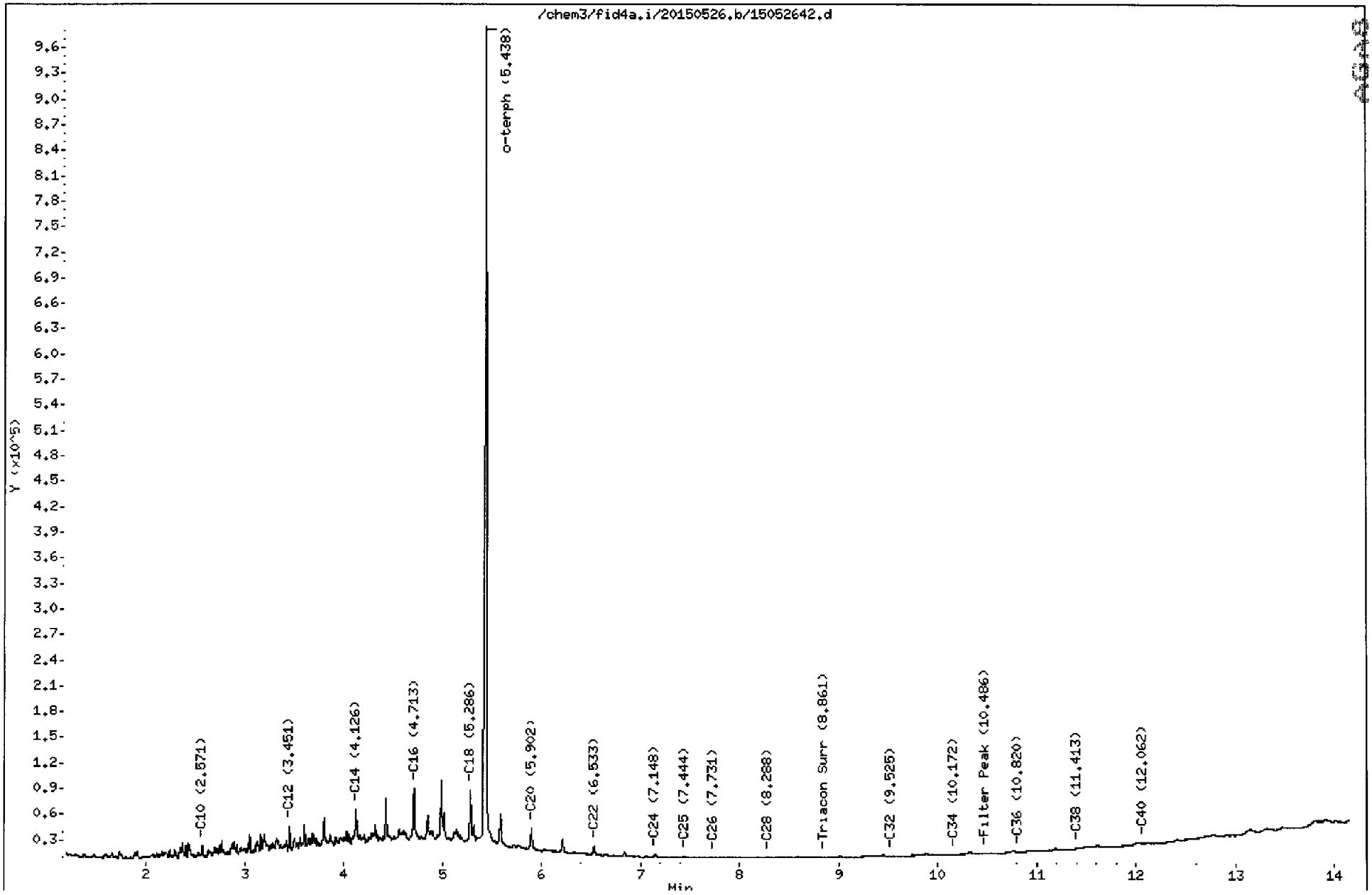
Sample Info: DIESEL#4

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052643.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#4
Client ID:
Injection: 27-MAY-2015 03:51
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	263563	10.68
C8	0.994	0.005	63140	209697	WATPHD	(C12-C24)	646716	39.10
C10	2.603	0.032	525	1404	WATPHM	(C24-C38)	7937306	521.44
C12	3.495	0.045	78	255	AK102	(C10-C25)	923990	46.99
C14	4.113	-0.012	39	41	AK103	(C25-C36)	6528208	709.43
C16	4.723	0.013	249	1141				
C18	5.291	0.008	418	946				
C20	5.888	-0.009	1446	3604	JET-A	(C10-C18)	39368	2.14
C22	6.517	-0.012	5217	8526				
C24	7.146	0.000	19650	25076				
C25	7.438	-0.006	26253	30530				
C26	7.731	-0.006	30151	67158				
C28	8.285	-0.010	33662	69765				
C32	9.471	-0.035	36479	216445				
C34	10.141	-0.008	32622	101840				
Filter Peak	10.464	-0.003	31683	54215				
C36	10.779	-0.021	33881	116676				
C38	11.463	0.014	29651	93648				
C40	12.039	-0.034	34092	223828				
o-terph	5.430	-0.003	1688	4288				
Triacon Surr	8.895	-0.003	390254	861670				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

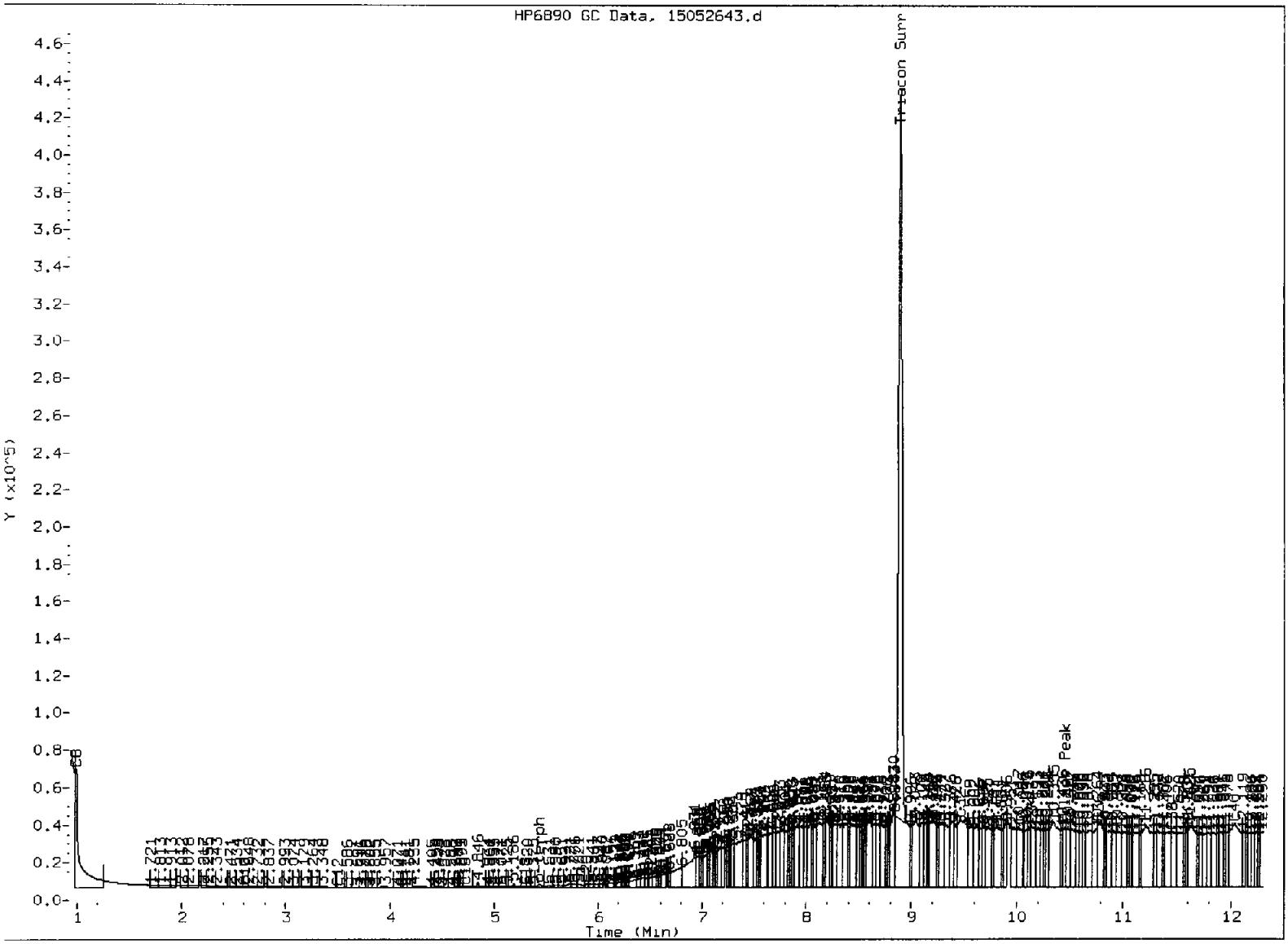
Surrogate	Area	Amount	%Rec
o-Terphenyl	4288	0.2	0.4
Triacontane	861670	43.0	95.5 M

ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 MOIL#4 FID:4A SIGNAL



MANUAL INTEGRATION

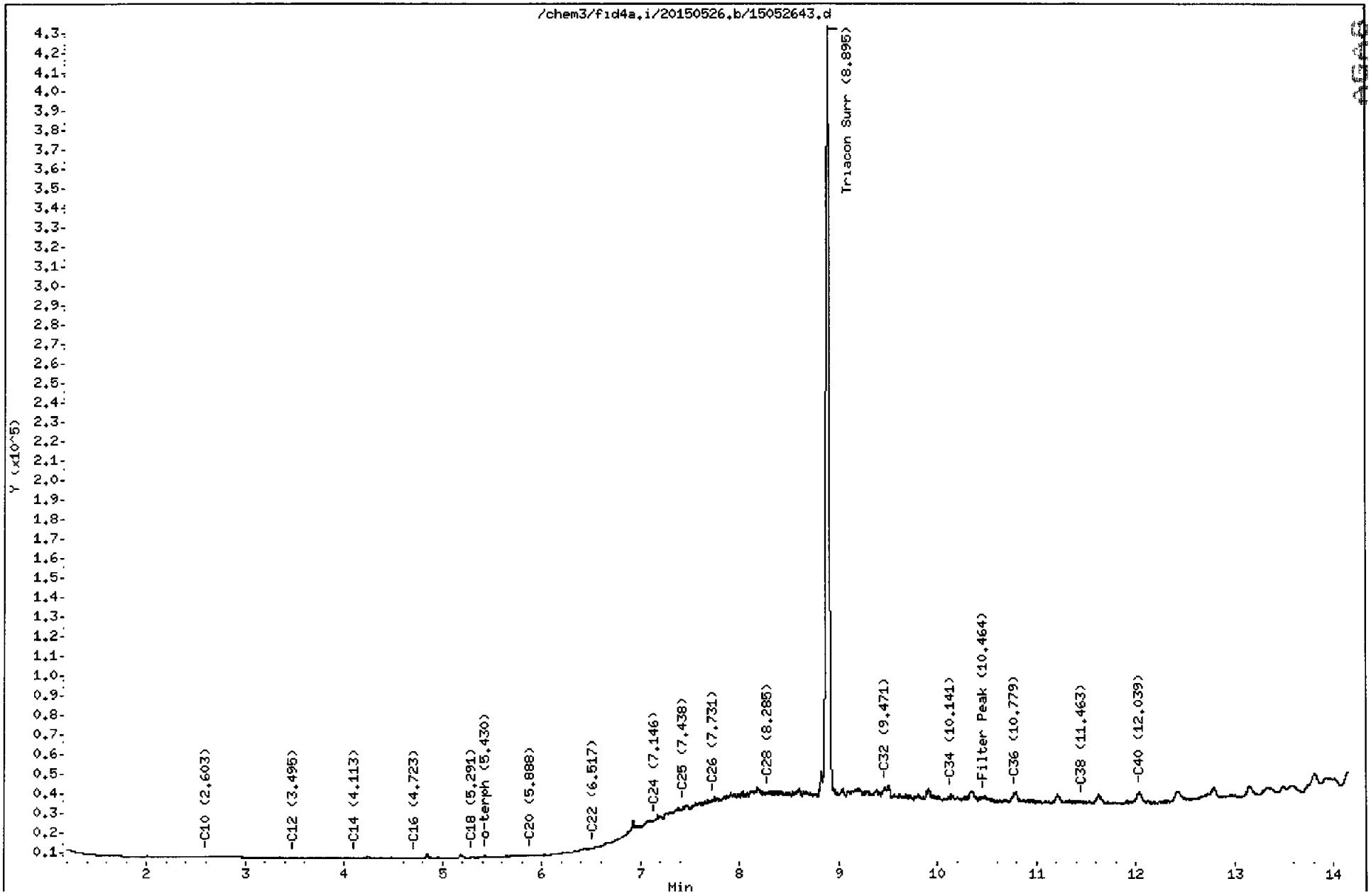
1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: _____ Date: _____

ABAA 01857

Data File: /chem3/fid4a.i/20150526.b/15052643.d
Date : 27-MAY-2015 03:51
Client ID:
Sample Info: MOIL#4

Instrument: fid4a.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AG49/AGC9 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
(FID-9) ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00027 Analysis Start Date: 5/21/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	(NA) / Y / N / ____	Method Blank in Control?	(Y) / N / ✓
Retention times within Windows?	(Y) / N / ✓	BS/BSD Recovery in Control?	(Y) / N / ✓
ICV/CCV met %D Criteria?	(Y) / N / ✓	BS/BSD RPD ≤30%?	NA / ____
Surrogate Recovery in Control?	(Y) / N / ✓	~~MS / MSD Recovery in Control?~~	Y / N / ____
Internal STD. within 50-200%?	NA / Y / N / ____	~~MS / MSD RPD ≤30%?~~	~~NA / ____~~
Manual Integrations?	(Y) / N / ✓	Samples Diluted?	Y / (N) ____
Integration Summary?	(Y) / N / ✓	Special Analysis Request?	(Y) / N / ____

Detail problems, corrective actions and/or other pertinent information below

- samples extracted and batched and reported together.
- samples reported in LIMs and element.
- both samples below RL for diesel / motor oil

(Review 1) Analyst: MC **Date:** 5/22/15

(Review 2) Reviewer: MW **Date:** 5/22

AG49 01869

Analytical Resources Inc.: Organics Instrument Log
FID-9 Agilent 6850 - Serial No.: US10404004

Date: 5/21/15 Analysis: TPHD Analyst: JW for ML

Column 1 Serial No.: B000117 Column Type: RTX-1

GC Method: TPH ICal Code: YE000027 Injection Volume: 1uL

IS	Ical/Ccal	ICV
	D000115	
	D000116	
	D000203	
	D000521	

Document All Maintenance Tasks In Element LIMS

	Inject Date/Time	Filename	DF	LabID	ClientID
1	21-MAY-2015 13:59	15052101.d	1	RT	
2	21-MAY-2015 14:21	15052102.d	1	IB	
3	21-MAY-2015 14:42	15052103.d	1	DIESEL#1	
4	21-MAY-2015 15:04	15052104.d	1	MOIL#1	
5	21-MAY-2015 15:25	15052105.d	1	D002204	
6	21-MAY-2015 15:46	15052106.d	1	AGA9MBW1	AGA9MBW1
7	21-MAY-2015 16:08	15052107.d	1	AGA9LCSW1	AGA9LCSW1
8	21-MAY-2015 16:29	15052108.d	1	AGA9LCSDW1	AGA9LCSDW1
9	21-MAY-2015 16:50	15052109.d	1	AGA9QLS	
10	21-MAY-2015 17:12	15052110.d	1	AGA9A	
11	21-MAY-2015 17:33	15052111.d	1	AGA9C	NGW620-051315
12	21-MAY-2015 17:54	15052112.d	1	AGA9D	NGW621-051315
13	21-MAY-2015 18:15	15052113.d	1	AGA9E	NGW623-051315
14	21-MAY-2015 18:36	15052114.d	1	AGA9F	NGW624-051315
15	21-MAY-2015 18:58	15052115.d	1	AGC1A	SDD05A051315GRAB
16	21-MAY-2015 19:19	15052116.d	1	AGA8MBW1	AGA8MBW1
17	21-MAY-2015 19:40	15052117.d	1	AGA8LCSW1	AGA8LCSW1
18	21-MAY-2015 20:01	15052118.d	1	AGA8LCSDW1	AGA8LCSDW1
19	21-MAY-2015 20:22	15052119.d	1	AGA8J	RB-051315
20	21-MAY-2015 20:43	15052120.d	1	AGC9L	RB-051415
21	21-MAY-2015 21:04	15052121.d	1	DIESEL#2	
22	21-MAY-2015 21:26	15052122.d	1	MOIL#2	
23	21-MAY-2015 21:47	15052123.d	1	AGB8MBS1	AGB8MBS1
24	21-MAY-2015 22:08	15052124.d	1	AGB8LCSS1	AGB8LCSS1
25	21-MAY-2015 22:29	15052125.d	1	AGB8QLS	
26	21-MAY-2015 22:49	15052126.d	10	AGB8A	CB263-051415
27	21-MAY-2015 23:10	15052127.d	10	AGB8B	CB108-051415
28	21-MAY-2015 23:31	15052128.d	1	DIESEL#3	
29	21-MAY-2015 23:52	15052129.d	1	MOIL#3	

JW 5/22/15

Every line must contain information or be lined out. Make all entries legible.

Start a new page for each QC period. Document All Maintenance Tasks In Element LIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid9.i/20150521.b

ARI Job No.: RT Method: ftphfid9a.m Instrument: fid9.i Date: 21-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1359	15052101.d	RT		1	NO MANUAL INTEGRATION
1421	15052102.d	IB	IB	1	NO MANUAL INTEGRATION
1442	15052103.d	DIESEL#1	NBF RI Pha	1	o-terph,
1504	15052104.d	MOIL#1	NBF RI Pha	1	Triacon Surr,
1919	15052116.d	AGA8MBW1	AGA8MBW1	1	NO MANUAL INTEGRATION
1940	15052117.d	AGA8LCSW1	AGA8LCSW1	1	o-terph,
2001	15052118.d	AGA8LCSDW1	AGA8LCSDW1	1	o-terph,
2022	15052119.d	AGA8J	RB-051315	1	NO MANUAL INTEGRATION
2043	15052120.d	AGC9L	RB-051415	1	NO MANUAL INTEGRATION
2104	15052121.d	DIESEL#2	Bills Mobi	1	o-terph,
2126	15052122.d	MOIL#2	Bills Mobi	1	Triacon Surr,

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052101.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: RT
Client ID:
Injection: 21-MAY-2015 13:59
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.075	0.000	153933	164958	GAS (Tol-C12)	1683160	67.92
C8	1.265	0.000	221886	427747	DIESEL (C12-C24)	2531291	145.38
C10	2.973	0.000	242	65	M.OIL (C24-C38)	3017985	211.49
C12	3.967	0.000	194733	199979	AK-102 (C10-C25)	3297633	164.33
C14	4.653	0.000	199819	215779	AK-103 (C25-C36)	2531117	162.25
C16	5.242	0.000	265940	296655	OR.DIES (C10-C28)	4453267	219.87
C18	5.807	0.000	425725	304352			
C20	6.374	0.000	279543	298172			
C22	6.928	0.000	254895	289238			
C24	7.454	0.000	374562	358633			
C25	7.706	0.000	359997	353483			
C26	7.947	0.000	296095	360658			
C28	8.399	0.000	308848	371076	IT.DIES (C10-C24)	3269418	163.57
C32	9.181	0.000	387283	382911			
C34	9.526	0.000	427805	407950			
Filter Peak	9.652	0.000	1790	2578			
C36	9.848	0.000	509686	447022			
C38	10.149	0.000	482636	420838			
C40	10.442	0.000	327198	396544			
o-terph	5.962	0.000	1103190	964062	JET-A (C10-C18)	2008685	122.12
Triacon Surr	8.816	0.000	925141	851792			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	964062	43.9	97.6
Triacontane	851792	52.4	116.5

TW 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052101.d

Date : 21-MAY-2015 13:59

Client ID:

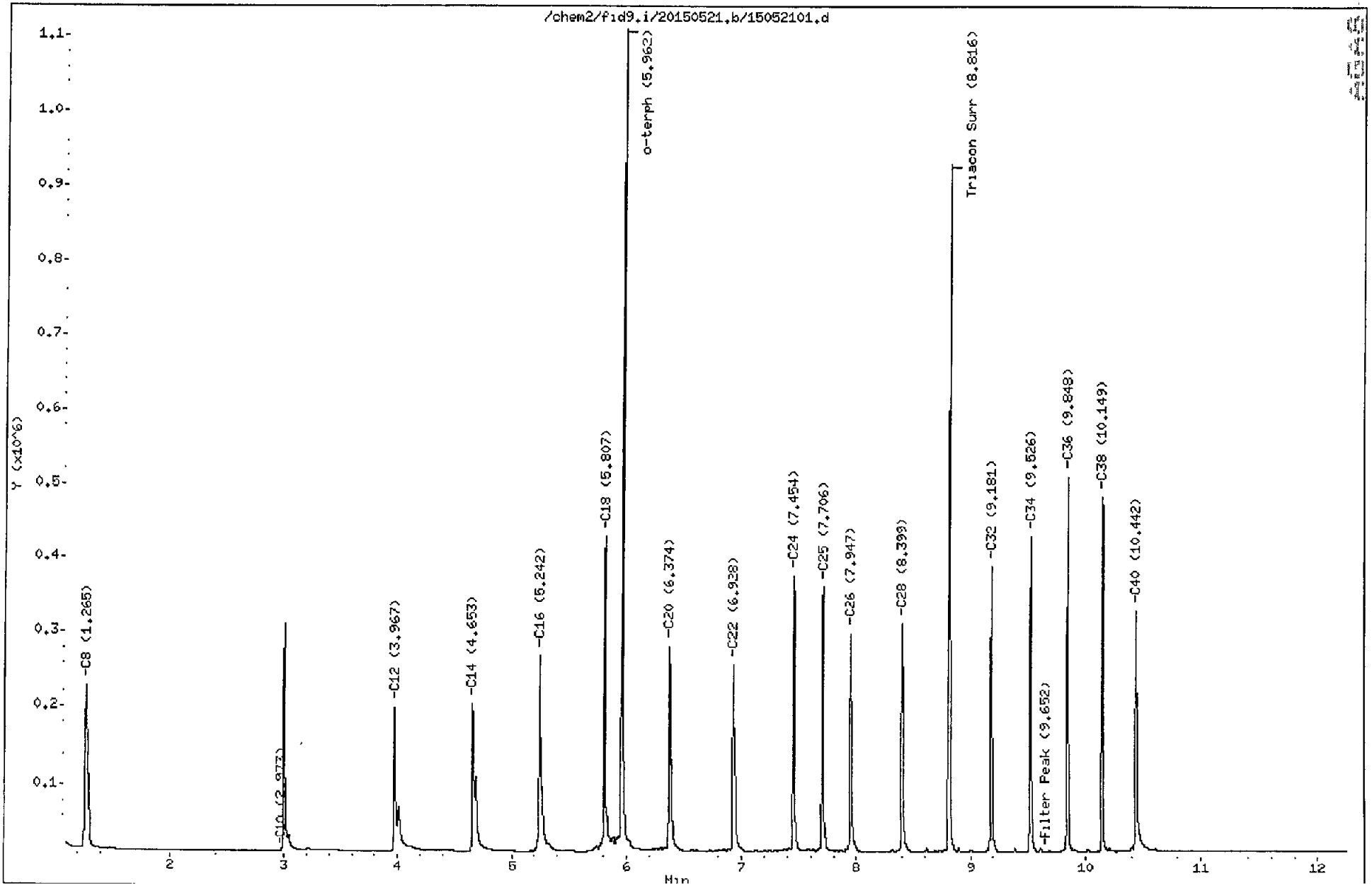
Sample Info: RT

Column phase: RTX-1

Instrument: fid9.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052102.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: IB
Client ID:
Injection: 21-MAY-2015 14:21
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	30197	1
C8	1.246	-0.018	1276	983	DIESEL (C12-C24)	115123	6.61
C10	2.968	-0.004	168	90	M.OIL (C24-C38)	207792	14.56
C12	3.970	0.004	58	28	AK-102 (C10-C25)	123062	6.13
C14	4.656	0.004	28	8	AK-103 (C25-C36)	176984	11.35
C16	5.245	0.004	43	8	OR.DIES (C10-C28)	131113	6.47
C18	5.805	-0.002	122	94			
C20	6.375	0.002	953	793			
C22	6.929	0.002	156	70			
C24	7.455	0.001	57	8			
C25	7.704	-0.002	80	67			
C26	7.947	0.000	123	74			
C28	8.393	-0.006	255	120	IT.DIES (C10-C24)	122131	6.11
C32	9.188	0.008	1560	1592			
C34	9.520	-0.005	1116	898			
Filter Peak	9.655	0.004	1125	709			
C36	9.863	0.015	1312	698			
C38	10.144	-0.004	1770	918			
C40	10.438	-0.004	2307	1374			
o-terph	5.963	0.001	1146597	984184	JET-A (C10-C18)	13503	0.82
Triacon Surr	8.818	0.002	740217	748141			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	984184	44.8	99.6
Triacontane	748141	46.0	102.3

BW 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

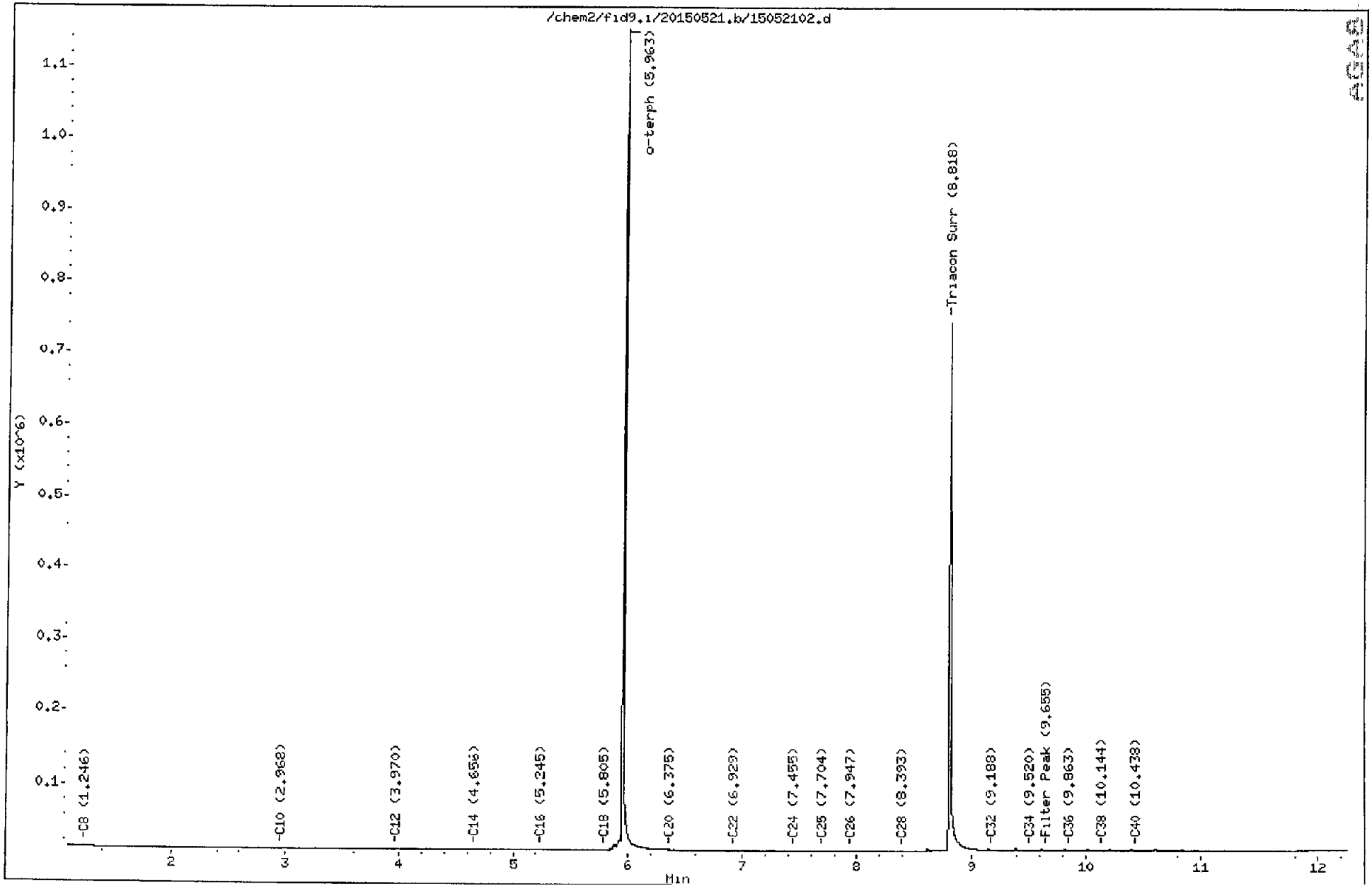
AGAS 8107H

Data File: /chem2/fid9.i/20150521.b/15052102.d
Date : 21-MAY-2015 14:21
Client ID:
Sample Info: IB

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052103.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: DIESEL#1
Client ID:
Injection: 21-MAY-2015 14:42
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.086	0.011	4014	6975	GAS (Tol-C12)	900581	36.34	
C8	1.261	-0.003	4070	6684	DIESEL (C12-C24)	4190600	240.67	
C10	2.981	0.008	3871	1311	M.OIL (C24-C38)	154780	10.85	
C12	3.969	0.002	21304	36304	AK-102 (C10-C25)	4840525	241.22	M
C14	4.653	0.000	44169	85379	AK-103 (C25-C36)	109927	7.05	
C16	5.240	-0.001	71296	87982	OR.DIES (C10-C28)	4880201	240.95	M
C18	5.803	-0.005	90487	109646				
C20	6.375	0.002	28599	40269				
C22	6.923	-0.004	6361	2006				
C24	7.451	-0.003	2620	1275				
C25	7.705	0.000	1595	1402				
C26	7.950	0.003	977	705				
C28	8.394	-0.005	240	154	IT.DIES (C10-C24)	4820061	241.15	M
C32	9.184	0.004	98	42				
C34	9.527	0.001	218	103				
Filter Peak	9.657	0.005	342	170				
C36	9.857	0.009	564	198				
C38	10.151	0.003	1001	573				
C40	10.442	0.000	1504	1074				
o-terph	5.963	0.000	1186809	956256	JET-A (C10-C18)	3636354	221.08	
Triacon Surr	8.802	-0.013	37	16				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	956256	43.6	96.8
Triacontane	16	0.0	0.0

BD 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052103.d

Date : 21-MAY-2015 14:42

Client ID:

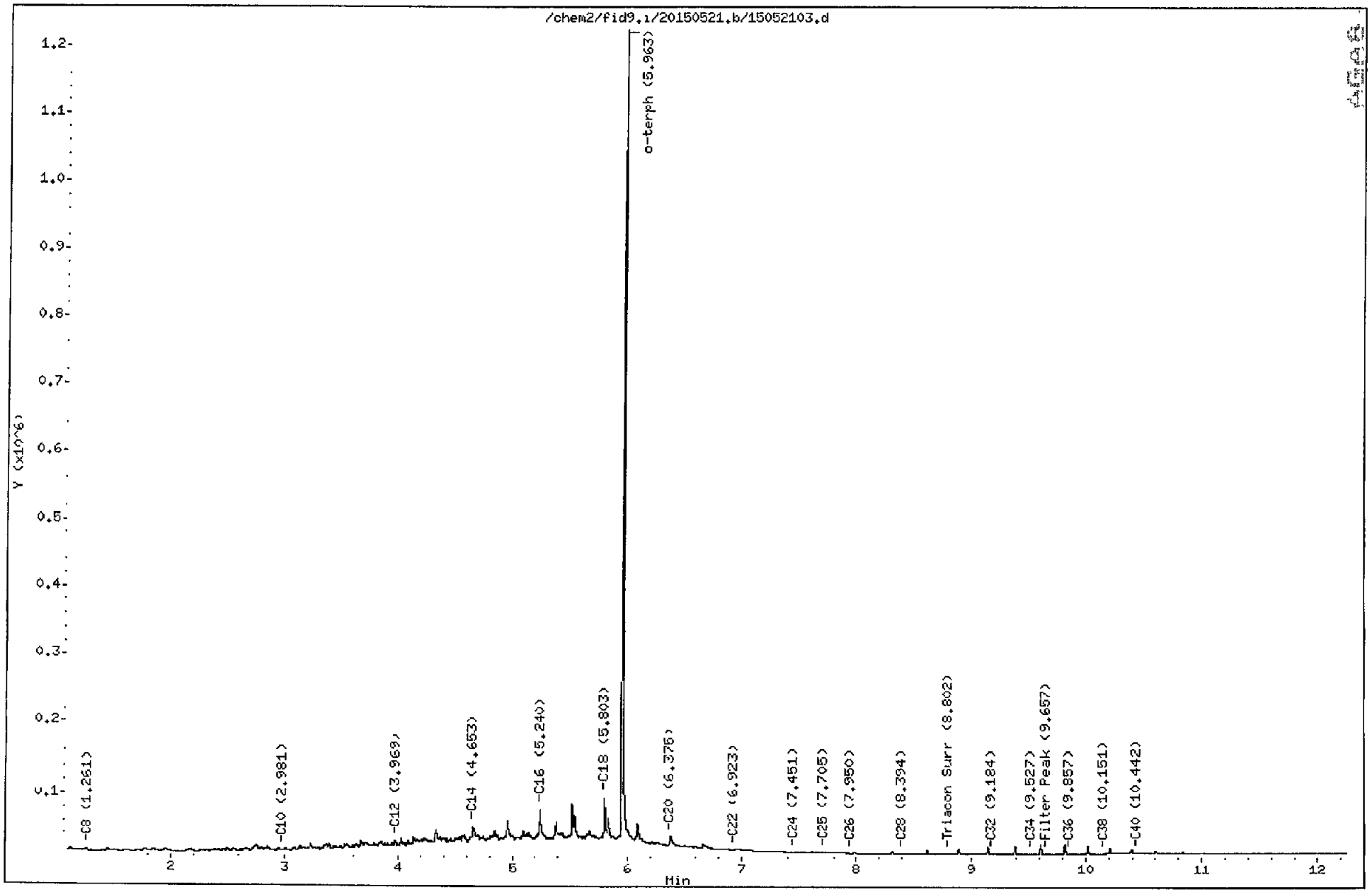
Sample Info: DIESEL#1

Column phase: RTX-1

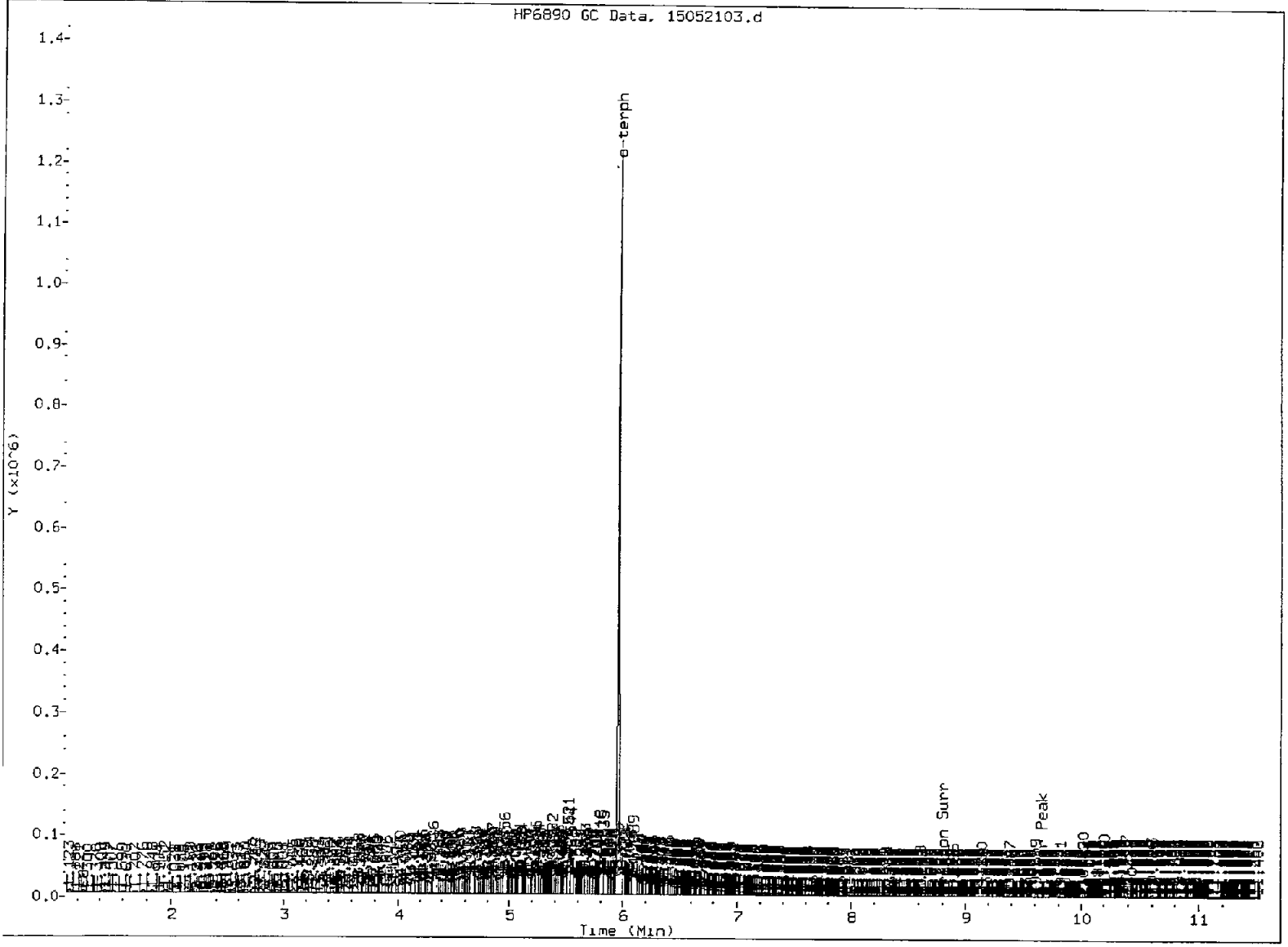
Instrument: fid9.i

Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 DIESEL#1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: [signature] Date: 3/22/15

AGAR : 01075

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052104.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: MOIL#1
Client ID:
Injection: 21-MAY-2015 15:04
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.157	0.083	1684	1427	GAS (Tol-C12)	30901	1.25
C8	1.246	-0.018	1169	2032	DIESEL (C12-C24)	717853	41.23
C10	2.971	-0.001	122	75	M.OIL (C24-C38)	7186887	503.64
C12	3.964	-0.003	36	14	AK-102 (C10-C25)	962551	47.97
C14	4.650	-0.003	123	82	AK-103 (C25-C36)	6081700	389.85 M
C16	5.235	-0.007	239	256	OR.DIES (C10-C28)	2651565	130.92
C18	5.804	-0.003	477	287			
C20	6.370	-0.004	1732	1274			
C22	6.927	0.000	6945	2989			
C24	7.449	-0.004	24575	27855			
C25	7.712	0.006	31725	8733			
C26	7.950	0.003	35428	18545			
C28	8.396	-0.003	42586	20226	IT.DIES (C10-C24)	723282	36.19
C32	9.176	-0.005	62111	58199			
C34	9.531	0.005	56781	16638			
Filter Peak	9.652	0.001	56801	19755			
C36	9.848	0.000	53826	57011			
C38	10.151	0.003	47320	13845			
C40	10.441	0.000	35070	9626			
o-terph	5.965	0.003	721	597	JET-A (C10-C18)	30290	1.84
Triacon Surr	8.820	0.004	872755	764127			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	597	0.0	0.1
Triacontane	764127	47.0	104.5

FJ 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/1505210-4.d

Date : 21-MAY-2015 15:04

Client ID:

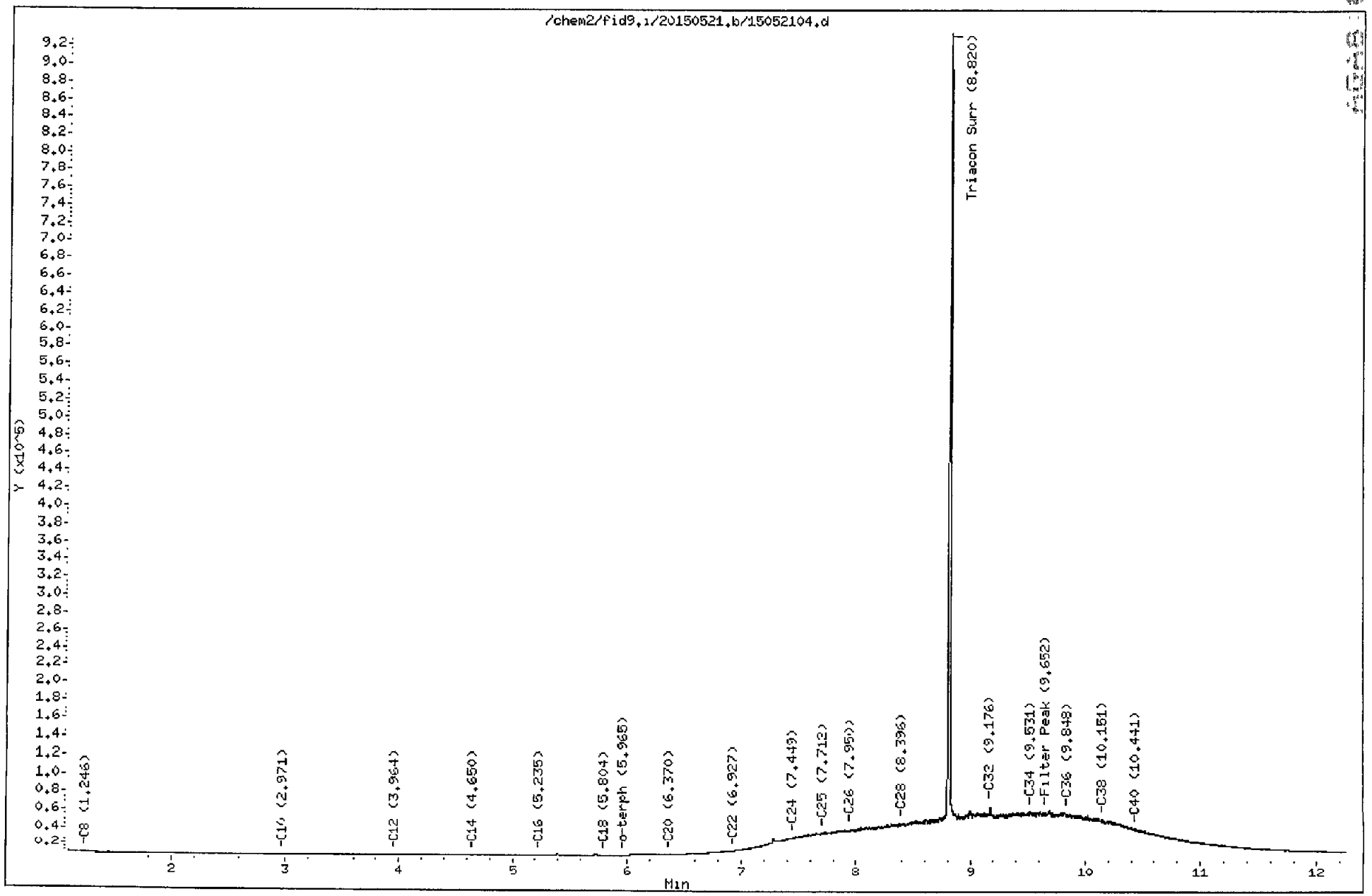
Sample Info: MOIL#1

Column phase: RTX-1

Instrument: fid9.i

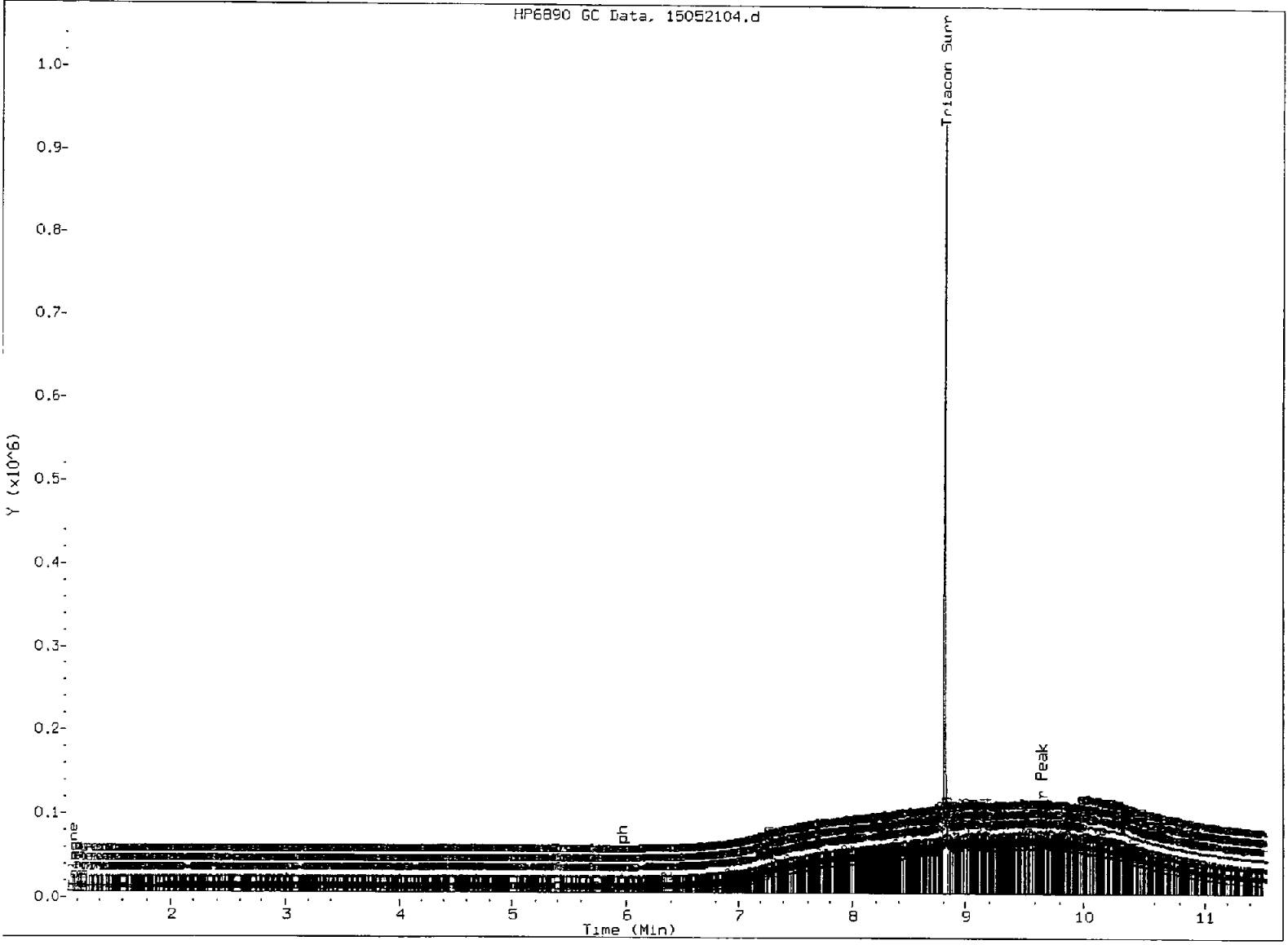
Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 MOIL#1

FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/22/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052116.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8MBW1
Client ID: AGA8MBW1
Injection: 21-MAY-2015 19:19
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	40357	2
C8	1.270	0.005	1212	866	DIESEL (C12-C24)	120689	6.93
C10	2.985	0.012	281	438	M.OIL (C24-C38)	210188	14.73
C12	3.966	0.000	41	15	AK-102 (C10-C25)	129365	6.45
C14	4.654	0.001	25	2	AK-103 (C25-C36)	175275	11.24
C16	5.244	0.002	62	14	OR.DIES (C10-C28)	144289	7.12
C18	5.818	0.011	146	50			
C20	6.370	-0.004	877	1017			
C22	6.931	0.003	223	132			
C24	7.454	0.000	181	72			
C25	7.705	-0.001	183	59			
C26	7.945	-0.002	240	164			
C28	8.393	-0.007	475	216	IT.DIES (C10-C24)	127698	6.39
C32	9.182	0.001	1495	884			
C34	9.520	-0.006	1269	707			
Filter Peak	9.653	0.001	1362	324			
C36	9.849	0.001	1608	700			
C38	10.148	-0.001	2120	590			
C40	10.441	-0.001	2684	910			
o-terph	5.961	-0.002	1043879	860712	JET-A (C10-C18)	13277	0.81
Triacon Surr	8.814	-0.002	664755	650493			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	860712	39.2	87.1
Triacontane	650493	40.0	89.0

JD 5/22/15

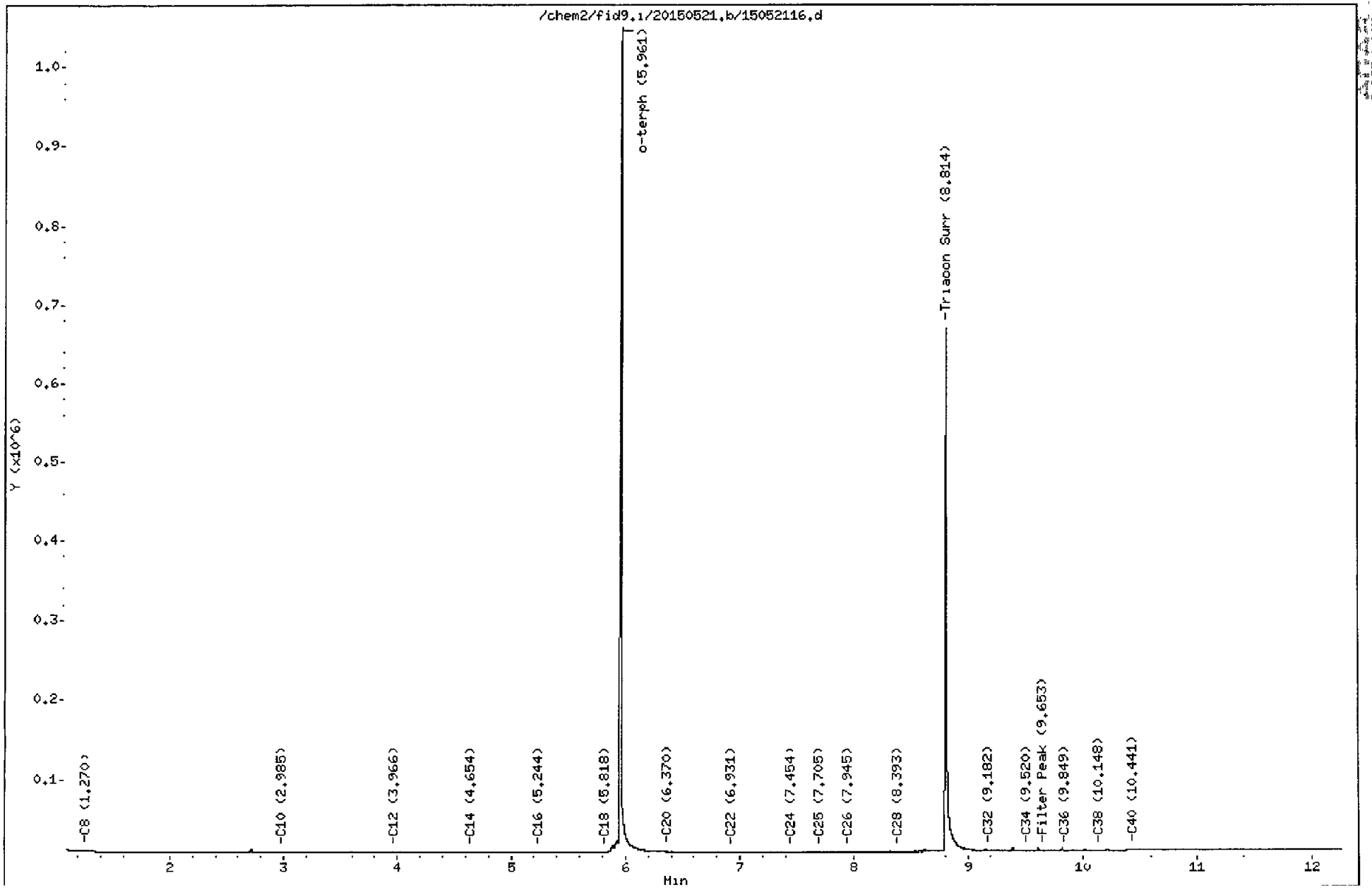
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGA8 81982

Data File: /chem2/fid9.1/20150521.b/15052116.d
Date : 21-MAY-2015 19:19
Client ID: AGA8MBW1
Sample Info: AGA8MBW1

Instrument: fid9.1
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052117.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8LCSW1
Client ID: AGA8LCSW1
Injection: 21-MAY-2015 19:40
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.081	0.006	6199	11022	GAS (Tol-C12)	4018028	162.13	
C8	1.268	0.003	6920	14455	DIESEL (C12-C24)	24008637	1378.86	
C10	2.974	0.001	13783	3018	M.OIL (C24-C38)	423784	29.70	
C12	3.964	-0.003	161563	201725	AK-102 (C10-C25)	27137986	1352.37	M
C14	4.653	0.000	352556	434943	AK-103 (C25-C36)	315083	20.20	
C16	5.244	0.002	572649	672548	OR.DIES (C10-C28)	27314666	1348.61	M
C18	5.811	0.003	569515	654335				
C20	6.375	0.001	312514	372982				
C22	6.926	-0.001	114654	171405				
C24	7.456	0.002	29299	45462				
C25	7.714	0.009	12590	26773				
C26	7.943	-0.004	3774	1690				
C28	8.412	0.013	2398	3780	IT.DIES (C10-C24)	27048636	1353.24	M
C32	9.180	-0.001	278	142				
C34	9.526	0.000	18	3				
Filter Peak	9.646	-0.006	106	63				
C36	9.851	0.002	257	152				
C38	10.150	0.001	715	267				
C40	10.444	0.002	1240	880				
o-terph	5.966	0.004	1059109	839263	JET-A (C10-C18)	20393950	1239.90	
Triacon Surr	8.816	0.000	707885	683637				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	839263	38.2	85.0
Triacontane	683637	42.1	93.5

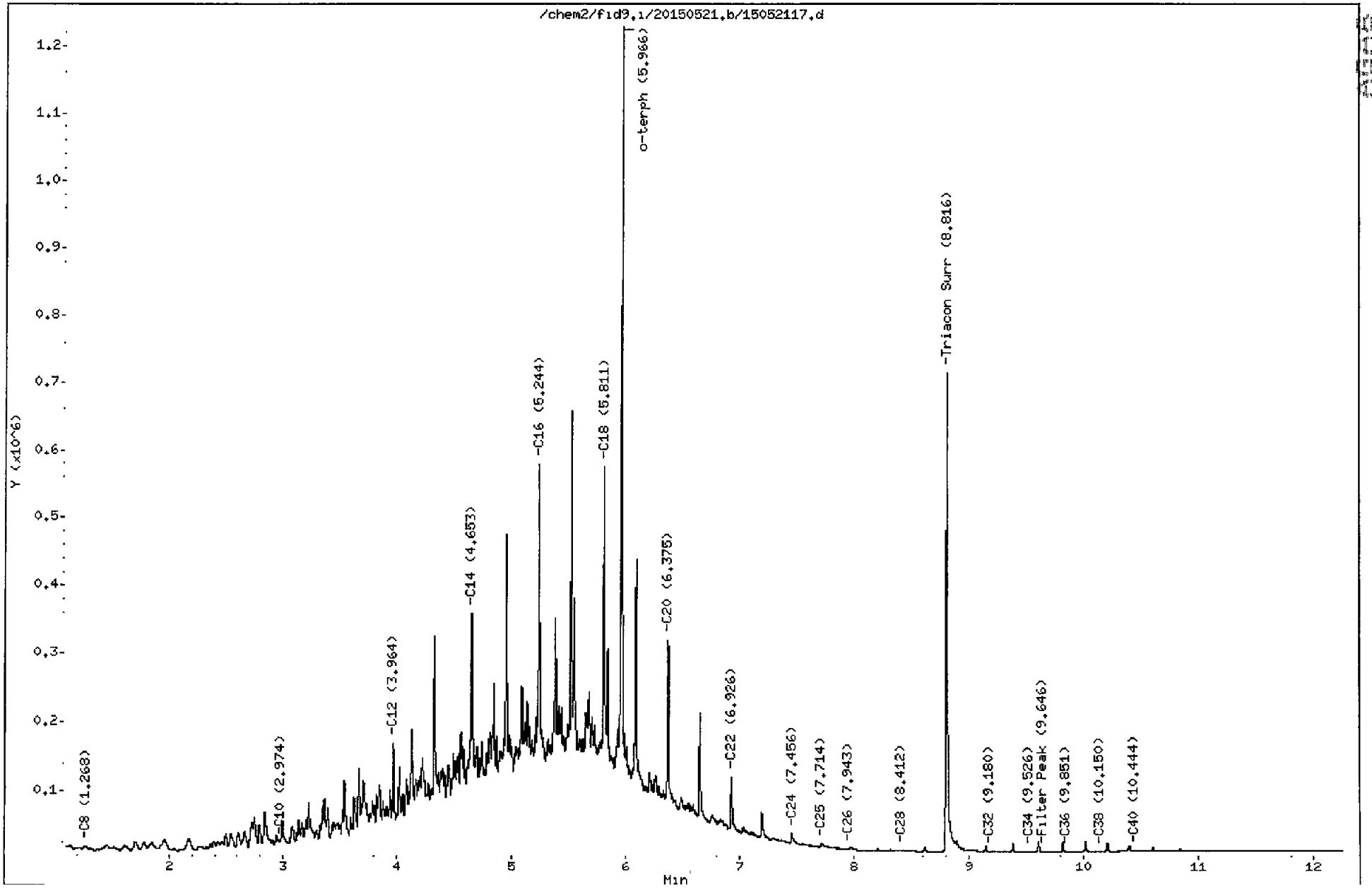
OK 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

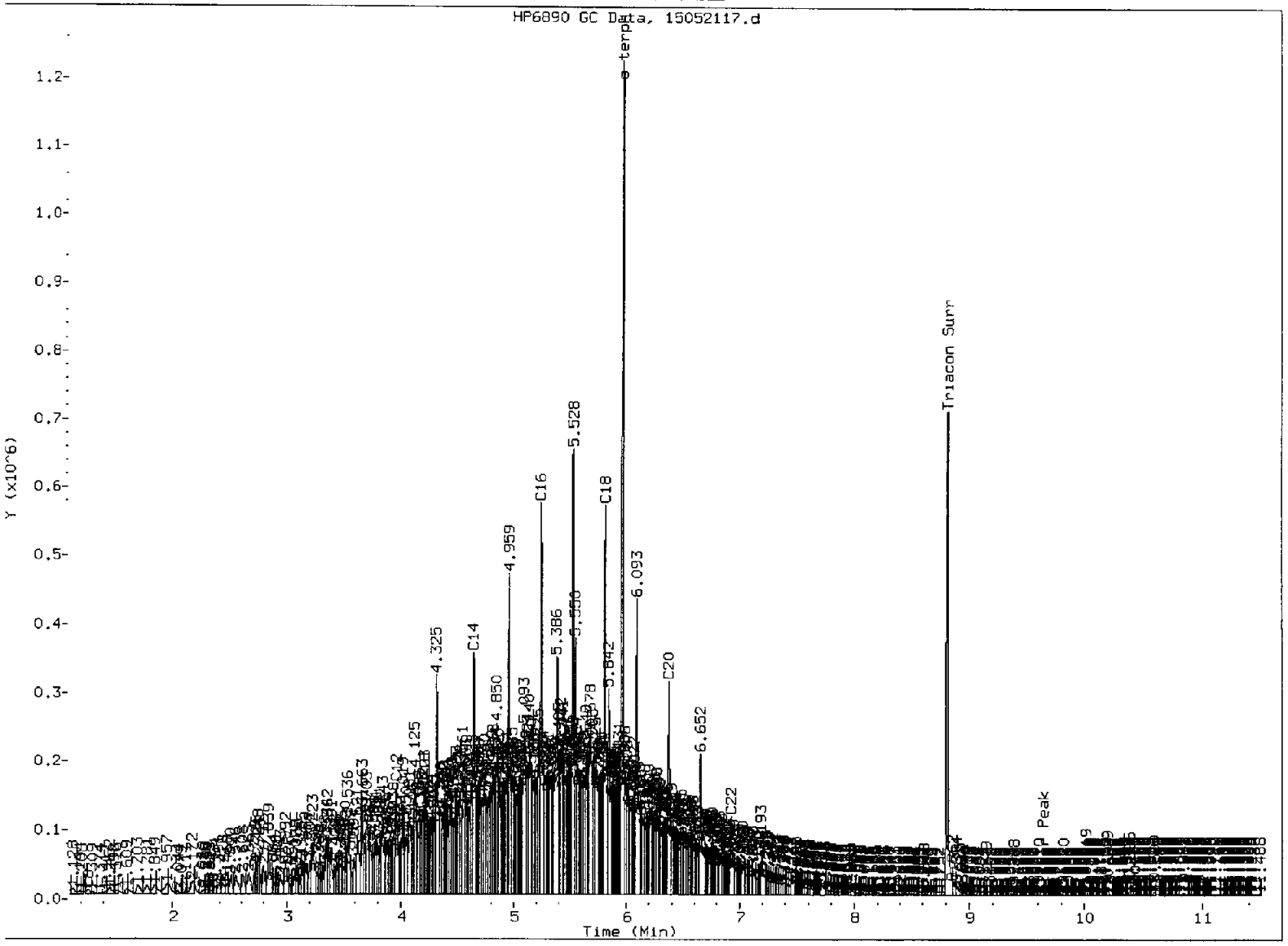
AGA8 · 01054

Data File: /chem2/fid9.i/20150521.b/15052117.d
Date : 21-MAY-2015 19:40
Client ID: AGA8LCSW1
Sample Info: AGA8LCSW1

Instrument: fid9.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 AGA8LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: DW Date: 5/22/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052118.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8LCSDW1
Client ID: AGA8LCSDW1
Injection: 21-MAY-2015 20:01
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.073	-0.002	6860	10876	GAS (Tol-C12)	4112693	165.95	
C8	1.268	0.004	6554	14985	DIESEL (C12-C24)	23588791	1354.74	
C10	2.995	0.023	48259	70946	M.OIL (C24-C38)	350761	24.58	
C12	3.965	-0.001	162165	198091	AK-102 (C10-C25)	26696126	1330.35	M
C14	4.653	0.000	350731	461041	AK-103 (C25-C36)	269246	17.26	
C16	5.245	0.003	567409	502292	OR.DIES (C10-C28)	26870309	1326.67	M
C18	5.811	0.004	574628	641893				
C20	6.375	0.002	298100	376623				
C22	6.927	0.000	115200	176027				
C24	7.458	0.005	27921	66372				
C25	7.698	-0.007	7476	2470				
C26	7.927	-0.020	3964	4592				
C28	8.398	-0.001	1187	436	IT.DIES (C10-C24)	26624854	1332.04	M
C32	9.186	0.006	247	181				
C34	9.529	0.004	37	10				
Filter Peak	9.650	-0.001	88	24				
C36	9.845	-0.003	285	59				
C38	10.149	0.001	756	367				
C40	10.439	-0.003	1198	522				
o-terph	5.968	0.006	1077747	828598	JET-A (C10-C18)	19892167	1209.40	
Triacon Surr	8.815	-0.001	700053	656381				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	828598	37.7	83.9
Triacontane	656381	40.4	89.8

BD 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052118.d

Date : 21-MAY-2015 20:01

Client ID: AGA8LCSDW1

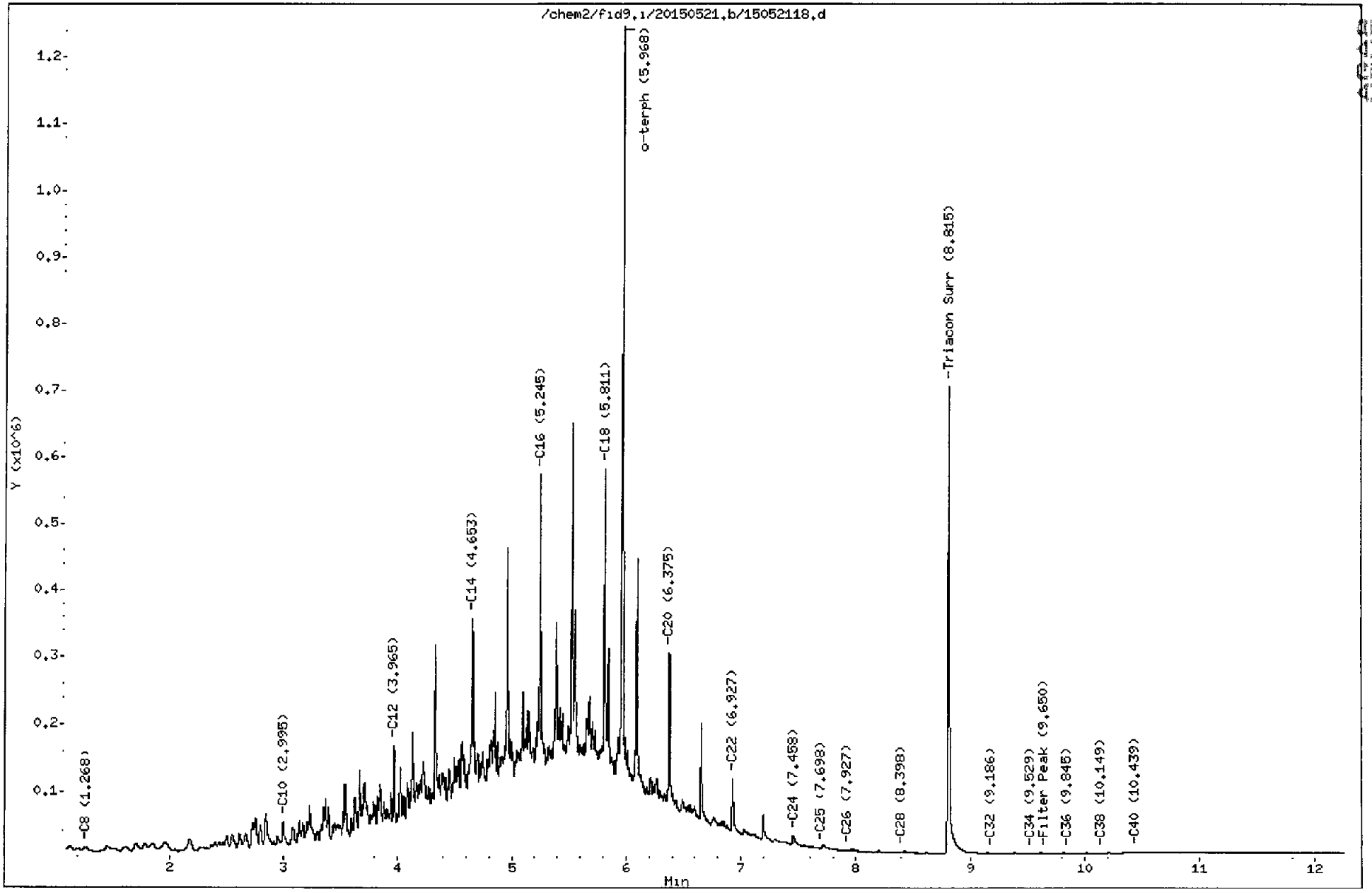
Sample Info: AGA8LCSDW1

Column phase: RTX-1

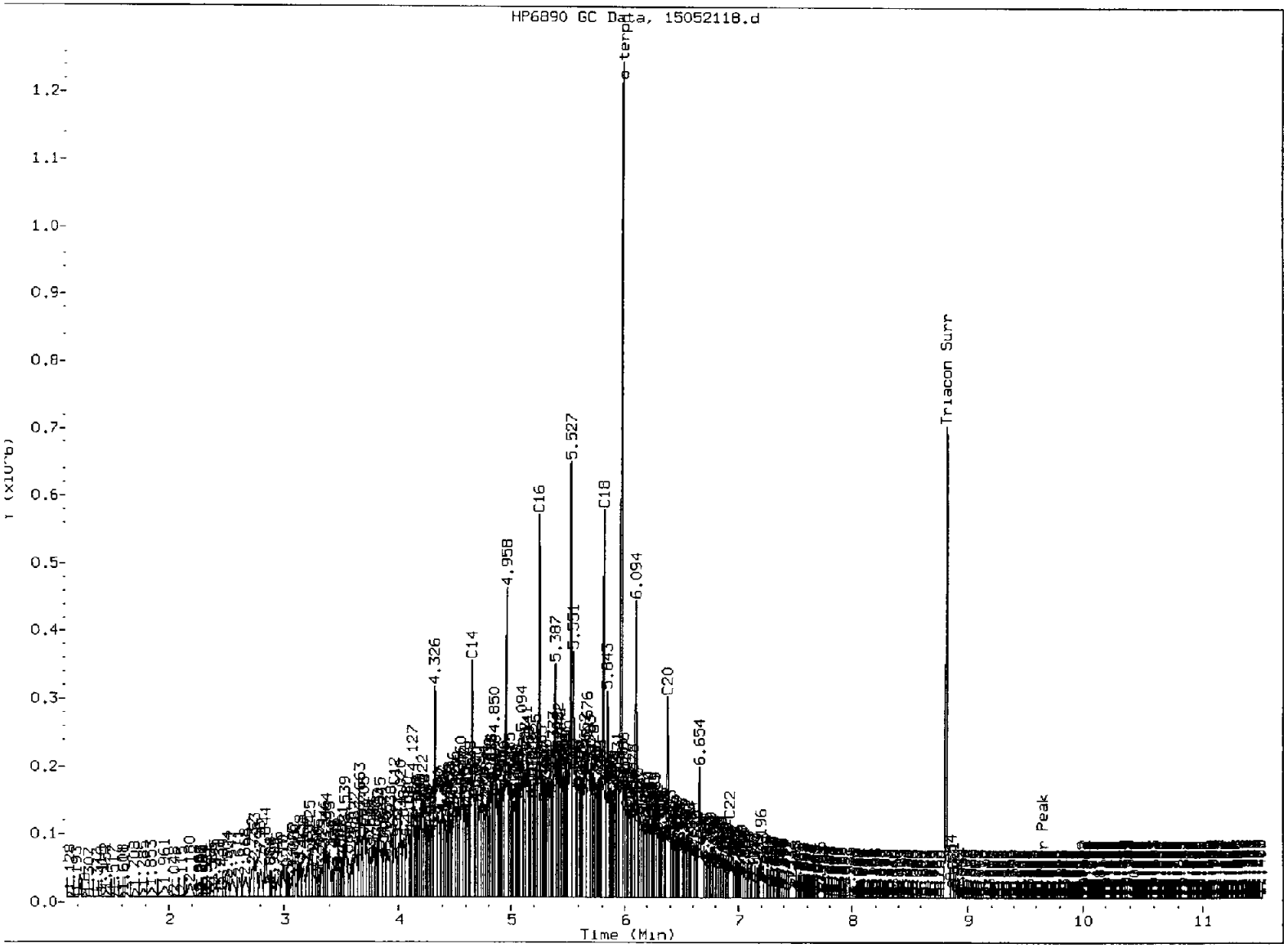
Instrument: fid9.i

Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 AGA8LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: _____ Date: 5/22/15

AGA8:0:1869

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052119.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8J
Client ID: RB-051315
Injection: 21-MAY-2015 20:22
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.071	-0.004	4254	7840	GAS (Tol-C12)	370271	14.94
C8	1.304	0.040	1354	2461	DIESEL (C12-C24)	860894	49.44
C10	2.983	0.010	1551	2502	M.OIL (C24-C38)	173261	12.14
C12	3.962	-0.004	6645	6293	AK-102 (C10-C25)	1091556	54.40
C14	4.652	-0.001	7279	9084	AK-103 (C25-C36)	140338	9.00
C16	5.236	-0.005	5779	4780	OR.DIES (C10-C28)	1111478	54.88
C18	5.802	-0.005	3880	4114			
C20	6.378	0.004	3058	3476			
C22	6.925	-0.003	1624	940			
C24	7.453	0.000	581	123			
C25	7.706	0.001	304	98			
C26	7.950	0.003	176	39			
C28	8.399	0.000	371	158	IT.DIES (C10-C24)	1088056	54.44
C32	9.184	0.004	1081	697			
C34	9.528	0.003	991	314			
Filter Peak	9.652	0.000	1053	876			
C36	9.850	0.002	1334	291			
C38	10.144	-0.005	1837	2067			
C40	10.445	0.004	2195	873			
o-terph	5.961	-0.001	992105	841934	JET-A (C10-C18)	873974	53.14
Triacon Surr	8.813	-0.002	675904	661543			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	841934	38.3	85.2
Triacontane	661543	40.7	90.5

JW 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGA8 · 81898

Data File: /chem2/fid9.i/20150521.b/15052119.d

Page 1

Date : 21-MAY-2015 20:22

Client ID: RB-051315

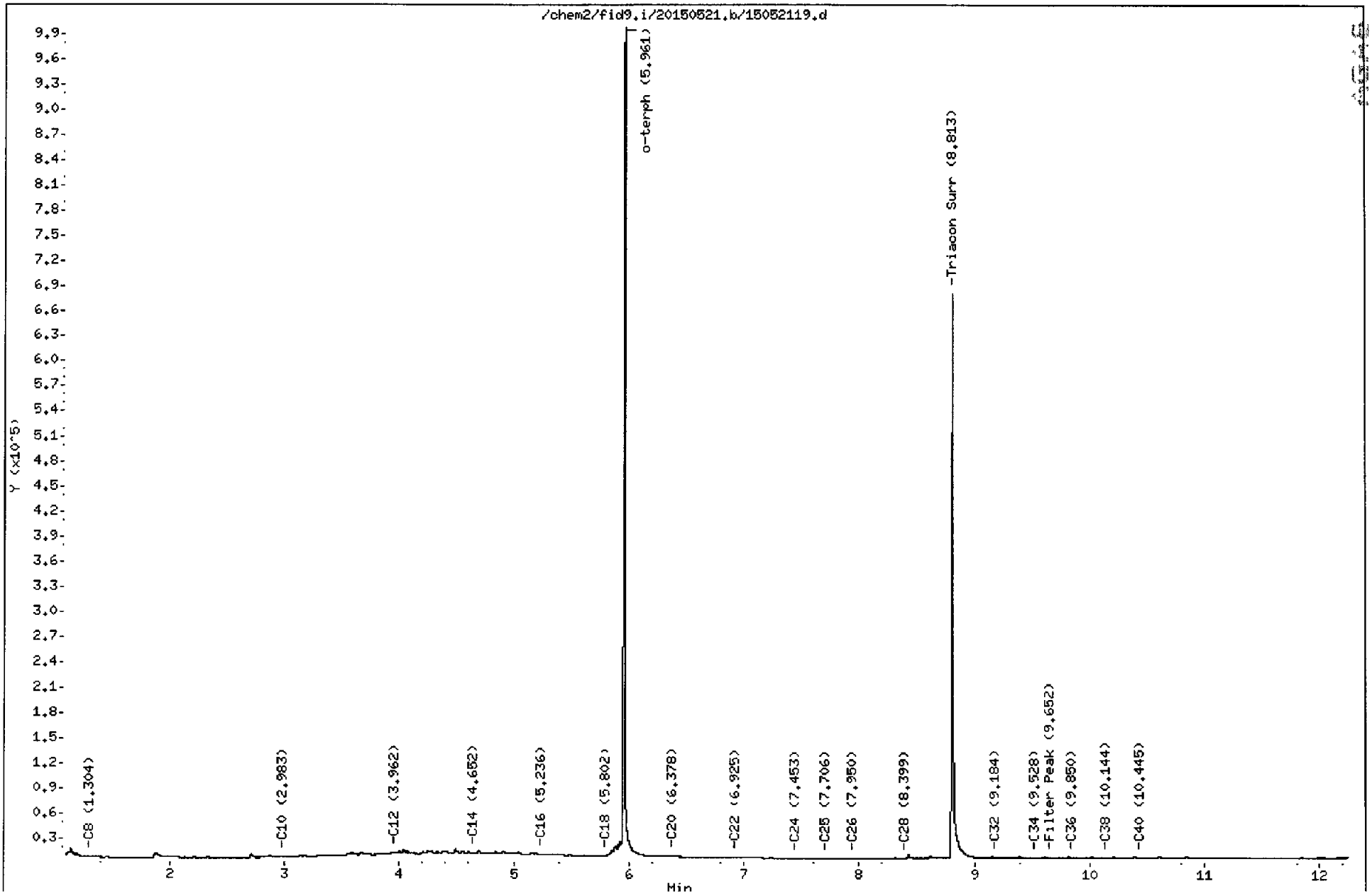
Instrument: fid9.i

Sample Info: AGA8J

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052120.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGC9L
Client ID: RB-051415
Injection: 21-MAY-2015 20:43
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.071	-0.004	8561	15770	GAS (Tol-C12)	462008	18.64
C8	1.297	0.032	3428	1899	DIESEL (C12-C24)	833942	47.89
C10	2.970	-0.003	1588	344	M.OIL (C24-C38)	140772	9.86
C12	3.964	-0.002	7231	4920	AK-102 (C10-C25)	1079184	53.78
C14	4.655	0.002	7650	12767	AK-103 (C25-C36)	116302	7.46
C16	5.242	0.000	5749	3054	OR.DIES (C10-C28)	1088712	53.75
C18	5.804	-0.004	3605	3659			
C20	6.378	0.004	2500	2067			
C22	6.923	-0.004	1118	925			
C24	7.458	0.004	340	190			
C25	7.710	0.004	130	59			
C26	7.950	0.003	30	14			
C28	8.388	-0.011	264	93	IT.DIES (C10-C24)	1076957	53.88
C32	9.186	0.005	920	454			
C34	9.535	0.010	714	435			
Filter Peak	9.649	-0.002	797	529			
C36	9.844	-0.004	938	690			
C38	10.150	0.002	1466	578			
C40	10.437	-0.004	1894	1694			
o-terph	5.961	-0.002	971158	860131	JET-A (C10-C18)	876205	53.27
Triacon Surr	8.812	-0.004	672639	673760			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

SW 5/22/15

Surrogate	Area	Amount	%Rec
o-Terphenyl	860131	39.2	87.1
Triacontane	673760	41.5	92.1

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGC9L 01092

Data File: /chem2/fid9.i/20150521.b/15052120.d

Date : 21-MAY-2015 20:43

Client ID: RB-051415

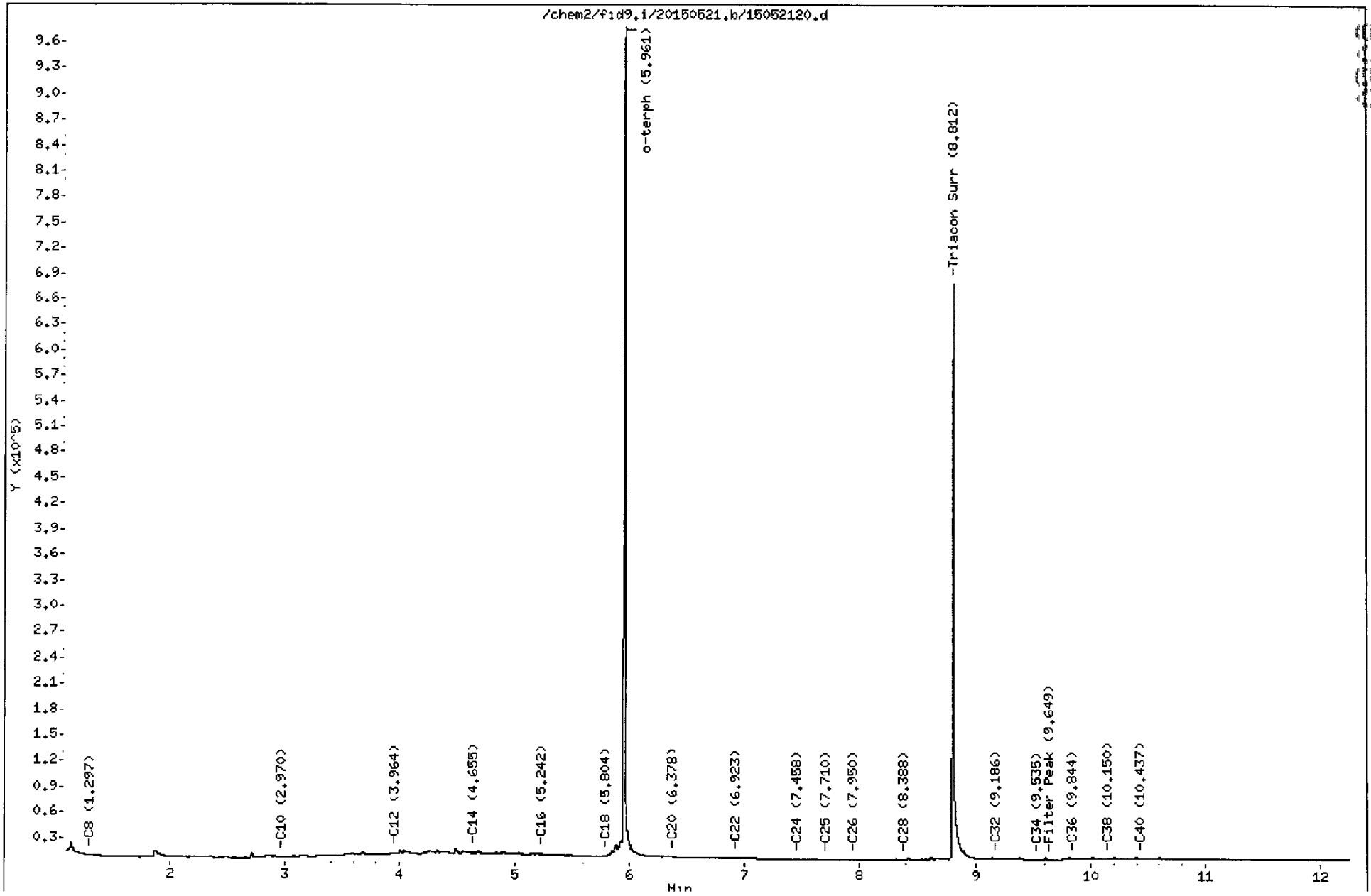
Sample Info: AGC9L

Instrument: fid9.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052121.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: DIESEL#2
Client ID:
Injection: 21-MAY-2015 21:04
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.088	0.013	4002	6893	GAS (Tol-C12)	897378	36.21	
C8	1.265	0.000	4090	6696	DIESEL (C12-C24)	4275054	245.52	
C10	2.965	-0.007	4023	2610	M.OIL (C24-C38)	103766	7.27	
C12	3.968	0.001	21842	37675	AK-102 (C10-C25)	4919195	245.14	M
C14	4.652	-0.001	45987	80896	AK-103 (C25-C36)	60951	3.91	
C16	5.240	-0.001	72691	115846	OR.DIES (C10-C28)	4956471	244.72	M
C18	5.805	-0.003	91750	107244				
C20	6.378	0.004	30756	63727				
C22	6.923	-0.005	6458	1410				
C24	7.448	-0.006	2694	2527				
C25	7.702	-0.004	1629	927				
C26	7.953	0.006	916	744				
C28	8.398	-0.001	263	178	IT.DIES (C10-C24)	4899587	245.13	M
C32	9.180	0.000	106	85				
C34	9.522	-0.003	269	191				
Filter Peak	9.651	-0.001	368	218				
C36	9.846	-0.003	590	127				
C38	10.146	-0.003	1082	945				
C40	10.450	0.008	1658	527				
o-terph	5.964	0.002	1203116	954270	JET-A (C10-C18)	3639682	221.28	
Triacon Surr	8.816	0.001	30	3				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	954270	43.5	96.6
Triacontane	3	0.0	0.0

BD 5/22/15

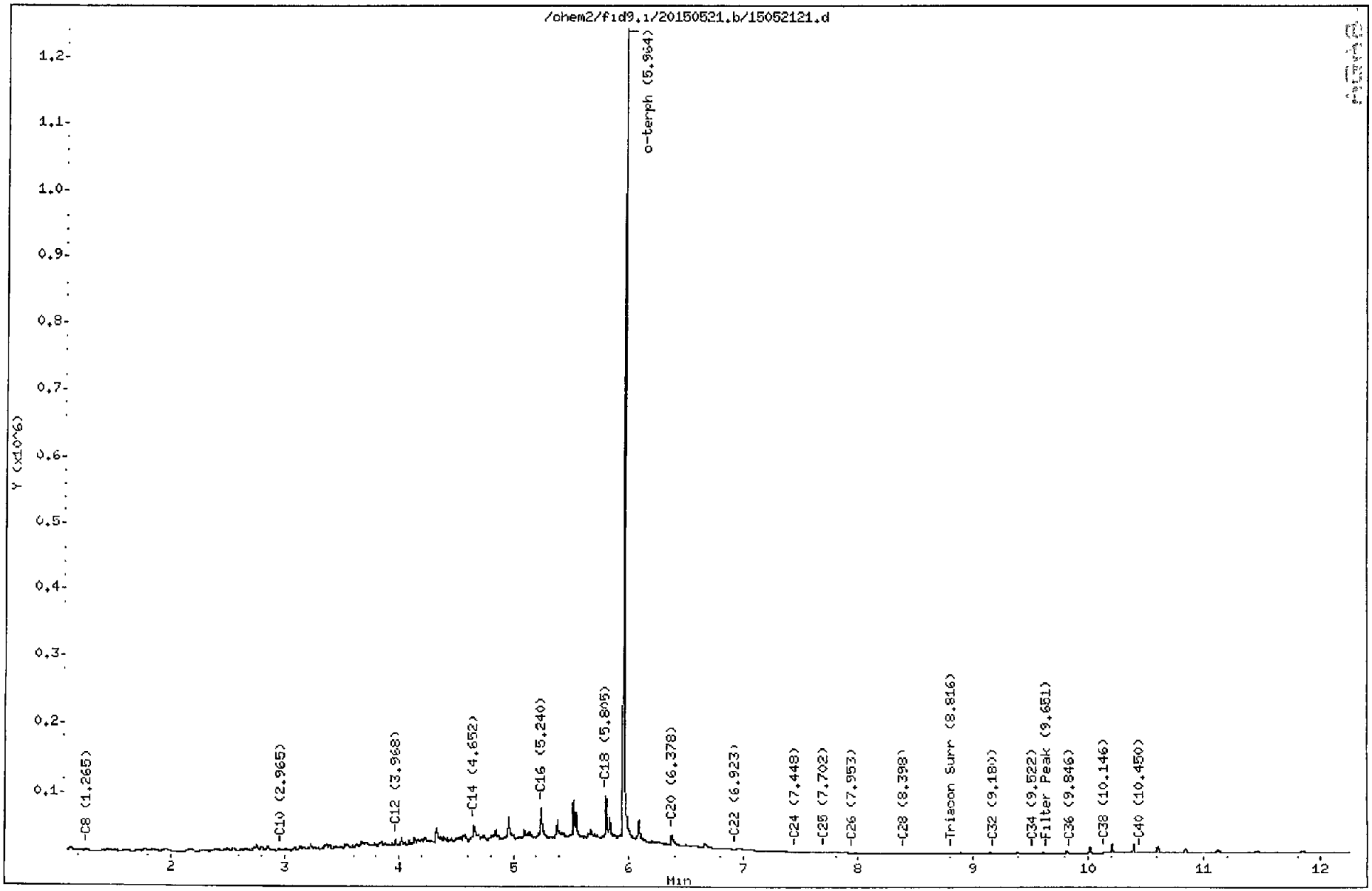
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGAR : 01954

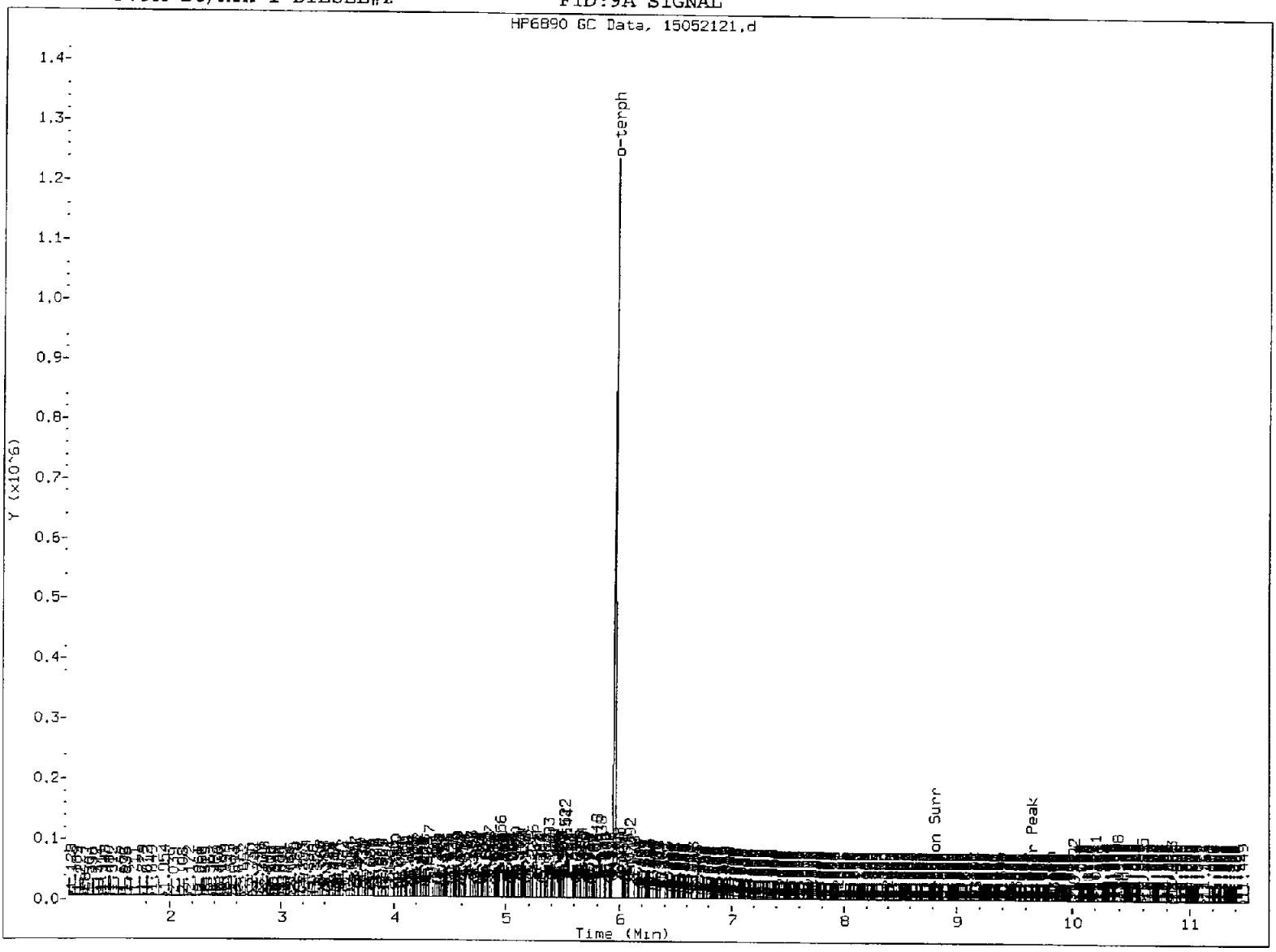
Data File: /chem2/fid9.i/20150521.b/15052121.d
Date : 21-MAY-2015 21:04
Client ID:
Sample Info: DIESEL#2

Instrument: fid9.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 DIESEL#2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JV Date: 5/22/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052122.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: MOIL#2
Client ID:
Injection: 21-MAY-2015 21:26
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	----				GAS (Tol-C12)	32881	1	
C8	1.276	0.011	1140	1149	DIESEL (C12-C24)	700259	40.22	
C10	2.970	-0.002	130	56	M.OIL (C24-C38)	6764973	474.07	—
C12	3.967	0.000	56	18	AK-102 (C10-C25)	950685	47.38	
C14	4.655	0.002	143	106	AK-103 (C25-C36)	5727137	367.12	M
C16	5.247	0.005	240	116	OR.DIES (C10-C28)	2583334	127.55	
C18	5.807	0.000	522	203				
C20	6.374	0.000	1978	1651				
C22	6.925	-0.002	6832	2422				
C24	7.458	0.004	23777	6568				
C25	7.704	-0.001	30504	29543				
C26	7.948	0.001	33776	11249				
C28	8.397	-0.002	41310	25915	IT.DIES (C10-C24)	705870	35.31	
C32	9.176	-0.004	58025	54636				
C34	9.527	0.002	52441	23717				
Filter Peak	9.648	-0.004	52469	34510				
C36	9.848	-0.001	50133	33070				
C38	10.149	0.001	43229	11891				
C40	10.446	0.004	33553	11828				
o-terph	5.960	-0.003	851	663	JET-A (C10-C18)	32196	1.96	
Triacon Surr	8.819	0.004	834767	717035				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	663	0.0	0.1
Triacontane	717035	44.1	98.1

BD 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

4848 9187

Data File: /chem2/fid9.i/20150521.b/15052122.d

Date : 21-MAY-2015 21:26

Client ID:

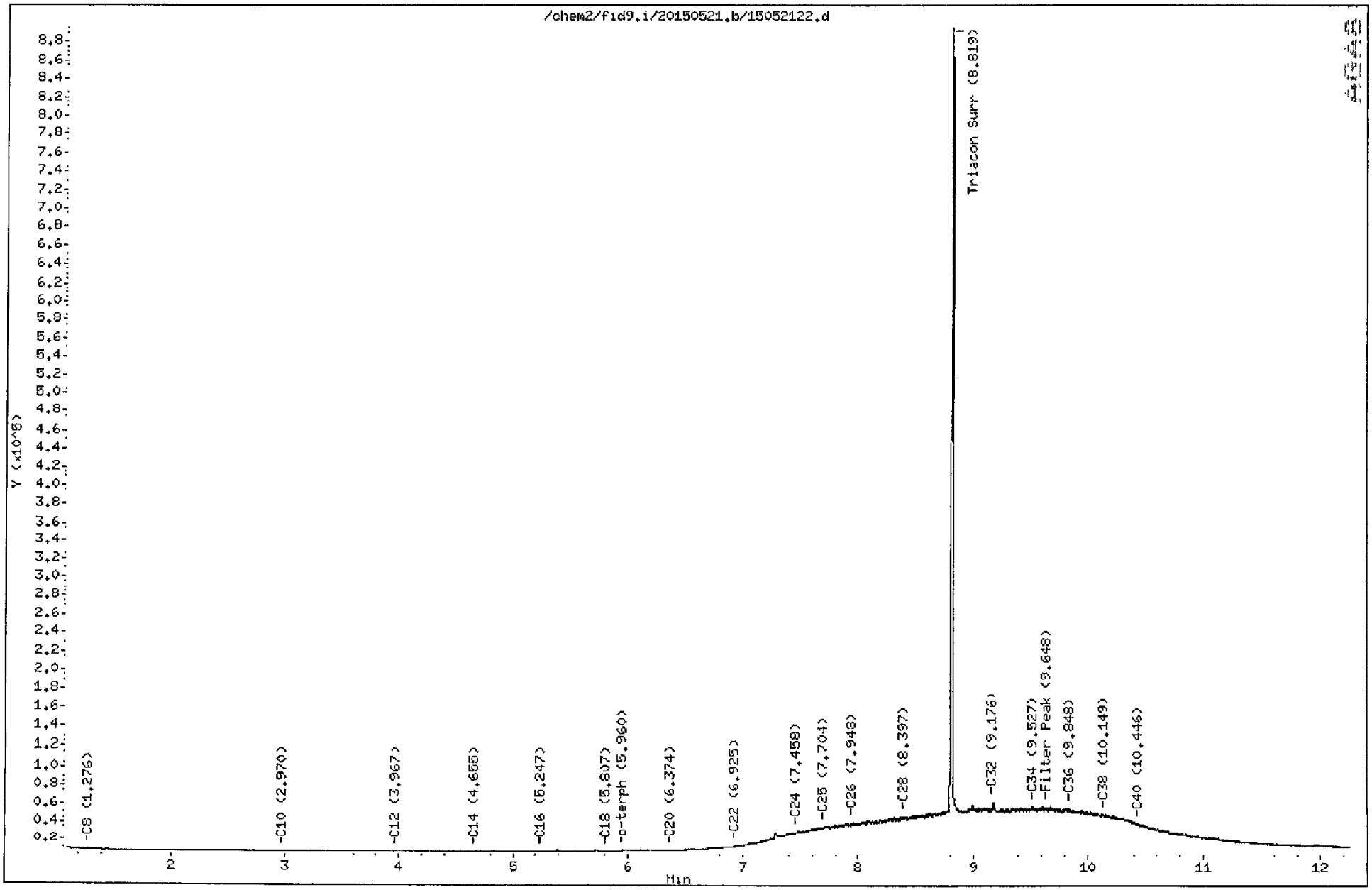
Sample Info: MOIL#2

Column phase: RTX-1

Instrument: fid9.i

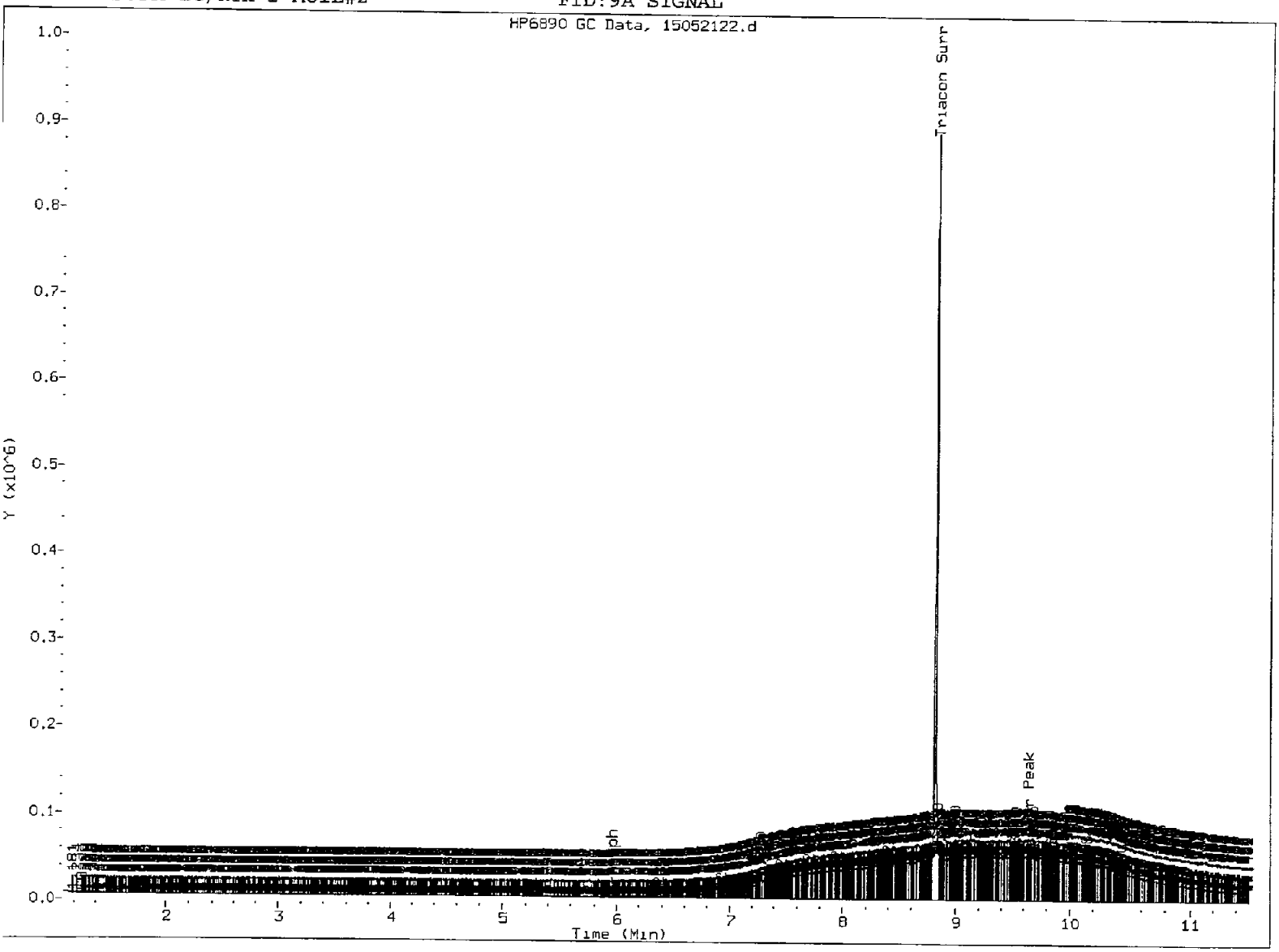
Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 MOIL#2

FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: RJ Date: 5/22/15

Metals Raw Data
Preparation Bench Sheets and Notes

ARI Job ID: AGA8

Analytical Resources,Incorporated
Analytical Chemists and Consultants

SPIKING LOG

Analyst: TH

Date: 5-18-15

Final Volume 25.0

Final Volume (Hg): 20.0

Sample ID AGAB ISPK, MB2SPK
AGCA LSPK, MB2SPK

	Prepcode:			
	Spike Solution:	ICP Routine	ICP No GFA	GFA
	Standard No.:			
	Vol Added (mL):			
	Ag	50		2.0
S	Al	200	200	
T	As	200		10
O	Ba	200	200	
C	Be	50	50	
K	Ca	1000	1000	
	Cd	50		2.0
	Co	50	50	
C	Cr	50	50	
O	Cu	50	50	
N	Fe	200	200	
C	K	1000	1000	
E	Mg	1000	1000	
N	Mn	50	50	
T	Na	1000	1000	
R	Ni	50	50	
A	Pb	200		10
T	Se	200		10
I	Sr	50	50	
O	Tl	200		10
N	V	50	50	
	Zn	50	50	

	BEN		
	ICP-MS #1	ICP-MS #2	ICP-MS Minerals
	D0325		
	0.05		
Ag	25 ✓		
Al			500
As	25 ✓		
Ba	25 ✓		
Be	25		
Ca			500
Cd	25 ✓		
Co	25		
Cr	25 ✓		
Cu	25 ✓		
Fe			500
K			500
Mg			500
Mn	25		
Mo		25	
Na			500
Ni	25		
Pb	25 ✓		
Sb		25	
Se	80 ✓		
Tl	25		
U	25		
V	25		
Zn	80 ✓		

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No.
Hg	TOM	CVA	1.0	0.02	D0214
Hg MBSPK	↓	CVA	1.0	0.04	↓
Sb		ICP	2000		
Sb		GFA	100		
B		ICP	500		
Mo		ICP	500		
Si		ICP	10000		
Sn		ICP	500		
Ti		ICP	2000		

Additional Elements:

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std. No.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SPIKING LOG

Analyst: MB **Final Volume** 50.0 **Sample ID** AGA8 FSPK, MBISPK

Date: 5/18/15 **Final Volume (Hg):** 50.0

	Prepcode:			
	Spike Solution:	ICP Routine	ICP No GFA	GFA
	Standard No.:			
	Vol Added (mL):			
	Ag	50		2.0
S	Al	200	200	
T	As	200		10
O	Ba	200	200	
C	Be	50	50	
K	Ca	1000	1000	
	Cd	50		2.0
	Co	50	50	
C	Cr	50	50	
O	Cu	50	50	
N	Fe	200	200	
C	K	1000	1000	
E	Mg	1000	1000	
N	Mn	50	50	
T	Na	1000	1000	
R	Ni	50	50	
A	Pb	200		10
T	Se	200		10
I	Sr	50	50	
O	Tl	200		10
N	V	50	50	
	Zn	50	50	

	SWN		
	ICP-MS #1	ICP-MS #2	ICP-MS Minerals
	D0325		
	1.0		
Ag	25 ✓		
Al			500
As	25 ✓		
Ba	25 ✓		
Be	25		
Ca			500
Cd	25 ✓		
Co	25		
Cr	25 ✓		
Cu	25 ✓		
Fe			500
K			500
Mg			500
Mn	25		
Mo		25	
Na			500
Ni	25		
Pb	25 ✓		
Sb		25	
Se	80 ✓		
Tl	25		
U	25		
V	25		
Zn	80 ✓		

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No.
Hg	SMM	CVA	1.0	0.05	D0214
Hg MBSPK	↓	CVA	1.0	0.10	↓
Sb		ICP	2000		
Sb		GFA	100		
B		ICP	500		
Mo		ICP	500		
Si		ICP	10000		
Sn		ICP	500		
Ti		ICP	2000		

Additional Elements:

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No.

Analytical Resources, Incorporated
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Mercury Digestion Log

Prep Code: TWM Matrix: Water
Analyst: TH Date: 5-18-15
Bath Temp: 91°C Start Time: 1020 End Time: 1220

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGA8 J	1	✓	20.0	20.0	S128 1	(Y)	
" JDUP	1	✓	↓	↓	1	↓	
" JSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGC9 L	1	✓			S129 1		
" LDUP	1	✓			1		
" LSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGB1 A	2	✓			S129 1		
" ADUP	2	✓			1		
" ASPK	2	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" D	1	✓			1		
" MB1	—	—	↓	↓	1	↓	
" MB1SPK	—	—	20.0	20.0	1	(Y)	
				TH 5-18-15			

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1501179

ARA 2183

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: SUM Matrix: soil
Analyst: MB Date: 5/18/15
Bath Temp: 90°C Start Time: 1025 End Time: 1055

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) ~~Volume (mL)~~	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGA8 A	1	–	0.248	50.0	5/28 1	Y	
" B	1	–	0.247		1		
" C	1	–	0.247		1		
" D	1	–	0.212		1		
" E	1	–	0.266		1		
" F	1	–	0.276		1		
" FDUP	1	–	0.274		1		
" FSPK	1	–	0.273		1		
" G	1	–	0.230		1		
" H	1	–	0.284		1		
" I	1	–	0.226		1		
" MB1	–	–	–		1		
" MBSPK	–	–	–		1		
AGB8 A	1	–	0.210		5/26 1		
" B	1	–	0.271		1		
" MB1	–	–	–		1		
" MBSPK	–	–	–	50.0	1	Y	

MB 5/18/15

Chemical/Reagent ID:

HNO_3: D14391 H_2SO_4: C3708 HCl: –

5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1408268

Analytical Resources, Incorporated
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Digestion Log

Analyst: TH Date: 5-18-15 Time: 0855

Matrix: Water Block ID: #12 Block Temp: 94°C Thermometer: MPS2

ARI Sample ID	Btl #	pH<2	Prep Code: BEN Initial ~~Wt (g)~~ Vol (mL)	Prep Code: BEN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
AG1A8 J	1	✓	50.0	25.0			
" JDUP	1	✓					
" JSPK	1	✓					
" MB2	—	—					
" MB2SPK	—	—					
AG1C9 L	1	✓					
" LDUP	1	✓					
" LSPK	1	✓					
" MB2	—	—					
" MB2SPK	—	—					
TH 5-18-15 ~~AG1B7~~ AG1D0 A	1	✓					Batch
AG1D0 MB	—	—					
" MBSPK	—	—					
AG1D2 A	4	✓					
AG1D4 A	4	✓	50.0	25.0			

TH 5-18-15

Chemical/Reagent ID:

HNO_3: D1978 HCl: — H_2O_2: C4188 Tube Lot #: 150117G

ARA 21105

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: MB Date: 5/14/15 Time: 0955

Matrix: Soil Block ID: #5 Block Temp: 95°C Thermometer: MB15

ARI Sample ID	Btl #	pH<2	Prep Code: SWN Initial Wt (g) ~~Vol (mL)~~	Prep Code: SWN Final Vol (mL)	Prep Code: SW2 Initial Wt (g) ~~Vol (mL)~~	Prep Code: SW2 Final Vol (mL)	Comments
AGA8 A	1	-	1.034	50.0			
" B	1	-	1.058				
" C	1	-	1.040				
" D	1	-	1.079				
" E	1	-	1.044				
" F	1	-	1.066				
" FDUP	1	-	1.069			MB 5/14/15	
" FSPK	1	-	1.068				
" G	1	-	1.006				
" H	1	-	1.011				
" I	1	-	1.068				
" MB1	-	-	-				
" MB1SPK	-	-	-	50.0			
AGB8 A	1	-			1.011	50.0	
" B	1	-		MB 5/14/15	1.034		
" MB1	-	-			-		
" MB1SPK	-	-			-	50.0	
				MB 5/14/15			

Chemical/Reagent ID:

HNO_3: Di908/00680 HCl: 00905 H_2O_2: C4188 Tube Lot #: 150179

Metals Raw Data
Run Logs, Calibrations, and Raw Data

ARI Job ID: AGA8

AGA8 0167

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Corrective Actions
Inorganic Analyses

Criteria Flagged:

ARI Job No.: AGAG

Unacceptable Blank: ☐

Date of Event: 5-22-15

Unacceptable Duplicate: ☐

Client ID:

Unacceptable Spike. ☒

Method/Element: CVA / Hg

Unacceptable Reference: ☐

Prep Code: SMM

Details of Problem/Recommended Corrective Action:

1st Analysis: F = 1.65 ppb

FDUP = 1.36 ppb RPD = 14 ✓

FSPK = 3.02 ppb %R = 137 High X

2nd Analysis F = 1.65 ppb

FDUP = 1.37 ppb RPD = 18 ✓

FSPK = 3.01 ppb %R = 136 High X

Samples Affected: F, FDUP, FSPK, MB1, MB1SPK

Corrective Action Taken:

Analyst Initials: TH

Supervisor:

Date: 5-22-15

Date: 5-22-15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Corrective Actions
Inorganic Analyses

Criteria Flagged:		ARI Job No.:	AGA8
Unacceptable Blank.	☐	Date of Event:	5/26/15
Unacceptable Duplicate:	☑	Client ID:	Kennedy Jenks
Unacceptable Spike	☑	Method/Element:	ICPMS
Unacceptable Reference.	☐	Prep Code:	SDA

Details of Problem/Recommended Corrective Action:

Low Se recovery on spike. Post-spike passes. (on sample F)

Cr RPD ↑ on the 200x dilution

Cu RPD 20.4% @ 50CV.

Samples Affected:

Corrective Action Taken:

Analyst Initials: RE. **Supervisor:** BI

Date: 5/29/15 **Date:** 5/29/15

5049F

Revision 007
6/11/10

AGA8 0189

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Metals Laboratory
Analyst Notes

ARI Job No.: AGA8

Client ID: Kennedy Jenks

Parameter: ICPMS

Client Project:

List problems, concerns, corrective actions and any other pertinent information
The Cu value in FSPK is high. The sample & duplicate were each around 200 mg/L. Fspike was around 22000 mg/L. Re-ran to check. Cu is high.
Sample & duplicate were run at 500x. The spike was run at 2000x dilution.

Analyst Initials:		Date:	5/29/15

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP (ICP-MS) GFA CVA **Analysis Date:** 5/28/15

M2	Analyst 5/28/15	Peer 5-29-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	see log
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	✓	✓	see log
Carry-over	✓	✓	
Method QC:			
CRI/CRA	✓	✓	see log
ICSA/ICSAB	✓	✓	see log
Post Spikes/Serial Dilutions	✓	✓	see log
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	AEA8
Matrix Duplicates	✓	✓	AEC9/AEA8
Method Blanks	✓	✓	
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAF's	✓	✓	AEA8/AEC9/AEØ

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ee **Page** 1 **of** 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		Std Ø	D2037		
		1	D2173		
		2	D2249		
		3	D2250		
		4	D2251		
		5	D2252		
		Rinse			
		ICV	D1815		
		ICB	D2037		
		CCV1	D2251		
		CCB1	D2037		
ZZZ		~~Low check~~ zzzzzz	D2173		
		ICSA	D2253		Cr^{53} Ni^{62} Cu^{63} ↑
		~~ICSAB~~	D2254		
		LR200	D2148		
		LR300	D2149		
		B1			
		B2			
		B3			
		B4			
		B5			
		CCV2			
		CCB2			Ni^{62} ↑
		Std Ø			

Analytical Resources, Incorporated
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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 Analyst: ee Page 2 of 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		CCV3			
		CCB3			
		Low Check			
		ICSA			$Cr^{53}N, ^{62}Cu^{63}$ ↑
ZZZ		~~ICSAB~~			Sc ↑
		ICSAB			
		B6			
		CCV4			
		CCB4			
		std Ø			
		CCV5			
		CCB5			
		AG07 MB	REN	2	Pb only
		AGP2 MB			↓
		↓ A			Cr Ni, Pb only
		AGPØ A			Ni Pb only
		AG 08 A		↓	Cr Ni, Pb
	✓	AG07 A		5	use 2x
		AG07 A		2	Cr Pb
		↓ MBSPK			Pb only
		AGP2 MBSPK			↓
		AGEØ MBSPK	↓	↓	Ag Cd Ba CAF%, RA As RR later, with similar results
		CCV6			
		CCB6			

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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 Analyst: ee Page 3 of 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGA8 MB1	SWN	20	
		A			RR Cr 50x
		B			↓
		C			
		FDUP			RR: Cr Ba Pb 50x RR Cu Zn 200x
		F			↓
		FSPK			RR 20x check Cu spike
		FPOST			0.06mL Mix #1: C2214 to 6mL Se CAF
		MB1SPK	↓	↓	RR As
	✓	AGEØ MBSPK	REN	2	use previous
		CCV7			
		CCB7			Ni 62 going negative
		std Ø			
		CCV8			
		CCB8			
		AGA8 MB2	REN	2	
		JDUP			
	✓	J			RR To check Cu; Second good, use this
		JSPK	↓	↓	
		D	SWN	20	RR Cr Zn 50x
		E			
		G			
		H			
		I	↓	↓	

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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ea **Page** 4 **of** 6

All corrections made by analyst unless otherwise noted. ea 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGA8 MB2SPK	REN	2	
		CCV9			
		CCB9			
		AGA8 A	SWN	50	Cr only
		B		↓	↓
		FDUP		↓	RR Cr Cu Pb Zn, use Ba
		F		↓	↓
		FSPK		↓	↓ Ba STL
		FDUP		200	↑ Cr ANPD ↑
		F		↓	Pb only Cr, RR Cu Zn 500x
		FSPK		↓	Pb Cr STL ↑
	✓	FSPK		20	↓ ↓ AN 2000x FSPK Zn
		↓ MB1SPK	↓	20	As only
		CCV10			
		CCB10			
		AGC9 MB1	SWN	20	
		AGA8 J	REN	2	
		D	SWN	50	Cr Zn Only
		FDUP	↓	500	Cu Zn only Cu RPD 20%
		F		↓	Cu Zn Only
		FSPK		↓	Zn Only i STL
		↓ FSPK		2000	Cu only i STL
		AGC9 A		20	
		↓ B	↓	20	RR: Cr Zn Pb @ 50x

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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ee **Page** 5 **of** 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGC9 MB1SPK	SWN	20	✓
		CCV11			
		CCB11			
		AGC9 C	SWN	20	
		D			
		E			ee 5/29/15
		F			RR Cr@50X
		G			
		I			RR Cr Zn Pb @200X
		H DUP			RR: Cr Cu Zn Ba Pb @200X, Cd, Ag RMD ↑ CAF
		H			
		HSPK			↓
zzz	✓	~~H POST~~	↓	↓	0.06mL SPK Mix #1; c2214
		CCV12			
		CCB12			
		AGG4 MB	REN	2	
		AGC9 MB2		2	
		LDUP			
		L			RR for Zn greater than blank, but will load current—NO Zn (use 5/29)
		LSPK	↓	↓	
		J	SWN	20	
		K	↓	↓	
		AGF8 MB SPK	SWN	20	✓
		~~AGG4 MB SPK~~	REN	2	✓

AGAB 0116

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Thursday, May 28, 2015 07:47:49
Sample Description:
Method File. C:\NexION Data\Method\Daily Performancenew mth
Dataset File C:\NexION Data\Dataset\Default\Daily Performance Check.5682
MassCal File: C \NexION Data\MassCal\Default.tun
Conditions File C \NexION Data\Conditions\Default dac
Dual Detector Mode Pulse
Acq Dead Time (ns) 60
Current Dead Time (ns): 60
Torch Z position (mm) 0 00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	4323 1	4323.121	61.314	1.4	Standard
	Mg	24.0	36963.8	36963.799	208 339	0.6	Standard
	In	114.9	102870.0	102870.040	80.654	0.1	Standard
	Pb	208.0	39849.6	39849 554	268 329	0.7	Standard
	U	238.1	68688.8	68688.762	265.454	0.4	Standard
⌈	CeO	155.9	1813.4	0.020	0.001	3.1	Standard
| >	Ce	139.9	92952.2	92952.232	1062.514	1.1	Standard
⌊	Ce++	70 0	2380.5	0.026	0.000	1.6	Standard
	Bkgd	220 0	0.1	0.083	0 118	141.4	Standard

Current Conditions File Data

Current Value	Description
1.05	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-1525.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-15 00	Cell Rod Offset STD [CRO]
7.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.05	DRC Mode NEB
-8.00	DRC Mode QRO
-2.50	DRC Mode CRO
-4.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-15.00	KED Mode CRO
-12 00	KED Mode QRO
-2.00	KED Mode Cell Entrance Voltage
-24.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
4 00	KED Cell Gas B
0.00	KED RPa

ASAS : 21117

SmartTune Wizard - Summary

)ptimization Summary

›martTune file: C:\NexIONData\Wizard\SmartTune\ariSTDaily+torch.swz

›tart Time: 5/28/2015 7:47:49 AM
:nd Time: 5/28/2015 7:48:53 AM

)aily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 4323.12
Obtained Intensity (Mg 23.985): 36963.80
Obtained Intensity (In 114.904): 102870.04
Obtained Intensity (Pb 207.977): 39849.55
Obtained Intensity (U 238.05): 68688.76
Obtained Intensity (Bkgd 220): 0.08
Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=1813.36 / 92952.23)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.026 (=2380.51 / 92952.23)

AGAS 04118

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:31:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L				67707	5
	Cl	37		ug/L				5882606	2
>	Sc	45		ug/L				1598309	3
	Cr	52		ug/L				38005	1
	Cr	53		ug/L				216	1
	Mn	55		ug/L				767	8
>	Ge	72		ug/L				1291976	1
	Ni	60		ug/L				37	11
	Ni	62		ug/L				173	3
	Cu	63		ug/L				207	6
	Cu	65		ug/L				74	8
	Zn	66		ug/L				2661	3
	Zn	67		ug/L				379	8
	Zn	68		ug/L				2025	0
	As	75		ug/L				28	144
	As-1	75		ug/L				18195	0
	Se	82		ug/L				29	69
	Se	78		ug/L				18449	0
	Y	89		ug/L				977062	0
	Kr	83		ug/L				343	3
>	In	115		ug/L				1320273	1
	Ag	107		ug/L				46	19
	Cd	111		ug/L				241	4
	Cd	114		ug/L				39	14
	Sb	121		ug/L				30	18
	Sb	123		ug/L				21	26
	Ba	135		ug/L				18	24
	Ba	137		ug/L				26	11
>	Tb	159		ug/L				1492326	1
	Tl	205		ug/L				35	15
	Pb	208		ug/L				187	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:35:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	68384	2
	Cl	37		ug/L			5882606	6038079	2
>	Sc	45		ug/L			1598309	1604087	1
	Cr	52	0.500	ug/L	0.074	14	38005	52617	3
	Cr	53	0.500	ug/L	0.010	1	216	1978	0
	Mn	55	0.500	ug/L	0.023	4	767	22561	3
>	Ge	72		ug/L			1291976	1292923	2
	Ni	60	0.500	ug/L	0.019	3	37	4089	1
	Ni	62	0.500	ug/L	0.024	4	173	783	3
	Cu	63	0.500	ug/L	0.015	3	207	9623	1
	Cu	65	0.500	ug/L	0.011	2	74	4442	1
	Zn	66	4.000	ug/L	0.157	3	2661	22053	1
	Zn	67	4.000	ug/L	0.020	0	379	3318	2
	Zn	68	4.000	ug/L	0.231	5	2025	15502	3
	As	75	0.200	ug/L	0.003	1	28	1137	2
	As-1	75	0.200	ug/L	0.068	34	18195	19295	0
	Se	82	0.500	ug/L	0.008	1	29	302	1
	Se	78	0.500	ug/L	0.266	53	18449	19148	0
	Y	89		ug/L			977062	964608	0
	Kr	83		ug/L			343	360	5
>	In	115		ug/L			1320273	1338562	0
	Ag	107	0.200	ug/L	0 003	1	46	5115	1
	Cd	111	0.100	ug/L	0.003	3	241	902	2
	Cd	114	0.100	ug/L	0.002	1	39	1592	1
	Sb	121	0.200	ug/L	0.002	0	30	3653	1
	Sb	123	0.200	ug/L	0.003	1	21	2803	1
	Ba	135	0.500	ug/L	0 003	0	18	2743	0
	Ba	137	0.500	ug/L	0 008	1	26	4740	1
>	Tb	159		ug/L			1492326	1492785	0
	Tl	205	0.200	ug/L	0.004	2	35	9127	2
	Pb	208	0.100	ug/L	0.002	1	187	6595	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:38:59
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			67707	67107	2
	Cl	37		ug/L			5882606	6085578	1
>	Sc	45		ug/L			1598309	1627223	0
	Cr	52	10.000	ug/L	0.087	0	38005	335589	1
	Cr	53	10.000	ug/L	0.344	3	216	35526	4
	Mn	55	9.999	ug/L	0.227	2	767	433682	2
>	Ge	72		ug/L			1291976	1318045	0
	Ni	60	9.999	ug/L	0.257	2	37	78823	1
	Ni	62	9.998	ug/L	0.164	1	173	11703	1
	Cu	63	9.999	ug/L	0.194	1	207	184203	1
	Cu	65	9.998	ug/L	0 222	2	74	83336	1
	Zn	66	9.968	ug/L	0.147	1	2661	51054	0
	Zn	67	10.109	ug/L	0.156	1	379	8512	1
	Zn	68	10.008	ug/L	0.137	1	2025	36624	1
	As	75	9.999	ug/L	0 205	2	28	48099	1
	As-1	75	9.999	ug/L	0 211	2	18195	64427	0
	Se	82	10.001	ug/L	0 224	2	29	5878	1
	Se	78	9.997	ug/L	0 242	2	18449	31481	0
	Y	89		ug/L			977062	976970	0
	Kr	83		ug/L			343	352	1
>	In	115		ug/L			1320273	1349452	0
	Ag	107	10.000	ug/L	0.027	0	46	249315	0
	Cd	111	10.000	ug/L	0 076	0	241	65579	0
	Cd	114	10.000	ug/L	0 105	1	39	159536	1
	Sb	121	10.000	ug/L	0 069	0	30	179605	0
	Sb	123	10.000	ug/L	0.207	2	21	136691	1
	Ba	135	9.998	ug/L	0 009	0	18	51142	0
	Ba	137	9.998	ug/L	0.100	1	26	88838	0
>	Tb	159		ug/L			1492326	1491898	1
	Tl	205	10.000	ug/L	0.151	1	35	460146	1
	Pb	208	10.000	ug/L	0.139	1	187	588802	0

AGA-B121

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:42:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	68142	1
	Cl	37		ug/L			5882606	5951602	2
>	Sc	45		ug/L			1598309	1612614	0
	Cr	52	19.963	ug/L	0.416	2	38005	621323	1
	Cr	53	19.903	ug/L	0.293	1	216	68525	0
	Mn	55	19.929	ug/L	0.307	1	767	843959	2
>	Ge	72		ug/L			1291976	1280970	1
	Ni	60	20.067	ug/L	0.067	0	37	155810	1
	Ni	62	20.001	ug/L	0.717	3	173	22583	2
	Cu	63	19.981	ug/L	0.383	1	207	356166	1
	Cu	65	20.041	ug/L	0.200	0	74	163619	2
	Zn	66	20.130	ug/L	0 243	1	2661	99693	0
	Zn	67	20.272	ug/L	0 592	2	379	16988	2
	Zn	68	20.156	ug/L	0 520	2	2025	71514	1
	As	75	20.025	ug/L	0 043	0	28	94065	1
	As-1	75	20.068	ug/L	0.143	0	18195	108743	0
	Se	82	20.010	ug/L	0 157	0	29	11425	1
	Se	78	20.163	ug/L	0 363	1	18449	43939	0
	Y	89		ug/L			977062	980224	1
	Kr	83		ug/L			343	373	4
>	In	115		ug/L			1320273	1327873	1
	Ag	107	19.834	ug/L	0.096	0	46	470981	1
	Cd	111	19.991	ug/L	0 155	0	241	128510	1
	Cd	114	20.021	ug/L	0 178	0	39	315542	0
	Sb	121	20.037	ug/L	0 270	1	30	356695	0
	Sb	123	20.030	ug/L	0 365	1	21	271003	0
	Ba	135	20.034	ug/L	0.278	1	18	101486	0
	Ba	137	20.046	ug/L	0 202	1	26	176854	0
>	Tb	159		ug/L			1492326	1491208	1
	Tl	205	19.993	ug/L	0.259	1	35	918266	0
	Pb	208	19.959	ug/L	0 486	2	187	1164701	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:47:00
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67707	63843	0
	Cl	37		ug/L			5882606	6006547	0
>	Sc	45		ug/L			1598309	1599765	2
	Cr	52	50.118	ug/L	1 181	2	38005	1506885	1
	Cr	53	50.007	ug/L	0 949	1	216	170563	1
	Mn	55	50.137	ug/L	1.370	2	767	2133249	0
>	Ge	72		ug/L			1291976	1294204	2
	Ni	60	49.954	ug/L	0.465	0	37	390096	3
	Ni	62	49.966	ug/L	0 776	1	173	56547	0
	Cu	63	49.817	ug/L	0 849	1	207	880676	1
	Cu	65	49.669	ug/L	0 934	1	74	396335	0
	Zn	66	49.915	ug/L	1 471	2	2661	243748	0
	Zn	67	49.835	ug/L	0.781	1	379	40987	1
	Zn	68	49.953	ug/L	1.606	3	2025	175229	0
	As	75	49.883	ug/L	1.355	2	28	233864	1
	As-1	75	49.910	ug/L	1 357	2	18195	244020	0
	Se	82	49.810	ug/L	1.175	2	29	28147	0
	Se	78	49.892	ug/L	1.275	2	18449	81898	0
	Y	89		ug/L			977062	980970	0
	Kr	83		ug/L			343	367	2
>	In	115		ug/L			1320273	1314748	0
	Ag	107	50.142	ug/L	0.465	0	46	1195725	0
	Cd	111	50.020	ug/L	0.653	1	241	318664	0
	Cd	114	50.007	ug/L	0.307	0	39	780939	0
	Sb	121	49.961	ug/L	0.257	0	30	877229	0
	Sb	123	50.037	ug/L	0.834	1	21	672802	0
	Ba	135	50.046	ug/L	0 276	0	18	252163	0
	Ba	137	50.062	ug/L	0 525	1	26	440033	0
>	Tb	159		ug/L			1492326	1469442	0
	Tl	205	50.369	ug/L	0.587	1	35	2367114	0
	Pb	208	49.935	ug/L	0.608	1	187	2853014	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:51:45
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	71927	3
	Cl	37		ug/L			5882606	6056314	0
>	Sc	45		ug/L			1598309	1628732	0
	Cr	52	99.417	ug/L	1 596	1	38005	2949376	0
	Cr	53	99.443	ug/L	1 011	1	216	338920	1
	Mn	55	98.962	ug/L	1.381	1	767	4144548	0
>	Ge	72		ug/L			1291976	1254084	1
	Ni	60	99.721	ug/L	0.339	0	37	747502	1
	Ni	62	100.079	ug/L	2.109	2	173	109895	2
	Cu	63	100.050	ug/L	2 003	2	207	1716550	1
	Cu	65	100.699	ug/L	2.143	2	74	797471	3
	Zn	66	99.761	ug/L	2 595	2	2661	465892	1
	Zn	67	99.770	ug/L	1.012	1	379	78569	2
	Zn	68	99.421	ug/L	1.082	1	2025	329835	1
	As	75	100.286	ug/L	1.006	1	28	460119	1
	As-1	75	100.390	ug/L	1.163	1	18195	463719	1
	Se	82	99.787	ug/L	1.349	1	29	54239	0
	Se	78	100.104	ug/L	1.146	1	18449	141665	0
	Y	89		ug/L			977062	965815	2
	Kr	83		ug/L			343	409	0
>	In	115		ug/L			1320273	1279808	1
	Ag	107	100.499	ug/L	3 489	3	46	2371879	2
	Cd	111	99.750	ug/L	1.294	1	241	613318	2
	Cd	114	99.729	ug/L	1 019	1	39	1502344	0
	Sb	121	100.025	ug/L	1 124	1	30	1710930	0
	Sb	123	100.129	ug/L	1 443	1	21	1316190	0
	Ba	135	100.201	ug/L	0 859	0	18	494730	0
	Ba	137	99.966	ug/L	0 589	0	26	854334	0
>	Tb	159		ug/L			1492326	1443880	0
	Tl	205	99.517	ug/L	1.633	1	35	4522569	1
	Pb	208	100.330	ug/L	0.720	0	187	5695341	0

ARAS - 21124

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Rinse sample
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:56:51
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67707	66290	1
	Cl	37		ug/L			5882606	5849591	3
>	Sc	45		ug/L			1598309	1600278	2
	Cr	52	-0.048	ug/L	0.042	85	38005	36651	3
	Cr	53	0.002	ug/L	0 012	535	216	223	17
	Mn	55	0.006	ug/L	0.007	117	767	1004	27
>	Ge	72		ug/L			1291976	1282673	0
	Ni	60	0.004	ug/L	0.006	174	37	65	75
	Ni	62	0.250	ug/L	0 018	7	173	452	4
	Cu	63	0.023	ug/L	0 006	26	207	618	18
	Cu	65	0.007	ug/L	0 004	58	74	131	26
	Zn	66	0.008	ug/L	0 022	266	2661	2681	4
	Zn	67	0.043	ug/L	0.032	74	379	411	6
	Zn	68	-0.013	ug/L	0 001	10	2025	1966	0
	As	75	-0.004	ug/L	0.004	110	28	10	194
	As-1	75	0.005	ug/L	0.041	769	18195	18088	0
	Se	82	-0.023	ug/L	0.008	35	29	16	26
	Se	78	0.016	ug/L	0 140	901	18449	18336	0
	Y	89		ug/L			977062	969451	2
	Kr	83		ug/L			343	352	3
>	In	115		ug/L			1320273	1305824	0
	Ag	107	0.002	ug/L	0.001	70	46	95	35
	Cd	111	0.006	ug/L	0.004	62	241	276	7
	Cd	114	0.002	ug/L	0.001	41	39	68	16
	Sb	121	0.082	ug/L	0 004	4	30	1458	4
	Sb	123	0.081	ug/L	0.005	6	21	1103	5
	Ba	135	0.002	ug/L	0.003	145	18	28	53
	Ba	137	0.002	ug/L	0.002	137	26	41	49
>	Tb	159		ug/L			1492326	1469117	1
	Tl	205	0.009	ug/L	0.001	14	35	433	14
	Pb	208	0.006	ug/L	0.006	98	187	548	65

Sample Information

Sample Date/Time: Thursday, May 28, 2015 08:51:45
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Mass Calibration File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

Calibration

Analyte	Mass	r Corr Coef	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Cr	52	**0.9999**	0.018	0.50	10	20	50	100
Cr	53	**0.9999**	0.002	0.50	10	20	50	100
Mn	55	**0.9998**	0 026	0.50	10	20	50	100
Ge	72							
Ni	60	**1.0000**	0.006	0.50	10	20	50	100
Ni	62	**1.0000**	0.001	0.50	10	20	50	100
Cu	63	**1.0000**	0.014	0.50	10	20	50	100
Cu	65	**0.9999**	0.006	0.50	10	20	50	100
Zn	66	**1.0000**	0.004	4 00	10	20	50	100
Zn	67	**1.0000**	0.001	4.00	10	20	50	100
Zn	68	**0.9999**	0.003	4.00	10	20	50	100
As	75	**1.0000**	0.004	0 20	10	20	50	100
As-1	75	**1.0000**	0.004	0 20	10	20	50	100
Se	82	**1.0000**	0.000	0.50	10	20	50	100
Se	78	**1.0000**	0.001	0.50	10	20	50	100
Y	89							
Kr	83							
In	115							
Ag	107	**0.9999**	0.018	0.20	10	20	50	100
Cd	111	**1.0000**	0.005	0 10	10	20	50	100
Cd	114	**1.0000**	0.012	0 10	10	20	50	100
Sb	121	**1.0000**	0 013	0.20	10	20	50	100
Sb	123	**1.0000**	0 010	0.20	10	20	50	100
Ba	135	**1.0000**	0 004	0.50	10	20	50	100
Ba	137	**1.0000**	0.007	0.50	10	20	50	100
Tb	159							
Tl	205	**0.9999**	0.031	0 20	10	20	50	100
Pb	208	**1.0000**	0.039	0 10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICV
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:03:17
Number of Replicates 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67707	66017	2
	Cl	37		ug/L			5882606	5935830	0
>	Sc	45		ug/L			1598309	1637465	0
	Cr	52	50.631	ug/L	1.588	3	38005	1529265	2
	Cr	53	51.795	ug/L	0.712	1	216	177563	1
	Mn	55	52.666	ug/L	1.390	2	767	2217680	1
>	Ge	72		ug/L			1291976	1275415	0
	Ni	60	51.955	ug/L	1.655	3	37	396033	2
	Ni	62	51.302	ug/L	0.993	1	173	57369	1
	Cu	63	50.956	ug/L	0.465	0	207	889396	1
	Cu	65	51.747	ug/L	1.056	2	74	416703	1
	Zn	66	50.880	ug/L	1.196	2	2661	242983	2
	Zn	67	50.171	ug/L	1.552	3	379	40358	2
	Zn	68	50.527	ug/L	1.344	2	2025	171459	2
	As	75	53.708	ug/L	0.158	0	28	250625	1
	As-1	75	52.662	ug/L	0 079	0	18195	255933	0
	Se	82	77.365	ug/L	0 475	0	29	42604	0
	Se	78	76.021	ug/L	1.192	1	18449	113791	0
	Y	89		ug/L			977062	1002278	0
	Kr	83		ug/L			343	377	1
>	In	115		ug/L			1320273	1312722	1
	Ag	107	48.825	ug/L	0.138	0	46	1182270	1
	Cd	111	49.337	ug/L	1.010	2	241	311206	0
	Cd	114	49.077	ug/L	0.963	1	39	758294	1
	Sb	121	51.445	ug/L	0 651	1	30	902603	0
	Sb	123	50.967	ug/L	0 766	1	21	687201	0
	Ba	135	49.929	ug/L	0.426	0	18	252869	0
	Ba	137	50.067	ug/L	1.188	2	26	438844	1
>	Tb	159		ug/L			1492326	1476911	1
	Tl	205	49.788	ug/L	0.630	1	35	2314251	0
	Pb	208	49.924	ug/L	1.061	2	187	2898292	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:09:43
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File· C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67707	67016	1
	Cl	37		ug/L			5882606	5792379	4
>	Sc	45		ug/L			1598309	1605004	1
	Cr	52	-0.014	ug/L	0.010	73	38005	37756	0
	Cr	53	-0.001	ug/L	0.005	529	216	213	7
	Mn	55	0.001	ug/L	0 001	111	767	797	3
>	Ge	72		ug/L			1291976	1292612	1
	Ni	60	0.000	ug/L	0.001	393	37	39	16
	Ni	62	0.209	ug/L	0.025	11	173	409	7
	Cu	63	0.014	ug/L	0.002	11	207	447	7
	Cu	65	0.002	ug/L	0.001	53	74	91	10
	Zn	66	-0.015	ug/L	0.006	39	2661	2593	2
	Zn	67	-0.011	ug/L	0.051	446	379	370	9
	Zn	68	-0.014	ug/L	0.015	104	2025	1978	2
	As	75	-0.011	ug/L	0.003	22	28	-24	51
	As-1	75	-0.028	ug/L	0.031	109	18195	18072	0
	Se	82	-0.025	ug/L	0.008	32	29	15	27
	Se	78	-0.087	ug/L	0.114	131	18449	18346	0
	Y	89		ug/L			977062	968265	0
	Kr	83		ug/L			343	344	1
>	In	115		ug/L			1320273	1311908	1
	Ag	107	0.000	ug/L	0.000	61	46	56	11
	Cd	111	0.003	ug/L	0 002	73	241	259	4
	Cd	114	0.001	ug/L	0.000	49	39	48	9
	Sb	121	0.022	ug/L	0.002	10	30	409	8
	Sb	123	0.022	ug/L	0 002	10	21	318	8
	Ba	135	-0.001	ug/L	0 001	152	18	15	24
	Ba	137	0.000	ug/L	0 001	250	26	28	19
>	Tb	159		ug/L			1492326	1475422	1
	Tl	205	0.004	ug/L	0 000	8	35	230	8
	Pb	208	0.001	ug/L	0 000	25	187	238	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:13:25
Number of Replicates: 3
Method File: C.\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67707	66832	4
	Cl	37		ug/L			5882606	6014259	1
>	Sc	45		ug/L			1598309	1584024	2
	Cr	52	50.755	ug/L	1 210	2	38005	1482415	0
	Cr	53	51.563	ug/L	1.892	3	216	170916	1
	Mn	55	51.897	ug/L	2.509	4	767	2112699	2
>	Ge	72		ug/L			1291976	1285254	1
	Ni	60	49.988	ug/L	0.926	1	37	384002	1
	Ni	62	49.270	ug/L	1.001	2	173	55521	0
	Cu	63	49.633	ug/L	0.658	1	207	872947	2
	Cu	65	49.157	ug/L	0.666	1	74	398997	3
	Zn	66	49.397	ug/L	0.855	1	2661	237762	0
	Zn	67	49.712	ug/L	0.586	1	379	40302	0
	Zn	68	50.512	ug/L	1.000	1	2025	172724	1
	As	75	49.851	ug/L	0 970	1	28	234367	0
	As-1	75	49.719	ug/L	0.815	1	18195	244461	0
	Se	82	50.212	ug/L	0.745	1	29	27871	0
	Se	78	49.563	ug/L	0.509	1	18449	81150	1
	Y	89		ug/L			977062	970177	2
	Kr	83		ug/L			343	385	4
>	In	115		ug/L			1320273	1307977	0
	Ag	107	49.573	ug/L	0.872	1	46	1195983	1
	Cd	111	50.539	ug/L	0.162	0	241	317677	0
	Cd	114	50.734	ug/L	0.547	1	39	781144	0
	Sb	121	49.686	ug/L	0 448	0	30	868671	1
	Sb	123	49.670	ug/L	0 200	0	21	667352	0
	Ba	135	50.132	ug/L	0 163	0	18	252993	0
	Ba	137	49.923	ug/L	0.077	0	26	436082	0
>	Tb	159		ug/L			1492326	1469386	0
	Tl	205	50.789	ug/L	0.575	1	35	2348978	0
	Pb	208	49.462	ug/L	0.538	1	187	2857607	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:19:31
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	64317	2
	Cl	37		ug/L			5882606	5795849	1
>	Sc	45		ug/L			1598309	1557938	1
	Cr	52	-0.049	ug/L	0.037	74	38005	35658	2
	Cr	53	0.000	ug/L	0 003	1053	216	211	6
	Mn	55	-0.000	ug/L	0 002	652	767	737	8
>	Ge	72		ug/L			1291976	1259504	1
	Ni	60	0.001	ug/L	0 002	208	37	43	34
	Ni	62	0.216	ug/L	0 017	7	173	407	5
	Cu	63	0.017	ug/L	0 003	18	207	493	11
	Cu	65	0.003	ug/L	0.002	56	74	98	16
	Zn	66	-0.310	ug/L	0 009	2	2661	1147	3
	Zn	67	-0.241	ug/L	0 006	2	379	180	2
	Zn	68	-0.294	ug/L	0.020	6	2025	1000	6
	As	75	-0.010	ug/L	0 011	109	28	-16	290
	As-1	75	0.058	ug/L	0.032	54	18195	17995	0
	Se	82	-0.017	ug/L	0 018	105	29	19	50
	Se	78	0.224	ug/L	0 144	64	18449	18262	0
	Y	89		ug/L			977062	949456	0
	Kr	83		ug/L			343	332	3
>	In	115		ug/L			1320273	1312205	1
	Ag	107	0.001	ug/L	0 001	101	46	72	36
	Cd	111	0.002	ug/L	0 004	187	241	253	9
	Cd	114	0.001	ug/L	0.001	132	39	50	27
	Sb	121	0.041	ug/L	0.002	3	30	741	4
	Sb	123	0.041	ug/L	0.003	6	21	576	5
	Ba	135	0.000	ug/L	0.001	234	18	20	27
	Ba	137	-0.000	ug/L	0.001	479	26	25	21
>	Tb	159		ug/L			1492326	1477260	0
	Tl	205	0.005	ug/L	0.000	9	35	258	8
	Pb	208	0.001	ug/L	0 000	38	187	243	9

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LOW CHECK 272272 aa 5/28/15
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:23:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			67707	64955	4
	Cl	37		ug/L			5882606	5671474	2
>	Sc	45		ug/L			1598309	1565905	2
	Cr	52	0.465	ug/L	0 057	12	38005	50344	5
	Cr	53	0.520	ug/L	0 025	4	216	1914	2
	Mn	55	0.515	ug/L	0 001	0	767	21505	2
>	Ge	72		ug/L			1291976	1268684	0
	Ni	60	0.520	ug/L	0.014	2	37	3976	2
	Ni	62	0.712	ug/L	0.030	4	173	959	3
	Cu	63	0.532	ug/L	0.009	1	207	9434	1
	Cu	65	0.517	ug/L	0 012	2	74	4212	1
	Zn	66	3.889	ug/L	0 079	2	2661	20886	1
	Zn	67	3.478	ug/L	0.130	3	379	3129	3
	Zn	68	3.772	ug/L	0 064	1	2025	14574	2
	As	75	0.235	ug/L	0.009	3	28	1117	4
	As-1	75	0.247	ug/L	0 026	10	18195	18977	0
	Se	82	0.530	ug/L	0 013	2	29	318	2
	Se	78	0.604	ug/L	0.114	18	18449	18872	0
	Y	89		ug/L			977062	937547	1
	Kr	83		ug/L			343	334	7
>	In	115		ug/L			1320273	1305817	0
	Ag	107	0.203	ug/L	0 002	1	46	4939	1
	Cd	111	0.098	ug/L	0.007	7	241	855	5
	Cd	114	0.101	ug/L	0 002	1	39	1588	1
	Sb	121	0.219	ug/L	0.005	2	30	3856	2
	Sb	123	0.217	ug/L	0.001	0	21	2926	1
	Ba	135	0.483	ug/L	0 018	3	18	2452	4
	Ba	137	0.498	ug/L	0.012	2	26	4370	2
>	Tb	159		ug/L			1492326	1481431	0
	Tl	205	0.192	ug/L	0.005	2	35	8964	1
	Pb	208	0.102	ug/L	0.002	1	187	6141	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSA 7 2222Z we 5/28/15
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:26:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67707	138675	4
	Cl	37		ug/L			5882606	16884492	4
>	Sc	45		ug/L			1598309	1880755	3
	Cr	52	0.561	ug/L	0 026	4	38005	63696	4
	Cr	53	3.734	ug/L	0 042	1	216	14942	4
	Mn	55	0.098	ug/L	0 001	1	767	5660	3
>	Ge	72		ug/L			1291976	1388553	3
	Ni	60	0.272	ug/L	0.002	0	37	2301	3
	Ni	62	4.544	ug/L	0 577	12	173	5712	14
	Cu	63	1.133	ug/L	0 057	5	207	21758	7
	Cu	65	0.432	ug/L	0 019	4	74	3867	4
	Zn	66	0.906	ug/L	0 068	7	2661	7522	5
	Zn	67	5.895	ug/L	0.095	1	379	5523	3
	Zn	68	0.401	ug/L	0.016	3	2025	3642	4
	As	75	0.144	ug/L	0 030	20	28	762	19
	As-1	75	0.297	ug/L	0.100	33	18195	21011	3
	Se	82	-0.059	ug/L	0 025	41	29	-4	343
	Se	78	0.602	ug/L	0 243	40	18449	20650	2
	Y	89		ug/L			977062	1101018	5
	Kr	83		ug/L			343	608	4
>	In	115		ug/L			1320273	1375926	2
	Ag	107	0.009	ug/L	0 002	19	46	269	12
	Cd	111	0.018	ug/L	0 018	96	241	374	33
	Cd	114	0.187	ug/L	0.005	2	39	3072	1
	Sb	121	0.023	ug/L	0.002	8	30	454	6
	Sb	123	0.023	ug/L	0.003	11	21	351	7
	Ba	135	0.040	ug/L	0.004	10	18	232	6
	Ba	137	0.033	ug/L	0.004	13	26	330	10
>	Tb	159		ug/L			1492326	1525161	0
	Tl	205	0.006	ug/L	0 003	44	35	318	39
	Pb	208	0.049	ug/L	0.002	4	187	3144	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor: 222222 ee 5/28/15
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:32:59
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67707	151123	6
	Cl	37		ug/L			5882606	17356326	4
>	Sc	45		ug/L			1598309	1922924	5
	Cr	52	19.974	ug/L	0.813	4	38005	735797	4
	Cr	53	23.536	ug/L	0 766	3	216	94797	2
	Mn	55	19.780	ug/L	0.544	2	767	977910	2
>	Ge	72		ug/L			1291976	1408935	1
	Ni	60	19.842	ug/L	0.287	1	37	167149	2
	Ni	62	23.969	ug/L	0 750	3	173	29723	4
	Cu	63	20.836	ug/L	0.160	0	207	401843	1
	Cu	65	19.887	ug/L	0.280	1	74	176982	2
	Zn	66	19.666	ug/L	0.449	2	2661	105557	3
	Zn	67	22.166	ug/L	0.347	1	379	19933	3
	Zn	68	18.497	ug/L	0.317	1	2025	70736	1
	As	75	17.722	ug/L	0.289	1	28	91390	3
	As-1	75	18.469	ug/L	0.318	1	18195	112052	3
	Se	82	-0.084	ug/L	0.024	28	29	-19	75
	Se	78	0.675	ug/L	0.121	17	18449	21059	2
	Y	89		ug/L			977062	1122380	4
	Kr	83		ug/L			343	653	2
>	In	115		ug/L			1320273	1389657	1
	Ag	107	19.827	ug/L	0 211	1	46	508279	2
	Cd	111	19.181	ug/L	0.187	0	241	128266	2
	Cd	114	19.030	ug/L	0 114	0	39	311315	0
	Sb	121	0.019	ug/L	0.001	4	30	383	3
	Sb	123	0.021	ug/L	0.001	2	21	319	2
	Ba	135	0.043	ug/L	0.005	10	18	249	10
	Ba	137	0.031	ug/L	0.002	5	26	317	5
>	Tb	159		ug/L			1492326	1525362	1
	Tl	205	0.003	ug/L	0.000	12	35	196	10
	Pb	208	0.051	ug/L	0.001	2	187	3271	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR200
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:39:24
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File. C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	70397	1
	Cl	37		ug/L			5882606	6456129	1
>	Sc	45		ug/L			1598309	1761075	2
	Cr	52	196.361	ug/L	7.517	3	38005	6254782	1
	Cr	53	197.401	ug/L	3.134	1	216	727091	2
	Mn	55	193.879	ug/L	4.938	2	767	8776643	1
>	Ge	72		ug/L			1291976	1300480	1
	Ni	60	199.962	ug/L	1 457	0	37	1554245	0
	Ni	62	200.045	ug/L	5.842	2	173	227563	1
	Cu	63	199.553	ug/L	5.449	2	207	3550399	2
	Cu	65	197.371	ug/L	5.160	2	74	1620380	2
	Zn	66	198.024	ug/L	1.494	0	2661	956554	1
	Zn	67	192.467	ug/L	0.915	0	379	156807	1
	Zn	68	196.175	ug/L	3.892	1	2025	672897	1
	As	75	198.447	ug/L	4.024	2	28	944092	1
	As-1	75	198.459	ug/L	4.111	2	18195	932672	1
	Se	82	195.866	ug/L	2.565	1	29	109934	1
	Se	78	194.773	ug/L	3 331	1	18449	268253	0
	Y	89		ug/L			977062	996111	1
	Kr	83		ug/L			343	544	10
>	In	115		ug/L			1320273	1281639	0
	Ag	107	203.964	ug/L	1.468	0	46	4821521	0
	Cd	111	198.554	ug/L	0 870	0	241	1222240	0
	Cd	114	204.560	ug/L	1.682	0	39	3086102	0
	Sb	121	209.770	ug/L	1 615	0	30	3593394	0
	Sb	123	208.077	ug/L	2 343	1	21	2739215	0
	Ba	135	203.628	ug/L	0 958	0	18	1006894	1
	Ba	137	204.168	ug/L	1 594	0	26	1747381	0
>	Tb	159		ug/L			1492326	1472345	1
	Tl	205	194.716	ug/L	2 005	1	35	9023270	0
	Pb	208	199.725	ug/L	3.892	1	187	11559439	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR300
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:45:50
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	70473	4
	Cl	37		ug/L			5882606	6266536	2
>	Sc	45		ug/L			1598309	1611403	2
	Cr	52	313.330	ug/L	6 369	2	38005	9111914	0
	Cr	53	309.713	ug/L	4.206	1	216	1043802	2
	Mn	55	308.877	ug/L	4 446	1	767	12796358	2
>	Ge	72		ug/L			1291976	1229281	1
	Ni	60	306.180	ug/L	3 711	1	37	2249341	0
	Ni	62	303.300	ug/L	4 458	1	173	326067	0
	Cu	63	300.265	ug/L	2.186	0	207	5049750	1
	Cu	65	297.007	ug/L	2 833	0	74	2304875	1
	Zn	66	284.821	ug/L	1 261	0	2661	1299420	1
	Zn	67	280.719	ug/L	4 754	1	379	216030	2
	Zn	68	287.407	ug/L	5.504	1	2025	930832	0
	As	75	296.957	ug/L	5.366	1	28	1335253	1
	As-1	75	298.074	ug/L	5 130	1	18195	1315339	1
	Se	82	288.091	ug/L	4.587	1	29	152814	0
	Se	78	289.898	ug/L	3.693	1	18449	368823	0
	Y	89		ug/L			977062	964141	1
	Kr	83		ug/L			343	709	6
>	In	115		ug/L			1320273	1245907	0
	Ag	107	299.492	ug/L	1.562	0	46	6882480	0
	Cd	111	295.527	ug/L	1.605	0	241	1768391	1
	Cd	114	301.205	ug/L	3.101	1	39	4417362	0
	Sb	121	310.019	ug/L	3.323	1	30	5162599	0
	Sb	123	309.250	ug/L	2.547	0	21	3957636	0
	Ba	135	310.973	ug/L	4.905	1	18	1494755	1
	Ba	137	323.792	ug/L	2.374	0	26	2693877	0
>	Tb	159		ug/L			1492326	1426723	0
	Tl	205	286.942	ug/L	4.474	1	35	12885936	1
	Pb	208	293.896	ug/L	0 900	0	187	16485106	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:52:15
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File C:\NexIONData\MassCal\Default.tun
Optimization File. C:\NexIONData\Conditions\Default.dac
Calibration File C:\NexIONData\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67707	68192	6
	Cl	37		ug/L			5882606	5877008	3
[>	Sc	45		ug/L			1598309	1648946	1
|	Cr	52	-0.045	ug/L	0.069	150	38005	37840	3
|	Cr	53	0.052	ug/L	0.062	119	216	400	51
L	Mn	55	0.055	ug/L	0.076	139	767	3071	101
[>	Ge	72		ug/L			1291976	1319025	0
|	Ni	60	0.065	ug/L	0.081	124	37	552	115
|	Ni	62	1.579	ug/L	0.122	7	173	1997	6
|	Cu	63	0.190	ug/L	0.122	64	207	3637	60
|	Cu	65	0.111	ug/L	0.137	124	74	993	114
|	Zn	66	1.657	ug/L	0.882	53	2661	10810	39
|	Zn	67	1.491	ug/L	0.757	50	379	1616	38
|	Zn	68	1.590	ug/L	0.841	52	2025	7580	38
|	As	75	0.042	ug/L	0.061	145	28	230	126
|	As-1	75	0.101	ug/L	0.072	71	18195	19047	1
|	Se	82	0.026	ug/L	0.057	216	29	44	71
L	Se	78	0.242	ug/L	0.167	68	18449	19150	0
	Y	89		ug/L			977062	978268	1
	Kr	83		ug/L			343	359	8
[>	In	115		ug/L			1320273	1334713	0
|	Ag	107	0.015	ug/L	0 020	132	46	420	116
|	Cd	111	0.013	ug/L	0.016	124	241	323	30
|	Cd	114	0.012	ug/L	0.017	137	39	234	113
|	Sb	121	0.196	ug/L	0.016	8	30	3533	7
|	Sb	123	0.194	ug/L	0.014	7	21	2676	6
|	Ba	135	0.018	ug/L	0.013	71	18	112	58
L	Ba	137	0.016	ug/L	0.006	35	26	166	29
[>	Tb	159		ug/L			1492326	1499258	0
|	Tl	205	0.036	ug/L	0.006	16	35	1740	16
L	Pb	208	0.022	ug/L	0.013	59	187	1498	51

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:57:51
Number of Replicates: 3
Method File: C:\NexIONData\Method\200 8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File. C:\NexIONData\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67707	66096	4
	Cl	37		ug/L			5882606	5872823	3
[>	Sc	45		ug/L			1598309	1617217	2
|	Cr	52	-0.008	ug/L	0 048	603	38005	38196	1
|	Cr	53	0.020	ug/L	0.008	41	216	287	8
L	Mn	55	0.008	ug/L	0 002	30	767	1087	5
[>	Ge	72		ug/L			1291976	1300494	2
|	Ni	60	0.015	ug/L	0 002	13	37	155	12
|	Ni	62	1.277	ug/L	0 072	5	173	1625	5
|	Cu	63	0.099	ug/L	0.000	0	207	1970	3
|	Cu	65	0.028	ug/L	0 007	25	74	305	19
|	Zn	66	-0.196	ug/L	0.017	8	2661	1731	2
|	Zn	67	-0.152	ug/L	0.037	24	379	258	9
|	Zn	68	-0.193	ug/L	0 031	15	2025	1376	5
|	As	75	0.003	ug/L	0.014	534	28	41	165
|	As-1	75	0.098	ug/L	0.137	140	18195	18754	1
|	Se	82	-0.002	ug/L	0.015	914	29	28	31
L	Se	78	0.348	ug/L	0.474	136	18449	19005	0
	Y	89		ug/L			977062	991826	1
	Kr	83		ug/L			343	359	3
[>	In	115		ug/L			1320273	1323907	0
|	Ag	107	0.003	ug/L	0.001	52	46	111	30
|	Cd	111	0.004	ug/L	0.005	140	241	264	11
|	Cd	114	0.002	ug/L	0.002	98	39	74	45
|	Sb	121	0.064	ug/L	0.005	7	30	1158	6
|	Sb	123	0.064	ug/L	0.005	7	21	889	6
|	Ba	135	0.008	ug/L	0.001	12	18	60	7
L	Ba	137	0.009	ug/L	0.001	6	26	110	4
[>	Tb	159		ug/L			1492326	1501007	0
|	Tl	205	0.012	ug/L	0.001	6	35	612	6
L	Pb	208	0.009	ug/L	0.001	6	187	741	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:06:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File· C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	67925	1
	Cl	37		ug/L			5882606	5882116	1
>	Sc	45		ug/L			1598309	1619516	2
	Cr	52	-0.009	ug/L	0.059	625	38005	38208	1
	Cr	53	0.017	ug/L	0.009	52	216	277	13
	Mn	55	0.009	ug/L	0.001	7	767	1156	3
>	Ge	72		ug/L			1291976	1311375	1
	Ni	60	0.014	ug/L	0.002	15	37	148	12
	Ni	62	1.078	ug/L	0.014	1	173	1412	2
	Cu	63	0.084	ug/L	0.002	2	207	1725	2
	Cu	65	0.025	ug/L	0.001	3	74	284	3
	Zn	66	0.739	ug/L	0.019	2	2661	6291	0
	Zn	67	0.698	ug/L	0.021	3	379	956	0
	Zn	68	0.752	ug/L	0.023	3	2025	4647	1
	As	75	-0.006	ug/L	0.000	2	28	0	585
	As-1	75	0.030	ug/L	0.047	155	18195	18608	0
	Se	82	-0.024	ug/L	0.002	9	29	16	8
	Se	78	0.113	ug/L	0.177	156	18449	18871	0
	Y	89		ug/L			977062	1012995	3
	Kr	83		ug/L			343	362	3
>	In	115		ug/L			1320273	1360519	1
	Ag	107	0.003	ug/L	0.003	118	46	112	69
	Cd	111	-0.000	ug/L	0.002	5849	241	248	7
	Cd	114	0.001	ug/L	0.000	28	39	54	8
	Sb	121	0.033	ug/L	0.003	8	30	639	6
	Sb	123	0.034	ug/L	0.003	10	21	496	8
	Ba	135	0.012	ug/L	0 001	6	18	82	4
	Ba	137	0.012	ug/L	0 001	7	26	136	6
>	Tb	159		ug/L			1492326	1509646	0
	Tl	205	0.006	ug/L	0 000	3	35	301	3
	Pb	208	0.012	ug/L	0 001	4	187	926	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:12:13
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	69130	2
	Cl	37		ug/L			5882606	5798005	1
>	Sc	45		ug/L			1598309	1631103	4
	Cr	52	-0.011	ug/L	0.028	263	38005	38456	3
	Cr	53	0.011	ug/L	0.006	55	216	257	4
	Mn	55	0.009	ug/L	0.001	11	767	1148	0
>	Ge	72		ug/L			1291976	1311963	3
	Ni	60	0.015	ug/L	0 001	6	37	154	7
	Ni	62	0.975	ug/L	0.077	7	173	1293	5
	Cu	63	0.076	ug/L	0.003	3	207	1567	1
	Cu	65	0.023	ug/L	0.003	13	74	264	7
	Zn	66	0.775	ug/L	0.047	6	2661	6463	1
	Zn	67	0.718	ug/L	0.062	8	379	974	7
	Zn	68	0.754	ug/L	0.047	6	2025	4656	4
	As	75	-0.000	ug/L	0.011	14421	28	30	183
	As-1	75	0.010	ug/L	0 140	1346	18195	18508	0
	Se	82	-0.008	ug/L	0 006	76	29	25	17
	Se	78	0.033	ug/L	0 532	1589	18449	18761	0
	Y	89		ug/L			977062	1005868	0
	Kr	83		ug/L			343	355	8
>	In	115		ug/L			1320273	1350239	2
	Ag	107	0.001	ug/L	0.000	78	46	60	18
	Cd	111	-0.003	ug/L	0.003	91	241	224	6
	Cd	114	0.000	ug/L	0.000	101	39	48	14
	Sb	121	0.018	ug/L	0 002	13	30	346	10
	Sb	123	0.019	ug/L	0 003	14	21	285	12
	Ba	135	0.012	ug/L	0.001	6	18	81	7
	Ba	137	0.014	ug/L	0 002	15	26	152	11
>	Tb	159		ug/L			1492326	1509214	0
	Tl	205	0.003	ug/L	0.000	4	35	189	3
	Pb	208	0.011	ug/L	0.001	5	187	856	3

AGAS : 81135

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:19:04
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	68438	1
	Cl	37		ug/L			5882606	5804764	2
>	Sc	45		ug/L			1598309	1648694	0
	Cr	52	-0.024	ug/L	0.022	93	38005	38502	0
	Cr	53	0.013	ug/L	0.007	54	216	269	9
	Mn	55	0.012	ug/L	0.001	8	767	1288	3
>	Ge	72		ug/L			1291976	1320625	0
	Ni	60	0.026	ug/L	0.001	2	37	244	1
	Ni	62	0.769	ug/L	0.017	2	173	1065	1
	Cu	63	0.072	ug/L	0.003	3	207	1515	3
	Cu	65	0.031	ug/L	0.001	4	74	330	3
	Zn	66	0.729	ug/L	0.018	2	2661	6285	1
	Zn	67	0.659	ug/L	0 040	6	379	931	3
	Zn	68	0.712	ug/L	0 041	5	2025	4542	2
	As	75	-0.004	ug/L	0 006	173	28	11	258
	As-1	75	-0.027	ug/L	0.052	192	18195	18472	1
	Se	82	-0.014	ug/L	0 032	227	29	22	81
	Se	78	-0.095	ug/L	0 179	188	18449	18734	0
	Y	89		ug/L			977062	989533	1
	Kr	83		ug/L			343	356	11
>	In	115		ug/L			1320273	1344597	1
	Ag	107	0.001	ug/L	0 000	47	46	73	16
	Cd	111	-0.000	ug/L	0 003	1070	241	243	6
	Cd	114	0.001	ug/L	0.000	23	39	59	7
	Sb	121	0.012	ug/L	0 001	8	30	243	8
	Sb	123	0.012	ug/L	0.002	19	21	180	17
	Ba	135	0.018	ug/L	0.001	3	18	109	3
	Ba	137	0.018	ug/L	0.001	7	26	190	5
>	Tb	159		ug/L			1492326	1500311	0
	Tl	205	0.003	ug/L	0 000	3	35	153	2
	Pb	208	0.017	ug/L	0.001	3	187	1203	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:24:40
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67707	68539	3
	Cl	37		ug/L			5882606	5968634	1
>	Sc	45		ug/L			1598309	1632173	1
	Cr	52	52.179	ug/L	0 842	1	38005	1569637	0
	Cr	53	51.326	ug/L	0 729	1	216	175375	0
	Mn	55	52.324	ug/L	1 112	2	767	2196020	0
>	Ge	72		ug/L			1291976	1281846	0
	Ni	60	50.185	ug/L	0 341	0	37	384541	1
	Ni	62	50.865	ug/L	1.242	2	173	57169	1
	Cu	63	51.052	ug/L	0 197	0	207	895522	0
	Cu	65	50.979	ug/L	1.123	2	74	412588	1
	Zn	66	52.059	ug/L	0.574	1	2661	249818	1
	Zn	67	51.370	ug/L	1.033	2	379	41525	1
	Zn	68	52.292	ug/L	0.681	1	2025	178287	1
	As	75	51.175	ug/L	0.636	1	28	239996	0
	As-1	75	50.948	ug/L	0.764	1	18195	249424	0
	Se	82	52.016	ug/L	0.437	0	29	28799	0
	Se	78	51.058	ug/L	0.586	1	18449	82824	0
	Y	89		ug/L			977062	1009709	1
	Kr	83		ug/L			343	361	4
>	In	115		ug/L			1320273	1334045	1
	Ag	107	50.036	ug/L	0 494	0	46	1231135	0
	Cd	111	49.745	ug/L	1.146	2	241	318886	2
	Cd	114	50.425	ug/L	0 638	1	39	791828	1
	Sb	121	50.167	ug/L	0.376	0	30	894489	0
	Sb	123	49.344	ug/L	0.850	1	21	676076	0
	Ba	135	49.166	ug/L	0.611	1	18	253033	0
	Ba	137	49.766	ug/L	0.082	0	26	443374	1
>	Tb	159		ug/L			1492326	1502529	1
	Tl	205	50.871	ug/L	0.625	1	35	2405715	0
	Pb	208	49.500	ug/L	0 524	1	187	2924124	1

AGAS - 02144

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:31:07
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67707	68374	4
	Cl	37		ug/L			5882606	6015532	1
>	Sc	45		ug/L			1598309	1657179	3
	Cr	52	-0.074	ug/L	0 035	47	38005	37171	1
	Cr	53	0.002	ug/L	0.004	218	216	230	9
	Mn	55	0.000	ug/L	0 002	1285	767	799	4
>	Ge	72		ug/L			1291976	1324461	0
	Ni	60	0.001	ug/L	0 001	159	37	42	15
	Ni	62	0.570	ug/L	0 022	3	173	838	2
	Cu	63	0.039	ug/L	0 001	2	207	916	1
	Cu	65	0.005	ug/L	0.002	42	74	114	14
	Zn	66	0.654	ug/L	0 044	6	2661	5935	3
	Zn	67	0.630	ug/L	0 052	8	379	910	4
	Zn	68	0.633	ug/L	0.014	2	2025	4280	1
	As	75	-0.009	ug/L	0 013	151	28	-12	521
	As-1	75	-0.042	ug/L	0 021	51	18195	18456	0
	Se	82	-0.011	ug/L	0 019	172	29	23	43
	Se	78	-0.132	ug/L	0.072	54	18449	18741	0
	Y	89		ug/L			977062	995648	1
	Kr	83		ug/L			343	348	3
>	In	115		ug/L			1320273	1359082	0
	Ag	107	0.001	ug/L	0.000	21	46	62	5
	Cd	111	0.001	ug/L	0 002	159	241	254	4
	Cd	114	0.000	ug/L	0 000	50	39	47	6
	Sb	121	0.039	ug/L	0.001	1	30	741	0
	Sb	123	0.039	ug/L	0.000	0	21	565	0
	Ba	135	0.002	ug/L	0.001	28	18	31	11
	Ba	137	0.002	ug/L	0 001	29	26	48	12
>	Tb	159		ug/L			1492326	1512946	1
	Tl	205	0.005	ug/L	0 000	9	35	268	7
	Pb	208	0.001	ug/L	0 000	14	187	254	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:43:40
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default dac
Calibration File. C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L				69868	2
	Cl	37		ug/L				5971125	1
>	Sc	45		ug/L				1593503	1
	Cr	52		ug/L				38265	1
	Cr	53		ug/L				218	5
	Mn	55		ug/L				810	3
>	Ge	72		ug/L				1300426	0
	Ni	60		ug/L				44	5
	Ni	62		ug/L				744	2
	Cu	63		ug/L				766	1
	Cu	65		ug/L				97	19
	Zn	66		ug/L				4990	3
	Zn	67		ug/L				752	3
	Zn	68		ug/L				3608	2
	As	75		ug/L				-12	259
	As-1	75		ug/L				18257	0
	Se	82		ug/L				12	60
	Se	78		ug/L				18525	0
	Y	89		ug/L				985570	2
	Kr	83		ug/L				362	3
>	In	115		ug/L				1349760	1
	Ag	107		ug/L				62	36
	Cd	111		ug/L				232	6
	Cd	114		ug/L				44	31
	Sb	121		ug/L				288	7
	Sb	123		ug/L				229	15
	Ba	135		ug/L				29	16
	Ba	137		ug/L				52	15
>	Tb	159		ug/L				1521468	0
	Tl	205		ug/L				143	12
	Pb	208		ug/L				258	17

ADAS : 01143

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:47:22
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			69868	67505	3
	Cl	37		ug/L			5971125	6112659	2
>	Sc	45		ug/L			1593503	1652097	1
	Cr	52	50.209	ug/L	1 848	3	38265	1530500	2
	Cr	53	51.212	ug/L	2 177	4	218	177100	3
	Mn	55	52.122	ug/L	0.268	0	810	2214786	1
>	Ge	72		ug/L			1300426	1311289	1
	Ni	60	50.176	ug/L	0.824	1	44	393251	0
	Ni	62	50.372	ug/L	1 800	3	744	58483	2
	Cu	63	49.288	ug/L	1 325	2	766	885050	3
	Cu	65	49.763	ug/L	1.876	3	97	411969	3
	Zn	66	49.893	ug/L	1 359	2	4990	247338	2
	Zn	67	50.765	ug/L	0.481	0	752	42357	0
	Zn	68	50.455	ug/L	1.084	2	3608	177619	2
	As	75	49.696	ug/L	0 945	1	-12	238358	1
	As-1	75	49.477	ug/L	1.049	2	18257	248247	1
	Se	82	50.577	ug/L	0 383	0	12	28628	0
	Se	78	49.653	ug/L	1 009	2	18525	82858	0
	Y	89		ug/L			985570	1004974	1
	Kr	83		ug/L			362	371	4
>	In	115		ug/L			1349760	1336643	2
	Ag	107	49.023	ug/L	1.325	2	62	1208215	0
	Cd	111	49.633	ug/L	0.803	1	232	318803	2
	Cd	114	50.777	ug/L	0.874	1	44	798786	0
	Sb	121	50.170	ug/L	1.120	2	288	896327	0
	Sb	123	49.827	ug/L	0 434	0	229	684274	1
	Ba	135	49.687	ug/L	0.902	1	29	256214	1
	Ba	137	50.168	ug/L	0 721	1	52	447763	1
>	Tb	159		ug/L			1521468	1507558	1
	Tl	205	50.377	ug/L	0 792	1	143	2390336	0
	Pb	208	49.574	ug/L	1.189	2	258	2937886	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:53:48
Number of Replicates: 3
Method File. C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			69868	68382	3
	Cl	37		ug/L			5971125	5843237	3
>	Sc	45		ug/L			1593503	1617601	2
	Cr	52	-0.027	ug/L	0 022	83	38265	38069	2
	Cr	53	0.001	ug/L	0.004	411	218	224	6
	Mn	55	-0.002	ug/L	0 001	73	810	756	4
>	Ge	72		ug/L			1300426	1275211	0
	Ni	60	0.001	ug/L	0 001	101	44	48	10
	Ni	62	-0.008	ug/L	0 013	162	744	721	2
	Cu	63	0.000	ug/L	0.001	360	766	757	2
	Cu	65	0.000	ug/L	0 002	334	97	99	13
	Zn	66	0.067	ug/L	0 036	54	4990	5207	3
	Zn	67	0.024	ug/L	0.036	151	752	756	3
	Zn	68	0.040	ug/L	0.018	45	3608	3673	1
	As	75	0.000	ug/L	0.005	2509	-12	-11	201
	As-1	75	0.088	ug/L	0.018	20	18257	18302	0
	Se	82	0.027	ug/L	0.023	84	12	27	46
	Se	78	0.332	ug/L	0.072	21	18525	18584	0
	Y	89		ug/L			985570	990960	0
	Kr	83		ug/L			362	334	10
>	In	115		ug/L			1349760	1332433	1
	Ag	107	-0.000	ug/L	0.000	2037	62	61	5
	Cd	111	0.006	ug/L	0 003	49	232	266	5
	Cd	114	0.001	ug/L	0 002	176	44	59	45
	Sb	121	0.025	ug/L	0 001	5	288	731	1
	Sb	123	0.024	ug/L	0.002	8	229	554	6
	Ba	135	0.000	ug/L	0 000	156	29	30	6
	Ba	137	0.000	ug/L	0.001	388	52	55	23
>	Tb	159		ug/L			1521468	1496233	0
	Tl	205	0.003	ug/L	0 001	18	143	276	9
	Pb	208	0.000	ug/L	0 000	223	258	267	10

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LOW CHECK
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:57:30
Number of Replicates: 3
Method File: C:\NexIONData\Method\200 8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815.cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
C	13		ug/L			69868	68169	2
Cl	37		ug/L			5971125	5829466	2
> Sc	45		ug/L			1593503	1629314	2
Cr	52	0.488	ug/L	0.029	5	38265	53398	1
Cr	53	0.518	ug/L	0 022	4	218	1985	1
Mn	55	0.518	ug/L	0.012	2	810	22529	3
> Ge	72		ug/L			1300426	1298076	1
Ni	60	0.530	ug/L	0.009	1	44	4153	2
Ni	62	0.432	ug/L	0.019	4	744	1233	2
Cu	63	0.531	ug/L	0.017	3	766	10192	4
Cu	65	0.559	ug/L	0.003	0	97	4677	1
Zn	66	3.935	ug/L	0.098	2	4990	23896	1
Zn	67	3.543	ug/L	0.147	4	752	3623	1
Zn	68	3.932	ug/L	0 199	5	3608	17017	2
As	75	0.237	ug/L	0 010	4	-12	1111	5
As-1	75	0.236	ug/L	0.053	22	18257	19306	0
Se	82	0.521	ug/L	0 034	6	12	304	5
Se	78	0.550	ug/L	0 246	44	18525	19192	0
Y	89		ug/L			985570	991770	0
Kr	83		ug/L			362	363	6
> In	115		ug/L			1349760	1336462	1
Ag	107	0.205	ug/L	0.002	0	62	5106	0
Cd	111	0.102	ug/L	0 008	8	232	887	5
Cd	114	0.102	ug/L	0.002	1	44	1652	2
Sb	121	0.209	ug/L	0.002	0	288	4014	1
Sb	123	0.202	ug/L	0 003	1	229	3002	1
Ba	135	0.490	ug/L	0.012	2	29	2556	3
Ba	137	0.495	ug/L	0.015	3	52	4467	2
> Tb	159		ug/L			1521468	1506915	1
Tl	205	0.195	ug/L	0 003	1	143	9386	1
Pb	208	0.109	ug/L	0 002	1	258	6690	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:01:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			69868	146666	2
	Cl	37		ug/L			5971125	16878446	6
>	Sc	45		ug/L			1593503	1895866	3
	Cr	52	0.507	ug/L	0.047	9	38265	62756	0
	Cr	53	3.746	ug/L	0.029	0	218	15109	3
	Mn	55	0.101	ug/L	0.001	1	810	5875	2
>	Ge	72		ug/L			1300426	1400173	3
	Ni	60	0.290	ug/L	0.015	5	44	2480	8
	Ni	62	3.290	ug/L	0.425	12	744	4840	13
	Cu	63	1.059	ug/L	0.030	2	766	21120	6
	Cu	65	0.430	ug/L	0.006	1	97	3906	3
	Zn	66	0.168	ug/L	0.053	31	4990	6239	0
	Zn	67	5.329	ug/L	0 328	6	752	5475	7
	Zn	68	-0.305	ug/L	0.014	4	3608	2762	1
	As	75	0.144	ug/L	0 017	11	-12	726	14
	As-1	75	0.255	ug/L	0 061	23	18257	20914	2
	Se	82	-0.047	ug/L	0 010	20	12	-14	36
	Se	78	0.461	ug/L	0 247	53	18525	20575	1
	Y	89		ug/L			985570	1109852	3
	Kr	83		ug/L			362	626	5
>	In	115		ug/L			1349760	1389266	2
	Ag	107	0.008	ug/L	0.001	8	62	267	7
	Cd	111	0.020	ug/L	0 005	24	232	371	6
	Cd	114	0.182	ug/L	0 004	2	44	3025	0
	Sb	121	0.009	ug/L	0 003	30	288	455	10
	Sb	123	0.007	ug/L	0.001	18	229	342	5
	Ba	135	0.033	ug/L	0 001	2	29	206	0
	Ba	137	0.026	ug/L	0 002	6	52	293	3
>	Tb	159		ug/L			1521468	1543429	1
	Tl	205	0.003	ug/L	0 001	42	143	298	20
	Pb	208	0.046	ug/L	0 001	1	258	3047	0

ADAS QUALITY

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB ZZZZZZ ~ 5/28/15
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:07:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			69868	151152	1
	Cl	37		ug/L			5971125	17082132	1
>	Sc	45		ug/L			1593503	1920766	1
	Cr	52	20.223	ug/L	0.542	2	38265	744266	1
	Cr	53	23.140	ug/L	0 325	1	218	93201	1
	Mn	55	19.718	ug/L	0 429	2	810	974472	0
>	Ge	72		ug/L			1300426	1403874	1
	Ni	60	20.419	ug/L	0.634	3	44	171421	4
	Ni	62	23.368	ug/L	0.805	3	744	29481	3
	Cu	63	20.090	ug/L	0 464	2	766	386648	1
	Cu	65	19.894	ug/L	0.508	2	97	176397	1
	Zn	66	18.909	ug/L	0 232	1	4990	103714	1
	Zn	67	22.359	ug/L	0 732	3	752	20431	3
	Zn	68	17.664	ug/L	0.691	3	3608	69126	4
	As	75	17.733	ug/L	0 075	0	-12	91056	1
	As-1	75	18.410	ug/L	0 121	0	18257	111278	1
	Se	82	-0.039	ug/L	0.010	25	12	-10	60
	Se	78	0.449	ug/L	0 161	35	18525	20621	1
	Y	89		ug/L			985570	1110316	2
	Kr	83		ug/L			362	625	4
>	In	115		ug/L			1349760	1389268	0
	Ag	107	19.697	ug/L	0.339	1	62	504847	2
	Cd	111	19.400	ug/L	0 095	0	232	129670	1
	Cd	114	18.921	ug/L	0 063	0	44	309481	1
	Sb	121	0.005	ug/L	0 001	11	288	391	3
	Sb	123	0.004	ug/L	0 002	44	229	293	9
	Ba	135	0.042	ug/L	0 001	3	29	256	1
	Ba	137	0.030	ug/L	0 002	7	52	332	6
>	Tb	159		ug/L			1521468	1513725	1
	Tl	205	0.001	ug/L	0.000	24	143	187	6
	Pb	208	0.049	ug/L	0.001	1	258	3201	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:15:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			69868	146043	4
	Cl	37		ug/L			5971125	17048459	4
>	Sc	45		ug/L			1593503	1898697	4
	Cr	52	19.778	ug/L	0 494	2	38265	720217	2
	Cr	53	23.036	ug/L	1 195	5	218	91585	0
	Mn	55	19.595	ug/L	0 340	1	810	957058	2
>	Ge	72		ug/L			1300426	1387288	2
	Ni	60	20.022	ug/L	0.476	2	44	166006	1
	Ni	62	22.788	ug/L	0.644	2	744	28427	3
	Cu	63	20.654	ug/L	0.127	0	766	392789	2
	Cu	65	19.853	ug/L	0 665	3	97	173870	0
	Zn	66	19.226	ug/L	0 604	3	4990	104092	3
	Zn	67	21.918	ug/L	0.543	2	752	19810	4
	Zn	68	17.918	ug/L	0 195	1	3608	69220	3
	As	75	17.715	ug/L	0 317	1	-12	89864	1
	As-1	75	18.408	ug/L	0 367	1	18257	109926	1
	Se	82	-0.045	ug/L	0 021	46	12	-13	92
	Se	78	0.509	ug/L	0 193	37	18525	20454	1
	Y	89		ug/L			985570	1083789	1
	Kr	83		ug/L			362	627	9
>	In	115		ug/L			1349760	1359518	0
	Ag	107	19.889	ug/L	0 125	0	62	498788	0
	Cd	111	19.068	ug/L	0 298	1	232	124711	0
	Cd	114	19.192	ug/L	0.170	0	44	307187	1
	Sb	121	0.004	ug/L	0.001	21	288	354	3
	Sb	123	0.003	ug/L	0.002	74	229	266	10
	Ba	135	0.035	ug/L	0.001	1	29	213	0
	Ba	137	0.029	ug/L	0 002	6	52	313	5
>	Tb	159		ug/L			1521468	1496319	0
	Tl	205	0.001	ug/L	0 000	15	143	171	2
	Pb	208	0.046	ug/L	0.001	2	258	2958	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:21:37
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			69868	72744	3
	Cl	37		ug/L			5971125	6190011	2
>	Sc	45		ug/L			1593503	1769227	0
	Cr	52	-0.059	ug/L	0 020	33	38265	40610	0
	Cr	53	0.177	ug/L	0 026	14	218	896	10
	Mn	55	0.009	ug/L	0 002	16	810	1323	4
>	Ge	72		ug/L			1300426	1365562	1
	Ni	60	0.022	ug/L	0.003	15	44	226	11
	Ni	62	0.293	ug/L	0 018	6	744	1131	1
	Cu	63	0.041	ug/L	0.001	3	766	1572	2
	Cu	65	0.027	ug/L	0 004	12	97	338	7
	Zn	66	0.398	ug/L	0 033	8	4990	7253	2
	Zn	67	0.328	ug/L	0.009	2	752	1069	1
	Zn	68	0.423	ug/L	0 052	12	3608	5305	3
	As	75	-0.003	ug/L	0.008	277	-12	-28	147
	As-1	75	-0.009	ug/L	0 051	533	18257	19124	0
	Se	82	0.010	ug/L	0 015	145	12	19	45
	Se	78	-0.023	ug/L	0.174	763	18525	19421	0
	Y	89		ug/L			985570	1055233	1
	Kr	83		ug/L			362	362	7
>	In	115		ug/L			1349760	1372851	0
	Ag	107	0.000	ug/L	0.001	453	62	68	30
	Cd	111	0.000	ug/L	0 002	479	232	239	6
	Cd	114	0.000	ug/L	0.000	73	44	53	10
	Sb	121	-0.010	ug/L	0.000	2	288	112	3
	Sb	123	-0.010	ug/L	0.001	5	229	90	8
	Ba	135	0.011	ug/L	0.003	21	29	90	14
	Ba	137	0.012	ug/L	0.001	7	52	161	4
>	Tb	159		ug/L			1521468	1493825	0
	Tl	205	-0.001	ug/L	0.000	49	143	108	14
	Pb	208	0.017	ug/L	0.001	3	258	1229	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:27:32
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			69868	70749	2
	Cl	37		ug/L			5971125	6351613	0
⌈>	Sc	45		ug/L			1593503	1775111	3
|	Cr	52	50.598	ug/L	1.956	3	38265	1655885	0
|	Cr	53	50.564	ug/L	2 198	4	218	187753	1
L	Mn	55	51.386	ug/L	2.449	4	810	2343535	1
⌈>	Ge	72		ug/L			1300426	1361803	2
|	Ni	60	49.916	ug/L	1 641	3	44	406141	1
|	Ni	62	50.338	ug/L	1.518	3	744	60682	0
|	Cu	63	50.221	ug/L	1.334	2	766	936244	2
|	Cu	65	50.471	ug/L	1.224	2	97	433864	0
|	Zn	66	51.191	ug/L	0.927	1	4990	263405	1
|	Zn	67	50.838	ug/L	0.888	1	752	44045	1
|	Zn	68	52.379	ug/L	0 487	0	3608	191340	1
|	As	75	50.480	ug/L	1 360	2	-12	251373	0
|	As-1	75	50.363	ug/L	1.579	3	18257	262003	0
|	Se	82	51.329	ug/L	0.847	1	12	30168	1
L	Se	78	50.759	ug/L	1 465	2	18525	87516	0
	Y	89		ug/L			985570	1043265	1
	Kr	83		ug/L			362	382	5
⌈>	In	115		ug/L			1349760	1354112	0
|	Ag	107	50.971	ug/L	0.689	1	62	1273020	0
|	Cd	111	50.578	ug/L	0.721	1	232	329099	0
|	Cd	114	50.623	ug/L	1.383	2	44	806819	1
|	Sb	121	50.457	ug/L	0.415	0	288	913473	0
|	Sb	123	49.294	ug/L	0 512	1	229	685843	0
|	Ba	135	48.750	ug/L	0 424	0	29	254699	0
L	Ba	137	48.739	ug/L	0 892	1	52	440741	1
⌈>	Tb	159		ug/L			1521468	1470374	0
|	Tl	205	52.680	ug/L	0 946	1	143	2438069	1
L	Pb	208	51.937	ug/L	0 061	0	258	3002560	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:33:58
Number of Replicates. 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			69868	73139	3
	Cl	37		ug/L			5971125	6243822	3
>	Sc	45		ug/L			1593503	1750111	0
	Cr	52	-0.070	ug/L	0 045	63	38265	39813	3
	Cr	53	0.048	ug/L	0.006	12	218	415	5
	Mn	55	-0.002	ug/L	0.001	51	810	813	5
>	Ge	72		ug/L			1300426	1358153	2
	Ni	60	0.000	ug/L	0.001	317	44	50	23
	Ni	62	0.023	ug/L	0 021	89	744	804	1
	Cu	63	0.004	ug/L	0 001	34	766	865	0
	Cu	65	0.001	ug/L	0.001	77	97	113	6
	Zn	66	-0.556	ug/L	0 033	5	4990	2411	5
	Zn	67	-0.517	ug/L	0 010	1	752	346	0
	Zn	68	-0.522	ug/L	0.030	5	3608	1901	3
	As	75	0.002	ug/L	0 008	332	-12	-1	3227
	As-1	75	-0.040	ug/L	0.107	269	18257	18867	0
	Se	82	0.021	ug/L	0.012	55	12	25	29
	Se	78	-0.136	ug/L	0 411	302	18525	19156	0
	Y	89		ug/L			985570	1031729	1
	Kr	83		ug/L			362	363	5
>	In	115		ug/L			1349760	1366000	1
	Ag	107	-0.000	ug/L	0 000	73	62	52	13
	Cd	111	0.001	ug/L	0 003	405	232	239	6
	Cd	114	0.000	ug/L	0.001	234	44	49	21
	Sb	121	0.020	ug/L	0.001	4	288	652	2
	Sb	123	0.017	ug/L	0 002	13	229	463	6
	Ba	135	-0.002	ug/L	0 001	40	29	18	25
	Ba	137	-0.001	ug/L	0.001	56	52	42	12
>	Tb	159		ug/L			1521468	1492250	0
	Tl	205	0.002	ug/L	0.001	23	143	252	10
	Pb	208	0.002	ug/L	0 000	9	258	354	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:42:42
Number of Replicates. 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File· C:\NexION Data\MassCal\Default.tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L				71708	1
	Cl	37		ug/L				6333363	1
>	Sc	45		ug/L				1764261	4
	Cr	52		ug/L				39922	1
	Cr	53		ug/L				337	6
	Mn	55		ug/L				816	2
>	Ge	72		ug/L				1351736	0
	Ni	60		ug/L				55	18
	Ni	62		ug/L				712	5
	Cu	63		ug/L				711	5
	Cu	65		ug/L				105	3
	Zn	66		ug/L				2747	3
	Zn	67		ug/L				413	0
	Zn	68		ug/L				2046	4
	As	75		ug/L				10	103
	As-1	75		ug/L				19038	0
	Se	82		ug/L				27	26
	Se	78		ug/L				19298	0
	Y	89		ug/L				1042231	1
	Kr	83		ug/L				336	5
>	In	115		ug/L				1372269	1
	Ag	107		ug/L				48	8
	Cd	111		ug/L				235	3
	Cd	114		ug/L				45	17
	Sb	121		ug/L				223	19
	Sb	123		ug/L				167	11
	Ba	135		ug/L				22	12
	Ba	137		ug/L				42	2
>	Tb	159		ug/L				1505082	0
	Tl	205		ug/L				96	17
	Pb	208		ug/L				330	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:46:24
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			71708	70660	4
	Cl	37		ug/L			6333363	6411457	1
>	Sc	45		ug/L			1764261	1755253	0
	Cr	52	49.924	ug/L	0 465	0	39922	1614978	0
	Cr	53	50.737	ug/L	0 325	0	337	186558	0
	Mn	55	52.197	ug/L	0 924	1	816	2356229	1
>	Ge	72		ug/L			1351736	1361491	2
	Ni	60	50.137	ug/L	1 473	2	55	407857	0
	Ni	62	50.609	ug/L	2 172	4	712	60915	1
	Cu	63	49.433	ug/L	1 178	2	711	921153	0
	Cu	65	50.617	ug/L	1.095	2	105	435029	0
	Zn	66	50.821	ug/L	1.022	2	2747	258976	0
	Zn	67	51.383	ug/L	0.786	1	413	44126	1
	Zn	68	51.539	ug/L	1.027	1	2046	186532	0
	As	75	49.843	ug/L	1 267	2	10	248164	0
	As-1	75	49.651	ug/L	1 651	3	19038	258552	0
	Se	82	51.420	ug/L	0.739	1	27	30229	1
	Se	78	50.697	ug/L	2 012	3	19298	87439	0
	Y	89		ug/L			1042231	1055654	2
	Kr	83		ug/L			336	397	5
>	In	115		ug/L			1372269	1343182	0
	Ag	107	51.139	ug/L	0.626	1	48	1267006	1
	Cd	111	50.595	ug/L	0.513	1	235	326563	0
	Cd	114	50.810	ug/L	0.385	0	45	803428	1
	Sb	121	50.314	ug/L	0.341	0	223	903486	0
	Sb	123	49.961	ug/L	0.359	0	167	689459	0
	Ba	135	49.186	ug/L	0.283	0	22	254903	0
	Ba	137	49.005	ug/L	0.516	1	42	439613	1
>	Tb	159		ug/L			1505082	1479434	1
	Tl	205	52.551	ug/L	1.401	2	96	2446666	1
	Pb	208	51.718	ug/L	0.618	1	330	3008065	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:52:51
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			71708	76247	1
	Cl	37		ug/L			6333363	6338780	1
>	Sc	45		ug/L			1764261	1751448	1
	Cr	52	0.001	ug/L	0.057	4215	39922	39659	3
	Cr	53	-0.007	ug/L	0.004	63	337	311	5
	Mn	55	0.002	ug/L	0.001	42	816	879	2
>	Ge	72		ug/L			1351736	1360311	1
	Ni	60	-0.001	ug/L	0.000	46	55	49	6
	Ni	62	-0.117	ug/L	0.039	33	712	578	6
	Cu	63	-0.002	ug/L	0.002	116	711	683	5
	Cu	65	0.002	ug/L	0.001	48	105	120	4
	Zn	66	0.035	ug/L	0.026	72	2747	2941	2
	Zn	67	0.020	ug/L	0.021	105	413	433	3
	Zn	68	0.047	ug/L	0 005	9	2046	2226	1
	As	75	-0.006	ug/L	0 003	47	10	-21	73
	As-1	75	-0.056	ug/L	0 078	138	19038	18883	0
	Se	82	-0.018	ug/L	0 003	15	27	16	11
	Se	78	-0.189	ug/L	0 270	142	19298	19163	0
	Y	89		ug/L			1042231	1041672	1
	Kr	83		ug/L			336	354	1
>	In	115		ug/L			1372269	1367759	0
	Ag	107	0.001	ug/L	0 001	115	48	65	30
	Cd	111	0.003	ug/L	0 003	80	235	255	5
	Cd	114	0.001	ug/L	0.001	105	45	56	21
	Sb	121	0.024	ug/L	0.001	4	223	664	3
	Sb	123	0.026	ug/L	0 001	3	167	525	1
	Ba	135	0.001	ug/L	0.001	65	22	26	10
	Ba	137	0.001	ug/L	0 002	110	42	55	24
>	Tb	159		ug/L			1505082	1505699	0
	Tl	205	0.004	ug/L	0.001	19	96	287	12
	Pb	208	0.001	ug/L	0.000	17	330	401	2

ADAS 6155

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 MB REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:57:08
Number of Replicates. 3
Method File. C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			71708	79504	1
	Cl	37		ug/L			6333363	6222269	1
>	Sc	45		ug/L			1764261	1795725	2
	Cr	52	0.052	ug/L	0.043	82	39922	42281	0
	Cr	53	-0.002	ug/L	0 007	388	337	336	6
	Mn	55	0.013	ug/L	0.001	5	816	1447	3
>	Ge	72		ug/L			1351736	1419067	0
	Ni	60	0.005	ug/L	0 000	7	55	98	2
	Ni	62	-0.130	ug/L	0 029	22	712	586	6
	Cu	63	0.015	ug/L	0 001	6	711	1032	1
	Cu	65	0.021	ug/L	0.003	13	105	295	8
	Zn	66	0.905	ug/L	0 032	3	2747	7643	2
	Zn	67	0.804	ug/L	0 054	6	413	1146	4
	Zn	68	0.894	ug/L	0.017	1	2046	5485	0
	As	75	-0.011	ug/L	0 004	34	10	-44	42
	As-1	75	-0.138	ug/L	0.024	17	19038	19294	0
	Se	82	-0.007	ug/L	0 013	190	27	24	31
	Se	78	-0.460	ug/L	0 080	17	19298	19616	0
	Y	89		ug/L			1042231	1068573	1
	Kr	83		ug/L			336	355	5
>	In	115		ug/L			1372269	1384945	0
	Ag	107	0.000	ug/L	0 000	22	48	58	4
	Cd	111	0.001	ug/L	0.002	198	235	245	7
	Cd	114	0.002	ug/L	0.000	23	45	70	9
	Sb	121	0.004	ug/L	0 001	20	223	292	3
	Sb	123	0.006	ug/L	0.002	40	167	248	11
	Ba	135	0.009	ug/L	0.001	10	22	68	6
	Ba	137	0.007	ug/L	0.000	6	42	109	3
>	Tb	159		ug/L			1505082	1526542	0
	Tl	205	0.004	ug/L	0 001	42	96	267	26
	Pb	208	0.010	ug/L	0 000	4	330	953	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 MB REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:00:49
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			71708	82454	3
	Cl	37		ug/L			6333363	6237188	2
>	Sc	45		ug/L			1764261	1764520	2
	Cr	52	0.090	ug/L	0 055	60	39922	42761	1
	Cr	53	0.002	ug/L	0 004	211	337	344	2
	Mn	55	0.073	ug/L	0.004	4	816	4109	1
>	Ge	72		ug/L			1351736	1402335	0
	Ni	60	0.005	ug/L	0 001	24	55	99	10
	Ni	62	-0.174	ug/L	0.017	9	712	526	4
	Cu	63	0.008	ug/L	0.004	45	711	892	7
	Cu	65	0.017	ug/L	0.003	15	105	259	8
	Zn	66	0.476	ug/L	0 038	8	2747	5324	4
	Zn	67	0.417	ug/L	0 034	8	413	794	4
	Zn	68	0.479	ug/L	0.055	11	2046	3891	5
	As	75	-0.001	ug/L	0.005	347	10	3	748
	As-1	75	-0.101	ug/L	0 023	22	19038	19251	0
	Se	82	-0.014	ug/L	0 011	80	27	20	33
	Se	78	-0.356	ug/L	0 073	20	19298	19527	0
	Y	89		ug/L			1042231	1071028	0
	Kr	83		ug/L			336	372	0
>	In	115		ug/L			1372269	1391168	1
	Ag	107	0.001	ug/L	0.002	121	48	84	50
	Cd	111	0.001	ug/L	0.001	49	235	245	3
	Cd	114	0.001	ug/L	0.002	179	45	61	44
	Sb	121	0.000	ug/L	0.002	372	223	234	12
	Sb	123	-0.000	ug/L	0 001	281	167	164	6
	Ba	135	0.021	ug/L	0 002	7	22	134	4
	Ba	137	0.019	ug/L	0.001	4	42	222	2
>	Tb	159		ug/L			1505082	1514462	0
	Tl	205	0.001	ug/L	0 001	97	96	146	32
	Pb	208	0.008	ug/L	0.001	9	330	823	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:04:31
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			71708	236426	3
	Cl	37		ug/L			6333363	7074802	1
>	Sc	45		ug/L			1764261	1846153	0
	Cr	52	9.456	ug/L	0 107	1	39922	355600	1
	Cr	53	8.951	ug/L	0 074	0	337	34906	0
	Mn	55	5.446	ug/L	0.122	2	816	259349	2
>	Ge	72		ug/L			1351736	1244845	1
	Ni	60	9.942	ug/L	0.275	2	55	73997	1
	Ni	62	6.843	ug/L	0.198	2	712	8103	3
	Cu	63	2.462	ug/L	0.106	4	711	42555	2
	Cu	65	1.592	ug/L	0.026	1	105	12608	0
	Zn	66	14.004	ug/L	0.376	2	2747	67087	1
	Zn	67	12.760	ug/L	0 440	3	413	10305	2
	Zn	68	13.894	ug/L	0 585	4	2046	47347	2
	As	75	0.833	ug/L	0 020	2	10	3803	1
	As-1	75	0.552	ug/L	0.063	11	19038	19966	0
	Se	82	1.772	ug/L	0.065	3	27	976	2
	Se	78	1.053	ug/L	0 234	22	19298	19060	0
	Y	89		ug/L			1042231	1076301	0
	Kr	83		ug/L			336	598	2
>	In	115		ug/L			1372269	1264976	0
	Ag	107	0.005	ug/L	0 001	13	48	154	9
	Cd	111	0.088	ug/L	0.008	8	235	749	6
	Cd	114	0.060	ug/L	0.002	3	45	941	3
	Sb	121	0.491	ug/L	0 006	1	223	8503	0
	Sb	123	0.484	ug/L	0 011	2	167	6446	1
	Ba	135	11.772	ug/L	0 139	1	22	57470	0
	Ba	137	11.618	ug/L	0 161	1	42	98173	1
>	Tb	159		ug/L			1505082	1385481	1
	Tl	205	0.001	ug/L	0.001	97	96	125	29
	Pb	208	0.030	ug/L	0 001	1	330	1934	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP0 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:08:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	113269	1
	Cl	37		ug/L			6333363	7398889	2
>	Sc	45		ug/L			1764261	1949316	1
	Cr	52	3.206	ug/L	0.081	2	39922	156440	1
	Cr	53	3.187	ug/L	0.036	1	337	13363	0
	Mn	55	2.340	ug/L	0.041	1	816	118137	1
>	Ge	72		ug/L			1351736	1364959	1
	Ni	60	3.717	ug/L	0.068	1	55	30385	2
	Ni	62	2.401	ug/L	0.038	1	712	3584	1
	Cu	63	0.976	ug/L	0.044	4	711	18934	3
	Cu	65	0.815	ug/L	0.001	0	105	7130	1
	Zn	66	2.837	ug/L	0.022	0	2747	17115	1
	Zn	67	2.626	ug/L	0.120	4	413	2657	4
	Zn	68	2.975	ug/L	0.159	5	2046	12741	3
	As	75	0.397	ug/L	0.013	3	10	1991	2
	As-1	75	0.309	ug/L	0.048	15	19038	20716	0
	Se	82	0.499	ug/L	0 031	6	27	321	5
	Se	78	0.293	ug/L	0 170	57	19298	19879	0
	Y	89		ug/L			1042231	1117104	0
	Kr	83		ug/L			336	509	7
>	In	115		ug/L			1372269	1342442	0
	Ag	107	0.002	ug/L	0.000	32	48	85	14
	Cd	111	0.042	ug/L	0 000	1	235	498	0
	Cd	114	0.025	ug/L	0.000	1	45	440	0
	Sb	121	0.297	ug/L	0.002	0	223	5544	0
	Sb	123	0.304	ug/L	0.005	1	167	4349	1
	Ba	135	3.279	ug/L	0.017	0	22	17003	0
	Ba	137	3.298	ug/L	0.053	1	42	29606	1
>	Tb	159		ug/L			1505082	1437670	1
	Tl	205	0.000	ug/L	0.000	136	96	97	6
	Pb	208	0.014	ug/L	0.001	3	330	1125	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO8 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:11:53
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	952894	3
	Cl	37		ug/L			6333363	6550387	1
>	Sc	45		ug/L			1764261	1856047	2
	Cr	52	14.208	ug/L	0.309	2	39922	515952	2
	Cr	53	11.160	ug/L	0.090	0	337	43673	3
	Mn	55	16.073	ug/L	0.411	2	816	767655	2
>	Ge	72		ug/L			1351736	1053668	2
	Ni	60	25.678	ug/L	0 262	1	55	161753	2
	Ni	62	16.466	ug/L	0 858	5	712	15733	6
	Cu	63	10.351	ug/L	0 180	1	711	149773	3
	Cu	65	8.158	ug/L	0.089	1	105	54348	2
	Zn	66	380.599	ug/L	6.583	1	2747	1487819	3
	Zn	67	340.394	ug/L	6 439	1	413	224434	1
	Zn	68	371.795	ug/L	3.461	0	2046	1031664	1
	As	75	1.089	ug/L	0 002	0	10	4207	2
	As-1	75	0.992	ug/L	0 037	3	19038	18543	2
	Se	82	2.153	ug/L	0.004	0	27	1000	2
	Se	78	2.393	ug/L	0 155	6	19298	17528	2
	Y	89		ug/L			1042231	1008276	2
	Kr	83		ug/L			336	885	3
>	In	115		ug/L			1372269	1121484	1
	Ag	107	0.009	ug/L	0.000	2	48	227	1
	Cd	111	0.974	ug/L	0.024	2	235	5435	2
	Cd	114	0.929	ug/L	0.004	0	45	12297	2
	Sb	121	0.479	ug/L	0.003	0	223	7361	2
	Sb	123	0.477	ug/L	0.003	0	167	5630	1
	Ba	135	73.140	ug/L	0 306	0	22	316483	1
	Ba	137	72.835	ug/L	0 236	0	42	545522	1
>	Tb	159		ug/L			1505082	1267852	1
	Tl	205	0.005	ug/L	0 001	11	96	289	7
	Pb	208	0.240	ug/L	0 002	0	330	12246	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 A REN
Sample Dil Factor: 5
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:15:34
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

Del: use 2x

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	195048	4
	Cl	37		ug/L			6333363	7659605	2
>	Sc	45		ug/L			1764261	2071769	1
	Cr	52	7.532	ug/L	0.189	2	39922	327332	0
	Cr	53	7.156	ug/L	0.316	4	337	31386	3
	Mn	55	11.479	ug/L	0.455	3	816	612191	2
>	Ge	72		ug/L			1351736	1488749	0
	Ni	60	3.196	ug/L	0.045	1	55	28500	1
	Ni	62	3.830	ug/L	0.130	3	712	5769	2
	Cu	63	1.086	ug/L	0.014	1	711	22906	1
	Cu	65	0.723	ug/L	0.006	0	105	6908	1
	Zn	66	5.733	ug/L	0.118	2	2747	34638	1
	Zn	67	5.428	ug/L	0.242	4	413	5505	3
	Zn	68	5.856	ug/L	0.119	2	2046	25182	2
	As	75	0.264	ug/L	0.002	0	10	1451	0
	As-1	75	0.115	ug/L	0.024	20	19038	21576	0
	Se	82	0.481	ug/L	0.021	4	27	339	4
	Se	78	0.049	ug/L	0.075	153	19298	21326	0
	Y	89		ug/L			1042231	1176050	0
	Kr	83		ug/L			336	517	6
>	In	115		ug/L			1372269	1452159	0
	Ag	107	0.005	ug/L	0.000	4	48	177	3
	Cd	111	0.086	ug/L	0.015	17	235	846	11
	Cd	114	0.047	ug/L	0.003	6	45	850	5
	Sb	121	0.360	ug/L	0.003	0	223	7215	0
	Sb	123	0.356	ug/L	0.002	0	167	5493	0
	Ba	135	6.334	ug/L	0.092	1	22	35511	1
	Ba	137	6.277	ug/L	0 054	0	42	60910	1
>	Tb	159		ug/L			1505082	1536708	0
	Tl	205	-0.001	ug/L	0 000	17	96	67	8
	Pb	208	0.059	ug/L	0 001	1	330	3915	1

AGAB 61161

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:19:16
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	302899	4
	Cl	37		ug/L			6333363	7843712	1
>	Sc	45		ug/L			1764261	2093186	0
	Cr	52	17.844	ug/L	0 321	1	39922	718843	1
	Cr	53	17.338	ug/L	0.171	0	337	76287	0
	Mn	55	27.764	ug/L	0.593	2	816	1495148	2
>	Ge	72		ug/L			1351736	1409722	1
	Ni	60	7.757	ug/L	0.143	1	55	65408	1
	Ni	62	7.709	ug/L	0.266	3	712	10245	3
	Cu	63	2.733	ug/L	0.055	2	711	53436	0
	Cu	65	1.887	ug/L	0.043	2	105	16902	1
	Zn	66	12.685	ug/L	0 153	1	2747	69111	2
	Zn	67	12.017	ug/L	0.164	1	413	11019	2
	Zn	68	13.011	ug/L	0.102	0	2046	50366	0
	As	75	0.642	ug/L	0.001	0	10	3320	1
	As-1	75	0.500	ug/L	0.024	4	19038	22353	0
	Se	82	1.178	ug/L	0.020	1	27	745	0
	Se	78	0.858	ug/L	0.106	12	19298	21317	0
	Y	89		ug/L			1042231	1185549	0
	Kr	83		ug/L			336	578	1
>	In	115		ug/L			1372269	1413835	0
	Ag	107	0.341	ug/L	0 009	2	48	8944	1
	Cd	111	0.205	ug/L	0.005	2	235	1633	2
	Cd	114	0.108	ug/L	0.004	3	45	1842	3
	Sb	121	0.859	ug/L	0 011	1	223	16456	1
	Sb	123	0.854	ug/L	0.013	1	167	12569	1
	Ba	135	15.441	ug/L	0 173	1	22	84246	0
	Ba	137	15.502	ug/L	0 092	0	42	146397	0
>	Tb	159		ug/L			1505082	1512864	1
	Tl	205	-0.000	ug/L	0 000	24	96	83	3
	Pb	208	0.129	ug/L	0.002	1	330	8002	1

AGAS - 61162

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:22:57
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	103428	4
	Cl	37		ug/L			6333363	7704110	3
>	Sc	45		ug/L			1764261	2069981	1
	Cr	52	25.309	ug/L	0 850	3	39922	988306	1
	Cr	53	25.058	ug/L	0 511	2	337	108878	3
	Mn	55	25.064	ug/L	0 958	3	816	1334352	2
>	Ge	72		ug/L			1351736	1538989	1
	Ni	60	26.262	ug/L	0 664	2	55	241572	1
	Ni	62	26.225	ug/L	0.815	3	712	36085	1
	Cu	63	25.615	ug/L	0 339	1	711	540070	0
	Cu	65	25.482	ug/L	0 387	1	105	247660	0
	Zn	66	80.087	ug/L	1.777	2	2747	459563	0
	Zn	67	73.465	ug/L	0 621	0	413	71123	0
	Zn	68	78.321	ug/L	1.994	2	2046	319252	1
	As	75	29.607	ug/L	0.361	1	10	166679	0
	As-1	75	26.711	ug/L	0 369	1	19038	167302	0
	Se	82	78.341	ug/L	0.528	0	27	52051	0
	Se	78	73.324	ug/L	0.616	0	19298	133209	0
	Y	89		ug/L			1042231	1198817	1
	Kr	83		ug/L			336	495	6
>	In	115		ug/L			1372269	1535380	0
	Ag	107	26.051	ug/L	0 093	0	48	737806	0
	Cd	111	24.011	ug/L	0.427	1	235	177279	0
	Cd	114	24.049	ug/L	0 587	2	45	434625	1
	Sb	121	-0.007	ug/L	0.000	1	223	108	2
	Sb	123	-0.007	ug/L	0 000	6	167	83	7
	Ba	135	23.331	ug/L	0.204	0	22	138218	0
	Ba	137	23.305	ug/L	0.230	0	42	238983	0
>	Tb	159		ug/L			1505082	1616690	0
	Tl	205	25.540	ug/L	0.294	1	96	1299747	1
	Pb	208	26.214	ug/L	0 095	0	330	1666488	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:26:38
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			71708	92017	3
	Cl	37		ug/L			6333363	7967542	2
>	Sc	45		ug/L			1764261	2039787	2
	Cr	52	23.751	ug/L	0.818	3	39922	916766	2
	Cr	53	23.981	ug/L	0.352	1	337	102655	1
	Mn	55	24.154	ug/L	1.048	4	816	1266693	1
>	Ge	72		ug/L			1351736	1498570	1
	Ni	60	24.651	ug/L	0 216	0	55	220840	0
	Ni	62	25.360	ug/L	1 091	4	712	34007	3
	Cu	63	24.892	ug/L	0 532	2	711	511042	1
	Cu	65	25.244	ug/L	0 833	3	105	238867	1
	Zn	66	83.635	ug/L	1.058	1	2747	467240	0
	Zn	67	75.916	ug/L	2.137	2	413	71542	1
	Zn	68	80.666	ug/L	2.098	2	2046	320108	1
	As	75	28.876	ug/L	0 901	3	10	158268	1
	As-1	75	26.223	ug/L	0 259	0	19038	160324	0
	Se	82	76.848	ug/L	2.539	3	27	49707	1
	Se	78	72.603	ug/L	0.685	0	19298	128648	1
	Y	89		ug/L			1042231	1193588	0
	Kr	83		ug/L			336	450	8
>	In	115		ug/L			1372269	1541193	1
	Ag	107	24.810	ug/L	1 006	4	48	705051	2
	Cd	111	23.231	ug/L	0.184	0	235	172199	1
	Cd	114	23.207	ug/L	0 334	1	45	421016	0
	Sb	121	-0.005	ug/L	0 000	9	223	142	5
	Sb	123	-0.004	ug/L	0 001	22	167	120	11
	Ba	135	22.850	ug/L	0 288	1	22	135875	0
	Ba	137	22.977	ug/L	0.120	0	42	236509	0
>	Tb	159		ug/L			1505082	1620143	0
	Tl	205	24.278	ug/L	0 192	0	96	1238121	0
	Pb	208	25.239	ug/L	0 250	0	330	1607872	0

ABAB : 81164

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGE0 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:30:19
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b cal

~~ER~~ As use ee 05/28/15

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	88804	1
	Cl	37		ug/L			6333363	7405466	1
>	Sc	45		ug/L			1764261	1855238	1
	Cr	52	24.160	ug/L	0.296	1	39922	847684	1
	Cr	53	24.578	ug/L	0 298	1	337	95695	1
	Mn	55	24.711	ug/L	0.277	1	816	1179407	0
>	Ge	72		ug/L			1351736	1441224	1
	Ni	60	24.574	ug/L	0.206	0	55	211737	0
	Ni	62	24.626	ug/L	0.537	2	712	31785	1
	Cu	63	24.632	ug/L	0 352	1	711	486445	1
	Cu	65	24.171	ug/L	0.078	0	105	220035	0
	Zn	66	88.844	ug/L	4.138	4	2747	477058	3
	Zn	67	79.985	ug/L	1 064	1	413	72476	0
	Zn	68	87.007	ug/L	2.510	2	2046	331906	2
	As	75	31.608	ug/L	0 626	1	10	166645	1
	As-1	75	28.220	ug/L	0 360	1	19038	164387	0
	Se	82	92.431	ug/L	0 996	1	27	57507	0
	Se	78	86.977	ug/L	0 267	0	19298	144151	0
	Y	89		ug/L			1042231	1102029	1
	Kr	83		ug/L			336	440	3
>	In	115		ug/L			1372269	1489218	1
	Ag	107	24.649	ug/L	0.315	1	48	677166	2
	Cd	111	25.207	ug/L	0 373	1	235	180510	1
	Cd	114	25.018	ug/L	0.441	1	45	438553	0
	Sb	121	-0.009	ug/L	0.000	0	223	60	0
	Sb	123	-0.009	ug/L	0.000	3	167	50	8
	Ba	135	22.981	ug/L	0.140	0	22	132056	1
	Ba	137	22.705	ug/L	0.295	1	42	225827	0
>	Tb	159		ug/L			1505082	1563584	0
	Tl	205	24.321	ug/L	0.146	0	96	1197086	0
	Pb	208	25.083	ug/L	0.188	0	330	1542243	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:35:06
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			71708	77218	4
	Cl	37		ug/L			6333363	7066195	1
>	Sc	45		ug/L			1764261	1862056	1
	Cr	52	50.929	ug/L	0 649	1	39922	1746926	2
	Cr	53	50.594	ug/L	0.620	1	337	197330	0
	Mn	55	51.790	ug/L	1.047	2	816	2479656	0
>	Ge	72		ug/L			1351736	1405882	0
	Ni	60	51.053	ug/L	0.837	1	55	429041	1
	Ni	62	51.387	ug/L	1 205	2	712	63902	2
	Cu	63	50.668	ug/L	1 754	3	711	975251	3
	Cu	65	51.508	ug/L	0 381	0	105	457271	0
	Zn	66	52.889	ug/L	1.038	1	2747	278267	1
	Zn	67	52.465	ug/L	0.479	0	413	46527	1
	Zn	68	52.458	ug/L	1.115	2	2046	196066	1
	As	75	50.888	ug/L	0.548	1	10	261732	1
	As-1	75	50.494	ug/L	0.394	0	19038	271312	0
	Se	82	53.038	ug/L	0.652	1	27	32202	1
	Se	78	51.661	ug/L	0.607	1	19298	91670	0
	Y	89		ug/L			1042231	1108924	1
	Kr	83		ug/L			336	425	4
>	In	115		ug/L			1372269	1465030	1
	Ag	107	49.714	ug/L	0.711	1	48	1343319	1
	Cd	111	49.670	ug/L	0.245	0	235	349684	0
	Cd	114	50.360	ug/L	0.950	1	45	868575	2
	Sb	121	49.545	ug/L	0.275	0	223	970410	1
	Sb	123	49.179	ug/L	0.578	1	167	740241	1
	Ba	135	48.553	ug/L	0.280	0	22	274446	1
	Ba	137	48.788	ug/L	0.096	0	42	477343	1
>	Tb	159		ug/L			1505082	1579335	1
	Tl	205	52.450	ug/L	0.430	0	96	2607598	2
	Pb	208	51.074	ug/L	0.585	1	330	3171330	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:41:32
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			71708	74652	2
	Cl	37		ug/L			6333363	6463715	1
>	Sc	45		ug/L			1764261	1739674	1
|	Cr	52	0.033	ug/L	0.035	105	39922	40386	2
|	Cr	53	-0.022	ug/L	0 005	24	337	254	8
|	Mn	55	0.002	ug/L	0.001	33	816	915	3
>	Ge	72		ug/L			1351736	1370082	1
|	Ni	60	-0.000	ug/L	0 001	497	55	55	12
|	Ni	62	0.007	ug/L	0 018	252	712	730	2
|	Cu	63	0.000	ug/L	0 001	252	711	725	2
|	Cu	65	0.008	ug/L	0.003	36	105	179	13
|	Zn	66	0.352	ug/L	0 021	5	2747	4570	3
|	Zn	67	0.311	ug/L	0.021	6	413	685	1
|	Zn	68	0.370	ug/L	0.028	7	2046	3407	1
|	As	75	-0.004	ug/L	0.003	58	10	-11	113
|	As-1	75	0.069	ug/L	0.068	98	19038	19629	0
|	Se	82	-0.005	ug/L	0 012	272	27	24	27
|	Se	78	0.282	ug/L	0 244	86	19298	19937	0
	Y	89		ug/L			1042231	1078112	0
	Kr	83		ug/L			336	379	4
>	In	115		ug/L			1372269	1429042	1
|	Ag	107	0.001	ug/L	0 000	29	48	69	7
|	Cd	111	0.008	ug/L	0 003	41	235	300	7
|	Cd	114	0.001	ug/L	0 000	48	45	58	10
|	Sb	121	0.023	ug/L	0 001	3	223	664	2
|	Sb	123	0.021	ug/L	0.002	11	167	484	6
|	Ba	135	0.004	ug/L	0.001	31	22	45	14
|	Ba	137	0.003	ug/L	0 001	34	42	71	13
>	Tb	159		ug/L			1505082	1557208	0
|	Tl	205	0.004	ug/L	0 000	3	96	290	2
|	Pb	208	0.002	ug/L	0 000	16	330	480	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1 SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:51:02
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	77498	0
	Cl	37		ug/L			6333363	6491006	0
>	Sc	45		ug/L			1764261	1753320	2
	Cr	52	0.076	ug/L	0.046	61	39922	42041	2
	Cr	53	-0.018	ug/L	0.005	26	337	269	4
	Mn	55	0.022	ug/L	0.001	4	816	1792	0
>	Ge	72		ug/L			1351736	1384521	1
	Ni	60	0.008	ug/L	0.001	14	55	122	8
	Ni	62	-0.164	ug/L	0.040	24	712	532	10
	Cu	63	0.006	ug/L	0.001	24	711	843	3
	Cu	65	0.022	ug/L	0.002	10	105	298	6
	Zn	66	1.992	ug/L	0.070	3	2747	13029	1
	Zn	67	1.760	ug/L	0 061	3	413	1946	1
	Zn	68	1.879	ug/L	0.038	2	2046	8936	1
	As	75	-0.010	ug/L	0.003	27	10	-42	34
	As-1	75	0.026	ug/L	0 082	311	19038	19625	0
	Se	82	-0.019	ug/L	0.008	42	27	16	30
	Se	78	0.131	ug/L	0 306	233	19298	19940	0
	Y	89		ug/L			1042231	1070475	1
	Kr	83		ug/L			336	378	6
>	In	115		ug/L			1372269	1426553	1
	Ag	107	0.000	ug/L	0.000	97	48	61	17
	Cd	111	0.009	ug/L	0 002	17	235	305	2
	Cd	114	-0.000	ug/L	0 001	370	45	42	35
	Sb	121	0.001	ug/L	0.002	250	223	245	13
	Sb	123	0.000	ug/L	0.001	1064	167	175	6
	Ba	135	0.016	ug/L	0.002	15	22	109	13
	Ba	137	0.014	ug/L	0.002	10	42	179	8
>	Tb	159		ug/L			1505082	1555743	1
	Tl	205	0.001	ug/L	0.000	36	96	128	9
	Pb	208	0.016	ug/L	0 000	1	330	1311	1

AGA8 B1 SWN

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 A SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:54:43
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

RR Cr

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			71708	75085	1
	Cl	37		ug/L			6333363	6400512	0
>	Sc	45		ug/L			1764261	1728925	1
	Cr	52	338.469	ug/L	9.334	2	39922	10556687	1
	Cr	53	336.619	ug/L	4.241	1	337	1217179	0
	Mn	55	9697.995	ug/L	243 983	2	816	430996763	1
>	Ge	72		ug/L			1351736	1212466	1
	Ni	60	12.997	ug/L	0.224	1	55	94227	1
	Ni	62	13.806	ug/L	0.203	1	712	15272	0
	Cu	63	27.697	ug/L	0.610	2	711	460058	2
	Cu	65	29.458	ug/L	0.790	2	105	225533	1
	Zn	66	198.937	ug/L	5.210	2	2747	895703	1
	Zn	67	189.731	ug/L	1.807	0	413	144126	0
	Zn	68	193.445	ug/L	3.117	1	2046	618596	1
	As	75	6.033	ug/L	0.042	0	10	26766	0
	As-1	75	6.285	ug/L	0.101	1	19038	44072	0
	Se	82	0.526	ug/L	0.034	6	27	299	5
	Se	78	1.158	ug/L	0.245	21	19298	18691	0
	Y	89		ug/L			1042231	1286528	0
	Kr	83		ug/L			336	866	3
>	In	115		ug/L			1372269	1283338	1
	Ag	107	0.200	ug/L	0.008	3	48	4783	2
	Cd	111	1.088	ug/L	0.088	8	235	6922	6
	Cd	114	0.461	ug/L	0.006	1	45	7008	0
	Sb	121	0.309	ug/L	0.002	0	223	5515	0
	Sb	123	0.308	ug/L	0.010	3	167	4212	1
	Ba	135	89.651	ug/L	1.252	1	22	443847	0
	Ba	137	91.076	ug/L	1 952	2	42	780424	1
>	Tb	159		ug/L			1505082	1490839	0
	Tl	205	0.039	ug/L	0 002	4	96	1936	3
	Pb	208	93.462	ug/L	0 396	0	330	5478145	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 B SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:58:24
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	79423	2
	Cl	37		ug/L			6333363	6369891	2
>	Sc	45		ug/L			1764261	1850985	1
	Cr	52	293.549	ug/L	5 050	1	39922	9808471	0
	Cr	53	296.537	ug/L	1.889	0	337	1148061	0
	Mn	55	2902.415	ug/L	50.541	1	816	138112533	1
>	Ge	72		ug/L			1351736	1372908	0
	Ni	60	13.098	ug/L	0.091	0	55	107532	0
	Ni	62	14.376	ug/L	0 328	2	712	17976	1
	Cu	63	34.959	ug/L	0.577	1	711	657285	0
	Cu	65	34.880	ug/L	0.309	0	105	302436	1
	Zn	66	34.861	ug/L	0 783	2	2747	180054	1
	Zn	67	36.676	ug/L	0.259	0	413	31887	0
	Zn	68	34.423	ug/L	1.651	4	2046	126326	3
	As	75	6.394	ug/L	0.057	0	10	32124	0
	As-1	75	6.484	ug/L	0.129	1	19038	50873	0
	Se	82	0.130	ug/L	0 031	24	27	104	16
	Se	78	-0.114	ug/L	0 280	245	19298	19443	1
	Y	89		ug/L			1042231	1373601	1
	Kr	83		ug/L			336	625	3
>	In	115		ug/L			1372269	1384186	1
	Ag	107	0.098	ug/L	0.002	2	48	2547	1
	Cd	111	0.280	ug/L	0.012	4	235	2095	3
	Cd	114	0.061	ug/L	0.001	2	45	1037	1
	Sb	121	0.028	ug/L	0.001	4	223	750	4
	Sb	123	0.026	ug/L	0.001	1	167	538	2
	Ba	135	31.330	ug/L	0.379	1	22	167345	2
	Ba	137	30.979	ug/L	0.188	0	42	286389	0
>	Tb	159		ug/L			1505082	1578494	0
	Tl	205	0.041	ug/L	0.001	2	96	2139	2
	Pb	208	6.817	ug/L	0.047	0	330	423365	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 C SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:02:05
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File. C:\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			71708	77412	0
	Cl	37		ug/L			6333363	6351893	1
>	Sc	45		ug/L			1764261	1820253	2
	Cr	52	9.387	ug/L	0.437	4	39922	348113	1
	Cr	53	9.447	ug/L	0.134	1	337	36298	1
	Mn	55	78.054	ug/L	2.242	2	816	3652908	3
>	Ge	72		ug/L			1351736	1414017	1
	Ni	60	5.135	ug/L	0.099	1	55	43450	2
	Ni	62	6.232	ug/L	0.067	1	712	8450	2
	Cu	63	8.576	ug/L	0.196	2	711	166613	0
	Cu	65	8.588	ug/L	0.275	3	105	76742	1
	Zn	66	23.096	ug/L	0.746	3	2747	123888	5
	Zn	67	24.153	ug/L	1.027	4	413	21783	5
	Zn	68	23.482	ug/L	0.130	0	2046	89465	2
	As	75	9.076	ug/L	0.118	1	10	46954	0
	As-1	75	9.244	ug/L	0.201	2	19038	66215	0
	Se	82	0.068	ug/L	0.014	21	27	69	14
	Se	78	-0.268	ug/L	0.331	123	19298	19809	1
	Y	89		ug/L			1042231	1300177	1
	Kr	83		ug/L			336	553	2
>	In	115		ug/L			1372269	1425651	1
	Ag	107	0.026	ug/L	0.002	7	48	737	5
	Cd	111	0.117	ug/L	0.004	3	235	1046	2
	Cd	114	0.016	ug/L	0.001	5	45	314	6
	Sb	121	0.005	ug/L	0.000	10	223	319	4
	Sb	123	0.005	ug/L	0.001	27	167	241	7
	Ba	135	19.473	ug/L	0.206	1	22	107115	0
	Ba	137	19.701	ug/L	0.080	0	42	187604	1
>	Tb	159		ug/L			1505082	1576107	1
	Tl	205	0.021	ug/L	0.000	1	96	1155	1
	Pb	208	1.880	ug/L	0.019	0	330	116851	1

RR Cu

ICP-MS Quantitative Analysis - Summary Report

RR Cr, Ba, Pb 50x
Zn 200x

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:05:47
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b.cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens. RSD
C	13		ug/L			71708	72394	2
Cl	37		ug/L			6333363	6507940	2
> Sc	45		ug/L			1764261	1815000	2
Cr	52	458.191	ug/L	4.249	0	39922	14989442	1
Cr	53	466.657	ug/L	12 675	2	337	1771105	2
Mn	55	15925.895	ug/L	60 662	0	816	743166886	2
> Ge	72		ug/L			1351736	1234807	1
Ni	60	41.725	ug/L	0 889	2	55	307928	0
Ni	62	45.504	ug/L	0 453	0	712	49770	1
Cu	63	185.329	ug/L	3 684	1	711	3130866	0
Cu	65	183.903	ug/L	4 599	2	105	1433325	0
Zn	66	2307.600	ug/L	18.372	0	2747	10556257	1
Zn	67	2025.246	ug/L	65.942	3	413	1562710	1
Zn	68	2211.394	ug/L	17.477	0	2046	7182408	1
As	75	6.544	ug/L	0.137	2	10	29566	0
As-1	75	6.704	ug/L	0.213	3	19038	46711	0
Se	82	0.564	ug/L	0.044	7	27	325	6
Se	78	0.838	ug/L	0.324	38	19298	18644	0
Y	89		ug/L			1042231	1446355	3
Kr	83		ug/L			336	926	2
> In	115		ug/L			1372269	1280083	1
Ag	107	0.502	ug/L	0.018	3	48	11891	1
Cd	111	6.302	ug/L	0.065	1	235	38954	0
Cd	114	5.414	ug/L	0.130	2	45	81599	0
Sb	121	2.341	ug/L	0.063	2	223	40247	1
Sb	123	2.303	ug/L	0.030	1	167	30439	0
Ba	135	452.638	ug/L	9.388	2	22	2234986	0
Ba	137	451.908	ug/L	5 654	1	42	3862602	0
> Tb	159		ug/L			1505082	1514084	0
Tl	205	0.050	ug/L	0 001	1	96	2484	1
Pb	208	457.950	ug/L	1.247	0	330	27259799	0

AGA8 9172

RRCu

ICP-MS Quantitative Analysis - Summary Report

RR Cr, Ba, Pb, Zn

Sample ID: AGA8 F SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:09:28
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	74705	1
	Cl	37		ug/L			6333363	6267852	1
>	Sc	45		ug/L			1764261	1788744	0
	Cr	52	619.703	ug/L	7.655	1	39922	19967788	1
	Cr	53	639.427	ug/L	12 696	1	337	2391957	1
	Mn	55	18713.738	ug/L	222.623	1	816	860595615	0
>	Ge	72		ug/L			1351736	1204124	0
	Ni	60	41.679	ug/L	0.944	2	55	299983	1
	Ni	62	44.791	ug/L	0 664	1	712	47789	2
	Cu	63	233.355	ug/L	4 625	1	711	3844489	1
	Cu	65	232.248	ug/L	2 034	0	105	1765537	0
	Zn	66	2361.849	ug/L	33 733	1	2747	10536030	0
	Zn	67	2095.392	ug/L	9.328	0	413	1577179	0
	Zn	68	2251.315	ug/L	36 313	1	2046	7130159	0
	As	75	6.867	ug/L	0.090	1	10	30257	0
	As-1	75	7.094	ug/L	0 108	1	19038	47220	0
	Se	82	0.590	ug/L	0.056	9	27	330	8
	Se	78	1.093	ug/L	0 153	13	19298	18487	0
	Y	89		ug/L			1042231	1378554	1
	Kr	83		ug/L			336	939	4
>	In	115		ug/L			1372269	1273423	0
	Ag	107	0.561	ug/L	0 028	5	48	13225	5
	Cd	111	6.699	ug/L	0 177	2	235	41182	2
	Cd	114	5.560	ug/L	0 035	0	45	83376	0
	Sb	121	1.947	ug/L	0 026	1	223	33337	0
	Sb	123	1.884	ug/L	0 039	2	167	24796	1
	Ba	135	491.284	ug/L	7 365	1	22	2413521	1
	Ba	137	497.512	ug/L	3 547	0	42	4230625	0
>	Tb	159		ug/L			1505082	1491458	0
	Tl	205	0.047	ug/L	0 001	2	96	2293	2
	Pb	208	469.327	ug/L	6.012	1	330	27519202	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:13:09
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

RR Cr, Ba, Pb, Zn, Cu
+
RR @ 20x to check Cu FSPK

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	73005	0
	Cl	37		ug/L			6333363	6047945	0
>	Sc	45		ug/L			1764261	1701560	0
	Cr	52	**757.736**	ug/L	11 323	1	39922	23216967	1
	Cr	53	**764.698**	ug/L	1.908	0	337	2721194	0
	Mn	55	**15487.523**	ug/L	210.611	1	816	677517483	1
>	Ge	72		ug/L			1351736	1174719	0
	Ni	60	**148.507**	ug/L	3.197	2	55	1042732	2
	Ni	62	**146.915**	ug/L	1.399	0	712	151497	0
	Cu	63	**21565.122**	ug/L	330 231	1	711	346577457	1
	Cu	65	**21832.488**	ug/L	302 204	1	105	161912659	1
	Zn	66	**3378.384**	ug/L	36 615	1	2747	14702863	1
	Zn	67	**3049.900**	ug/L	18.160	0	413	2239429	0
	Zn	68	**3142.597**	ug/L	56 004	1	2046	9710257	2
	As	75	**33.846**	ug/L	0.147	0	10	145460	0
	As-1	75	**32.747**	ug/L	0.175	0	19038	152837	0
	Se	82	**58.768**	ug/L	0.445	0	27	29812	0
	Se	78	**57.915**	ug/L	0.623	1	19298	83840	0
	Y	89		ug/L			1042231	1289130	0
	Kr	83		ug/L			336	977	2
>	In	115		ug/L			1372269	1170367	0
	Ag	107	**26.147**	ug/L	0 231	0	48	564477	0
	Cd	111	**29.879**	ug/L	0.471	1	235	168124	1
	Cd	114	**28.478**	ug/L	0.495	1	45	392376	1
	Sb	121	**3.873**	ug/L	0 053	1	223	60777	1
	Sb	123	**3.746**	ug/L	0.032	0	167	45182	0
	Ba	135	**383.361**	ug/L	2 053	0	22	1731001	0
	Ba	137	**391.847**	ug/L	3 658	0	42	3062527	0
>	Tb	159		ug/L			1505082	1432637	1
	Tl	205	**21.997**	ug/L	0 413	1	96	991828	0
	Pb	208	**1073.323**	ug/L	12.454	1	330	60447011	0

AGA8 01174

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FPOST SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:16:50
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens. RSD
	C	13		ug/L			71708	74232	4
	Cl	37		ug/L			6333363	6192894	2
>	Sc	45		ug/L			1764261	1683328	1
	Cr	52	661.696	ug/L	7 205	1	39922	20059975	0
	Cr	53	672.331	ug/L	3 205	0	337	2366946	1
	Mn	55	19836.536	ug/L	395.113	1	816	858336592	0
>	Ge	72		ug/L			1351736	1189820	0
	Ni	60	66.086	ug/L	0.741	1	55	470039	1
	Ni	62	68.720	ug/L	0.455	0	712	72110	1
	Cu	63	256.861	ug/L	3.373	1	711	4181700	0
	Cu	65	255.096	ug/L	8.804	3	105	1916083	3
	Zn	66	2406.133	ug/L	45 492	1	2747	10606333	1
	Zn	67	2164.877	ug/L	17 226	0	413	1610093	0
	Zn	68	2282.019	ug/L	29.714	1	2046	7141881	0
	As	75	35.768	ug/L	0.032	0	10	155697	0
	As-1	75	33.956	ug/L	0.409	1	19038	159899	1
	Se	82	75.083	ug/L	0.486	0	27	38571	0
	Se	78	73.248	ug/L	1.461	1	19298	102901	1
	Y	89		ug/L			1042231	1339526	2
	Kr	83		ug/L			336	952	3
>	In	115		ug/L			1372269	1256584	1
	Ag	107	23.105	ug/L	0.317	1	48	535500	0
	Cd	111	29.935	ug/L	0.329	1	235	180836	0
	Cd	114	28.784	ug/L	0.619	2	45	425757	1
	Sb	121	1.960	ug/L	0.045	2	223	33122	1
	Sb	123	1.907	ug/L	0.014	0	167	24762	0
	Ba	135	520.270	ug/L	8.740	1	22	2521929	0
	Ba	137	515.955	ug/L	11.387	2	42	4329083	1
>	Tb	159		ug/L			1505082	1479416	0
	Tl	205	22.378	ug/L	0 061	0	96	1042157	0
	Pb	208	487.191	ug/L	2 889	0	330	28336910	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:20:31
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

RR As

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			71708	70594	0
	Cl	37		ug/L			6333363	6171775	1
>	Sc	45		ug/L			1764261	1678673	2
	Cr	52	25.500	ug/L	1 097	4	39922	807074	2
	Cr	53	25.393	ug/L	0.196	0	337	89444	1
	Mn	55	27.384	ug/L	1.705	6	816	1182366	6
>	Ge	72		ug/L			1351736	1309692	0
	Ni	60	25.696	ug/L	0.168	0	55	201195	0
	Ni	62	24.878	ug/L	0.708	2	712	29173	2
	Cu	63	26.324	ug/L	1.266	4	711	472431	5
	Cu	65	26.814	ug/L	1.212	4	105	221840	5
	Zn	66	85.269	ug/L	0.798	0	2747	416306	0
	Zn	67	76.748	ug/L	1.416	1	413	63216	1
	Zn	68	83.116	ug/L	1.299	1	2046	288248	1
	As	75	30.232	ug/L	0.490	1	10	144851	1
	As-1	75	27.792	ug/L	0.309	1	19038	147404	0
	Se	82	80.616	ug/L	1.823	2	27	45583	1
	Se	78	77.390	ug/L	1.105	1	19298	118616	0
	Y	89		ug/L			1042231	1001386	1
	Kr	83		ug/L			336	383	3
>	In	115		ug/L			1372269	1389485	0
	Ag	107	25.407	ug/L	0.133	0	48	651192	0
	Cd	111	24.919	ug/L	0.362	1	235	166506	1
	Cd	114	24.810	ug/L	0.217	0	45	405834	0
	Sb	121	-0.006	ug/L	0.001	11	223	115	11
	Sb	123	-0.005	ug/L	0.000	4	167	101	3
	Ba	135	24.574	ug/L	0.102	0	22	131757	0
	Ba	137	24.551	ug/L	0 150	0	42	227853	0
>	Tb	159		ug/L			1505082	1518221	0
	Tl	205	24.617	ug/L	0 195	0	96	1176466	0
	Pb	208	25.423	ug/L	0.365	1	330	1517726	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGE0 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:24:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b cal

Del

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			71708	76592	1
	Cl	37		ug/L			6333363	5892081	1
>	Sc	45		ug/L			1764261	1559161	2
	Cr	52	24.956	ug/L	0 747	2	39922	734398	0
	Cr	53	25.025	ug/L	0 915	3	337	81864	3
	Mn	55	28.786	ug/L	5 538	19	816	1151618	17
>	Ge	72		ug/L			1351736	1257406	1
	Ni	60	24.790	ug/L	0.292	1	55	186352	0
	Ni	62	24.298	ug/L	0 355	1	712	27374	2
	Cu	63	26.161	ug/L	1.699	6	711	450900	7
	Cu	65	26.962	ug/L	2.316	8	105	214252	9
	Zn	66	94.523	ug/L	1.711	1	2747	442811	2
	Zn	67	83.898	ug/L	2.900	3	413	66328	4
	Zn	68	90.790	ug/L	1 473	1	2046	302088	0
	As	75	31.961	ug/L	0 859	2	10	147004	1
	As-1	75	29.426	ug/L	0 699	2	19038	148781	1
	Se	82	91.898	ug/L	2.554	2	27	49877	1
	Se	78	89.381	ug/L	2 129	2	19298	128731	1
	Y	89		ug/L			1042231	969020	0
	Kr	83		ug/L			336	360	2
>	In	115		ug/L			1372269	1345014	0
	Ag	107	24.818	ug/L	0.309	1	48	615725	1
	Cd	111	25.621	ug/L	0.058	0	235	165714	0
	Cd	114	25.594	ug/L	0.408	1	45	405264	1
	Sb	121	-0.008	ug/L	0.001	8	223	74	16
	Sb	123	-0.007	ug/L	0.002	24	167	62	40
	Ba	135	23.926	ug/L	0.351	1	22	124173	1
	Ba	137	23.924	ug/L	0.089	0	42	214921	0
>	Tb	159		ug/L			1505082	1474023	0
	Tl	205	23.852	ug/L	0.176	0	96	1106749	0
	Pb	208	24.611	ug/L	0.091	0	330	1426519	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:28:59
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			71708	68125	2
	Cl	37		ug/L			6333363	6170277	3
>	Sc	45		ug/L			1764261	1653227	2
	Cr	52	50.165	ug/L	0 748	1	39922	1527986	0
	Cr	53	51.324	ug/L	0 300	0	337	177727	1
	Mn	55	50.636	ug/L	1.522	3	816	2152015	0
>	Ge	72		ug/L			1351736	1300084	1
	Ni	60	50.252	ug/L	0 460	0	55	390532	1
	Ni	62	49.130	ug/L	0.281	0	712	56522	1
	Cu	63	50.216	ug/L	0.631	1	711	893743	0
	Cu	65	49.263	ug/L	1.275	2	105	404310	0
	Zn	66	51.660	ug/L	0.925	1	2747	251379	1
	Zn	67	51.801	ug/L	0.601	1	413	42485	2
	Zn	68	52.471	ug/L	0.876	1	2046	181329	0
	As	75	50.319	ug/L	0.878	1	10	239296	1
	As-1	75	49.970	ug/L	0.994	1	19038	248437	0
	Se	82	51.390	ug/L	0.846	1	27	28851	1
	Se	78	50.051	ug/L	1.276	2	19298	82691	0
	Y	89		ug/L			1042231	1008943	2
	Kr	83		ug/L			336	387	9
>	In	115		ug/L			1372269	1337813	0
	Ag	107	49.861	ug/L	0.221	0	48	1230382	0
	Cd	111	50.635	ug/L	0 617	1	235	325516	0
	Cd	114	50.761	ug/L	1.012	1	45	799434	2
	Sb	121	50.640	ug/L	0 552	1	223	905718	0
	Sb	123	51.028	ug/L	0 530	1	167	701364	0
	Ba	135	50.427	ug/L	1.079	2	22	260284	1
	Ba	137	50.166	ug/L	0 659	1	42	448196	0
>	Tb	159		ug/L			1505082	1476007	0
	Tl	205	50.962	ug/L	0 687	1	96	2367626	0
	Pb	208	50.933	ug/L	0 562	1	330	2955722	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:35:26
Number of Replicates: 3
Method File. C.\NexIONData\Method\200 8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C.\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815b cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	68449	0
	Cl	37		ug/L			6333363	5686435	1
[>	Sc	45		ug/L			1764261	1596792	1
|	Cr	52	0.076	ug/L	0 005	6	39922	38314	1
|	Cr	53	-0.028	ug/L	0.003	9	337	211	3
L	Mn	55	0.026	ug/L	0 001	2	816	1824	2
[>	Ge	72		ug/L			1351736	1295794	1
|	Ni	60	0.000	ug/L	0.001	223	55	56	13
|	Ni	62	-0.370 ~	ug/L	0 022	5	712	264	8
|	Cu	63	0.002	ug/L	0 002	82	711	720	5
|	Cu	65	0.022	ug/L	0 004	18	105	282	12
|	Zn	66	0.362	ug/L	0 017	4	2747	4373	1
|	Zn	67	0.325	ug/L	0 019	5	413	659	1
|	Zn	68	0.376	ug/L	0.030	8	2046	3240	2
|	As	75	-0.003	ug/L	0 005	181	10	-2	1093
|	As-1	75	0.045	ug/L	0 084	186	19038	18456	1
|	Se	82	-0.001	ug/L	0.011	1228	27	25	23
L	Se	78	0.180	ug/L	0.300	166	19298	18727	1
	Y	89		ug/L			1042231	993728	0
	Kr	83		ug/L			336	338	3
[>	In	115		ug/L			1372269	1371373	1
|	Ag	107	0.001	ug/L	0.000	43	48	76	14
|	Cd	111	0.006	ug/L	0.005	81	235	272	10
|	Cd	114	0.002	ug/L	0.001	34	45	70	11
|	Sb	121	0.021	ug/L	0 001	5	223	600	4
|	Sb	123	0.020	ug/L	0 002	11	167	454	6
|	Ba	135	0.005	ug/L	0 001	24	22	46	11
L	Ba	137	0.003	ug/L	0 002	58	42	73	24
[>	Tb	159		ug/L			1505082	1488934	0
|	Tl	205	0.005	ug/L	0 000	8	96	323	6
L	Pb	208	0.002	ug/L	0 000	14	330	444	4

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:45:00
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L				67898	2
	Cl	37		ug/L				5760484	1
>	Sc	45		ug/L				1610711	3
	Cr	52		ug/L				38065	1
	Cr	53		ug/L				203	2
	Mn	55		ug/L				1658	2
>	Ge	72		ug/L				1293916	1
	Ni	60		ug/L				46	22
	Ni	62		ug/L				240	12
	Cu	63		ug/L				692	4
	Cu	65		ug/L				311	1
	Zn	66		ug/L				4584	2
	Zn	67		ug/L				730	5
	Zn	68		ug/L				3468	0
	As	75		ug/L				28	67
	As-1	75		ug/L				18458	0
	Se	82		ug/L				18	28
	Se	78		ug/L				18694	0
	Y	89		ug/L				973453	0
	Kr	83		ug/L				355	4
>	In	115		ug/L				1353268	0
	Ag	107		ug/L				55	8
	Cd	111		ug/L				244	6
	Cd	114		ug/L				67	14
	Sb	121		ug/L				194	12
	Sb	123		ug/L				127	3
	Ba	135		ug/L				44	21
	Ba	137		ug/L				87	11
>	Tb	159		ug/L				1500497	0
	Tl	205		ug/L				126	7
	Pb	208		ug/L				476	6

AGAS - 21180

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:48:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67898	70328	2
	Cl	37		ug/L			5760484	5833916	2
>	Sc	45		ug/L			1610711	1637642	1
	Cr	52	51.454	ug/L	0 554	1	38065	1553377	1
	Cr	53	52.312	ug/L	2.302	4	203	179264	3
	Mn	55	51.591	ug/L	1 498	2	1658	2173119	1
>	Ge	72		ug/L			1293916	1280856	0
	Ni	60	50.397	ug/L	0 191	0	46	385865	0
	Ni	62	50.163	ug/L	1 166	2	240	56412	2
	Cu	63	50.190	ug/L	0.356	0	692	880196	0
	Cu	65	50.284	ug/L	0 330	0	311	406910	0
	Zn	66	51.057	ug/L	0.892	1	4584	246770	1
	Zn	67	51.850	ug/L	0 414	0	730	42227	0
	Zn	68	51.192	ug/L	0 398	0	3468	175864	0
	As	75	50.764	ug/L	0.602	1	28	237891	0
	As-1	75	50.486	ug/L	0 655	1	18458	247377	0
	Se	82	51.763	ug/L	0 211	0	18	28626	0
	Se	78	50.639	ug/L	0 423	0	18694	82447	0
	Y	89		ug/L			973453	1008730	2
	Kr	83		ug/L			355	367	2
>	In	115		ug/L			1353268	1332979	0
	Ag	107	49.004	ug/L	1 059	2	55	1204835	1
	Cd	111	50.193	ug/L	0.767	1	244	321530	1
	Cd	114	50.970	ug/L	0 301	0	67	799825	0
	Sb	121	50.899	ug/L	0 344	0	194	907024	0
	Sb	123	50.216	ug/L	0 633	1	127	687702	1
	Ba	135	50.480	ug/L	0 705	1	44	259649	1
	Ba	137	50.860	ug/L	0.406	0	87	452803	0
>	Tb	159		ug/L			1500497	1489311	0
	Tl	205	50.528	ug/L	0.586	1	126	2368628	0
	Pb	208	49.759	ug/L	0 423	0	476	2914009	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:55:08
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			67898	70705	4
	Cl	37		ug/L			5760484	5786655	2
>	Sc	45		ug/L			1610711	1621863	0
	Cr	52	-0.014	ug/L	0.012	84	38065	37917	1
	Cr	53	-0.003	ug/L	0.003	88	203	195	3
	Mn	55	-0.003	ug/L	0.001	19	1658	1547	1
>	Ge	72		ug/L			1293916	1271089	2
	Ni	60	0.001	ug/L	0.001	153	46	49	10
	Ni	62	0.054	ug/L	0.010	18	240	296	2
	Cu	63	0.004	ug/L	0.003	61	692	757	4
	Cu	65	0.001	ug/L	0.006	478	311	314	12
	Zn	66	0.042	ug/L	0.040	94	4584	4699	1
	Zn	67	0.008	ug/L	0.029	346	730	723	2
	Zn	68	0.009	ug/L	0.034	398	3468	3434	2
	As	75	-0.006	ug/L	0.008	124	28	-1	3165
	As-1	75	0.027	ug/L	0.089	326	18458	18249	0
	Se	82	0.009	ug/L	0.008	92	18	22	21
	Se	78	0.117	ug/L	0.310	264	18694	18506	1
	Y	89		ug/L			973453	976197	1
	Kr	83		ug/L			355	329	3
>	In	115		ug/L			1353268	1346399	0
	Ag	107	0.001	ug/L	0.001	113	55	70	26
	Cd	111	0.004	ug/L	0.002	45	244	271	5
	Cd	114	-0.000	ug/L	0.001	49091	67	67	20
	Sb	121	0.024	ug/L	0.001	5	194	618	4
	Sb	123	0.025	ug/L	0.001	3	127	466	3
	Ba	135	0.001	ug/L	0.001	172	44	48	14
	Ba	137	-0.001	ug/L	0.001	87	87	78	10
>	Tb	159		ug/L			1500497	1483208	1
	Tl	205	0.004	ug/L	0.001	12	126	322	8
	Pb	208	0.001	ug/L	0.001	114	476	504	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB2 REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:03:13
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	78087	1
	Cl	37		ug/L			5760484	5786389	3
>	Sc	45		ug/L			1610711	1680223	2
	Cr	52	0.167	ug/L	0.062	36	38065	44723	1
	Cr	53	0.172	ug/L	0.011	6	203	815	1
	Mn	55	0.040	ug/L	0.001	3	1658	3439	4
>	Ge	72		ug/L			1293916	1310344	2
	Ni	60	0.033	ug/L	0.002	7	46	306	5
	Ni	62	0.052	ug/L	0.022	41	240	302	7
	Cu	63	0.053	ug/L	0.002	3	692	1647	0
	Cu	65	0.051	ug/L	0.002	3	311	740	4
	Zn	66	0.781	ug/L	0.058	7	4584	8430	1
	Zn	67	0.638	ug/L	0.046	7	730	1261	1
	Zn	68	0.706	ug/L	0.048	6	3468	5942	1
	As	75	-0.003	ug/L	0 006	191	28	14	196
	As-1	75	0.002	ug/L	0 065	3993	18458	18695	0
	Se	82	-0.002	ug/L	0.017	1081	18	17	56
	Se	78	0.018	ug/L	0.245	1375	18694	18949	0
	Y	89		ug/L			973453	1009057	2
	Kr	83		ug/L			355	364	4
>	In	115		ug/L			1353268	1370914	1
	Ag	107	0.002	ug/L	0.001	52	55	94	20
	Cd	111	0.009	ug/L	0 002	17	244	303	4
	Cd	114	0.001	ug/L	0 000	69	67	78	7
	Sb	121	0.005	ug/L	0 001	15	194	287	6
	Sb	123	0.007	ug/L	0.002	29	127	221	13
	Ba	135	0.016	ug/L	0.000	0	44	129	1
	Ba	137	0.014	ug/L	0 003	17	87	220	9
>	Tb	159		ug/L			1500497	1522487	0
	Tl	205	0.003	ug/L	0 001	44	126	248	20
	Pb	208	0.028	ug/L	0 000	1	476	2151	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 JDUP REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:06:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	78985	1
	Cl	37		ug/L			5760484	5723928	3
>	Sc	45		ug/L			1610711	1699811	2
	Cr	52	0.074	ug/L	0.051	69	38065	42400	1
	Cr	53	0.066	ug/L	0.002	2	203	450	3
	Mn	55	0.064	ug/L	0.003	4	1658	4548	0
>	Ge	72		ug/L			1293916	1332127	0
	Ni	60	0.009	ug/L	0.003	30	46	118	17
	Ni	62	0.029	ug/L	0.010	35	240	281	4
	Cu	63	0.084	ug/L	0.003	3	692	2251	3
	Cu	65	0.084	ug/L	0.003	3	311	1023	2
	Zn	66	-0.031	ug/L	0.029	94	4584	4566	2
	Zn	67	-0.079	ug/L	0.061	77	730	686	7
	Zn	68	-0.054	ug/L	0.030	55	3468	3381	2
	As	75	0.032	ug/L	0.004	13	28	183	11
	As-1	75	-0.012	ug/L	0.019	160	18458	18948	0
	Se	82	0.130	ug/L	0 012	9	18	93	6
	Se	78	-0.030	ug/L	0 059	197	18694	19207	0
	Y	89		ug/L			973453	1027091	1
	Kr	83		ug/L			355	341	1
>	In	115		ug/L			1353268	1388262	0
	Ag	107	0.001	ug/L	0 000	10	55	83	3
	Cd	111	0.007	ug/L	0 002	33	244	297	5
	Cd	114	-0.000	ug/L	0.001	623	67	67	15
	Sb	121	-0.002	ug/L	0.001	51	194	159	13
	Sb	123	-0.001	ug/L	0.000	79	127	122	5
	Ba	135	0.010	ug/L	0.003	25	44	101	13
	Ba	137	0.010	ug/L	0 001	12	87	180	7
>	Tb	159		ug/L			1500497	1540754	1
	Tl	205	-0.000	ug/L	0 000	619	126	126	18
	Pb	208	0.011	ug/L	0 000	3	476	1138	0

AGA8 0134

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 J REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:10:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

Del

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			67898	81554	3
	Cl	37		ug/L			5760484	5756887	5
>	Sc	45		ug/L			1610711	1689576	1
	Cr	52	0.221	ug/L	0.207	93	38065	46698	15
	Cr	53	0.221	ug/L	0 249	112	203	1003	90
	Mn	55	3.473	ug/L	5 876	169	1658	155406	167
>	Ge	72		ug/L			1293916	1338291	1
	Ni	60	0.044	ug/L	0.033	74	46	402	66
	Ni	62	0.048	ug/L	0.011	22	240	304	5
	Cu	63	0.739	ug/L	1.109	150	692	14399	142
	Cu	65	0.638	ug/L	0.942	147	311	5766	139
	Zn	66	0.682	ug/L	0.359	52	4584	8136	23
	Zn	67	0.556	ug/L	0.253	45	730	1221	18
	Zn	68	0.617	ug/L	0.297	48	3468	5764	19
	As	75	0.075	ug/L	0.009	11	28	394	10
	As-1	75	-0.020	ug/L	0.042	206	18458	18995	1
	Se	82	0.251	ug/L	0.028	11	18	163	8
	Se	78	-0.067	ug/L	0.146	217	18694	19246	1
	Y	89		ug/L			973453	1019274	1
	Kr	83		ug/L			355	371	3
>	In	115		ug/L			1353268	1372286	0
	Ag	107	0.002	ug/L	0.002	128	55	102	58
	Cd	111	0.010	ug/L	0.001	13	244	314	2
	Cd	114	0.007	ug/L	0.003	49	67	179	30
	Sb	121	-0.000	ug/L	0.001	489	194	193	9
	Sb	123	0.002	ug/L	0.001	75	127	156	13
	Ba	135	0.030	ug/L	0.005	15	44	204	11
	Ba	137	0.032	ug/L	0.008	24	87	377	19
>	Tb	159		ug/L			1500497	1533746	0
	Tl	205	0.002	ug/L	0.004	188	126	232	83
	Pb	208	0.130	ug/L	0.187	144	476	8303	135

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 JSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:14:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	78007	4
	Cl	37		ug/L			5760484	5716259	1
>	Sc	45		ug/L			1610711	1691345	2
	Cr	52	24.796	ug/L	0.795	3	38065	793588	1
	Cr	53	25.053	ug/L	0 416	1	203	88802	1
	Mn	55	25.548	ug/L	0.475	1	1658	1112471	1
>	Ge	72		ug/L			1293916	1313135	0
	Ni	60	25.801	ug/L	0.524	2	46	202559	2
	Ni	62	25.277	ug/L	0 431	1	240	29260	1
	Cu	63	25.661	ug/L	0 474	1	692	461739	2
	Cu	65	25.781	ug/L	0.503	1	311	214051	2
	Zn	66	76.510	ug/L	2 769	3	4584	376740	2
	Zn	67	69.278	ug/L	1.323	1	730	57590	1
	Zn	68	75.338	ug/L	1.454	1	3468	263662	1
	As	75	27.928	ug/L	0 163	0	28	134188	0
	As-1	75	26.319	ug/L	0 117	0	18458	141177	0
	Se	82	71.423	ug/L	0 073	0	18	40488	0
	Se	78	70.384	ug/L	0 366	0	18694	110086	0
	Y	89		ug/L			973453	1021363	2
	Kr	83		ug/L			355	368	2
>	In	115		ug/L			1353268	1376597	0
	Ag	107	24.924	ug/L	0.180	0	55	632902	0
	Cd	111	23.482	ug/L	0 129	0	244	155475	0
	Cd	114	23.313	ug/L	0 066	0	67	377833	0
	Sb	121	-0.002	ug/L	0 001	38	194	160	9
	Sb	123	-0.001	ug/L	0 000	60	127	118	5
	Ba	135	24.505	ug/L	0.185	0	44	130192	1
	Ba	137	24.619	ug/L	0.206	0	87	226397	0
>	Tb	159		ug/L			1500497	1525105	0
	Tl	205	24.010	ug/L	0 177	0	126	1152671	0
	Pb	208	24.612	ug/L	0 187	0	476	1476146	0

ee 05/28/15

RR Cr Zn ~~Ba~~ ~~Pb~~

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 D SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:17:58
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	70441	2
	Cl	37		ug/L			5760484	5859220	1
>	Sc	45		ug/L			1610711	1608929	0
	Cr	52	498.235	ug/L	4 237	0	38065	14449021	1
	Cr	53	505.496	ug/L	2.431	0	203	1700937	1
	Mn	55	10653.297	ug/L	223 329	2	1658	440655850	1
>	Ge	72		ug/L			1293916	1139532	0
	Ni	60	57.281	ug/L	0.128	0	46	390175	0
	Ni	62	57.468	ug/L	0.922	1	240	57458	1
	Cu	63	143.556	ug/L	1.485	1	692	2238665	1
	Cu	65	141.041	ug/L	0 920	0	311	1014916	1
	Zn	66	615.214	ug/L	8.730	1	4584	2600607	0
	Zn	67	550.983	ug/L	9 936	1	730	392987	0
	Zn	68	589.072	ug/L	7.014	1	3468	1768227	0
	As	75	21.842	ug/L	0 038	0	28	91077	1
	As-1	75	22.594	ug/L	0 035	0	18458	107476	0
	Se	82	0.415	ug/L	0 058	13	18	220	13
	Se	78	1.038	ug/L	0 194	18	18694	17628	0
	Y	89		ug/L			973453	1199172	1
	Kr	83		ug/L			355	919	2
>	In	115		ug/L			1353268	1209710	1
	Ag	107	0.301	ug/L	0 007	2	55	6757	1
	Cd	111	2.608	ug/L	0.006	0	244	15367	0
	Cd	114	1.811	ug/L	0 030	1	67	25846	0
	Sb	121	0.990	ug/L	0 014	1	194	16172	0
	Sb	123	0.965	ug/L	0.011	1	127	12099	0
	Ba	135	234.000	ug/L	5 072	2	44	1091964	1
	Ba	137	240.032	ug/L	4 656	1	87	1938886	1
>	Tb	159		ug/L			1500497	1422187	0
	Tl	205	0.053	ug/L	0 001	1	126	2482	1
	Pb	208	221.548	ug/L	2.387	1	476	12387404	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 E SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:21:39
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	72156	2
	Cl	37		ug/L			5760484	5539065	1
>	Sc	45		ug/L			1610711	1674040	2
	Cr	52	7.829	ug/L	0 190	2	38065	275105	0
	Cr	53	7.851	ug/L	0 044	0	203	27693	2
	Mn	55	68.971	ug/L	1 900	2	1658	2969695	2
>	Ge	72		ug/L			1293916	1270748	0
	Ni	60	6.018	ug/L	0.043	0	46	45748	0
	Ni	62	7.136	ug/L	0 102	1	240	8163	1
	Cu	63	10.624	ug/L	0 242	2	692	185378	1
	Cu	65	10.695	ug/L	0 248	2	311	86095	1
	Zn	66	14.833	ug/L	0 281	1	4584	74320	1
	Zn	67	17.103	ug/L	0.373	2	730	14298	1
	Zn	68	15.740	ug/L	0 223	1	3468	56007	1
	As	75	20.205	ug/L	0 107	0	28	93954	0
	As-1	75	20.905	ug/L	0 147	0	18458	112245	0
	Se	82	0.109	ug/L	0.020	18	18	77	14
	Se	78	0.354	ug/L	0.143	40	18694	18802	0
	Y	89		ug/L			973453	1161967	1
	Kr	83		ug/L			355	477	6
>	In	115		ug/L			1353268	1342239	1
	Ag	107	0.022	ug/L	0 001	4	55	590	3
	Cd	111	0.108	ug/L	0 014	12	244	936	8
	Cd	114	0.023	ug/L	0.001	2	67	429	1
	Sb	121	0.002	ug/L	0.002	91	194	224	14
	Sb	123	0.004	ug/L	0 001	19	127	175	4
	Ba	135	26.416	ug/L	0.338	1	44	136835	1
	Ba	137	26.766	ug/L	0 419	1	87	239955	0
>	Tb	159		ug/L			1500497	1498030	1
	Tl	205	0.033	ug/L	0 001	2	126	1699	3
	Pb	208	1.283	ug/L	0.002	0	476	76034	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 G SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:25:20
Number of Replicates. 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	76045	1
	Cl	37		ug/L			5760484	5555580	5
>	Sc	45		ug/L			1610711	1776329	2
	Cr	52	13.651	ug/L	0 364	2	38065	477749	1
	Cr	53	13.605	ug/L	0 162	1	203	50747	1
	Mn	55	176.163	ug/L	6.633	3	1658	8041567	1
>	Ge	72		ug/L			1293916	1282678	1
	Ni	60	10.849	ug/L	0 185	1	46	83215	2
	Ni	62	12.666	ug/L	0 193	1	240	14439	0
	Cu	63	15.996	ug/L	0 162	1	692	281371	1
	Cu	65	15.983	ug/L	0.672	4	311	129666	2
	Zn	66	34.759	ug/L	0 639	1	4584	169663	1
	Zn	67	38.522	ug/L	0 827	2	730	31596	0
	Zn	68	35.864	ug/L	0.831	2	3468	124384	1
	As	75	6.798	ug/L	0.113	1	28	31919	0
	As-1	75	7.009	ug/L	0 209	2	18458	50138	0
	Se	82	0.212	ug/L	0.028	13	18	135	10
	Se	78	0.346	ug/L	0 337	97	18694	18963	0
	Y	89		ug/L			973453	1334089	1
	Kr	83		ug/L			355	587	6
>	In	115		ug/L			1353268	1330147	1
	Ag	107	0.039	ug/L	0 001	2	55	1015	3
	Cd	111	0.170	ug/L	0 005	2	244	1325	3
	Cd	114	0.028	ug/L	0.002	6	67	503	6
	Sb	121	0.005	ug/L	0 001	29	194	280	9
	Sb	123	0.006	ug/L	0 001	11	127	209	4
	Ba	135	52.618	ug/L	0.542	1	44	270056	1
	Ba	137	52.616	ug/L	1 043	1	87	467423	1
>	Tb	159		ug/L			1500497	1503658	1
	Tl	205	0.057	ug/L	0 001	2	126	2820	3
	Pb	208	2.620	ug/L	0.057	2	476	155291	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 H SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:29:01
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	76990	0
	Cl	37		ug/L			5760484	5505323	0
>	Sc	45		ug/L			1610711	1785605	1
	Cr	52	13.886	ug/L	0.342	2	38065	487835	1
	Cr	53	14.097	ug/L	0.332	2	203	52846	1
	Mn	55	158.078	ug/L	2.683	1	1658	7257573	0
>	Ge	72		ug/L			1293916	1294480	0
	Ni	60	12.402	ug/L	0.275	2	46	95995	1
	Ni	62	13.528	ug/L	0.360	2	240	15550	2
	Cu	63	18.576	ug/L	0.188	1	692	329686	1
	Cu	65	18.909	ug/L	0.392	2	311	154837	1
	Zn	66	28.036	ug/L	0.461	1	4584	139010	1
	Zn	67	34.025	ug/L	0.665	1	730	28255	1
	Zn	68	30.287	ug/L	0.711	2	3468	106567	1
	As	75	2.639	ug/L	0.039	1	28	12523	1
	As-1	75	2.655	ug/L	0.059	2	18458	30641	0
	Se	82	0.227	ug/L	0.040	17	18	144	15
	Se	78	0.170	ug/L	0 082	47	18694	18919	0
	Y	89		ug/L			973453	1365532	1
	Kr	83		ug/L			355	627	3
>	In	115		ug/L			1353268	1325513	0
	Ag	107	0.051	ug/L	0.001	2	55	1299	3
	Cd	111	0.222	ug/L	0 002	0	244	1654	0
	Cd	114	0.033	ug/L	0.001	3	67	583	2
	Sb	121	0.002	ug/L	0.001	56	194	226	9
	Sb	123	0.003	ug/L	0.001	26	127	163	6
	Ba	135	61.338	ug/L	0.328	0	44	313712	0
	Ba	137	61.231	ug/L	0.322	0	87	542071	0
>	Tb	159		ug/L			1500497	1506240	0
	Tl	205	0.072	ug/L	0.002	2	126	3518	1
	Pb	208	2.964	ug/L	0 044	1	476	175978	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 I SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:32:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67898	73758	4
	Cl	37		ug/L			5760484	5673014	2
>	Sc	45		ug/L			1610711	1812094	1
	Cr	52	15.549	ug/L	0 269	1	38065	549347	2
	Cr	53	15.780	ug/L	0.209	1	203	60011	0
	Mn	55	233.063	ug/L	7 185	3	1658	10855665	1
>	Ge	72		ug/L			1293916	1308778	1
	Ni	60	11.261	ug/L	0 107	0	46	88134	1
	Ni	62	12.816	ug/L	0 354	2	240	14903	1
	Cu	63	17.279	ug/L	0.220	1	692	310056	0
	Cu	65	17.531	ug/L	0 287	1	311	145143	0
	Zn	66	37.136	ug/L	0 185	0	4584	184659	1
	Zn	67	41.674	ug/L	1.101	2	730	34816	1
	Zn	68	37.984	ug/L	0 543	1	3468	134224	0
	As	75	2.362	ug/L	0.037	1	28	11336	1
	As-1	75	2.368	ug/L	0.073	3	18458	29647	0
	Se	82	0.180	ug/L	0.027	15	18	120	13
	Se	78	0.121	ug/L	0.170	140	18694	19063	0
	Y	89		ug/L			973453	1366283	1
	Kr	83		ug/L			355	644	5
>	In	115		ug/L			1353268	1342769	1
	Ag	107	0.043	ug/L	0 002	5	55	1130	4
	Cd	111	0.189	ug/L	0.023	12	244	1459	9
	Cd	114	0.052	ug/L	0 002	4	67	893	3
	Sb	121	0.004	ug/L	0 003	60	194	268	16
	Sb	123	0.006	ug/L	0.002	29	127	205	10
	Ba	135	59.356	ug/L	0 654	1	44	307515	0
	Ba	137	59.053	ug/L	0 518	0	87	529599	1
>	Tb	159		ug/L			1500497	1490754	0
	Tl	205	0.064	ug/L	0 001	1	126	3136	1
	Pb	208	4.892	ug/L	0.009	0	476	287177	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB2SPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:36:24
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	74321	1
	Cl	37		ug/L			5760484	5608538	2
>	Sc	45		ug/L			1610711	1632736	2
	Cr	52	25.230	ug/L	0.921	3	38065	778740	1
	Cr	53	24.559	ug/L	0.835	3	203	84016	1
	Mn	55	25.220	ug/L	1.305	5	1658	1059730	3
>	Ge	72		ug/L			1293916	1336422	0
	Ni	60	24.398	ug/L	0.377	1	46	194921	0
	Ni	62	24.010	ug/L	0.371	1	240	28298	0
	Cu	63	24.728	ug/L	0.461	1	692	452803	1
	Cu	65	24.391	ug/L	0 046	0	311	206106	0
	Zn	66	74.351	ug/L	1.072	1	4584	372760	0
	Zn	67	67.142	ug/L	1.013	1	730	56829	1
	Zn	68	73.564	ug/L	0 855	1	3468	262129	1
	As	75	27.236	ug/L	0.401	1	28	133180	1
	As-1	75	25.825	ug/L	0 217	0	18458	141343	0
	Se	82	70.210	ug/L	1.062	1	18	40503	0
	Se	78	69.825	ug/L	0.527	0	18694	111300	0
	Y	89		ug/L			973453	1011250	0
	Kr	83		ug/L			355	377	7
>	In	115		ug/L			1353268	1354885	1
	Ag	107	24.868	ug/L	0.184	0	55	621473	1
	Cd	111	23.466	ug/L	0.395	1	244	152896	1
	Cd	114	23.554	ug/L	0.663	2	67	375597	1
	Sb	121	-0.007	ug/L	0.000	6	194	74	9
	Sb	123	-0.005	ug/L	0.001	18	127	51	25
	Ba	135	24.134	ug/L	0.447	1	44	126171	0
	Ba	137	23.967	ug/L	0.622	2	87	216860	0
>	Tb	159		ug/L			1500497	1514634	0
	Tl	205	23.088	ug/L	0.061	0	126	1100835	0
	Pb	208	23.909	ug/L	0.406	1	476	1424128	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:41:10
Number of Replicates 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	66133	1
	Cl	37		ug/L			5760484	5574123	2
>	Sc	45		ug/L			1610711	1583338	4
	Cr	52	50.606	ug/L	1.290	2	38065	1476818	1
	Cr	53	51.262	ug/L	1.472	2	203	169787	1
	Mn	55	51.669	ug/L	1.289	2	1658	2103468	2
>	Ge	72		ug/L			1293916	1249792	1
	Ni	60	50.881	ug/L	0 996	1	46	380086	1
	Ni	62	49.705	ug/L	0.696	1	240	54536	0
	Cu	63	50.032	ug/L	1 827	3	692	856034	3
	Cu	65	50.849	ug/L	0 493	0	311	401488	0
	Zn	66	50.101	ug/L	0.359	0	4584	236350	0
	Zn	67	50.907	ug/L	0 893	1	730	40464	1
	Zn	68	50.981	ug/L	0.712	1	3468	170916	2
	As	75	50.300	ug/L	0.869	1	28	229993	1
	As-1	75	50.198	ug/L	0.962	1	18458	240093	1
	Se	82	51.214	ug/L	0.226	0	18	27637	1
	Se	78	50.701	ug/L	0 286	0	18694	80526	1
	Y	89		ug/L			973453	956843	2
	Kr	83		ug/L			355	341	8
>	In	115		ug/L			1353268	1298289	0
	Ag	107	49.335	ug/L	0 354	0	55	1181484	1
	Cd	111	50.253	ug/L	0.692	1	244	313521	0
	Cd	114	51.175	ug/L	0.577	1	67	782098	0
	Sb	121	50.804	ug/L	0.634	1	194	881736	0
	Sb	123	50.353	ug/L	0.349	0	127	671608	0
	Ba	135	50.773	ug/L	1.020	2	44	254333	1
	Ba	137	50.646	ug/L	1.433	2	87	439122	2
>	Tb	159		ug/L			1500497	1470977	0
	Tl	205	49.955	ug/L	0.672	1	126	2313117	1
	Pb	208	48.984	ug/L	0 868	1	476	2832958	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:47:37
Number of Replicates 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	65870	0
	Cl	37		ug/L			5760484	5642812	4
>	Sc	45		ug/L			1610711	1524639	0
	Cr	52	0.020	ug/L	0 033	170	38065	36568	2
	Cr	53	0.005	ug/L	0 003	64	203	208	4
	Mn	55	-0.006	ug/L	0.001	18	1658	1336	3
>	Ge	72		ug/L			1293916	1265537	2
	Ni	60	-0.001	ug/L	0 000	5	46	34	3
	Ni	62	0.017	ug/L	0 016	93	240	254	8
	Cu	63	-0.004	ug/L	0 001	26	692	611	2
	Cu	65	-0.008	ug/L	0 003	34	311	238	9
	Zn	66	-0.681	ug/L	0 015	2	4584	1291	5
	Zn	67	-0.669	ug/L	0.009	1	730	184	5
	Zn	68	-0.691	ug/L	0 020	2	3468	1091	4
	As	75	-0.007	ug/L	0.003	42	28	-3	356
	As-1	75	0.008	ug/L	0 102	1309	18458	18082	0
	Se	82	0.005	ug/L	0.012	251	18	20	32
	Se	78	0.064	ug/L	0.353	548	18694	18358	0
	Y	89		ug/L			973453	925972	2
	Kr	83		ug/L			355	357	4
>	In	115		ug/L			1353268	1322349	0
	Ag	107	0.002	ug/L	0 002	130	55	94	56
	Cd	111	-0.000	ug/L	0.004	1298	244	236	9
	Cd	114	0.001	ug/L	0.002	262	67	77	37
	Sb	121	0.024	ug/L	0 002	6	194	606	4
	Sb	123	0.024	ug/L	0 002	8	127	456	5
	Ba	135	-0.005	ug/L	0 001	10	44	18	13
	Ba	137	-0.005	ug/L	0.001	11	87	37	14
>	Tb	159		ug/L			1500497	1471129	0
	Tl	205	0.004	ug/L	0.001	27	126	298	16
	Pb	208	-0.001	ug/L	0.000	40	476	413	5

AGAS 8194

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 A SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:55:42
Number of Replicates: 3
Method File. C.\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C.\NexIONData\MassCal\Default tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

Cr Only

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	69680	2
	Cl	37		ug/L			5760484	5866973	1
>	Sc	45		ug/L			1610711	1600906	0
	Cr	52	136.999	ug/L	1 526	1	38065	3980572	1
	Cr	53	138.075	ug/L	4 601	3	203	462348	2
	Mn	55	3869.696	ug/L	61.390	1	1658	159266635	1
>	Ge	72		ug/L			1293916	1178292	0
	Ni	60	5.422	ug/L	0.139	2	46	38229	3
	Ni	62	5.531	ug/L	0 154	2	240	5915	2
	Cu	63	11.848	ug/L	0.360	3	692	191608	2
	Cu	65	12.289	ug/L	0 073	0	311	91696	0
	Zn	66	87.431	ug/L	0.874	0	4584	385752	0
	Zn	67	83.472	ug/L	1.740	2	730	62127	1
	Zn	68	85.814	ug/L	1.639	1	3468	269045	1
	As	75	2.502	ug/L	0.017	0	28	10810	0
	As-1	75	2.750	ug/L	0 052	1	18458	28289	0
	Se	82	0.258	ug/L	0.026	10	18	147	9
	Se	78	0.994	ug/L	0.149	15	18694	18177	0
	Y	89		ug/L			973453	1045071	1
	Kr	83		ug/L			355	485	5
>	In	115		ug/L			1353268	1274816	1
	Ag	107	0.079	ug/L	0 001	1	55	1903	1
	Cd	111	0.427	ug/L	0.013	3	244	2843	3
	Cd	114	0.202	ug/L	0 008	3	67	3097	2
	Sb	121	0.137	ug/L	0 002	1	194	2509	0
	Sb	123	0.138	ug/L	0.004	2	127	1923	3
	Ba	135	35.523	ug/L	0 347	0	44	174739	0
	Ba	137	35.081	ug/L	0 302	0	87	298702	0
>	Tb	159		ug/L			1500497	1452934	1
	Tl	205	0.017	ug/L	0.001	3	126	881	3
	Pb	208	37.145	ug/L	0.517	1	476	2122103	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 B SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:59:23
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

Cr only

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	71132	3
	Cl	37		ug/L			5760484	5827045	1
>	Sc	45		ug/L			1610711	1607213	0
	Cr	52	123.055	ug/L	1.616	1	38065	3593448	1
	Cr	53	123.435	ug/L	2 684	2	203	415000	1
	Mn	55	1202.320	ug/L	21 989	1	1658	49685410	2
>	Ge	72		ug/L			1293916	1257734	2
	Ni	60	5.399	ug/L	0 248	4	46	40600	2
	Ni	62	6.004	ug/L	0.366	6	240	6829	3
	Cu	63	13.829	ug/L	0 574	4	692	238538	3
	Cu	65	14.337	ug/L	0 538	3	311	114080	1
	Zn	66	13.663	ug/L	0 326	2	4584	68088	0
	Zn	67	14.319	ug/L	0 405	2	730	11960	0
	Zn	68	13.316	ug/L	0.146	1	3468	47412	2
	As	75	2.594	ug/L	0 050	1	28	11962	1
	As-1	75	2.712	ug/L	0 165	6	18458	30017	1
	Se	82	0.050	ug/L	0.022	43	18	44	25
	Se	78	0.230	ug/L	0 458	198	18694	18448	1
	Y	89		ug/L			973453	1087354	2
	Kr	83		ug/L			355	432	2
>	In	115		ug/L			1353268	1312111	1
	Ag	107	0.038	ug/L	0.001	1	55	979	2
	Cd	111	0.115	ug/L	0.009	7	244	962	6
	Cd	114	0.023	ug/L	0.002	9	67	422	8
	Sb	121	0.008	ug/L	0.001	17	194	330	6
	Sb	123	0.011	ug/L	0.000	1	127	267	1
	Ba	135	12.644	ug/L	0.325	2	44	64033	0
	Ba	137	12.571	ug/L	0 120	0	87	110225	0
>	Tb	159		ug/L			1500497	1470755	1
	Tl	205	0.016	ug/L	0 000	2	126	856	1
	Pb	208	2.779	ug/L	0 055	1	476	161132	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:03:04
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cr Pb Zn Cu

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	68671	1
	Cl	37		ug/L			5760484	5976122	1
>	Sc	45		ug/L			1610711	1610006	2
	Cr	52	197.125	ug/L	4 783	2	38065	5740916	1
	Cr	53	201.833	ug/L	4.798	2	203	679444	1
	Mn	55	6748.246	ug/L	334 076	4	1658	279064377	1
>	Ge	72		ug/L			1293916	1201313	0
	Ni	60	17.555	ug/L	0 223	1	46	126085	1
	Ni	62	19.131	ug/L	0 296	1	240	20316	1
	Cu	63	76.425	ug/L	1 504	1	692	1256702	1
	Cu	65	75.961	ug/L	0 980	1	311	576388	1
	Zn	66	1025.298	ug/L	10 859	1	4584	4566587	1
	Zn	67	897.668	ug/L	19 615	2	730	674612	2
	Zn	68	973.886	ug/L	20 279	2	3468	3079903	2
	As	75	2.773	ug/L	0.034	1	28	12211	0
	As-1	75	2.981	ug/L	0.040	1	18458	29827	0
	Se	82	0.293	ug/L	0.014	4	18	168	4
	Se	78	0.872	ug/L	0.076	8	18694	18388	0
	Y	89		ug/L			973453	1125965	0
	Kr	83		ug/L			355	512	3
>	In	115		ug/L			1353268	1264177	0
	Ag	107	0.207	ug/L	0.003	1	55	4875	2
	Cd	111	2.619	ug/L	0.025	0	244	16127	1
	Cd	114	2.327	ug/L	0.048	2	67	34695	1
	Sb	121	1.078	ug/L	0.021	1	194	18387	1
	Sb	123	1.089	ug/L	0.023	2	127	14253	1
	Ba	135	184.552	ug/L	3 007	1	44	900067	1
	Ba	137	184.288	ug/L	1 929	1	87	1555746	0
>	Tb	159		ug/L			1500497	1460838	1
	Tl	205	0.021	ug/L	0 001	2	126	1068	2
	Pb	208	196.007	ug/L	2 465	1	476	11256253	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:06:45
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

KR Cr Pb Zn Cu

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	66195	3
	Cl	37		ug/L			5760484	5685259	1
>	Sc	45		ug/L			1610711	1579506	1
	Cr	52	**265.374**	ug/L	5.330	2	38065	7571717	1
	Cr	53	**272.378**	ug/L	3 509	1	203	899756	0
	Mn	55	**7995.115**	ug/L	107 747	1	1658	324646228	0
>	Ge	72		ug/L			1293916	1199004	0
	Ni	60	**16.639**	ug/L	0 155	0	46	119281	0
	Ni	62	**18.422**	ug/L	0 109	0	240	19533	1
	Cu	63	**93.471**	ug/L	0.221	0	692	1533930	0
	Cu	65	**95.295**	ug/L	1.801	1	311	721653	2
	Zn	66	**1029.674**	ug/L	16.047	1	4584	4576836	0
	Zn	67	**892.120**	ug/L	11 663	1	730	669141	1
	Zn	68	**971.190**	ug/L	10.638	1	3468	3065465	1
	As	75	**2.826**	ug/L	0 006	0	28	12421	0
	As-1	75	**3.035**	ug/L	0 036	1	18458	29998	0
	Se	82	**0.302**	ug/L	0 005	1	18	172	0
	Se	78	**0.885**	ug/L	0 115	13	18694	18368	0
	Y	89		ug/L			973453	1078589	0
	Kr	83		ug/L			355	522	4
>	In	115		ug/L			1353268	1251514	0
	Ag	107	**0.230**	ug/L	0 009	4	55	5362	3
	Cd	111	**2.704**	ug/L	0.010	0	244	16475	0
	Cd	114	**2.370**	ug/L	0 015	0	67	34974	0
	Sb	121	**0.890**	ug/L	0 015	1	194	15063	0
	Sb	123	**0.872**	ug/L	0 007	0	127	11329	0
	Ba	135	**200.929**	ug/L	3 756	1	44	970199	1
	Ba	137	**203.404**	ug/L	3.851	1	87	1699950	1
>	Tb	159		ug/L			1500497	1440261	0
	Tl	205	**0.018**	ug/L	0.000	2	126	941	2
	Pb	208	**200.028**	ug/L	0 927	0	476	11326548	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:10:26
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cr Pb En Cu

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	66339	1
	Cl	37		ug/L			5760484	5728001	1
>	Sc	45		ug/L			1610711	1513856	2
	Cr	52	**331.052**	ug/L	7 781	2	38065	9041814	0
	Cr	53	**331.652**	ug/L	9.473	2	203	1049570	0
	Mn	55	**6703.472**	ug/L	279 263	4	1658	260727892	1
>	Ge	72		ug/L			1293916	1194135	1
	Ni	60	**58.657**	ug/L	1 577	2	46	418596	1
	Ni	62	**59.994**	ug/L	1.240	2	240	62843	1
	Cu	63	**8996.751**	ug/L	152 068	1	692	146959624	0
	Cu	65	**8833.395**	ug/L	245 490	2	311	66575550	1
	Zn	66	**1469.209**	ug/L	30.236	2	4584	6501522	0
	Zn	67	**1288.896**	ug/L	48.700	3	730	962292	2
	Zn	68	**1395.909**	ug/L	36.403	2	3468	4385824	1
	As	75	**14.464**	ug/L	0 265	1	28	63200	0
	As-1	75	**14.056**	ug/L	0 301	2	18458	76493	0
	Se	82	**25.689**	ug/L	0.646	2	18	13251	1
	Se	78	**25.552**	ug/L	0 598	2	18694	47326	0
	Y	89		ug/L			973453	1069062	1
	Kr	83		ug/L			355	537	4
>	In	115		ug/L			1353268	1221570	0
	Ag	107	**10.789**	ug/L	0 054	0	55	243138	0
	Cd	111	**12.734**	ug/L	0.040	0	244	74922	0
	Cd	114	**12.231**	ug/L	0 195	1	67	175938	1
	Sb	121	**1.802**	ug/L	0 025	1	194	29605	1
	Sb	123	**1.770**	ug/L	0 016	0	127	22320	1
	Ba	135	**157.461**	ug/L	0 769	0	44	742128	0
	Ba	137	**158.907**	ug/L	0.480	0	87	1296347	0
>	Tb	159		ug/L			1500497	1435453	1
	Tl	205	**9.164**	ug/L	0.208	2	126	414112	0
	Pb	208	**445.435**	ug/L	5 073	1	476	25135842	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:14:07
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cuzon

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	67850	3
	Cl	37		ug/L			5760484	5742738	1
>	Sc	45		ug/L			1610711	1499946	2
	Cr	52	**53.996**	ug/L	0.281	0	38065	1491407	2
	Cr	53	**53.943**	ug/L	1.140	2	203	169334	1
	Mn	55	**1819.159**	ug/L	45 677	2	1658	70142034	2
>	Ge	72		ug/L			1293916	1215321	1
	Ni	60	**4.507**	ug/L	0.075	1	46	32789	3
	Ni	62	**4.943**	ug/L	0.108	2	240	5476	1
	Cu	63	**20.233**	ug/L	0.192	0	692	337088	2
	Cu	65	**20.318**	ug/L	0.432	2	311	156149	0
	Zn	66	**277.113**	ug/L	4.346	1	4584	1251616	1
	Zn	67	**244.220**	ug/L	4.065	1	730	186146	0
	Zn	68	**273.337**	ug/L	8.570	3	3468	876711	2
	As	75	**0.708**	ug/L	0.007	0	28	3173	1
	As-1	75	**0.870**	ug/L	0.070	8	18458	21081	0
	Se	82	**0.072**	ug/L	0.013	18	18	54	12
	Se	78	**0.611**	ug/L	0.252	41	18694	18287	0
	Y	89		ug/L			973453	981144	0
	Kr	83		ug/L			355	380	4
>	In	115		ug/L			1353268	1291493	0
	Ag	107	**0.053**	ug/L	0.003	6	55	1314	6
	Cd	111	**0.681**	ug/L	0.007	1	244	4456	0
	Cd	114	**0.603**	ug/L	0.013	2	67	9231	2
	Sb	121	**0.281**	ug/L	0.004	1	194	5030	1
	Sb	123	**0.281**	ug/L	0 004	1	127	3847	1
	Ba	135	**45.012**	ug/L	0.871	1	44	224306	1
	Ba	137	**45.486**	ug/L	0.736	1	87	392356	1
>	Tb	159		ug/L			1500497	1413868	1
	Tl	205	**0.007**	ug/L	0.001	15	126	435	11
	Pb	208	**50.273**	ug/L	0.707	1	476	2794526	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:17:49
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File C:\NexION Data\System\052815c.cal

RR Cu Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	64327	1
	Cl	37		ug/L			5760484	5692425	3
>	Sc	45		ug/L			1610711	1506982	2
	Cr	52	71.974	ug/L	1 278	1	38065	1984788	1
	Cr	53	71.480	ug/L	3.567	4	203	225259	2
	Mn	55	2126.225	ug/L	98.485	4	1658	82306523	1
>	Ge	72		ug/L			1293916	1226736	0
	Ni	60	4.278	ug/L	0 086	2	46	31413	2
	Ni	62	4.610	ug/L	0 058	1	240	5172	1
	Cu	63	24.546	ug/L	0 249	1	692	412611	1
	Cu	65	24.603	ug/L	0 191	0	311	190839	1
	Zn	66	270.387	ug/L	0.825	0	4584	1232973	0
	Zn	67	240.507	ug/L	3 453	1	730	185082	1
	Zn	68	264.489	ug/L	1 621	0	3468	856540	0
	As	75	0.710	ug/L	0 009	1	28	3214	1
	As-1	75	0.812	ug/L	0 022	2	18458	21027	0
	Se	82	0.062	ug/L	0 016	26	18	49	17
	Se	78	0.375	ug/L	0 062	16	18694	18177	0
	Y	89		ug/L			973453	970700	0
	Kr	83		ug/L			355	377	3
>	In	115		ug/L			1353268	1289455	1
	Ag	107	0.058	ug/L	0 001	2	55	1441	3
	Cd	111	0.721	ug/L	0.003	0	244	4695	1
	Cd	114	0.614	ug/L	0 010	1	67	9385	1
	Sb	121	0.222	ug/L	0 006	2	194	4011	1
	Sb	123	0.225	ug/L	0.007	3	127	3106	1
	Ba	135	49.240	ug/L	0 166	0	44	244995	1
	Ba	137	49.493	ug/L	0.446	0	87	426220	0
>	Tb	159		ug/L			1500497	1433180	0
	Tl	205	0.004	ug/L	0.001	16	126	316	9
	Pb	208	50.466	ug/L	0.661	1	476	2843798	0

AGA8 - 81281

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:21:30
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cu Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	66258	6
	Cl	37		ug/L			5760484	5657283	1
>	Sc	45		ug/L			1610711	1505178	1
	Cr	52	84.310	ug/L	1 234	1	38065	2316889	1
	Cr	53	84.913	ug/L	0 716	0	203	267431	0
	Mn	55	1713.644	ug/L	10.657	0	1658	66315321	1
>	Ge	72		ug/L			1293916	1220372	1
	Ni	60	15.307	ug/L	0.210	1	46	111681	0
	Ni	62	15.157	ug/L	0.484	3	240	16394	2
	Cu	63	2328.032	ug/L	56 225	2	692	38860831	0
	Cu	65	2338.115	ug/L	21 446	0	311	18012720	0
	Zn	66	389.249	ug/L	14.446	3	4584	1763223	2
	Zn	67	349.263	ug/L	6.567	1	730	267048	1
	Zn	68	379.977	ug/L	12 077	3	3468	1222347	1
	As	75	3.726	ug/L	0.054	1	28	16657	0
	As-1	75	3.690	ug/L	0.091	2	18458	33359	0
	Se	82	6.826	ug/L	0.211	3	18	3610	1
	Se	78	7.054	ug/L	0.368	5	18694	26114	0
	Y	89		ug/L			973453	943723	2
	Kr	83		ug/L			355	378	3
>	In	115		ug/L			1353268	1264603	0
	Ag	107	2.738	ug/L	0.064	2	55	63905	2
	Cd	111	3.293	ug/L	0.072	2	244	20229	2
	Cd	114	3.171	ug/L	0 104	3	67	47259	2
	Sb	121	0.459	ug/L	0 011	2	194	7945	1
	Sb	123	0.465	ug/L	0 002	0	127	6163	0
	Ba	135	39.684	ug/L	0.663	1	44	193637	1
	Ba	137	39.547	ug/L	0 321	0	87	334036	0
>	Tb	159		ug/L			1500497	1435212	0
	Tl	205	2.399	ug/L	0 005	0	126	108489	0
	Pb	208	115.124	ug/L	0.609	0	476	6496206	0

AGA8 - 81282

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:25:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

De 1

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	66625	1
	Cl	37		ug/L			5760484	5536728	2
>	Sc	45		ug/L			1610711	1599097	2
	Cr	52	740.122	ug/L	20.515	2	38065	21302813	0
	Cr	53	747.808	ug/L	10.470	1	203	2500578	2
	Mn	55	15135.968	ug/L	596 640	3	1658	621799085	0
>	Ge	72		ug/L			1293916	1103857	0
	Ni	60	146.029	ug/L	1 095	0	46	963477	0
	Ni	62	147.404	ug/L	5 631	3	240	142424	2
	Cu	63	21571.073	ug/L	428 979	1	692	325732128	1
	Cu	65	21446.106	ug/L	270 143	1	311	149445710	0
	Zn	66	3380.598	ug/L	32.846	0	4584	13827076	1
	Zn	67	2966.912	ug/L	36.298	1	730	2047550	2
	Zn	68	3170.803	ug/L	44 121	1	3468	9207182	1
	As	75	34.037	ug/L	0.653	1	28	137456	1
	As-1	75	33.216	ug/L	0 814	2	18458	145635	1
	Se	82	57.462	ug/L	0 578	1	18	27384	0
	Se	78	57.455	ug/L	1.071	1	18694	78466	0
	Y	89		ug/L			973453	1214689	0
	Kr	83		ug/L			355	969	2
>	In	115		ug/L			1353268	1106296	0
	Ag	107	26.335	ug/L	0 178	0	55	537405	0
	Cd	111	29.498	ug/L	0 447	1	244	156900	0
	Cd	114	28.055	ug/L	0.078	0	67	365404	0
	Sb	121	4.114	ug/L	0.028	0	194	60994	0
	Sb	123	3.995	ug/L	0.064	1	127	45503	1
	Ba	135	383.040	ug/L	9 336	2	44	1634693	1
	Ba	137	394.764	ug/L	5 913	1	87	2916289	1
>	Tb	159		ug/L			1500497	1384552	1
	Tl	205	21.286	ug/L	0.251	1	126	927711	0
	Pb	208	1036.827	ug/L	9.754	0	476	56434500	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:28:52
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

As only

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67898	67299	4
	Cl	37		ug/L			5760484	5547476	3
>	Sc	45		ug/L			1610711	1490729	0
	Cr	52	26.097	ug/L	0.702	2	38065	734666	3
	Cr	53	25.955	ug/L	0.406	1	203	81094	1
	Mn	55	26.912	ug/L	0.401	1	1658	1032955	1
>	Ge	72		ug/L			1293916	1228164	1
	Ni	60	25.090	ug/L	0.528	2	46	184185	0
	Ni	62	24.997	ug/L	0.598	2	240	27069	3
	Cu	63	25.764	ug/L	1.230	4	692	433350	3
	Cu	65	26.661	ug/L	1.053	3	311	206936	2
	Zn	66	81.272	ug/L	1.074	1	4584	374054	1
	Zn	67	73.553	ug/L	0.406	0	730	57151	2
	Zn	68	80.111	ug/L	1.278	1	3468	262010	1
	As	75	29.531	ug/L	0 466	1	28	132691	1
	As-1	75	27.675	ug/L	0 502	1	18458	137925	0
	Se	82	77.798	ug/L	1.161	1	18	41241	1
	Se	78	76.389	ug/L	1 334	1	18694	110218	0
	Y	89		ug/L			973453	924996	0
	Kr	83		ug/L			355	328	2
>	In	115		ug/L			1353268	1304889	0
	Ag	107	24.769	ug/L	0.556	2	55	596174	2
	Cd	111	24.379	ug/L	0.388	1	244	152994	1
	Cd	114	24.458	ug/L	0 388	1	67	375728	1
	Sb	121	-0.005	ug/L	0.001	11	194	96	10
	Sb	123	-0.003	ug/L	0.000	9	127	86	3
	Ba	135	24.716	ug/L	0.422	1	44	124465	1
	Ba	137	24.585	ug/L	0.532	2	87	214297	1
>	Tb	159		ug/L			1500497	1434839	1
	Tl	205	24.312	ug/L	0.166	0	126	1098066	1
	Pb	208	24.897	ug/L	0 308	1	476	1404729	0

AGA8 : 052815

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV10
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:33:38
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	64824	0
	Cl	37		ug/L			5760484	5548876	3
>	Sc	45		ug/L			1610711	1481592	2
	Cr	52	50.959	ug/L	0.892	1	38065	1392173	2
	Cr	53	51.444	ug/L	1.760	3	203	159487	1
	Mn	55	51.648	ug/L	0.658	1	1658	1968528	1
>	Ge	72		ug/L			1293916	1197000	2
	Ni	60	49.244	ug/L	1.164	2	46	352231	0
	Ni	62	49.088	ug/L	1.316	2	240	51573	1
	Cu	63	49.406	ug/L	1.505	3	692	809404	1
	Cu	65	50.331	ug/L	2.495	4	311	380358	2
	Zn	66	49.754	ug/L	2.059	4	4584	224717	2
	Zn	67	50.841	ug/L	1.095	2	730	38696	0
	Zn	68	51.250	ug/L	1.297	2	3468	164506	2
	As	75	50.209	ug/L	1.172	2	28	219817	0
	As-1	75	50.321	ug/L	1.497	2	18458	230396	0
	Se	82	50.162	ug/L	0.968	1	18	25918	0
	Se	78	50.331	ug/L	2.126	4	18694	76651	1
	Y	89		ug/L			973453	903746	2
	Kr	83		ug/L			355	358	5
>	In	115		ug/L			1353268	1254566	0
	Ag	107	48.859	ug/L	1.110	2	55	1130523	1
	Cd	111	49.513	ug/L	0.327	0	244	298528	1
	Cd	114	49.770	ug/L	0.196	0	67	735047	0
	Sb	121	50.717	ug/L	0.298	0	194	850611	0
	Sb	123	50.228	ug/L	0 387	0	127	647403	1
	Ba	135	49.819	ug/L	0 512	1	44	241159	0
	Ba	137	50.862	ug/L	0 460	0	87	426181	0
>	Tb	159		ug/L			1500497	1394029	0
	Tl	205	50.607	ug/L	0 107	0	126	2220710	0
	Pb	208	49.231	ug/L	0 146	0	476	2698605	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB10
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:40:05
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	63870	2
	Cl	37		ug/L			5760484	5335827	1
>	Sc	45		ug/L			1610711	1468227	3
	Cr	52	0.001	ug/L	0.060	4209	38065	34708	2
	Cr	53	0.001	ug/L	0 001	109	203	188	1
	Mn	55	-0.005	ug/L	0.001	18	1658	1309	0
>	Ge	72		ug/L			1293916	1182778	0
	Ni	60	-0.000	ug/L	0.000	116	46	39	7
	Ni	62	-0.034	ug/L	0.018	53	240	184	10
	Cu	63	-0.006	ug/L	0.002	35	692	539	6
	Cu	65	-0.006	ug/L	0 002	28	311	239	5
	Zn	66	-0.143	ug/L	0 015	10	4584	3563	1
	Zn	67	-0.168	ug/L	0.044	26	730	543	6
	Zn	68	-0.164	ug/L	0 002	1	3468	2659	0
	As	75	-0.006	ug/L	0 008	138	28	0	9544350
	As-1	75	0.116	ug/L	0 044	37	18458	17357	0
	Se	82	0.009	ug/L	0 025	289	18	20	60
	Se	78	0.444	ug/L	0.148	33	18694	17606	0
	Y	89		ug/L			973453	895952	1
	Kr	83		ug/L			355	322	7
>	In	115		ug/L			1353268	1266327	0
	Ag	107	0.001	ug/L	0 002	161	55	76	53
	Cd	111	0.006	ug/L	0 001	18	244	263	2
	Cd	114	0.000	ug/L	0 001	11279	67	63	31
	Sb	121	0.021	ug/L	0.003	15	194	541	10
	Sb	123	0.023	ug/L	0.004	15	127	421	11
	Ba	135	-0.001	ug/L	0.001	80	44	37	9
	Ba	137	-0.003	ug/L	0.001	36	87	59	14
>	Tb	159		ug/L			1500497	1407458	0
	Tl	205	0.005	ug/L	0 000	9	126	336	6
	Pb	208	-0.003	ug/L	0.001	25	476	280	15

AGAR 91295

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB1 SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:54:44
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	73235	2
	Cl	37		ug/L			5760484	5292414	4
>	Sc	45		ug/L			1610711	1495862	3
	Cr	52	0.056	ug/L	0 056	100	38065	36818	0
	Cr	53	0.008	ug/L	0.000	1	203	212	3
	Mn	55	0.006	ug/L	0 003	46	1658	1782	2
>	Ge	72		ug/L			1293916	1193077	2
	Ni	60	0.006	ug/L	0.000	7	46	87	6
	Ni	62	-0.036	ug/L	0 019	54	240	184	13
	Cu	63	0.007	ug/L	0.002	30	692	746	3
	Cu	65	0.004	ug/L	0.000	12	311	316	2
	Zn	66	0.751	ug/L	0 086	11	4584	7542	2
	Zn	67	0.646	ug/L	0.043	6	730	1154	0
	Zn	68	0.693	ug/L	0 058	8	3468	5367	1
	As	75	-0.003	ug/L	0.010	311	28	10	417
	As-1	75	0.163	ug/L	0 076	46	18458	17704	0
	Se	82	0.023	ug/L	0 016	72	18	28	27
	Se	78	0.611	ug/L	0 256	41	18694	17951	0
	Y	89		ug/L			973453	907725	3
	Kr	83		ug/L			355	312	0
>	In	115		ug/L			1353268	1263612	2
	Ag	107	0.001	ug/L	0.001	67	55	69	15
	Cd	111	0.007	ug/L	0.004	59	244	270	8
	Cd	114	-0.001	ug/L	0.000	44	67	51	8
	Sb	121	-0.001	ug/L	0 001	117	194	160	15
	Sb	123	0.001	ug/L	0 001	155	127	131	13
	Ba	135	0.005	ug/L	0.002	44	44	65	17
	Ba	137	0.005	ug/L	0.001	15	87	127	5
>	Tb	159		ug/L			1500497	1423748	2
	Tl	205	0.000	ug/L	0.000	971	126	121	5
	Pb	208	0.003	ug/L	0.001	30	476	604	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 J REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:59:31
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	73094	0
	Cl	37		ug/L			5760484	5313966	2
>	Sc	45		ug/L			1610711	1551028	0
	Cr	52	0.089	ug/L	0 050	56	38065	39117	3
	Cr	53	0.080	ug/L	0 010	12	203	454	6
	Mn	55	0.104	ug/L	0 049	46	1658	5755	33
>	Ge	72		ug/L			1293916	1216994	1
	Ni	60	0.026	ug/L	0 001	4	46	230	4
	Ni	62	-0.019	ug/L	0.008	42	240	206	5
	Cu	63	0.131	ug/L	0 044	33	692	2838	27
	Cu	65	0.118	ug/L	0.033	27	311	1199	22
	Zn	66	3.677	ug/L	0 167	4	4584	20886	3
	Zn	67	3.165	ug/L	0 182	5	730	3092	3
	Zn	68	3.569	ug/L	0.214	5	3468	14681	4
	As	75	0.075	ug/L	0 004	5	28	358	4
	As-1	75	0.147	ug/L	0 090	61	18458	17990	1
	Se	82	0.279	ug/L	0.009	3	18	163	1
	Se	78	0.549	ug/L	0.310	56	18694	18238	1
	Y	89		ug/L			973453	939672	0
	Kr	83		ug/L			355	317	5
>	In	115		ug/L			1353268	1312332	0
	Ag	107	0.002	ug/L	0 001	50	55	104	24
	Cd	111	0.016	ug/L	0.005	28	244	338	8
	Cd	114	0.007	ug/L	0.003	39	67	170	24
	Sb	121	-0.001	ug/L	0 002	207	194	176	14
	Sb	123	0.001	ug/L	0 001	135	127	132	9
	Ba	135	0.033	ug/L	0 003	9	44	210	6
	Ba	137	0.035	ug/L	0.006	16	87	390	12
>	Tb	159		ug/L			1500497	1467281	0
	Tl	205	0.001	ug/L	0.001	60	126	167	15
	Pb	208	0.020	ug/L	0 005	25	476	1622	17

AGA8 · 61388

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 D SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:03:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

Cr Zn

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	65080	3
	Cl	37		ug/L			5760484	5560408	1
>	Sc	45		ug/L			1610711	1500827	1
	Cr	52	200.784	ug/L	3.992	1	38065	5451535	0
	Cr	53	204.694	ug/L	3.527	1	203	642581	2
	Mn	55	4319.746	ug/L	137.433	3	1658	166635799	2
>	Ge	72		ug/L			1293916	1118685	1
	Ni	60	22.994	ug/L	0.570	2	46	153746	0
	Ni	62	23.775	ug/L	0.635	2	240	23457	2
	Cu	63	59.998	ug/L	0.857	1	692	918721	0
	Cu	65	58.541	ug/L	0.771	1	311	413669	1
	Zn	66	264.926	ug/L	7.288	2	4584	1101393	1
	Zn	67	241.791	ug/L	3.758	1	730	169646	0
	Zn	68	258.936	ug/L	4.957	1	3468	764598	0
	As	75	9.181	ug/L	0.092	1	28	37594	0
	As-1	75	9.703	ug/L	0.157	1	18458	54410	0
	Se	82	0.237	ug/L	0.030	12	18	129	9
	Se	78	1.183	ug/L	0.252	21	18694	17464	0
	Y	89		ug/L			973453	1012199	1
	Kr	83		ug/L			355	477	2
>	In	115		ug/L			1353268	1213535	1
	Ag	107	0.119	ug/L	0.003	2	55	2721	2
	Cd	111	1.057	ug/L	0.027	2	244	6379	2
	Cd	114	0.763	ug/L	0.017	2	67	10966	3
	Sb	121	0.426	ug/L	0.014	3	194	7090	1
	Sb	123	0.424	ug/L	0.017	3	127	5392	2
	Ba	135	95.352	ug/L	1.730	1	44	446390	0
	Ba	137	95.654	ug/L	1.498	1	87	775137	0
>	Tb	159		ug/L			1500497	1403748	1
	Tl	205	0.021	ug/L	0 000	1	126	1029	2
	Pb	208	90.502	ug/L	0.967	1	476	4994650	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:18:23
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	65550	2
	Cl	37		ug/L			5760484	5595088	1
>	Sc	45		ug/L			1610711	1421156	3
	Cr	52	21.826	ug/L	0 420	1	38065	590935	2
	Cr	53	21.915	ug/L	0 626	2	203	65259	0
	Mn	55	742.372	ug/L	16.757	2	1658	27110878	1
>	Ge	72		ug/L			1293916	1165248	2
	Ni	60	1.797	ug/L	0.056	3	46	12552	3
	Ni	62	2.053	ug/L	0.039	1	240	2307	1
	Cu	63	8.105	ug/L	0.308	3	692	129751	1
	Cu	65	8.301	ug/L	0.174	2	311	61320	0
	Zn	66	109.498	ug/L	2 424	2	4584	476561	0
	Zn	67	97.677	ug/L	2.970	3	730	71768	2
	Zn	68	107.973	ug/L	3.404	3	3468	333809	0
	As	75	0.284	ug/L	0 005	1	28	1234	0
	As-1	75	0.518	ug/L	0.151	29	18458	18750	0
	Se	82	0.036	ug/L	0 012	34	18	34	20
	Se	78	0.855	ug/L	0.516	60	18694	17807	0
	Y	89		ug/L			973453	904382	0
	Kr	83		ug/L			355	334	1
>	In	115		ug/L			1353268	1268576	0
	Ag	107	0.020	ug/L	0 001	4	55	522	4
	Cd	111	0.279	ug/L	0 013	4	244	1926	4
	Cd	114	0.239	ug/L	0.005	2	67	3632	1
	Sb	121	0.107	ug/L	0 001	0	194	1992	0
	Sb	123	0.108	ug/L	0 004	3	127	1530	2
	Ba	135	18.080	ug/L	0.104	0	44	88527	0
	Ba	137	18.196	ug/L	0 153	0	87	154225	0
>	Tb	159		ug/L			1500497	1418364	0
	Tl	205	0.001	ug/L	0 000	24	126	165	6
	Pb	208	19.840	ug/L	0.120	0	476	1106745	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:22:04
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	65545	3
	Cl	37		ug/L			5760484	5534209	1
>	Sc	45		ug/L			1610711	1435645	2
	Cr	52	28.365	ug/L	0.666	2	38065	765754	1
	Cr	53	28.573	ug/L	0 662	2	203	85927	0
	Mn	55	849.477	ug/L	16 988	1	1658	31346244	0
>	Ge	72		ug/L			1293916	1170706	0
	Ni	60	1.764	ug/L	0.019	1	46	12384	1
	Ni	62	1.892	ug/L	0.043	2	240	2153	1
	Cu	63	9.944	ug/L	0 152	1	692	159891	1
	Cu	65	10.041	ug/L	0 210	2	311	74491	1
	Zn	66	108.982	ug/L	1 319	1	4584	476723	0
	Zn	67	97.547	ug/L	2 767	2	730	72025	2
	Zn	68	106.052	ug/L	1.731	1	3468	329646	1
	As	75	0.291	ug/L	0 004	1	28	1271	1
	As-1	75	0.463	ug/L	0 040	8	18458	18619	0
	Se	82	0.044	ug/L	0 017	37	18	38	21
	Se	78	0.629	ug/L	0 148	23	18694	17639	0
	Y	89		ug/L			973453	920197	1
	Kr	83		ug/L			355	320	4
>	In	115		ug/L			1353268	1255295	1
	Ag	107	0.022	ug/L	0.001	2	55	560	1
	Cd	111	0.288	ug/L	0 013	4	244	1960	3
	Cd	114	0.245	ug/L	0 008	3	67	3683	2
	Sb	121	0.085	ug/L	0 002	2	194	1611	3
	Sb	123	0.084	ug/L	0 001	1	127	1198	2
	Ba	135	19.827	ug/L	0.195	0	44	96054	0
	Ba	137	19.955	ug/L	0 355	1	87	167333	0
>	Tb	159		ug/L			1500497	1403804	1
	Tl	205	0.001	ug/L	0 000	38	126	153	9
	Pb	208	20.122	ug/L	0 096	0	476	1110963	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:25:45
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	63469	1
	Cl	37		ug/L			5760484	5651419	3
>	Sc	45		ug/L			1610711	1442414	2
	Cr	52	**33.329**	ug/L	0.696	2	38065	898267	2
	Cr	53	**33.373**	ug/L	0.951	2	203	100801	0
	Mn	55	**678.579**	ug/L	16 993	2	1658	25160156	1
>	Ge	72		ug/L			1293916	1181518	1
	Ni	60	**5.957**	ug/L	0.094	1	46	42105	0
	Ni	62	**6.230**	ug/L	0.081	1	240	6654	2
	Cu	63	**916.954**	ug/L	20.959	2	692	14819684	1
	Cu	65	**942.371**	ug/L	5.150	0	311	7029183	1
	Zn	66	**159.388**	ug/L	5.487	3	4584	701470	1
	Zn	67	**139.960**	ug/L	4.867	3	730	104007	3
	Zn	68	**156.104**	ug/L	4.971	3	3468	488055	2
	As	75	**1.479**	ug/L	0.012	0	28	6418	1
	As-1	75	**1.542**	ug/L	0.053	3	18458	23306	0
	Se	82	**2.771**	ug/L	0.032	1	18	1429	0
	Se	78	**3.128**	ug/L	0.212	6	18694	20710	0
	Y	89		ug/L			973453	915857	0
	Kr	83		ug/L			355	317	6
>	In	115		ug/L			1353268	1251699	1
	Ag	107	**1.092**	ug/L	0.018	1	55	25262	0
	Cd	111	**1.312**	ug/L	0.044	3	244	8105	1
	Cd	114	**1.282**	ug/L	0.039	3	67	18946	1
	Sb	121	**0.182**	ug/L	0.003	1	194	3217	0
	Sb	123	**0.182**	ug/L	0.007	3	127	2457	1
	Ba	135	**15.838**	ug/L	0.274	1	44	76514	1
	Ba	137	**15.894**	ug/L	0.173	1	87	132915	0
>	Tb	159		ug/L			1500497	1390626	0
	Tl	205	**0.982**	ug/L	0.007	0	126	43105	0
	Pb	208	**46.501**	ug/L	0.664	1	476	2542742	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 2000
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:29:27
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	64764	0
	Cl	37		ug/L			5760484	5430477	2
>	Sc	45		ug/L			1610711	1436303	2
	Cr	52	8.279	ug/L	0.112	1	38065	247663	0
	Cr	53	8.443	ug/L	0 208	2	203	25532	1
	Mn	55	171.501	ug/L	5 630	3	1658	6331576	1
>	Ge	72		ug/L			1293916	1194198	0
	Ni	60	1.525	ug/L	0.015	0	46	10929	1
	Ni	62	1.492	ug/L	0.027	1	240	1779	1
	Cu	63	237.596	ug/L	4.165	1	692	3882417	1
	Cu	65	238.272	ug/L	5 090	2	311	1796709	2
	Zn	66	40.349	ug/L	0.970	2	4584	182717	2
	Zn	67	35.635	ug/L	0.441	1	730	27268	1
	Zn	68	39.073	ug/L	0 607	1	3468	125906	1
	As	75	0.369	ug/L	0 014	3	28	1637	3
	As-1	75	0.420	ug/L	0.023	5	18458	18812	0
	Se	82	0.686	ug/L	0 015	2	18	370	1
	Se	78	0.902	ug/L	0.081	8	18694	18315	0
	Y	89		ug/L			973453	901904	0
	Kr	83		ug/L			355	327	6
>	In	115		ug/L			1353268	1262578	0
	Ag	107	0.270	ug/L	0 004	1	55	6340	1
	Cd	111	0.339	ug/L	0.017	5	244	2282	3
	Cd	114	0.313	ug/L	0 005	1	67	4711	0
	Sb	121	0.038	ug/L	0 001	3	194	827	2
	Sb	123	0.041	ug/L	0.002	5	127	646	5
	Ba	135	3.893	ug/L	0 028	0	44	19006	1
	Ba	137	3.898	ug/L	0 059	1	87	32942	0
>	Tb	159		ug/L			1500497	1418274	1
	Tl	205	0.241	ug/L	0 002	1	126	10887	1
	Pb	208	11.367	ug/L	0.165	1	476	634180	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 A SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:33:08
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	73718	3
	Cl	37		ug/L			5760484	5481657	0
>	Sc	45		ug/L			1610711	1565369	0
	Cr	52	111.848	ug/L	0.713	0	38065	3184345	0
	Cr	53	113.325	ug/L	1 278	1	203	371123	0
	Mn	55	603.248	ug/L	24 402	4	1658	24273133	3
>	Ge	72		ug/L			1293916	1166636	2
	Ni	60	261.445	ug/L	10 224	3	46	1822124	1
	Ni	62	257.286	ug/L	6.193	2	240	262565	1
	Cu	63	146.840	ug/L	5 259	3	692	2343251	1
	Cu	65	143.519	ug/L	4.829	3	311	1056868	1
	Zn	66	101.681	ug/L	1.504	1	4584	443461	1
	Zn	67	95.392	ug/L	0.716	0	730	70201	1
	Zn	68	99.672	ug/L	1.094	1	3468	308888	1
	As	75	12.052	ug/L	0 275	2	28	51446	0
	As-1	75	12.482	ug/L	0.345	2	18458	68217	0
	Se	82	0.104	ug/L	0 018	17	18	68	12
	Se	78	0.352	ug/L	0.231	65	18694	17257	0
	Y	89		ug/L			973453	1136690	0
	Kr	83		ug/L			355	465	3
>	In	115		ug/L			1353268	1222040	1
	Ag	107	0.068	ug/L	0.004	6	55	1575	7
	Cd	111	0.376	ug/L	0 007	1	244	2425	2
	Cd	114	0.229	ug/L	0 006	2	67	3361	1
	Sb	121	0.328	ug/L	0 006	1	194	5534	0
	Sb	123	0.324	ug/L	0.005	1	127	4183	0
	Ba	135	36.585	ug/L	0 342	0	44	172524	1
	Ba	137	36.826	ug/L	0.568	1	87	300563	0
>	Tb	159		ug/L			1500497	1427412	0
	Tl	205	0.028	ug/L	0 000	1	126	1384	1
	Pb	208	57.945	ug/L	0.660	1	476	3252122	0

AGA9 · 01214

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 B SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:36:49
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c cal

RR: Cr, Zn, Pb

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	83886	1
	Cl	37		ug/L			5760484	5835834	1
>	Sc	45		ug/L			1610711	1450259	1
	Cr	52	597.612	ug/L	11 512	1	38065	15612318	1
	Cr	53	604.097	ug/L	12 973	2	203	1831773	0
	Mn	55	3931.876	ug/L	84 875	2	1658	146573723	0
>	Ge	72		ug/L			1293916	1074520	0
	Ni	60	361.847	ug/L	7 969	2	46	2323663	1
	Ni	62	352.083	ug/L	1.853	0	240	330947	1
	Cu	63	198.892	ug/L	1 859	0	692	2924324	0
	Cu	65	198.488	ug/L	3 018	1	311	1346618	0
	Zn	66	458.828	ug/L	2.522	0	4584	1829952	0
	Zn	67	401.773	ug/L	3 261	0	730	270404	0
	Zn	68	434.839	ug/L	9 433	2	3468	1231583	2
	As	75	17.517	ug/L	0 220	1	28	68875	0
	As-1	75	18.251	ug/L	0 281	1	18458	84804	0
	Se	82	0.165	ug/L	0.017	10	18	91	8
	Se	78	0.848	ug/L	0 193	22	18694	16421	0
	Y	89		ug/L			973453	967968	2
	Kr	83		ug/L			355	398	4
>	In	115		ug/L			1353268	1135881	1
	Ag	107	0.539	ug/L	0 012	2	55	11337	1
	Cd	111	4.157	ug/L	0 054	1	244	22879	0
	Cd	114	4.076	ug/L	0 079	1	67	54547	0
	Sb	121	0.388	ug/L	0.003	0	194	6059	1
	Sb	123	0.374	ug/L	0.002	0	127	4468	1
	Ba	135	61.583	ug/L	1.307	2	44	269868	1
	Ba	137	62.205	ug/L	0.840	1	87	471862	0
>	Tb	159		ug/L			1500497	1379450	0
	Tl	205	0.048	ug/L	0.001	1	126	2211	0
	Pb	208	491.629	ug/L	4 189	0	476	26661452	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:40:30
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	68025	4
	Cl	37		ug/L			5760484	5513258	3
>	Sc	45		ug/L			1610711	1408547	0
	Cr	52	26.084	ug/L	0 390	1	38065	693792	1
	Cr	53	26.557	ug/L	0 177	0	203	78400	0
	Mn	55	26.815	ug/L	0 446	1	1658	972486	1
>	Ge	72		ug/L			1293916	1163507	0
	Ni	60	25.778	ug/L	0.592	2	46	179318	2
	Ni	62	25.180	ug/L	0 222	0	240	25827	0
	Cu	63	25.501	ug/L	0 555	2	692	406519	1
	Cu	65	25.889	ug/L	0 504	1	311	190441	1
	Zn	66	81.145	ug/L	1.501	1	4584	353843	2
	Zn	67	74.409	ug/L	0.310	0	730	54763	1
	Zn	68	80.518	ug/L	1 120	1	3468	249497	2
	As	75	29.874	ug/L	0 263	0	28	127187	1
	As-1	75	28.118	ug/L	0.128	0	18458	132512	1
	Se	82	77.657	ug/L	0 644	0	18	39004	1
	Se	78	76.553	ug/L	0 509	0	18694	104617	0
	Y	89		ug/L			973453	877341	2
	Kr	83		ug/L			355	315	5
>	In	115		ug/L			1353268	1265735	1
	Ag	107	25.037	ug/L	0 303	1	55	584524	0
	Cd	111	24.555	ug/L	0 817	3	244	149446	2
	Cd	114	24.451	ug/L	0.491	2	67	364316	1
	Sb	121	-0.007	ug/L	0.001	13	194	57	28
	Sb	123	-0.006	ug/L	0.000	4	127	46	7
	Ba	135	25.335	ug/L	0.722	2	44	123731	1
	Ba	137	25.443	ug/L	0.360	1	87	215117	0
>	Tb	159		ug/L			1500497	1433008	1
	Tl	205	24.252	ug/L	0.227	0	126	1093944	0
	Pb	208	24.744	ug/L	0.255	1	476	1394393	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV11
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:45:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	62679	3
	Cl	37		ug/L			5760484	5245754	2
>	Sc	45		ug/L			1610711	1369281	1
	Cr	52	52.810	ug/L	1.504	2	38065	1332058	1
	Cr	53	52.584	ug/L	1.735	3	203	150695	2
	Mn	55	52.730	ug/L	2.333	4	1658	1857003	3
>	Ge	72		ug/L			1293916	1132193	0
	Ni	60	49.711	ug/L	0.766	1	46	336444	1
	Ni	62	50.119	ug/L	1.114	2	240	49817	2
	Cu	63	49.548	ug/L	0.716	1	692	768085	1
	Cu	65	50.249	ug/L	1.221	2	311	359394	1
	Zn	66	51.044	ug/L	0.698	1	4584	218091	2
	Zn	67	51.703	ug/L	1.158	2	730	37218	1
	Zn	68	51.576	ug/L	0.648	1	3468	156589	0
	As	75	50.253	ug/L	1.137	2	28	208144	1
	As-1	75	50.530	ug/L	0.977	1	18458	218828	1
	Se	82	49.981	ug/L	0.709	1	18	24431	0
	Se	78	50.706	ug/L	0 303	0	18694	72953	0
	Y	89		ug/L			973453	863804	0
	Kr	83		ug/L			355	323	5
>	In	115		ug/L			1353268	1213883	0
	Ag	107	48.644	ug/L	0.315	0	55	1089186	0
	Cd	111	50.201	ug/L	0 735	1	244	292843	1
	Cd	114	50.326	ug/L	0.946	1	67	719146	1
	Sb	121	50.683	ug/L	0 439	0	194	822477	0
	Sb	123	49.994	ug/L	0.465	0	127	623475	0
	Ba	135	51.256	ug/L	0.952	1	44	240068	1
	Ba	137	51.108	ug/L	0 454	0	87	414358	0
>	Tb	159		ug/L			1500497	1378900	0
	Tl	205	50.433	ug/L	0 440	0	126	2189116	1
	Pb	208	49.092	ug/L	0 306	0	476	2661763	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB11
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:51:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67898	61408	2
	Cl	37		ug/L			5760484	5054537	0
>	Sc	45		ug/L			1610711	1411314	1
	Cr	52	-0.021	ug/L	0.014	68	38065	32830	2
	Cr	53	-0.001	ug/L	0.004	342	203	174	6
	Mn	55	-0.008	ug/L	0.001	16	1658	1154	4
>	Ge	72		ug/L			1293916	1137541	1
	Ni	60	-0.000	ug/L	0.001	378	46	38	21
	Ni	62	-0.024	ug/L	0.011	46	240	187	4
	Cu	63	0.000	ug/L	0.004	1499	692	612	9
	Cu	65	-0.001	ug/L	0.001	135	311	267	1
	Zn	66	0.025	ug/L	0.019	78	4584	4134	1
	Zn	67	-0.043	ug/L	0.028	64	730	611	3
	Zn	68	-0.016	ug/L	0.030	187	3468	3000	1
	As	75	-0.001	ug/L	0.008	573	28	19	164
	As-1	75	0.180	ug/L	0.080	44	18458	16949	0
	Se	82	0.023	ug/L	0.011	49	18	27	22
	Se	78	0.663	ug/L	0.260	39	18694	17175	0
	Y	89		ug/L			973453	852790	2
	Kr	83		ug/L			355	296	4
>	In	115		ug/L			1353268	1230891	0
	Ag	107	0.001	ug/L	0.000	28	55	69	8
	Cd	111	0.003	ug/L	0.002	74	244	237	5
	Cd	114	0.000	ug/L	0.000	1008	67	62	10
	Sb	121	0.023	ug/L	0.002	8	194	556	5
	Sb	123	0.023	ug/L	0.003	13	127	402	9
	Ba	135	-0.003	ug/L	0.001	31	44	27	14
	Ba	137	-0.003	ug/L	0 001	28	87	53	13
>	Tb	159		ug/L			1500497	1383105	0
	Tl	205	0.003	ug/L	0 000	12	126	263	6
	Pb	208	-0.001	ug/L	0 001	104	476	408	7

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP ICP-MS GFA CVA **Analysis Date:** 5-20-15

	Analyst TK 5-20-15	Peer JA 5-20-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	—	—	
Carry-over	—	✓	
Method QC:			
CRI/CRA	✓	✓	
ICSA/ICSAB	—	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	
Matrix Duplicates	✓	✓	
Method Blanks	✓	✓	
Data Distribution:			
Requested elements/isotope identified	✓	—	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAF's	—	—	

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-20-15

Page: 1 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
STD 0.0	Tom	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				High X
" 5.0				
" 10.0				
STD 0.0				
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			7.74	Begin CLP Y.R=97 ✓
ICB			-0.02	✓
CCV1			3.93	Y.R=98 ✓
CCB1			-0.03	✓
CRA			0.07	✓
AGAB MB2			-0.01	✓
" MB2SPK			1.92	Y.R=96 ✓
" J			-0.01	
" JDUP			-0.01	No RPD; undetected ✓
" JSPK			0.99	Y.R=99 ✓
AGCG MB2			-0.01	✓
" MB2SPK			1.83	Y.R=92 ✓
" L			-0.02	
" LDUP			-0.01	No RPD; undetected ✓
CCV2			3.82	Y.R=96 ✓
CCB2	↓	↓	-0.01	✓

Chemical/Reagent ID:

10% $SnCl_2$: D2059

14% NH_2OH/NaCl: D1433

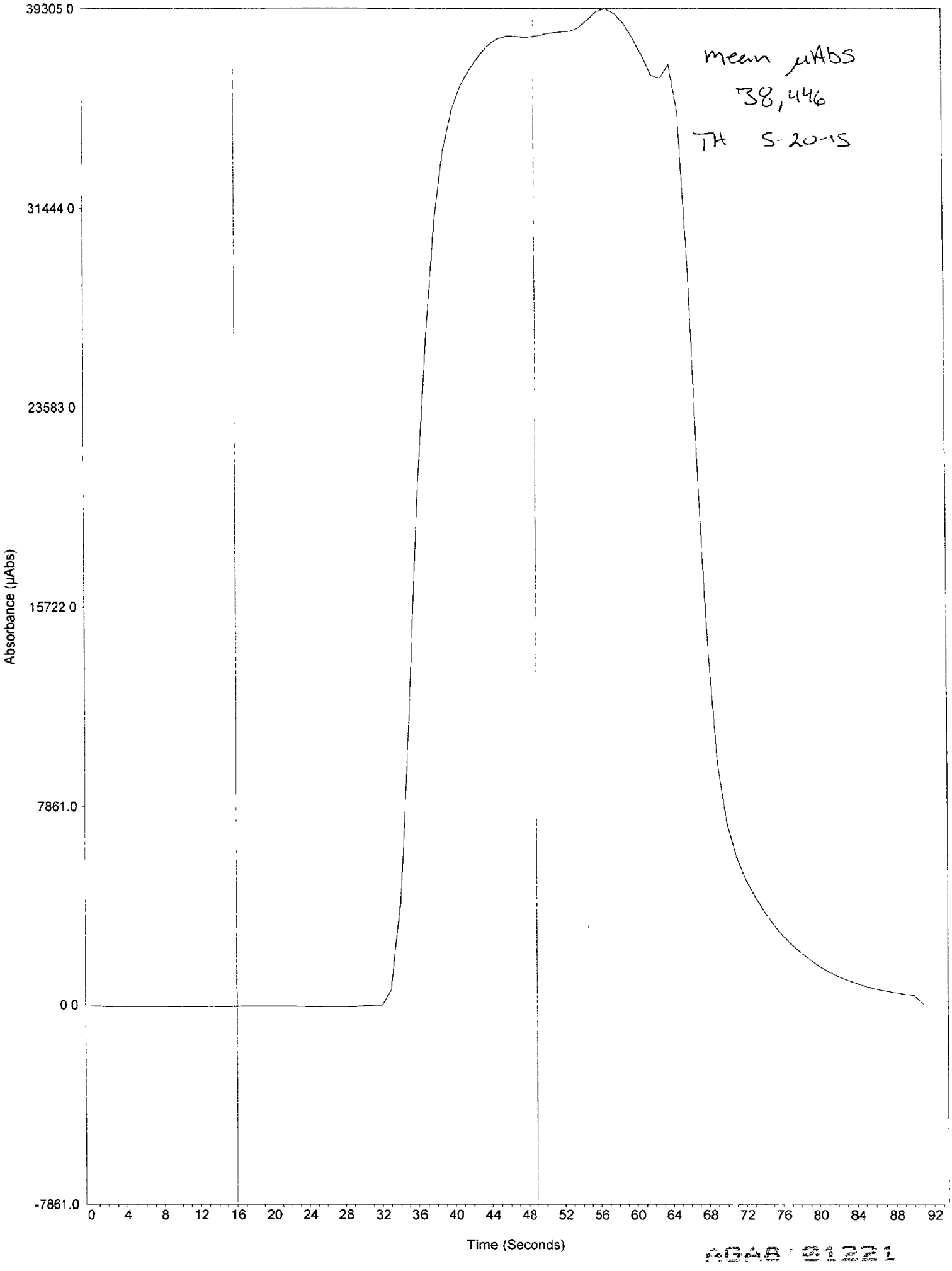
Standard ID:

Standard: 3062-15

ICV/CCV: D0176

5026F

td Tube 6 05/20/2015, 9:31 AM



AGAA-01221

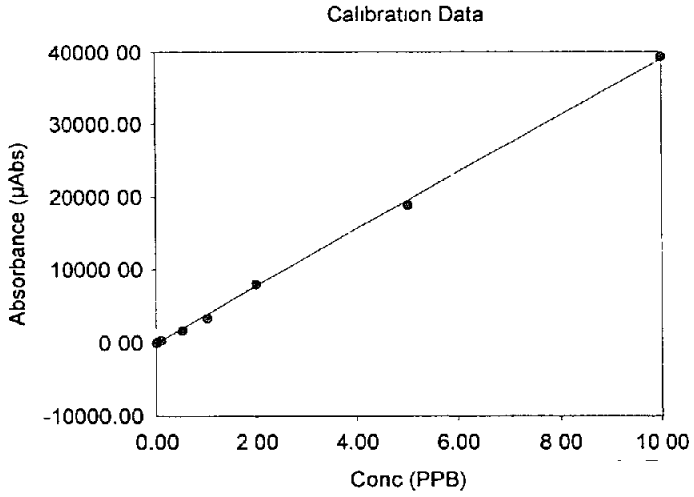
CETAC Hg Analysis Report - 15052000.DB - Wednesday, May 20, 2015, 11:28:32 AM

Analyst
Date Started Wednesday, May 20, 2015, 09 31 17
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Std Tube 6	20-May-2015, 09 31	10 00	0 25	38400 00	1.00	

Information about this calibration could not be retrieved from the Master File

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	20-May-2015, 09 34	0 00	153 00	-8 37	1 00	
Standard #1	20-May-2015, 09.37	0 10	1.25	341 00	1 00	
Standard #2	20-May-2015, 09 39	0 50	0.51	1660.00	1 00	
Standard #3	20-May-2015, 09:41	1 00	0.67	3320.00	1.00	
Standard #4	20-May-2015, 09 42	2 00	1.14	7980.00	1 00	Hgh x
Standard #5	20-May-2015, 09:44	5 00	0 34	18900 00	1 00	
Standard #6	20-May-2015, 09 45	10 00	0 18	39400 00	1 00	



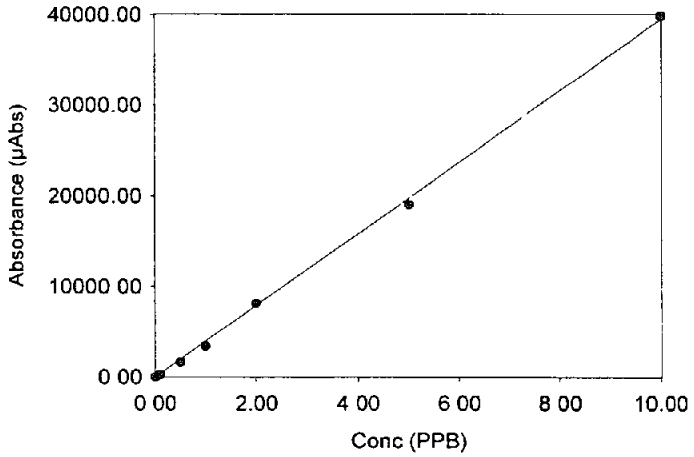
Int.	0 000
Slope	3906 691
Correlation	0 99960

Thm

Analyst
Date Started Wednesday, May 20, 2015, 09 50 26
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	20-May-2015, 09 50	0.00	12 90	21.00	1 00	
Standard #1	20-May-2015, 09 53	0 10	1 24	290 00	1 00	
Standard #2	20-May-2015, 09 54	0 50	0 80	1660 00	1.00	
Standard #3	20-May-2015, 09 56	1 00	0 33	3400 00	1 00	
Standard #4	20-May-2015, 09 57	2 00	0 31	8150.00	1 00	
Standard #5	20-May-2015, 09 59	5 00	0 37	19100 00	1 00	
Standard #6	20-May-2015, 10 01	10 00	0 13	39900 00	1.00	

Calibration Data



Int.	0 000
Slope	3950 117
Correlation	0 99957

TWM

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	20-May-2015, 10:04	7.74	0 42	30600 00	1 00	Begin CLP
ICB	20-May-2015, 10 07	-0.02	1 87	-85 10	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 10:08	3.93	0 06	15500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 10 10	-0 03	1 49	-99 40	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
CRA	20-May-2015, 10:12	0 07	1.12	278 00	1 00	
AGA8 MB2 TWM	20-May-2015, 10 13	-0 01	9 42	-33 20	1.00	
AGA8 MB2SPK TWM	20-May-2015, 10 15	1 92	0 18	7580 00	1.00	
AGA8 J TWM	20-May-2015, 10 16	-0 01	7 06	-37 80	1.00	
AGA8 JDUP TWM	20-May-2015, 10 18	-0 01	18 90	-55 00	1.00	
AGA8 JSPK TWM	20-May-2015, 10.20	0.99	0 89	3920 00	1.00	
AGC9 MB2 TWM	20-May-2015, 10 21	-0 01	11 50	-35 80	1.00	
AGC9 MB2SPK TWM	20-May-2015, 10:23	1.83	0.33	7240.00	1.00	
AGC9 L TWM	20-May-2015, 10.24	-0 02	12 70	-66 50	1.00	
AGC9 LDUP TWM	20-May-2015, 10:26	-0 01	11 80	-36.40	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 10:28	3 82	0.31	15100 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 10.29	-0 01	4 49	-58.20	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 LSPK TWM	20-May-2015, 10 31	0 99	0 70	3910 00	1 00	
AGB1 MB1 TWM	20-May-2015, 10:33	-0.02	14 70	-65 30	1 00	
AGB1 MB1SPK TWM	20-May-2015, 10 34	1 90	0 43	7490.00	1 00	
AGB1 A TWM	20-May-2015, 10 36	0 06	11 10	228 00	1 00	

AM 5-22-15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Standard Prep Log

Prep Code: SMM Instrument: CETAC
Analyst: TH Date: 5-15-16
Bath Temp: 92°C Start Time: 1105 End Time: 1135

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0 00	50.0	0.0	3
STD1	3062-14	0.01		0.1	2
STD2		0.05		0.5	2
STD3		0.10		1.0	2
STD4		0.20		2.0	2
STD5		0 50		5.0	2
STD6		1.00		10.0	2
CRA	↓	0.01		0.1	1
ICB/CCB	—	0.00		0.0	3
ICV/LCS	D0176	0.08	↓	8.0	3
CCV	↓	0.04	50.0	4.0	3

TH 5-15-15

Chemical/Reagent ID:
HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

Prep Code: TWM 20.0mL Digested Instrument: CETAC
Analyst: TH Date: 5-19-15
Bath Temp: 91°C Start Time: 1340 End Time: 1540

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0.00	100.0	0.0	1
STD1	3062-15	0.01		0.1	1
STD2		0 05		0.5	1
STD3		0.10		1.0	1
STD4		0.20		2.0	1
STD5		0 50		5.0	1
STD6		1.00		10.0	1
CRA	↓	0.01		0.1	1
ICB/CCB	—	0.00		0.0	1
ICV/LCS	D0176	0.16	↓	8.0	1
CCV	↓	0.08	100.0	4.0	1

Chemical/Reagent ID:
HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

ARI 012240

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: TWM Matrix: Water
Analyst: TH Date: 5-18-15
Bath Temp: 91°C Start Time: 1020 End Time: 1220

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGAB J	1	✓	20.0	20.0	5/28 1	(Y)	
" JDUP	1	✓			1		
" JSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGCG L	1	✓			5/29 1		
" LDUP	1	✓			1		
" LSPK	1	✓			1		
" MB3	—	—			1		
" MB3SPK	—	—			1		
AGBI A	2	✓			5/29 1		
" ADUP	2	✓			1		
" ASPK	2	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" D	1	✓			1		
" MB1	—	—	↓	↓	1	↓	
" MB1SPK	—	—	20.0	20.0	1	(Y)	
				TH 5-18-15			

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1501179

ADAB 81225

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP ICP-MS GFA CVA

Analysis Date: 5-22-15

	Analyst TH 5-22-15	Peer AG 5-22-15	Comment
Logbook:			
Analyst, Date, Method info	✓	—	
Sample ID's	✓	—	
Standard/QC solution ID's recorded	✓	—	
Prep codes	✓	—	
Dilution factors	✓	—	
Crossouts/Corrections/Deletions	✓	—	
Calibration:			
Blank & Standard intensities	✓	—	
Standard deviations	✓	—	
Curve fit	✓	—	
Calibration Verification:			
ICV/CCV	✓	—	
ICB/CCB	✓	—	
Samples:			
RSD's & SD's	✓	—	
Internal Standards	—	—	
Carry-over	—	—	
Method QC:			
CRI/CRA	✓	—	
ICSA/ICSAB	—	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	—	
Matrix Spikes	✓	—	AGA8
Matrix Duplicates	✓	—	AGC9
Method Blanks	✓	—	
Data Distribution:			
Requested elements/isotope identified	✓	—	
Correct samples identified for distribution	✓	—	
Raw data match distributed data	✓	—	
Data filename correct	✓	—	
Necessary Analysts Notes and CAF's	✓	—	See Cafs

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-22-15

Page: 1 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
STD 0.0	5mm	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				10W X
" 5.0				10W X
" 10.0				
STD 0.0				
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			8.57	ICV Test Y.R=107 ✓
CCV			4.03	CCV Test Y.R=101 ✓
ICV			8.44	Begin CLP Y.R=106 ✓
ICB			0.01	✓
CCV1			4.03	Y.R=101 ✓
CCB1			0.00	✓
CRA			0.09	✓
AGLC9 MB1			0.00	✓
" MB1SPK			2.35	Y.R=118 ✓
" A				
" B				
" C				
" D				
" E				
" F				
" G	↓	↓		

Chemical/Reagent ID:

10% $SnCl_2$: D2203

14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16

ICV/CCV: D0176

5026F

ARAR 01227

Mercury Analysis Log

Analyst: TH Date: 5-22-15

Instrument: CETAC Page: 2 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments	
CCV2	5mm	1x	4.02	Y.R=101	✓
CCB2			0.01		✓
AGC9 H			1.15		
" HDUP			1.87	RPD=48 High	X
" HSPK			1.94	Y.R=79	✓
" I					
" J					
" K					
CCV3			4.04	Y.R=101	✓
CCB3			-0.00		✓
AGA8 MB1			-0.00		✓
" MB1SPK			2.11	Y.R=106	✓
" A					
" B					
" C					
" D					
" E					
" F			1.65		
" FDUP			1.36	RPD=19	✓
" FSPK			3.02	Y.R=137 High	X
CCV4			4.01	Y.R=100	✓
CCB4			-0.00		✓
AGA8 G					
" H					
" I					
AGB8 MB1			0.00		✓
" MB1SPK			2.07	Y.R=104	✓
" A					
" B					
AGG2 MB1	↓	↓	0.00		✓

Chemical/Reagent ID:

10% $SnCl_2$: D2203 14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16 ICV/CCV: D0176

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-22-15

Page: 3 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
AGG2 MBISPK	5mm	1X	2.13	Y.R=107 ✓
" A			0.08	
CCV5			4.05	Y.R=101 ✓
CCB5			0.01	✓
AGG2 ADUP			0.08	No RPD; undetected ✓
" ASPK			1.12	Y.R=112 ✓
" B				
" C				
" D				
CCV6			4.05	Y.R=101 ✓
CCB6			0.00	✓
AGF8 MB			-0.01	✓
" MBSPK			2.14	Y.R=107 ✓
" A			0.41	
" ADUP			0.38	✓
" ASPK			1.41	Y.R=100 ✓
" B				
AGF9 A				
" B				
CCV7			4.05	Y.R=101 ✓
CCB7			0.00	✓
AGC9 H			1.18	
" HDUP			1.89	RPD=46 High X
" HSPK			1.91	Y.R=73 low X
AGA8 F			1.65	~~RPD=18~~ TH 5-22-15 ~~✓~~
" FDUP			1.37	RPD=18 ✓
" FSPK			3.01	Y.R=136 High X
CCV8			4.06	Y.R=102 ✓
CCB8	↓		-0.00	End CLP ✓
~~STD 0.0~~	Flow	↓	~~0.00~~ 5-22-15	

Chemical/Reagent ID:

10% $SnCl_2$: D2203

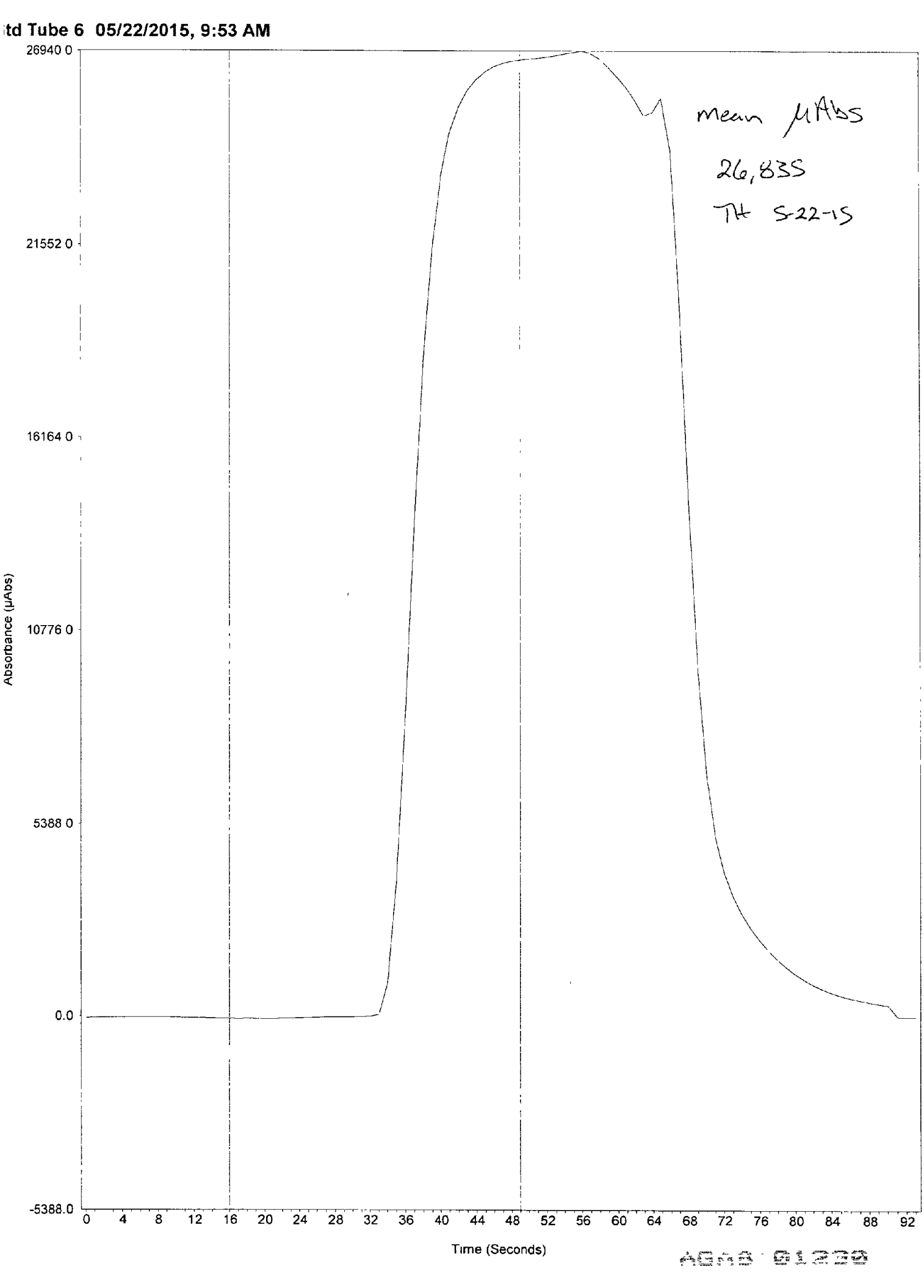
14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16 / 3063-1

ICV/CCV: D0176

5026F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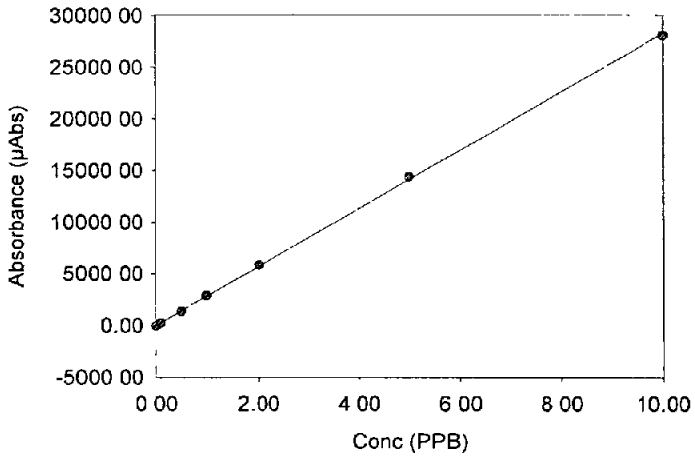
26940 0
21552 0
16164 0
10776 0
5388 0
0.0
-5388.0
Absorbance (µAbs)
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92
Time (Seconds)
mean µAbs
26,835
TH 5-22-15

CETAC Hg Analysis Report - 15052200.DB - Friday, May 22, 2015, 1:30:20 PM

Analyst
Date Started Friday, May 22, 2015, 10 08 28
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	22-May-2015, 10 08	0 00	29.20	-31 00	1.00	
Standard #1	22-May-2015, 10 10	0 10	1 00	282 00	1.00	
Standard #2	22-May-2015, 10 11	0 50	1.94	1380 00	1.00	
Standard #3	22-May-2015, 10 13	1 00	0 36	2900 00	1 00	
Standard #4	22-May-2015, 10 14	2.00	0 52	5810.00	1 00	
Standard #5	22-May-2015, 10 16	5.00	0 37	14400 00	1 00	
Standard #6	22-May-2015, 10 18	10 00	0 47	28100 00	1.00	

Calibration Data



Int	0.000
Slope	2828 722
Correlation	0 99990

Smm

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	22-May-2015, 10.20	8 57	0 92	24200.00	1.00	Test ICV

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10:22	4 03	0 27	11400 00	1 00	Test CCV

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	22-May-2015, 10:30	8 44	0 53	23900 00	1 00	Begin CLP
ICB	22-May-2015, 10.33	0 01	22 90	27 80	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10:35	4.03	0.55	11400 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 10 36	0 00	42 90	13 20	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
CRA	22-May-2015, 10 38	0 09	7.05	261 00	1 00	
AGC9 MB1 SMM	22-May-2015, 10 40	0.00	175.00	6 08	1 00	
AGC9 MB1SPK SMM	22-May-2015, 10 41	2.35	0.20	6660 00	1.00	
AGC9 A SMM	22-May-2015, 10 43	0.11	1.85	324 00	1 00	
AGC9 B SMM	22-May-2015, 10 44	0.10	2.77	289 00	1 00	
AGC9 C SMM	22-May-2015, 10 46	0.54	1.02	1530 00	1 00	
AGC9 D SMM	22-May-2015, 10 48	0.23	2.37	658 00	1 00	
AGC9 E SMM	22-May-2015, 10.49	0 10	2.05	271 00	1 00	
AGC9 F SMM	22-May-2015, 10 51	0.04	5 25	104 00	1 00	
AGC9 G SMM	22-May-2015, 10.53	0.13	1.29	381 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10 54	4 02	0 11	11400 00	1 00	

Analyst
Date Started Friday, May 22, 2015, 10:56.21
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 10:56	0.01	26 60	30.40	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 H SMM	22-May-2015, 10.57	1 15	0 40	3260 00	1 00	
AGC9 HDUP SMM	22-May-2015, 10 59	1 87	0 53	5280 00	1 00	RPD High X
AGC9 HSPK SMM	22-May-2015, 11 01	1.94	0 45	5490 00	1 00	
AGC9 I SMM	22-May-2015, 11 02	0 46	0 73	1290 00	1 00	
AGC9 J SMM	22-May-2015, 11 04	0 14	0.37	394.00	1 00	
AGC9 K SMM	22-May-2015, 11 05	0 03	5 61	90 50	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11 07	4 04	0.30	11400 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11 09	-0 00	46 00	-2 60	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGA8 MB1 SMM	22-May-2015, 11 11	-0 00	410.00	-1 96	1 00	
AGA8 MB1SPK SMM	22-May-2015, 11 12	2 11	0 47	5980 00	1 00	
AGA8 A SMM	22-May-2015, 11 14	0 07	1 88	205.00	1.00	
AGA8 B SMM	22-May-2015, 11 16	0.16	0 22	440.00	1.00	
AGA8 C SMM	22-May-2015, 11 17	0.04	8 86	103.00	1.00	
AGA8 D SMM	22-May-2015, 11 19	0.53	0 79	1500.00	1 00	
AGA8 E SMM	22-May-2015, 11 20	1.05	0 14	2980.00	1 00	
AGA8 F SMM	22-May-2015, 11 22	1.65	0 71	4680.00	1 00	
AGA8 FDUP SMM	22-May-2015, 11 24	1.36	0 62	3850 00	1 00	
AGA8 FSPK SMM	22-May-2015, 11.25	3.02	0 20	8550 00	1 00	Y.R High X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11:27	4 01	0 22	11300 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11.29	-0 00	58 30	-10 80	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGA8 G SMM	22-May-2015, 11 30	0.14	1.12	397 00	1 00	
AGA8 H SMM	22-May-2015, 11.32	0 17	3.42	482 00	1 00	
AGA8 I SMM	22-May-2015, 11 33	0 15	0.84	420.00	1 00	
AGB8 MB1 SMM	22-May-2015, 11:35	0.00	37.30	4 90	1 00	
AGB8 MB1SPK SMM	22-May-2015, 11 37	2 07	0.26	5850 00	1 00	
AGB8 A SMM	22-May-2015, 11 38	0.28	1.09	779 00	1 00	
AGB8 B SMM	22-May-2015, 11 40	0 06	4.44	168 00	1 00	
AGG2 MB1 SMM	22-May-2015, 11 41	0 00	22 20	12 20	1 00	
AGG2 MB1SPK SMM	22-May-2015, 11.43	2 13	0 50	6020 00	1.00	
AGG2 A SMM	22-May-2015, 11 45	0 08	3 10	225 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11:46	4.05	0.27	11500.00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11 48	0.01	22 40	28 60	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGG2 ADUP SMM	22-May-2015, 11 50	0.08	2.59	219 00	1 00	
AGG2 ASPK SMM	22-May-2015, 11 51	1 12	1 75	3180 00	1 00	
AGG2 B SMM	22-May-2015, 11 53	0 03	7 24	88 60	1 00	
AGG2 C SMM	22-May-2015, 11:55	0 14	0 71	397 00	1 00	
AGG2 D SMM	22-May-2015, 11.56	0 17	0 63	474 00	1 00	

Analyst
Date Started Friday, May 22, 2015, 11 58 17
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11 58	4 05	0 29	11400 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11 59	0 00	26 40	13 60	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGF8 MB SMM	22-May-2015, 12:01	-0.01	7 66	-32.60	1 00	
AGF8 MBSPK SMM	22-May-2015, 12 03	2 14	0 50	6050 00	1.00	
AGF8 A SMM	22-May-2015, 12 04	0 41	0.15	1150 00	1 00	
AGF8 ADUP SMM	22-May-2015, 12 06	0 38	1 03	1060 00	1 00	
AGF8 ASPK SMM	22-May-2015, 12 08	1.41	0 51	3990.00	1 00	
AGF8 B SMM	22-May-2015, 12:09	0 23	0 79	649 00	1 00	
AGF9 A SMM	22-May-2015, 12.11	0 15	4 02	416.00	1 00	
AGF9 B SMM	22-May-2015, 12 12	0.13	0 66	366 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 12 14	4 05	0 31	11500 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 12 16	0 00	18 60	7 32	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 H SMM	22-May-2015, 12 17	1 18	0 23	3330 00	1 00	
AGC9 HDUP SMM	22-May-2015, 12:19	1 89	0 69	5340 00	1 00	RPD High X
AGC9 HSPK SMM	22-May-2015, 12 21	1 91	0 95	5390.00	1 00	Y,R low X
AGA8 F SMM	22-May-2015, 12:22	1 65	0 53	4670 00	1 00	
AGA8 FDUP SMM	22-May-2015, 12 24	1 37	0 46	3870.00	1 00	
AGA8 FSPK SMM	22-May-2015, 12:26	3 01	0 36	8510 00	1 00	Y,R High X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 12 27	4 06	0 39	11500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 12 29	-0 00	20 70	-13 30	1 00	End CLP

Analyst	
Date Created:	Thursday, July 13, 2000
Worksheet	ARI 10ppb CALIB
Comment	
Sip Duration (Sec.):	30
Rinse Duration (Sec.):	60
Read Delay:	49
Integration Time/Replicate:	1 40
# of Replicates:	4
# of Repeats:	1
Baseline Correction Enabled:	True
Baseline Point 1 Start Time:	10
Baseline Point 1 End Time:	16
2-Point Baseline Corr. Enabled:	False
Baseline Point 2 Start Time:	
Baseline Point 2 End Time:	
Gas Flow (ml/min):	180
Calibration Algorithm:	Linear, Zero Intercept
Recalibration Frequency:	0
Reslope Frequency:	0
Reslope Standard:	5
Calibration Standard #1 Conc.:	0 10 PPB
Calibration Standard #2 Conc.:	0 50 PPB
Calibration Standard #3 Conc.:	1 00 PPB
Calibration Standard #4 Conc.:	2.00 PPB
Calibration Standard #5 Conc.:	5 00 PPB
Calibration Standard #6 Conc.:	10.00 PPB
QC Enabled:	True
QC-RSD Enabled:	True
Limit Condition & Error Action:	If %RSD > 5 0%, if µAbs > 1500, Flag and Continue
QC-Std Enabled:	True
Limit Condition & Error Action:	If outside 80% 120%,Stop
QC-Blank Enabled:	True
Limit Condition & Error Action:	If outside -100 100,Stop

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Standard Prep Log

Prep Code: SMM Instrument: CETAC
Analyst: MB Date: 5/21/15
Bath Temp: 91°C Start Time: 1115 End Time: 1145

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0.00	50.0	0.0	3
STD1	3062-16	0.01	↓	0.1	2
STD2	↓	0.05	↓	0.5	2
STD3	↓	0.10	↓	1.0	2
STD4	↓	0.20	↓	2.0	2
STD5	↓	0.50	↓	5.0	2
STD6	↓	1.00	↓	10.0	2
CRA	↓	0.01	↓	0.1	1
ICB/CCB	—	0.00	↓	0.0	3
ICV/LCS	D0176	0.08	↓	8.0	2
CCV	↓	0.04	50.0	4.0	3

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

Prep Code: _____ Instrument: _____
Analyst: _____ Date: _____
Bath Temp: _____ Start Time: _____ End Time: _____

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0		0.00			
STD1					
STD2		0.05			
STD3		0.10			
STD4		0.20			
STD5		0.50			
STD6		1.00			
CRA					
ICB/CCB		0.00			
ICV/LCS					
CCV					

Chemical/Reagent ID:

HNO_3: _____ H_2SO_4: _____ HCl: _____
5% $K_2S_2O_8$: _____ 5% $KMnO_4$: _____

ABAB_01235

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: 5mm Matrix: soil
Analyst: MB Date: 5/18/15
Bath Temp: 90°C Start Time: 1025 End Time: 1055

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) ~~Volume (mL)~~	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGA8 A	1	–	0.248	50.0	5/28 1	Y	
" B	1	–	0.247		1		
" C	1	–	0.247		1		
" D	1	–	0.212		1		
" E	1	–	0.266		1		
" F	1	–	0.276		1		
" FDUP	1	–	0.274		1		
" FSPK	1	–	0.273		1		
" G	1	–	0.230		1		
" H	1	–	0.284		1		
" I	1	–	0.226		1		
" MB1	–	–	–		1		
" MBSPK	–	–	–		1		
AGB8 A	1	–	0.210		5/26 1		
" B	1	–	0.271		1		
" MB1	–	–	–		1		
" MBSPK	–	–	–	50.0	1	Y	

MB 5/18/15

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: –

5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1408268

AGA8 · 01238

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Client: Kennedy Jenks Consultants

Project: 1496007.00 POS Sliver

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Extractions Bench Sheets and Notes	646	652
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TPHD Raw Data		
Extractions Bench Sheets and Notes	995	1002
Initial Calibration	1003	1115
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Preparation Bench Sheets and Notes	1196	1202
Run Logs, Calibrations, and Raw Data	1203	1400

BC

Signature

June-08-2015

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 8, 2015

Ryan Hultgren
Kennedy/Jenks Consultants Inc.
32001 32nd Avenue South, Suite 100
Federal Way, WA 98001

RE: Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGC9

Dear Mr. Hultgren:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: AGC9

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: AGC9

AGC9 00062

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGCG	Turn-around Requested: Std	Page: 1 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present? Yes
Client Contact: Ryan Holtgren		No of Coolers: 3.2	Cooler Temps: 6.5 7.9
Client Project Name: POS Slivers			
Client Project #: 1496007.00	Samplers: C. Joseph / J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Metals (1)	PAHs 8270c SIM	PCBs 8082	UHTPH-Dx (2)					Notes/Comments
					Analysis Requested								
SDP-01(3.0-4.0)	5/14/15	0835	Soil	1	X	X	X						(1) RCRA, Cu, Zn by 6020 Hg by 7471
SDP-01(8.0-9.0)		0855			X	X	X						(2) WITHOUT Silica Gel Cleanup
SDP-01(11.0-12.5)		0905						X (3)					HOLD
SDP-01(22.5-24.0)		0915											HOLD
SDP-02(7.0-8.5)		0940											HOLD
SDP-02(12.5-13.5)		0953											HOLD
SDP-02(16.0-17.5)		1030			X	X	X	X					
SDP-02(18.5-19.5)		1035			X	X	X	X					
SDP-02(20.0-21.5)		1043											HOLD
SDP-02(22.0-23.5)		1045			X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Kennedy Jenks	Company: ARI	Company	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page 2 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present?
Client Contact: Ryan Hultgren		No of Coolers	Cooler Temps
Client Project Name: FOS Slives			
Client Project #: 1496007.00	Samplers: C. Joseph / J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
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Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals (1)	PAHs 8270 SIM	PCBs 8082	NWTPH-Dx (2)					Notes/Comments
SDP-03 (2.0-3.5)	5/14/15	1105	Soil	1									HOLD
SDP-03 (6.5-8.0)		1115			X	X	X						
SDP-03 (21.0-22.0)		1205											HOLD
SDP-03 (23.5-24.5)		1210			X	X	X						
SDP-04 (1.5-3.0)		1305			X	X	X	X					
SDP-04 (8.0-9.0)		1310											HOLD
SDP-04 (10.5-12.0)		1320			X	X	X	X					
SDP-04 (16.0-17.0)		1325											HOLD
SDP-04 (18.0-19.5)		1330											HOLD
SDP-04 (1.5-3.0)-MS		1335			X	X	X	X					MS/MSD

(1) RCRA, Cu, Zn, Pb, 6020, Hg by 7471
(2) w/ Silica Gel Cleanup

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number.	Turn-around Requested: Std	Page: 3 of 3	
ARI Client Company: Kennedy Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present?
Client Contact: Ryan Holtgren		No of Coolers:	Cooler Temps.
Client Project Name: Pos Sliver			
Client Project #: 1496007.00	Samplers: C. Joseph/J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Metals (1)	PAHs 8270c SIM	PCBs 8082	NWTPH-Dx (2)					Notes/Comments
SDP-05 (1.0-2.5)	5/14/15	1350	Soil	1									(1) RCRA, Cu, Zn by 6020 Hg by 7471 (2) WITHOUT Silica Gel Cleanup
SDP-05 (6.5-7.5)	"	1405	"	"	X	X	X						HOLD
SDP-05 (13.0-14.0)	"	1410	"	"									
SDP-05 (17.5-19.0)	"	1420	"	"	X	X	X						HOLD
WC-051415	"	1450	"	"									
RB-051415	5/14/15	1340	Water	7	X	X	X	X					HOLD

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Kennedy Jenks Project Name Pac Silver

COC No(s) _____ (NA) Delivered by. Fed-Ex UPS Courier Hand Delivered Other._____

Assigned ARI Job No AGCG Tracking No _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry) 6.5 7.9 ___ ___ ___

Time. 1615

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877952

Cooler Accepted by CA Date 5-14-15 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs (Baggies) Foam Block Paper Other _____		
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI (NA) YES Date/Time:_____ Equipment _____ Split by _____

Samples Logged by: AV Date. 5/15/15 Time 939

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By Date:

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• •	• • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

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Cooler Temperature Compliance Form

Cooler#:	Temperature(°C): 6.5, 7.9	
Sample ID	**Bottle Count**	**Bottle Type**
All samples above 0°C		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by CA Date 5-14-15 Time 1615

PRESERVATION VERIFICATION 05/15/15
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **AGC9**

Inquiry Number: NONE
Analysis Requested: 05/15/15
Contact: Hultgren, Ryan
Client: Kennedy Jenks Consultants
Logged by: AV
Sample Set Used: Yes-490
Validatable Package: lv4
Deliverables:

PC: Cheronne
VTSR: 05/14/15

Project #: 1496007.00
Project: POS Sliver
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-9442 **AGC9L**	RB-051415						TOT pass															

Checked By AV Date 5/15/15

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: AGC9

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Case Narrative

Client: Kennedy/Jenks Consultants Inc.
Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGC9

Sample Receipt

Twenty-four soil samples and one water sample were received on May 14, 2015 under ARI job AGC9. The cooler temperatures measured by IR thermometer following ARI SOP were 6.5 and 7.9°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

PAHs by SW8270-SIM

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limit. The LCS and LCSD percent recoveries were within control limits.

The matrix spike percent recovery of Fluoranthene was outside the control limit high for sample **SDP-04(1.5-3.0)**. Also, several matrix spike/matrix spike duplicate RPDs were outside the control limit. No corrective action is required for matrix QC.

PCB Aroclors by SW8082

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements. The internal standard areas were within control limits

The surrogate percent recoveries were within control limits.

AGC9 00018

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

NWTPH-Dx

The samples and associated laboratory QC were extracted and analyzed within the method recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits. The LCS and LCSD percent recoveries were within control limits.

The matrix spike and matrix spike duplicate percent recoveries were within control limits.

Metals/Mercury by SW6020/7471/7470

The samples and associated laboratory QC were digested and analyzed within the method recommended holding times.

The method blanks were clean at the reporting limits. The LCS percent recoveries were within control limits.

The soil duplicate RPDs of barium, cadmium, chromium, copper, and mercury were outside the control limits for sample **SDP-04(1.5-3.0)**. All relevant data have been flagged with a "*" qualifier on the appropriate Form VI. No further corrective action was taken.

AGC9 : 050811

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AGC9
Client: Kennedy Jenks Consultants
Project Event: 1496007.00
Project Name: POS Sliver

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SDP-01(3.0-4.0)	AGC9A	15-9431	Soil	05/14/15 08:35	05/14/15 16:15
2.	SDP-01(8.0-9.0)	AGC9B	15-9432	Soil	05/14/15 08:55	05/14/15 16:15
3.	SDP-02(16.0-17.5)	AGC9C	15-9433	Soil	05/14/15 10:30	05/14/15 16:15
4.	SDP-02(18.5-19.5)	AGC9D	15-9434	Soil	05/14/15 10:35	05/14/15 16:15
5.	SDP-02(22.0-23.5)	AGC9E	15-9435	Soil	05/14/15 10:45	05/14/15 16:15
6.	SDP-03(6.5-8.0)	AGC9F	15-9436	Soil	05/14/15 11:15	05/14/15 16:15
7.	SDP-03(23.5-24.5)	AGC9G	15-9437	Soil	05/14/15 12:10	05/14/15 16:15
8.	SDP-04(1.5-3.0)	AGC9H	15-9438	Soil	05/14/15 13:05	05/14/15 16:15
9.	SDP-04(10.5-12.0)	AGC9I	15-9439	Soil	05/14/15 13:20	05/14/15 16:15
10.	SDP-05(6.5-7.5)	AGC9J	15-9440	Soil	05/14/15 14:05	05/14/15 16:15
11.	SDP-05(17.5-19.0)	AGC9K	15-9441	Soil	05/14/15 14:20	05/14/15 16:15
12.	RB-051415	AGC9L	15-9442	Water	05/14/15 13:40	05/14/15 16:15
13.	SDP-01(11.0-12.5)	AGC9M	15-9443	Soil	05/14/15 09:05	05/14/15 16:15
14.	SDP-01(22.5-24.0)	AGC9N	15-9444	Soil	05/14/15 09:15	05/14/15 16:15
15.	SDP-02(7.0-8.5)	AGC9O	15-9445	Soil	05/14/15 09:40	05/14/15 16:15
16.	SDP-02(12.5-13.5)	AGC9P	15-9446	Soil	05/14/15 09:55	05/14/15 16:15
17.	SDP-02(20.0-21.5)	AGC9Q	15-9447	Soil	05/14/15 10:43	05/14/15 16:15
18.	SDP-03(2.0-3.5)	AGC9R	15-9448	Soil	05/14/15 11:05	05/14/15 16:15
19.	SDP-03(21.0-22.0)	AGC9S	15-9449	Soil	05/14/15 12:05	05/14/15 16:15
20.	SDP-04(8.0-9.0)	AGC9T	15-9450	Soil	05/14/15 13:10	05/14/15 16:15
21.	SDP-04(16.0-17.0)	AGC9U	15-9451	Soil	05/14/15 13:25	05/14/15 16:15
22.	SDP-04(18.0-19.5)	AGC9V	15-9452	Soil	05/14/15 13:30	05/14/15 16:15
23.	SDP-05(1.0-2.5)	AGC9W	15-9453	Soil	05/14/15 13:50	05/14/15 16:15
24.	SDP-05(13.0-14.0)	AGC9X	15-9454	Soil	05/14/15 14:10	05/14/15 16:15
25.	WC-051415	AGC9Y	15-9455	Soil	05/14/15 14:50	05/14/15 16:15

AGC9 : 15-9431

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Data Reporting Qualifiers

Effective 2/14/2011

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q — Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

M2 The sample contains PCB congeners that do not match any standard Aroclor pattern. The PCBs are identified and quantified as the Aroclor whose pattern most closely matches that of the sample. The reported value is an estimate.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

AGC9 : 00011

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

ARCO 00015

Analytical Method Information

Printed: 06/08/2015 11:02 am

8270D-SIM PAH (5 ug/kg) in Solid (EPA 8270D-SIM)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz

Amount Required: 150 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Naphthalene	2.26	5.00 ug/kg		30	36-120	30	36-120	30
2-Methylnaphthalene	1.69	5.00 ug/kg		30	35-120	30	35-120	30
1-Methylnaphthalene	1.61	5.00 ug/kg		30	39-120	30	39-120	30
Biphenyl	1.44	5.00 ug/kg		30	30-160	30	30-160	30
2,6-Dimethylnaphthalene	0.750	5.00 ug/kg		30	30-160	30	30-160	30
Acenaphthylene	1.61	5.00 ug/kg		30	35-120	30	35-120	30
Acenaphthene	1.49	5.00 ug/kg		30	39-120	30	39-120	30
Dibenzofuran	1.41	5.00 ug/kg		30	38-120	30	38-120	30
2,3,5-Trimethylnaphthalene	0.419	5.00 ug/kg		30		30		30
Fluorene	1.47	5.00 ug/kg		30	41-120	30	41-120	30
Dibenzothiophene	0.425	5.00 ug/kg		30		30		30
Phenanthrene	1.58	5.00 ug/kg		30	46-120	30	46-120	30
Anthracene	1.78	5.00 ug/kg		30	36-120	30	36-120	30
Carbazole	0.189	5.00 ug/kg		30	30-160	30	30-160	30
1-Methylphenanthrene	0.700	5.00 ug/kg		30	30-160	30	30-160	30
Fluoranthene	1.87	5.00 ug/kg		30	46-120	30	46-120	30
Pyrene	2.26	5.00 ug/kg		30	49-120	30	49-120	30
Benzo(a)anthracene	2.22	5.00 ug/kg		30	42-120	30	42-120	30
Chrysene	1.92	5.00 ug/kg		30	48-120	30	48-120	30
Benzo(b)fluoranthene	2.11	5.00 ug/kg		30	35-127	30	35-127	30
Benzo(k)fluoranthene	2.28	5.00 ug/kg		30	37-129	30	37-129	30
Benzo(j)fluoranthene	1.75	5.00 ug/kg		30	40-120	30	40-120	30
Benzo(e)pyrene	0.647	5.00 ug/kg		30	30-160	30	30-160	30
Benzo(a)pyrene	2.38	5.00 ug/kg		30	36-120	30	36-120	30
Perylene	3.56	5.00 ug/kg		30	44-120	30	44-120	30
Indeno(1,2,3-cd)pyrene	3.01	5.00 ug/kg		30	40-120	30	40-120	30
Dibenzo(a,h)anthracene	2.56	5.00 ug/kg		30	38-120	30	38-120	30
Benzo(g,h,i)perylene	2.79	5.00 ug/kg		30	38-120	30	38-120	30
Benzofluoranthenes, Total	3.86	10.0 ug/kg		30	46-120	30	46-120	30
Surr: 2-Methylnaphthalene-d10			32-120					
Surr: Dibenzo[a,h]anthracene-d14			21-133					
Surr: Fluoranthene-d10			36-134					
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Perylene-d12								

Analytical Method Information

Printed: 06/08/2015 11:03 am

8270D-SIM PAH (0.1 ug/L) in Water (EPA 8270D-SIM)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Naphthalene	0.0296	0.100 ug/L		30	33-120	30	33-120	30
2-Methylnaphthalene	0.0302	0.100 ug/L		30	29-120	30	29-120	30
1-Methylnaphthalene	0.0289	0.100 ug/L		30	37-120	30	37-120	30
Biphenyl				30	30-160	30	30-160	40
2,6-Dimethylnaphthalene				30	30-160	30	30-160	40
Acenaphthylene	0.0380	0.100 ug/L		30	32-120	30	32-120	30
Acenaphthene	0.0304	0.100 ug/L		30	38-120	30	38-120	30
Dibenzofuran	0.0280	0.100 ug/L		30	38-120	30	38-120	30
2,3,5-Trimethylnaphthalene				30				
Fluorene	0.0278	0.100 ug/L		30	41-120	30	41-120	30
Dibenzothiophene				30				
Phenanthrene	0.0279	0.100 ug/L		30	49-120	30	49-120	30
Anthracene	0.0352	0.100 ug/L		30	39-120	30	39-120	30
Carbazole				30	30-160	30	30-160	40
1-Methylphenanthrene				30	30-160	30	30-160	40
Fluoranthene	0.0347	0.100 ug/L		30	48-120	30	48-120	30
Pyrene	0.0434	0.100 ug/L		30	48-120	30	48-120	30
Benzo(a)anthracene	0.0399	0.100 ug/L		30	37-120	30	37-120	30
Chrysene	0.0321	0.100 ug/L		30	48-120	30	48-120	30
Benzo(b)fluoranthene	0.0417	0.100 ug/L		30	38-128	30	38-128	30
Benzo(k)fluoranthene	0.0433	0.100 ug/L		30	36-130	30	36-130	30
Benzo(j)fluoranthene	0.0376	0.100 ug/L		30	49-120	30	49-120	30
Benzo(e)pyrene				30	30-160	30	30-160	30
Benzo(a)pyrene	0.0429	0.100 ug/L		30	25-120	30	25-120	30
Perylene	0.0420	0.100 ug/L		30	30-160	30	30-160	30
Indeno(1,2,3-cd)pyrene	0.0422	0.100 ug/L		30	32-120	30	32-120	30
Dibenzo(a,h)anthracene	0.0535	0.100 ug/L		30	21-120	30	21-120	30
Benzo(g,h,i)perylene	0.0388	0.100 ug/L		30	28-120	30	28-120	30
Benzofluoranthenes, Total	0.0850	0.200 ug/L		30	46-120	30	46-120	30
Surr: 2-Methylnaphthalene-d10			31-120					
Surr: Dibenzo[a,h]anthracene-d14			10-125					
Surr: Fluoranthene-d10			46-121					
Naphthalene-d8								
Acenaphthene-d10								
Phenanthrene-d10								
Chrysene-d12								
Perylene-d12								

AGS 00017

Analytical Method Information

Printed: 06/08/2015 11:03 am

8082A PCB Solid 20 in Solid (EPA 8082A)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz

Amount Required: 150 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	8.00	20.0 ug/kg		30	52-120	30	52-120	30
Aroclor-1016 (1)	8.00	20.0 ug/kg		30				
Aroclor-1016 (2)	8.00	20.0 ug/kg		30				
Aroclor-1016 (3)	8.00	20.0 ug/kg		30				
Aroclor-1016 (4)	8.00	20.0 ug/kg		30				
Aroclor 1016 [2C]	8.00	20.0 ug/kg		30	52-120	30	52-120	30
Aroclor-1016 (1) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (2) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (3) [2C]	8.00	20.0 ug/kg		30				
Aroclor-1016 (4) [2C]	8.00	20.0 ug/kg		30				
Aroclor 1221	8.00	20.0 ug/kg		30				
Aroclor-1221 (1)		20.0 ug/kg		30				
Aroclor-1221 (2)		20.0 ug/kg		30				
Aroclor-1221 (3)		20.0 ug/kg		30				
Aroclor 1221 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1221 (1) [2C]		20.0 ug/kg		30				
Aroclor-1221 (2) [2C]		20.0 ug/kg		30				
Aroclor-1221 (3) [2C]		20.0 ug/kg		30				
Aroclor-1221 (4) [2C]		20.0 ug/kg		30				
Aroclor 1232	8.00	20.0 ug/kg		30				
Aroclor-1232 (1)		20.0 ug/kg		30				
Aroclor-1232 (2)		20.0 ug/kg		30				
Aroclor-1232 (3)		20.0 ug/kg		30				
Aroclor-1232 (4)		20.0 ug/kg		30				
Aroclor 1232 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1232 (1) [2C]		20.0 ug/kg		30				
Aroclor-1232 (2) [2C]		20.0 ug/kg		30				
Aroclor-1232 (3) [2C]		20.0 ug/kg		30				
Aroclor-1232 (4) [2C]		20.0 ug/kg		30				
Aroclor 1242	8.00	20.0 ug/kg		30				
Aroclor-1242 (1)		20.0 ug/kg		30				
Aroclor-1242 (2)		20.0 ug/kg		30				
Aroclor-1242 (3)		20.0 ug/kg		30				
Aroclor-1242 (4)		20.0 ug/kg		30				
Aroclor 1242 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1242 (1) [2C]		20.0 ug/kg		30				
Aroclor-1242 (2) [2C]		20.0 ug/kg		30				
Aroclor-1242 (3) [2C]		20.0 ug/kg		30				
Aroclor-1242 (4) [2C]		20.0 ug/kg		30				
Aroclor 1248	8.00	20.0 ug/kg		30				
Aroclor-1248 (1)		20.0 ug/kg		30				
Aroclor-1248 (2)		20.0 ug/kg		30				
Aroclor-1248 (3)		20.0 ug/kg		30				
Aroclor-1248 (4)		20.0 ug/kg		30				
Aroclor 1248 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1248 (1) [2C]		20.0 ug/kg		30				
Aroclor-1248 (2) [2C]		20.0 ug/kg		30				
Aroclor-1248 (3) [2C]		20.0 ug/kg		30				
Aroclor-1248 (4) [2C]		20.0 ug/kg		30				
Aroclor 1254	8.00	20.0 ug/kg		30				
Aroclor-1254 (1)		20.0 ug/kg		30				
Aroclor-1254 (2)		20.0 ug/kg		30				
Aroclor-1254 (3)		20.0 ug/kg		30				
Aroclor-1254 (4)		20.0 ug/kg		30				

Analytical Method Information

(Continued)

Printed: 06/08/2015 11:03 am

8082A PCB Solid 20 in Solid (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)		20.0 ug/kg		30				
Aroclor 1254 [2C]	8.00	20.0 ug/kg		30				
Aroclor-1254 (1) [2C]		20.0 ug/kg		30				
Aroclor-1254 (2) [2C]		20.0 ug/kg		30				
Aroclor-1254 (3) [2C]		20.0 ug/kg		30				
Aroclor-1254 (4) [2C]		20.0 ug/kg		30				
Aroclor-1254 (5) [2C]		20.0 ug/kg		30				
Aroclor 1260	9.28	20.0 ug/kg		30	57-120	30	57-120	30
Aroclor-1260 (1)	9.28	20.0 ug/kg		30				
Aroclor-1260 (2)	9.28	20.0 ug/kg		30				
Aroclor-1260 (3)	9.28	20.0 ug/kg		30				
Aroclor-1260 (4)	9.28	20.0 ug/kg		30				
Aroclor-1260 (5)	9.28	20.0 ug/kg		30				
Aroclor 1260 [2C]	9.28	20.0 ug/kg		30	57-120	30	57-120	30
Aroclor-1260 (1) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (2) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (3) [2C]	9.28	20.0 ug/kg		30				
Aroclor-1260 (4) [2C]	9.28	20.0 ug/kg		30				
Aroclor 1262	9.28	20.0 ug/kg		30				
Aroclor-1262 (1)		20.0 ug/kg		30				
Aroclor-1262 (2)		20.0 ug/kg		30				
Aroclor-1262 (3)		20.0 ug/kg		30				
Aroclor-1262 (4)		20.0 ug/kg		30				
Aroclor-1262 (5)		20.0 ug/kg		30				
Aroclor 1262 [2C]	9.28	20.0 ug/kg		30				
Aroclor-1262 (1) [2C]		20.0 ug/kg		30				
Aroclor-1262 (2) [2C]		20.0 ug/kg		30				
Aroclor-1262 (3) [2C]		20.0 ug/kg		30				
Aroclor-1262 (4) [2C]		20.0 ug/kg		30				
Aroclor-1262 (5) [2C]		20.0 ug/kg		30				
Aroclor 1268	9.28	20.0 ug/kg		30				
Aroclor-1268 (1)		20.0 ug/kg		30				
Aroclor-1268 (2)		20.0 ug/kg		30				
Aroclor-1268 (3)		20.0 ug/kg		30				
Aroclor-1268 (4)		20.0 ug/kg		30				
Aroclor 1268 [2C]	9.28	20.0 ug/kg		30				
Aroclor-1268 (1) [2C]		20.0 ug/kg		30				
Aroclor-1268 (2) [2C]		20.0 ug/kg		30				
Aroclor-1268 (3) [2C]		20.0 ug/kg		30				
Aroclor-1268 (4) [2C]		20.0 ug/kg		30				
Surr: Decachlorobiphenyl			40-133					
Surr: Tetrachlorometaxylene			53-120					
Surr: Decachlorobiphenyl [2C]			40-133					
Surr: Tetrachlorometaxylene [2C]			53-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

ACS : 9819

Analytical Method Information

Printed: 06/08/2015 11:04 am

8082A PCB in Water (EPA 8082A)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 ml

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.130	1.00 ug/L		30	62-120	30	62-120	30
Aroclor-1016 (1)				30				
Aroclor-1016 (2)				30				
Aroclor-1016 (3)				30				
Aroclor-1016 (4)				30				
Aroclor 1016 [2C]	0.130	1.00 ug/L		30	62-120	30	62-120	30
Aroclor-1016 (1) [2C]				30				
Aroclor-1016 (2) [2C]				30				
Aroclor-1016 (3) [2C]				30				
Aroclor-1016 (4) [2C]				30				
Aroclor 1221	0.147	1.00 ug/L		30				
Aroclor-1221 (1)				30				
Aroclor-1221 (2)				30				
Aroclor-1221 (3)				30				
Aroclor 1221 [2C]	0.147	1.00 ug/L		30				
Aroclor-1221 (1) [2C]				30				
Aroclor-1221 (2) [2C]				30				
Aroclor-1221 (3) [2C]				30				
Aroclor-1221 (4) [2C]				30				
Aroclor 1232	0.147	1.00 ug/L		30				
Aroclor-1232 (1)				30				
Aroclor-1232 (2)				30				
Aroclor-1232 (3)				30				
Aroclor-1232 (4)				30				
Aroclor 1232 [2C]	0.147	1.00 ug/L		30				
Aroclor-1232 (1) [2C]				30				
Aroclor-1232 (2) [2C]				30				
Aroclor-1232 (3) [2C]				30				
Aroclor-1232 (4) [2C]				30				
Aroclor 1242	0.147	1.00 ug/L		30				
Aroclor-1242 (1)				30				
Aroclor-1242 (2)				30				
Aroclor-1242 (3)				30				
Aroclor-1242 (4)				30				
Aroclor 1242 [2C]	0.147	1.00 ug/L		30				
Aroclor-1242 (1) [2C]				30				
Aroclor-1242 (2) [2C]				30				
Aroclor-1242 (3) [2C]				30				
Aroclor-1242 (4) [2C]				30				
Aroclor 1248	0.130	1.00 ug/L		30				
Aroclor-1248 (1)				30				
Aroclor-1248 (2)				30				
Aroclor-1248 (3)				30				
Aroclor-1248 (4)				30				
Aroclor 1248 [2C]	0.130	1.00 ug/L		30				
Aroclor-1248 (1) [2C]				30				
Aroclor-1248 (2) [2C]				30				
Aroclor-1248 (3) [2C]				30				
Aroclor-1248 (4) [2C]				30				
Aroclor 1254	0.130	1.00 ug/L		30				
Aroclor-1254 (1)				30				
Aroclor-1254 (2)				30				
Aroclor-1254 (3)				30				
Aroclor-1254 (4)				30				

Analytical Method Information

(Continued)

Printed: 06/08/2015 11:04 am

8082A PCB in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor-1254 (5)				30				
Aroclor 1254 [2C]	0.130	1.00 ug/L		30				
Aroclor-1254 (1) [2C]				30				
Aroclor-1254 (2) [2C]				30				
Aroclor-1254 (3) [2C]				30				
Aroclor-1254 (4) [2C]				30				
Aroclor-1254 (5) [2C]				30				
Aroclor 1260	0.147	1.00 ug/L		30	61-120	30	61-120	30
Aroclor-1260 (1)				30				
Aroclor-1260 (2)				30				
Aroclor-1260 (3)				30				
Aroclor-1260 (4)				30				
Aroclor-1260 (5)				30				
Aroclor 1260 [2C]	0.147	1.00 ug/L		30	61-120	30	61-120	30
Aroclor-1260 (1) [2C]				30				
Aroclor-1260 (2) [2C]				30				
Aroclor-1260 (3) [2C]				30				
Aroclor-1260 (4) [2C]				30				
Aroclor 1262	0.147	1.00 ug/L		30				
Aroclor-1262 (1)				30				
Aroclor-1262 (2)				30				
Aroclor-1262 (3)				30				
Aroclor-1262 (4)				30				
Aroclor-1262 (5)				30				
Aroclor 1262 [2C]	0.147	1.00 ug/L		30				
Aroclor-1262 (1) [2C]				30				
Aroclor-1262 (2) [2C]				30				
Aroclor-1262 (3) [2C]				30				
Aroclor-1262 (4) [2C]				30				
Aroclor-1262 (5) [2C]				30				
Aroclor 1268	0.147	1.00 ug/L		30				
Aroclor-1268 (1)				30				
Aroclor-1268 (2)				30				
Aroclor-1268 (3)				30				
Aroclor-1268 (4)				30				
Aroclor 1268 [2C]	0.147	1.00 ug/L		30				
Aroclor-1268 (1) [2C]				30				
Aroclor-1268 (2) [2C]				30				
Aroclor-1268 (3) [2C]				30				
Aroclor-1268 (4) [2C]				30				
Surr: Decachlorobiphenyl			29-120					
Surr: Tetrachlorometaxylene			35-120					
Surr: Decachlorobiphenyl [2C]			29-120					
Surr: Tetrachlorometaxylene [2C]			35-120					
Surr: DCB			29-120					
Surr: TCX			35-120					
Surr: DCB [2C]			29-120					
Surr: TCX [2C]			35-120					
1-Bromo-2-Nitrobenzene								
Hexabromobiphenyl								
1-Bromo-2-Nitrobenzene [2C]								
Hexabromobiphenyl [2C]								

Analytical Method Information

Printed: 06/08/2015 11:04 am

TPH (Extractables) in Solid (NWTPH-Dx)

Preservation: Cool <6°C

Container: Glass WM, Clear, 8 oz

Amount Required: 15 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Diesel Range Organics (NW C12-C24)	1.96	5.00 mg/kg		30		30	62-120	30
Diesel Range Organics (Diesel#1 Tol-C18)				30		30		30
Diesel Range Organics (C10-24)				30		30	30-160	30
Diesel Range Organics (AK C10-C25)	1.98	5.00 mg/kg		30		30	75-125	30
Diesel Range Organics (8015 C10-C28)				30		30	30-160	30
Motor Oil Range Organics (NW C24-C38)	2.70	10.0 mg/kg		30		30		30
Motor Oil Range Organics (CAL C24-C40)				30		30		30
Motor Oil Range Organics (AK C25-C36)	3.42	10.0 mg/kg		30		30	60-120	30
Mineral Oil Range Organics (C24-C38)				30		30		30
Mineral Spirits Range Organics (Tol-C12)				30		30		30
JP8 Range Organics (C8-C18)				30		30		30
JP5 Range Organics (C10-C16)				30		30		30
JP4 Range Organics (Tol-C14)				30		30		30
Jet-A Range Organics (C10-C18)	2.22	5.00 mg/kg		30		30		30
Kerosene Range Organics (Tol-C18)				30		30		30
Stoddard Range Organics (C8-C12)				30		30		30
Creosote Range Organics (C8-C22)				30		30		30
Bunker C Range Organics (C10-C38)				30		30		30
Transformer Oil Range Organics (C12-C28)				30		30		30
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

ARS 9822

Analytical Method Information

Printed: 06/08/2015 11:04 am

TPH (Extractables) in Water (NWTPH-Dx)

Preservation: Cool <6°C

Container: Glass NM, Amber, 500 mL

Amount Required: 1000 mL

Hold Time: 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Diesel Range Organics (NW C12-C24)	0.0410	0.100 mg/L		30	64-120	30	64-120	30
Diesel Range Organics (AK C10-C25)	0.0390	0.100 mg/L		30	75-125	30	75-125	30
Diesel Range Organics (Diesel#1 Tol-C18)				30		30		30
Diesel Range Organics (C10-24)				30	30-160	30	30-160	30
Diesel Range Organics (8015 C10-C28)				30	30-160	30	30-160	30
Motor Oil Range Organics (NW C24-C38)	0.0500	0.200 mg/L		30		30		30
Motor Oil Range Organics (AK C25-C36)	0.0650	0.200 mg/L		30	60-120	30	60-120	30
Motor Oil Range Organics (CAL C24-C40)				30		30		30
Mineral Spirits Range Organics (Tol-C12)				30		30		30
Mineral Oil Range Organics (C24-C38)				30		30		30
Kerosene Range Organics (Tol-C18)				30		30		30
JP8 Range Organics (C8-C18)				30		30		30
JP5 Range Organics (C10-C16)				30		30		30
JP4 Range Organics (Tol-C14)				30		30		30
Jet-A Range Organics (C10-C18)				30		30		30
Creosote Range Organics (C8-C22)				30		30		30
Bunker C Range Organics (C10-C38)				30		30		30
Stoddard Range Organics (C8-C12)				30		30		30
Transformer Oil Range Organics (C12-C28)				30		30		30
Surr: o-Terphenyl			50-150					
Surr: n-Triacontane			50-150					

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 200.8/6020A Master List in Solid (EPA 200.8)

Preservation: Cool <6°C

Container: Glass WM, Clear, 4 oz

Amount Required: 100 g **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum-27	0.550	20.0 mg/kg		20	75-125	20	80-120	20
Antimony-121	0.0199	0.200 mg/kg		20	75-125	20	80-120	20
Antimony-123	0.0183	0.200 mg/kg		20	75-125	20	80-120	20
Arsenic-75a	0.0298	0.200 mg/kg		20	75-125	20	80-120	20
Arsenic-75b	0.120	0.500 mg/kg		20	75-125	20	80-120	20
Barium-135	0.0314	0.500 mg/kg		20	75-125	20	80-120	20
Barium-137	0.0336	0.500 mg/kg		20	75-125	20	80-120	20
Beryllium-9	0.00954	0.200 mg/kg		20	75-125	20	80-120	20
Cadmium-111	0.00716	0.100 mg/kg		20	75-125	20	80-120	20
Cadmium-114	0.00500	0.100 mg/kg		20	75-125	20	80-120	20
Calcium-43	3.81	50.0 mg/kg		20	75-125	20	80-120	20
Chromium-52	0.0685	0.500 mg/kg		20	75-125	20	80-120	20
Chromium-53	0.0373	0.500 mg/kg		20	75-125	20	80-120	20
Cobalt-59	0.00572	0.200 mg/kg		20	75-125	20	80-120	20
Copper-63	0.0372	0.500 mg/kg		20	75-125	20	80-120	20
Copper-65	0.0259	0.500 mg/kg		20	75-125	20	80-120	20
Iron-54	4.01	20.0 mg/kg		20	75-125	20	80-120	20
Iron-57	1.31	20.0 mg/kg		20	75-125	20	80-120	20
Lead-208	0.00800	0.100 mg/kg		20	75-125	20	80-120	20
Magnesium-24	0.614	20.0 mg/kg		20	75-125	20	80-120	20
Manganese-55	0.0133	0.500 mg/kg		20	75-125	20	80-120	20
Molybdenum-98	0.0100	0.200 mg/kg		20	75-125	20	80-120	20
Nickel-60	0.0168	0.500 mg/kg		20	75-125	20	80-120	20
Nickel-62	0.268	0.500 mg/kg		20	75-125	20	80-120	20
Potassium-39	2.81	20.0 mg/kg		20	75-125	20	80-120	20
Selenium-82	0.0322	0.500 mg/kg		20	75-125	20	80-120	20
Selenium-78	0.391	2.00 mg/kg		20	75-125	20	80-120	20
Silver-107	0.00310	0.200 mg/kg		20	75-125	20	80-120	20
Sodium-23	14.4	100 mg/kg		20	75-125	20	80-120	20
Thallium-205	0.00619	0.200 mg/kg		20	75-125	20	80-120	20
Vanadium-51a	0.0214	0.200 mg/kg		20	75-125	20	80-120	20
Vanadium-51b	0.0214	0.200 mg/kg		20	75-125	20	80-120	20
Zinc-66	0.285	4.00 mg/kg		20	75-125	20	80-120	20
Zinc-67	0.226	4.00 mg/kg		20	75-125	20	80-120	20
Zinc-68	0.326	4.00 mg/kg		20	75-125	20	80-120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

ACCUTEST

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 200.8/6020A Master List in Water (EPA 200.8)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3 **Amount Required:** 500 mL **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aluminum-27	0.000550	0.0200 mg/L		20	75-125	20	80-120	20
Antimony-121	0.0000199	0.000200 mg/L		20	75-125	20	80-120	20
Antimony-123	0.0000183	0.000200 mg/L		20	75-125	20	80-120	20
Arsenic-75a	0.0000298	0.000200 mg/L		20	75-125	20	80-120	20
Arsenic-75b	0.000120	0.000500 mg/L		20	75-125	20	80-120	20
Barium-135	0.0000314	0.000500 mg/L		20	75-125	20	80-120	20
Barium-137	0.0000336	0.000500 mg/L		20	75-125	20	80-120	20
Beryllium-9	0.00000954	0.000200 mg/L		20	75-125	20	80-120	20
Cadmium-111	0.00000716	0.000100 mg/L		20	75-125	20	80-120	20
Cadmium-114	0.00000500	0.000100 mg/L		20	75-125	20	80-120	20
Calcium-43	0.00381	0.0500 mg/L		20	75-125	20	80-120	20
Chromium-52	0.0000685	0.000500 mg/L		20	75-125	20	80-120	20
Chromium-53	0.0000373	0.000500 mg/L		20	75-125	20	80-120	20
Cobalt-59	0.00000572	0.000200 mg/L		20	75-125	20	80-120	20
Copper-63	0.0000372	0.000500 mg/L		20	75-125	20	80-120	20
Copper-65	0.0000259	0.000500 mg/L		20	75-125	20	80-120	20
Iron-54	0.00401	0.0200 mg/L		20	75-125	20	80-120	20
Iron-57	0.00131	0.0200 mg/L		20	75-125	20	80-120	20
Lead-208	0.00000800	0.000100 mg/L		20	75-125	20	80-120	20
Magnesium-24	0.000614	0.0200 mg/L		20	75-125	20	80-120	20
Manganese-55	0.0000133	0.000500 mg/L		20	75-125	20	80-120	20
Molybdenum-98	0.0000100	0.000200 mg/L		20	75-125	20	80-120	20
Nickel-60	0.0000168	0.000500 mg/L		20	75-125	20	80-120	20
Nickel-62	0.000268	0.000500 mg/L		20	75-125	20	80-120	20
Potassium-39	0.00281	0.0200 mg/L		20	75-125	20	80-120	20
Selenium-82	0.0000322	0.000500 mg/L		20	75-125	20	80-120	20
Selenium-78	0.000391	0.00200 mg/L		20	75-125	20	80-120	20
Silver-107	0.00000310	0.000200 mg/L		20	75-125	20	80-120	20
Sodium-23	0.0144	0.100 mg/L		20	75-125	20	80-120	20
Thallium-205	0.00000619	0.000200 mg/L		20	75-125	20	80-120	20
Vanadium-51a	0.0000203	0.000200 mg/L		20	75-125	20	80-120	20
Vanadium-51b	0.0000203	0.000200 mg/L		20	75-125	20	80-120	20
Zinc-66	0.000285	0.00400 mg/L		20	75-125	20	80-120	20
Zinc-67	0.000226	0.00400 mg/L		20	75-125	20	80-120	20
Zinc-68	0.000326	0.00400 mg/L		20	75-125	20	80-120	20
Lithium								
Scandium								
Germanium								
Indium								
Terbium								

Analytical Method Information

Printed: 06/08/2015 11:05 am

Met 7471B Hg in Solid (EPA 7471B)

Preservation: Cool <6°C

Container: Glass WM, Clear, 2 oz

Amount Required: 100 g **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00210	0.0250 mg/kg		20	75-125	20	80-120	20

Analytical Method Information

Printed: 06/08/2015 11:06 am

Met 7470A Hg in Water (EPA 7470A)

Preservation: pH<2; HNO3, Cool <6°C

Container: HDPE NM, 500 mL, 1:1 HNO3

Amount Required: 500 mL **Hold Time:** 28 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Mercury	0.00000700	0.000100 mg/L		20	75-125	20	80-120	20

4609 0027

SIM PAH Analysis
Report and Summary QC Forms

ARI Job ID: AGC9

AGC9 00028

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-01(3.0-4.0)
SAMPLE

Lab Sample ID: AGC9A
LIMS ID: 15-9431
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 11:26
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.9 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 11.1 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**2.1**	**4.6**	**8.6**
91-57-6	**2-Methylnaphthalene**	**1.5**	**4.6**	**8.6**
90-12-0	**1-Methylnaphthalene**	**1.5**	**4.6**	**3.9 J**
208-96-8	Acenaphthylene	1.5	4.6	< 4.6 U
83-32-9	**Acenaphthene**	**1.4**	**4.6**	**2.4 J**
86-73-7	Fluorene	1.3	4.6	< 4.6 U
85-01-8	**Phenanthrene**	**1.4**	**4.6**	**38**
120-12-7	**Anthracene**	**1.6**	**4.6**	**7.7**
206-44-0	**Fluoranthene**	**1.7**	**4.6**	**47**
129-00-0	**Pyrene**	**2.1**	**4.6**	**46**
56-55-3	**Benzo(a)anthracene**	**2.0**	**4.6**	**24**
218-01-9	**Chrysene**	**1.8**	**4.6**	**30**
205-99-2	**Benzo(b)fluoranthene**	**1.9**	**4.6**	**23**
207-08-9	**Benzo(k)fluoranthene**	**2.1**	**4.6**	**12**
50-32-8	**Benzo(a)pyrene**	**2.2**	**4.6**	**26**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.8**	**4.6**	**19**
53-70-3	**Dibenz(a,h)anthracene**	**2.3**	**4.6**	**4.8**
191-24-2	**Benzo(g,h,i)perylene**	**2.6**	**4.6**	**28**
132-64-9	**Dibenzofuran**	**1.3**	**4.6**	**3.8 J**
TOTBFA	**Total Benzofluoranthenes**	**2.1**	**4.6**	**48**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	74.0%
d10-2-Methylnaphthalene	48.0%
d14-Dibenzo(a,h)anthracen	72.7%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-01(8.0-9.0)
SAMPLE

Lab Sample ID: AGC9B
LIMS ID: 15-9432
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 11:51
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 20.4 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	
91-20-3	Naphthalene	2.2	4.8	20	
91-57-6	2-Methylnaphthalene	1.6	4.8	16	
90-12-0	1-Methylnaphthalene	1.6	4.8	9.7	
208-96-8	Acenaphthylene	1.6	4.8	2.9	J
83-32-9	Acenaphthene	1.4	4.8	4.5	J
86-73-7	Fluorene	1.4	4.8	4.5	J
85-01-8	Phenanthrene	1.5	4.8	120	
120-12-7	Anthracene	1.7	4.8	23	
206-44-0	Fluoranthene	1.8	4.8	70	
129-00-0	Pyrene	2.2	4.8	89	
56-55-3	Benzo(a)anthracene	2.1	4.8	37	
218-01-9	Chrysene	1.9	4.8	56	
205-99-2	Benzo(b)fluoranthene	2.0	4.8	17	
207-08-9	Benzo(k)fluoranthene	2.2	4.8	8.2	
50-32-8	Benzo(a)pyrene	2.3	4.8	20	
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	8.9	
53-70-3	Dibenz(a,h)anthracene	2.5	4.8	3.5	J
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	10	
132-64-9	Dibenzofuran	1.4	4.8	5.6	
TOTBFA	Total Benzofluoranthenes	2.2	4.8	34	

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	64.3%
d10-2-Methylnaphthalene	49.3%
d14-Dibenzo(a,h)anthracen	44.7%

AGS 20839

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-02(16.0-17.5)
SAMPLE

Lab Sample ID: AGC9C
LIMS ID: 15-9433
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 17:25
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.3 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 3.00
Percent Moisture: 14.9 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	13	29	170
91-57-6	2-Methylnaphthalene	9.8	29	43
90-12-0	1-Methylnaphthalene	9.4	29	23 J
208-96-8	Acenaphthylene	9.4	29	25 J
83-32-9	Acenaphthene	8.7	29	41
86-73-7	Fluorene	8.6	29	52
85-01-8	Phenanthrene	9.2	29	300
120-12-7	Anthracene	10	29	120
206-44-0	Fluoranthene	11	29	610
129-00-0	Pyrene	13	29	450
56-55-3	Benzo(a)anthracene	13	29	200
218-01-9	Chrysene	11	29	380
205-99-2	Benzo(b)fluoranthene	12	29	170
207-08-9	Benzo(k)fluoranthene	13	29	72
50-32-8	Benzo(a)pyrene	14	29	160
193-39-5	Indeno(1,2,3-cd)pyrene	18	29	84
53-70-3	Dibenz(a,h)anthracene	15	29	36
191-24-2	Benzo(g,h,i)perylene	16	29	120
132-64-9	Dibenzofuran	8.2	29	41
TOTBFA	Total Benzofluoranthenes	13	29	320

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	100%
d10-2-Methylnaphthalene	74.0%
d14-Dibenzo(a,h)anthracen	90.0%

AGC9 - 00031

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-02(18.5-19.5)
SAMPLE

Lab Sample ID: AGC9D
LIMS ID: 15-9434
Matrix: Soil
Data Release Authorized: KB
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 12:43
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.6 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 34.5 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.1	4.7	100
91-57-6	2-Methylnaphthalene	1.6	4.7	57
90-12-0	1-Methylnaphthalene	1.5	4.7	39
208-96-8	Acenaphthylene	1.5	4.7	12
83-32-9	Acenaphthene	1.4	4.7	41
86-73-7	Fluorene	1.4	4.7	29
85-01-8	Phenanthrene	1.5	4.7	89
120-12-7	Anthracene	1.7	4.7	26
206-44-0	Fluoranthene	1.8	4.7	64
129-00-0	Pyrene	2.1	4.7	59
56-55-3	Benzo(a)anthracene	2.1	4.7	19
218-01-9	Chrysene	1.8	4.7	26
205-99-2	Benzo(b)fluoranthene	2.0	4.7	16
207-08-9	Benzo(k)fluoranthene	2.2	4.7	7.4
50-32-8	Benzo(a)pyrene	2.2	4.7	14
193-39-5	Indeno(1,2,3-cd)pyrene	2.8	4.7	11
53-70-3	Dibenz(a,h)anthracene	2.4	4.7	5.1
191-24-2	Benzo(g,h,i)perylene	2.6	4.7	17
132-64-9	Dibenzofuran	1.3	4.7	26
TOTBFA	Total Benzofluoranthenes	2.2	4.7	32

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	63.3%
d10-2-Methylnaphthalene	49.7%
d14-Dibenzo(a,h)anthracen	64.3%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-02(22.0-23.5)
SAMPLE

Lab Sample ID: AGC9E
LIMS ID: 15-9435
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 13:08
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.8 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 24.3 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**2.1**	**4.6**	**54**
91-57-6	**2-Methylnaphthalene**	**1.6**	**4.6**	**12**
90-12-0	**1-Methylnaphthalene**	**1.5**	**4.6**	**8.4**
208-96-8	**Acenaphthylene**	**1.5**	**4.6**	**22**
83-32-9	**Acenaphthene**	**1.4**	**4.6**	**16**
86-73-7	**Fluorene**	**1.4**	**4.6**	**11**
85-01-8	**Phenanthrene**	**1.5**	**4.6**	**45**
120-12-7	**Anthracene**	**1.6**	**4.6**	**10**
206-44-0	**Fluoranthene**	**1.7**	**4.6**	**50**
129-00-0	**Pyrene**	**2.1**	**4.6**	**50**
56-55-3	**Benzo(a)anthracene**	**2.0**	**4.6**	**10**
218-01-9	**Chrysene**	**1.8**	**4.6**	**12**
205-99-2	**Benzo(b)fluoranthene**	**1.9**	**4.6**	**10**
207-08-9	**Benzo(k)fluoranthene**	**2.1**	**4.6**	**4.3 J**
50-32-8	**Benzo(a)pyrene**	**2.2**	**4.6**	**9.4**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.8**	**4.6**	**7.7**
53-70-3	Dibenz(a,h)anthracene	2.4	4.6	< 4.6 U
191-24-2	**Benzo(g,h,i)perylene**	**2.6**	**4.6**	**13**
132-64-9	**Dibenzofuran**	**1.3**	**4.6**	**10**
TOTBFA	**Total Benzofluoranthenes**	**2.1**	**4.6**	**20**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	60.3%
d10-2-Methylnaphthalene	42.3%
d14-Dibenzo(a,h)anthracen	59.0%

ANALYTICAL RESOURCES INCORPORATED

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PNAs by SIM SW8270D-SIM GC/MS
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Sample ID: SDP-03(6.5-8.0)
SAMPLE

Lab Sample ID: AGC9F
LIMS ID: 15-9436
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 13:34
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 8.6 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.9	9.8
91-57-6	2-Methylnaphthalene	1.7	4.9	10
90-12-0	1-Methylnaphthalene	1.6	4.9	6.2
208-96-8	Acenaphthylene	1.6	4.9	< 4.9 U
83-32-9	Acenaphthene	1.5	4.9	3.9 J
86-73-7	Fluorene	1.4	4.9	4.0 J
85-01-8	Phenanthrene	1.5	4.9	140
120-12-7	Anthracene	1.7	4.9	25
206-44-0	Fluoranthene	1.8	4.9	470
129-00-0	Pyrene	2.2	4.9	380
56-55-3	Benzo(a)anthracene	2.2	4.9	270
218-01-9	Chrysene	1.9	4.9	360
205-99-2	Benzo(b)fluoranthene	2.1	4.9	260
207-08-9	Benzo(k)fluoranthene	2.2	4.9	120
50-32-8	Benzo(a)pyrene	2.3	4.9	250
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.9	140
53-70-3	Dibenz(a,h)anthracene	2.5	4.9	45
191-24-2	Benzo(g,h,i)perylene	2.7	4.9	160
132-64-9	Dibenzofuran	1.4	4.9	4.6 J
TOTBFA	Total Benzofluoranthenes	2.2	4.9	490

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	78.3%
d10-2-Methylnaphthalene	55.7%
d14-Dibenzo(a,h)anthracen	68.0%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-03(23.5-24.5)
SAMPLE

Lab Sample ID: AGC9G
LIMS ID: 15-9437
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:00
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.2 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 22.2 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	**Naphthalene**	**2.2**	**4.9**	**4.0 J**
91-57-6	**2-Methylnaphthalene**	**1.7**	**4.9**	**4.1 J**
90-12-0	**1-Methylnaphthalene**	**1.6**	**4.9**	**2.7 J**
208-96-8	Acenaphthylene	1.6	4.9	< 4.9 U
83-32-9	Acenaphthene	1.5	4.9	< 4.9 U
86-73-7	Fluorene	1.4	4.9	< 4.9 U
85-01-8	**Phenanthrene**	**1.6**	**4.9**	**13**
120-12-7	**Anthracene**	**1.8**	**4.9**	**2.9 J**
206-44-0	**Fluoranthene**	**1.8**	**4.9**	**12**
129-00-0	**Pyrene**	**2.2**	**4.9**	**20**
56-55-3	**Benzo(a)anthracene**	**2.2**	**4.9**	**10**
218-01-9	**Chrysene**	**1.9**	**4.9**	**15**
205-99-2	**Benzo(b)fluoranthene**	**2.1**	**4.9**	**7.9**
207-08-9	**Benzo(k)fluoranthene**	**2.2**	**4.9**	**3.1 J**
50-32-8	**Benzo(a)pyrene**	**2.3**	**4.9**	**12**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**3.0**	**4.9**	**5.0**
53-70-3	Dibenz(a,h)anthracene	2.5	4.9	< 4.9 U
191-24-2	**Benzo(g,h,i)perylene**	**2.7**	**4.9**	**9.6**
132-64-9	Dibenzofuran	1.4	4.9	< 4.9 U
TOTBFA	**Total Benzofluoranthenes**	**2.2**	**4.9**	**14**

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	65.7%
d10-2-Methylnaphthalene	40.7%
d14-Dibenzo(a,h)anthracen	69.3%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-04(1.5-3.0)
SAMPLE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:25
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.8 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 9.7 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.1	4.6	14
91-57-6	2-Methylnaphthalene	1.6	4.6	16
90-12-0	1-Methylnaphthalene	1.5	4.6	7.1
208-96-8	Acenaphthylene	1.5	4.6	3.1 J
83-32-9	Acenaphthene	1.4	4.6	2.6 J
86-73-7	Fluorene	1.4	4.6	< 4.6 U
85-01-8	Phenanthrene	1.5	4.6	51
120-12-7	Anthracene	1.6	4.6	10
206-44-0	Fluoranthene	1.7	4.6	110
129-00-0	Pyrene	2.1	4.6	110
56-55-3	Benzo(a)anthracene	2.0	4.6	60
218-01-9	Chrysene	1.8	4.6	92
205-99-2	Benzo(b)fluoranthene	1.9	4.6	69
207-08-9	Benzo(k)fluoranthene	2.1	4.6	34
50-32-8	Benzo(a)pyrene	2.2	4.6	62
193-39-5	Indeno(1,2,3-cd)pyrene	2.8	4.6	52
53-70-3	Dibenz(a,h)anthracene	2.4	4.6	15
191-24-2	Benzo(g,h,i)perylene	2.6	4.6	56
132-64-9	Dibenzofuran	1.3	4.6	8.0
TOTBFA	Total Benzofluoranthenes	2.1	4.6	140

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	74.3%
d10-2-Methylnaphthalene	49.7%
d14-Dibenzo(a,h)anthracen	76.0%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546
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Sample ID: SDP-04(10.5-12.0)
SAMPLE

Lab Sample ID: AGC9I
LIMS ID: 15-9439
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 15:42
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.4 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 14.2 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	82
91-57-6	2-Methylnaphthalene	1.6	4.8	46
90-12-0	1-Methylnaphthalene	1.5	4.8	28
208-96-8	Acenaphthylene	1.5	4.8	5.2
83-32-9	Acenaphthene	1.4	4.8	3.8 J
86-73-7	Fluorene	1.4	4.8	4.9
85-01-8	Phenanthrene	1.5	4.8	100
120-12-7	Anthracene	1.7	4.8	16
206-44-0	Fluoranthene	1.8	4.8	120
129-00-0	Pyrene	2.2	4.8	110
56-55-3	Benzo(a)anthracene	2.1	4.8	39
218-01-9	Chrysene	1.8	4.8	86
205-99-2	Benzo(b)fluoranthene	2.0	4.8	45
207-08-9	Benzo(k)fluoranthene	2.2	4.8	20
50-32-8	Benzo(a)pyrene	2.3	4.8	30
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	24
53-70-3	Dibenz(a,h)anthracene	2.4	4.8	7.5
191-24-2	Benzo(g,h,i)perylene	2.7	4.8	31
132-64-9	Dibenzofuran	1.3	4.8	26
TOTBFA	Total Benzofluoranthenes	2.2	4.8	85

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	68.3%
d10-2-Methylnaphthalene	46.0%
d14-Dibenzo(a,h)anthracen	47.0%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: SDP-05(6.5-7.5)
SAMPLE

Lab Sample ID: AGC9J
LIMS ID: 15-9440
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:08
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.6 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 19.0 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	
91-20-3	**Naphthalene**	**2.1**	**4.7**	**9.8**	
91-57-6	**2-Methylnaphthalene**	**1.6**	**4.7**	**5.7**	
90-12-0	**1-Methylnaphthalene**	**1.5**	**4.7**	**4.4**	**J**
208-96-8	Acenaphthylene	1.5	4.7	< 4.7	U
83-32-9	Acenaphthene	1.4	4.7	< 4.7	U
86-73-7	Fluorene	1.4	4.7	< 4.7	U
85-01-8	**Phenanthrene**	**1.5**	**4.7**	**22**	
120-12-7	**Anthracene**	**1.7**	**4.7**	**3.3**	**J**
206-44-0	**Fluoranthene**	**1.8**	**4.7**	**22**	
129-00-0	**Pyrene**	**2.1**	**4.7**	**20**	
56-55-3	**Benzo(a)anthracene**	**2.1**	**4.7**	**11**	
218-01-9	**Chrysene**	**1.8**	**4.7**	**24**	
205-99-2	**Benzo(b)fluoranthene**	**2.0**	**4.7**	**20**	
207-08-9	**Benzo(k)fluoranthene**	**2.1**	**4.7**	**7.2**	
50-32-8	**Benzo(a)pyrene**	**2.2**	**4.7**	**23**	
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.8**	**4.7**	**50**	
53-70-3	**Dibenz(a,h)anthracene**	**2.4**	**4.7**	**6.4**	
191-24-2	**Benzo(g,h,i)perylene**	**2.6**	**4.7**	**140**	
132-64-9	**Dibenzofuran**	**1.3**	**4.7**	**5.7**	
TOTBFA	**Total Benzofluoranthenes**	**2.1**	**4.7**	**35**	

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	69.0%
d10-2-Methylnaphthalene	45.0%
d14-Dibenzo(a,h)anthracen	68.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: SDP-05(17.5-19.0)
SAMPLE

Lab Sample ID: AGC9K
LIMS ID: 15-9441
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:34
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.5 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 19.6 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.2	4.8	< 4.8 U
91-57-6	**2-Methylnaphthalene**	**1.6**	**4.8**	**2.7 J**
90-12-0	1-Methylnaphthalene	1.5	4.8	< 4.8 U
208-96-8	Acenaphthylene	1.5	4.8	< 4.8 U
83-32-9	Acenaphthene	1.4	4.8	< 4.8 U
86-73-7	Fluorene	1.4	4.8	< 4.8 U
85-01-8	Phenanthrene	1.5	4.8	< 4.8 U
120-12-7	Anthracene	1.7	4.8	< 4.8 U
206-44-0	Fluoranthene	1.8	4.8	< 4.8 U
129-00-0	Pyrene	2.2	4.8	< 4.8 U
56-55-3	Benzo(a)anthracene	2.1	4.8	< 4.8 U
218-01-9	Chrysene	1.8	4.8	< 4.8 U
205-99-2	Benzo(b)fluoranthene	2.0	4.8	< 4.8 U
207-08-9	Benzo(k)fluoranthene	2.2	4.8	< 4.8 U
50-32-8	Benzo(a)pyrene	2.3	4.8	< 4.8 U
193-39-5	Indeno(1,2,3-cd)pyrene	2.9	4.8	< 4.8 U
53-70-3	Dibenz(a,h)anthracene	2.4	4.8	< 4.8 U
191-24-2	**Benzo(g,h,i)perylene**	**2.7**	**4.8**	**4.8**
132-64-9	Dibenzofuran	1.3	4.8	< 4.8 U
TOTBFA	Total Benzofluoranthenes	2.2	4.8	< 4.8 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	72.3%
d10-2-Methylnaphthalene	47.7%
d14-Dibenzo(a,h)anthracen	75.3%

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	FLN	MNP	DBA	TOT OUT
SDP-01(3.0-4.0)	74.0%	48.0%	72.7%	0
SDP-01(8.0-9.0)	64.3%	49.3%	44.7%	0
SDP-02(16.0-17.5)	100%	74.0%	90.0%	0
SDP-02(18.5-19.5)	63.3%	49.7%	64.3%	0
SDP-02(22.0-23.5)	60.3%	42.3%	59.0%	0
SDP-03(6.5-8.0)	78.3%	55.7%	68.0%	0
SDP-03(23.5-24.5)	65.7%	40.7%	69.3%	0
MB-052215	56.3%	44.0%	60.7%	0
LCS-052215	78.0%	52.3%	85.7%	0
SDP-04(1.5-3.0)	74.3%	49.7%	76.0%	0
SDP-04(1.5-3.0) MS	83.3%	55.7%	79.7%	0
SDP-04(1.5-3.0) MSD	74.7%	52.0%	75.0%	0
SDP-04(10.5-12.0)	68.3%	46.0%	47.0%	0
SDP-05(6.5-7.5)	69.0%	45.0%	68.0%	0
SDP-05(17.5-19.0)	72.3%	47.7%	75.3%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(36-134)	(36-134)
(MNP) = d10-2-Methylnaphthalene	(32-120)	(32-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(21-133)	(21-133)

Prep Method: SW3546
Log Number Range: 15-9431 to 15-9441

AGC9 - 9801Q

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted MS/MSD: 05/22/15

Date Analyzed MS: 06/01/15 14:51
MSD: 06/01/15 15:17
Instrument/Analyst MS: NT8/JZ
MSD: NT8/JZ

Sample Amount MS: 10.91 g-dry-wt
MSD: 10.98 g-dry-wt
Final Extract Volume MS: 0.50 mL
MSD: 0.50 mL
Dilution Factor MS: 1.00
MSD: 1.00

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Naphthalene	14	95.8	137	59.7%	84.3	137	51.3%	12.8%
2-Methylnaphthalene	16	100	137	61.3%	88.3	137	52.8%	12.4%
1-Methylnaphthalene	7.1	88.5	137	59.4%	82.1	137	54.7%	7.5%
Acenaphthylene	3.1 J	94.2	137	66.5%	85.7	137	60.3%	9.4%
Acenaphthene	2.6 J	95.4	137	67.7%	87.2	137	61.8%	9.0%
Fluorene	< 4.6 U	107	137	78.1%	96.1	137	70.1%	10.7%
Phenanthrene	51	208	137	115%	149	137	71.5%	33.1%
Anthracene	10	136	137	92.0%	116	137	77.4%	15.9%
Fluoranthene	110	312	137	147%	215	137	76.6%	36.8%
Pyrene	110	263	137	112%	205	137	69.3%	24.8%
Benzo(a)anthracene	60	208	137	108%	164	137	75.9%	23.7%
Chrysene	92	239	137	107%	188	137	70.1%	23.9%
Benzo(b)fluoranthene	69	206	137	100%	173	137	75.9%	17.4%
Benzo(k)fluoranthene	34	155	137	88.3%	133	137	72.3%	15.3%
Benzo(a)pyrene	62	207	137	106%	162	137	73.0%	24.4%
Indeno(1,2,3-cd)pyrene	52	168	137	84.7%	147	137	69.3%	13.3%
Dibenz(a,h)anthracene	15	123	137	78.8%	115	137	73.0%	6.7%
Benzo(g,h,i)perylene	56	159	137	75.2%	146	137	65.7%	8.5%
Dibenzofuran	8.0	105	137	70.8%	96.5	137	64.6%	8.4%
Total Benzofluoranthenes	140	492	412	85.4%	415	410	67.1%	17.0%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: SDP-04(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:51
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.9 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 9.7 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.1	4.6	---
91-57-6	2-Methylnaphthalene	1.5	4.6	---
90-12-0	1-Methylnaphthalene	1.5	4.6	---
208-96-8	Acenaphthylene	1.5	4.6	---
83-32-9	Acenaphthene	1.4	4.6	---
86-73-7	Fluorene	1.3	4.6	---
85-01-8	Phenanthrene	1.4	4.6	---
120-12-7	Anthracene	1.6	4.6	---
206-44-0	Fluoranthene	1.7	4.6	---
129-00-0	Pyrene	2.1	4.6	---
56-55-3	Benzo(a)anthracene	2.0	4.6	---
218-01-9	Chrysene	1.8	4.6	---
205-99-2	Benzo(b)fluoranthene	1.9	4.6	---
207-08-9	Benzo(k)fluoranthene	2.1	4.6	---
50-32-8	Benzo(a)pyrene	2.2	4.6	---
193-39-5	Indeno(1,2,3-cd)pyrene	2.8	4.6	---
53-70-3	Dibenz(a,h)anthracene	2.3	4.6	---
191-24-2	Benzo(g,h,i)perylene	2.6	4.6	---
132-64-9	Dibenzofuran	1.3	4.6	---
TOTBFA	Total Benzofluoranthenes	2.1	4.6	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	83.3%
d10-2-Methylnaphthalene	55.7%
d14-Dibenzo(a,h)anthracen	79.7%

AGC9 08BN2

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: SDP-04(1.5-3.0)
MATRIX SPIKE DUP

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 15:17
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 11.0 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: 9.7 %
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.1	4.6	---
91-57-6	2-Methylnaphthalene	1.5	4.6	---
90-12-0	1-Methylnaphthalene	1.5	4.6	---
208-96-8	Acenaphthylene	1.5	4.6	---
83-32-9	Acenaphthene	1.4	4.6	---
86-73-7	Fluorene	1.3	4.6	---
85-01-8	Phenanthrene	1.4	4.6	---
120-12-7	Anthracene	1.6	4.6	---
206-44-0	Fluoranthene	1.7	4.6	---
129-00-0	Pyrene	2.1	4.6	---
56-55-3	Benzo(a)anthracene	2.0	4.6	---
218-01-9	Chrysene	1.7	4.6	---
205-99-2	Benzo(b)fluoranthene	1.9	4.6	---
207-08-9	Benzo(k)fluoranthene	2.1	4.6	---
50-32-8	Benzo(a)pyrene	2.2	4.6	---
193-39-5	Indeno(1,2,3-cd)pyrene	2.7	4.6	---
53-70-3	Dibenz(a,h)anthracene	2.3	4.6	---
191-24-2	Benzo(g,h,i)perylene	2.5	4.6	---
132-64-9	Dibenzofuran	1.3	4.6	---
TOTBFA	Total Benzofluoranthenes	2.1	4.6	---

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	74.7%
d10-2-Methylnaphthalene	52.0%
d14-Dibenzo(a,h)anthracen	75.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS

Sample ID: LCS-052215
LAB CONTROL SAMPLE

Lab Sample ID: LCS-052215
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/22/15
Date Analyzed LCS: 06/01/15 11:00
Instrument/Analyst LCS: NT8/JZ

Sample Amount LCS: 10.00 g-dry-wt
Final Extract Volume LCS: 0.50 mL
Dilution Factor LCS: 1.00

Analyte	LCS	Spike Added	Recovery
Naphthalene	74.2	150	49.5%
2-Methylnaphthalene	76.0	150	50.7%
1-Methylnaphthalene	69.8	150	46.5%
Acenaphthylene	77.7	150	51.8%
Acenaphthene	79.6	150	53.1%
Fluorene	88.1	150	58.7%
Phenanthrene	91.3	150	60.9%
Anthracene	87.9	150	58.6%
Fluoranthene	100	150	66.7%
Pyrene	99.8	150	66.5%
Benzo(a)anthracene	108	150	72.0%
Chrysene	102	150	68.0%
Benzo(b)fluoranthene	106	150	70.7%
Benzo(k)fluoranthene	106	150	70.7%
Benzo(a)pyrene	95.0	150	63.3%
Indeno(1,2,3-cd)pyrene	107	150	71.3%
Dibenz(a,h)anthracene	111	150	74.0%
Benzo(g,h,i)perylene	86.8	150	57.9%
Dibenzofuran	82.1	150	54.7%
Total Benzofluoranthenes	296	450	65.8%

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	78.0%
d10-2-Methylnaphthalene	52.3%
d14-Dibenzo(a,h)anthracene	85.7%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

AGC9MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No: AGC9

Project: POS SLIVER

Lab File ID: 15060118

Date Extracted: 05/22/15

Instrument ID: NT8

Date Analyzed: 06/01/15

Matrix: SOLID

Time Analyzed: 1659

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	AGC9LCSS1	AGC9LCSS1	15060104	06/01/15
02	SDP-01(3.0-4.0)	AGC9A	15060105	06/01/15
03	SDP-01(8.0-9.0)	AGC9B	15060106	06/01/15
04	SDP-02(18.5-19.5	AGC9D	15060108	06/01/15
05	SDP-02(22.0-23.5	AGC9E	15060109	06/01/15
06	SDP-03(6.5-8.0)	AGC9F	15060110	06/01/15
07	SDP-03(23.5-24.5	AGC9G	15060111	06/01/15
08	SDP-04(1.5-3.0)	AGC9H	15060112	06/01/15
09	SDP-04(1.5-3.0)	AGC9HMS	15060113	06/01/15
10	SDP-04(1.5-3.0)	AGC9HMSD	15060114	06/01/15
11	SDP-04(10.5-12.0	AGC9I	15060115	06/01/15
12	SDP-05(6.5-7.5)	AGC9J	15060116	06/01/15
13	SDP-05(17.5-19.0	AGC9K	15060117	06/01/15
14	SDP-02(16.0-17.5	AGC9C	15060119	06/01/15
15				
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FORM IV SV

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SIM SW8270D-SIM GC/MS
Extraction Method: SW3546

Sample ID: MB-052215
METHOD BLANK

Lab Sample ID: MB-052215
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:59
Instrument/Analyst: NT8/JZ
GPC Cleanup: Yes
Silica Gel Cleanup: No

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Percent Moisture: NA
Sulfur Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	2.3	5.0	< 5.0 U
91-57-6	2-Methylnaphthalene	1.7	5.0	< 5.0 U
90-12-0	1-Methylnaphthalene	1.6	5.0	< 5.0 U
208-96-8	Acenaphthylene	1.6	5.0	< 5.0 U
83-32-9	Acenaphthene	1.5	5.0	< 5.0 U
86-73-7	Fluorene	1.5	5.0	< 5.0 U
85-01-8	Phenanthrene	1.6	5.0	< 5.0 U
120-12-7	Anthracene	1.8	5.0	< 5.0 U
206-44-0	Fluoranthene	1.9	5.0	< 5.0 U
129-00-0	Pyrene	2.3	5.0	< 5.0 U
56-55-3	Benzo(a)anthracene	2.2	5.0	< 5.0 U
218-01-9	Chrysene	1.9	5.0	< 5.0 U
205-99-2	Benzo(b)fluoranthene	2.1	5.0	< 5.0 U
207-08-9	Benzo(k)fluoranthene	2.3	5.0	< 5.0 U
50-32-8	Benzo(a)pyrene	2.4	5.0	< 5.0 U
193-39-5	Indeno(1,2,3-cd)pyrene	3.0	5.0	< 5.0 U
53-70-3	Dibenz(a,h)anthracene	2.6	5.0	< 5.0 U
191-24-2	Benzo(g,h,i)perylene	2.8	5.0	< 5.0 U
132-64-9	Dibenzofuran	1.4	5.0	< 5.0 U
TOTBFA	Total Benzofluoranthenes	2.3	5.0	< 5.0 U

Reported in µg/kg (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	56.3%
d10-2-Methylnaphthalene	44.0%
d14-Dibenzo(a,h)anthracen	60.7%

AGC9 - 000115

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

Instrument ID: NT8 Project: POS SILVER

DFTPP Injection Date: 04/13/15 DFTPP Injection Time: 1211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	28.2
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	54.1
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.9
275	10.0 - 60.0% of mass 198	37.6
365	Greater than 1.0% of mass 198	5.06
441	0.0 - 24.0% of mass 442	12.2 (16.2)2
442	50.0 - 200.0% of mass 198	75.1
443	15.0 - 24.0% of mass 442	15.8 (21.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC25150413	SDD0030-CAL4	15041302	04/13/15	1222
02	IC01150413	SDD0030-CAL1	15041303	04/13/15	1250
03	IC1150413	SDD0030-CAL3	15041305	04/13/15	1341
04	IC5150413	SDD0030-CAL5	15041306	04/13/15	1407
05	IC10150413	SDD0030-CAL6	15041307	04/13/15	1432
06	IC05150413	SDD0030-CAL2	15041308	04/13/15	1458
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ARCS 00017

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

Instrument ID: NT8 Project: POS SILVER

DFTPP Injection Date: 06/01/15 DFTPP Injection Time: 0954

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	30.0
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	55.5
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	10.0 - 80.0% of mass 198	56.1
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	8.2
275	10.0 - 60.0% of mass 198	37.3
365	Greater than 1.0% of mass 198	5.04
441	0.0 - 24.0% of mass 442	12.9 (16.5)2
442	50.0 - 200.0% of mass 198	78.0
443	15.0 - 24.0% of mass 442	17.0 (21.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV150601	ICV150601	15060102	06/01/15	1006
02	AGC9LCSS1	AGC9LCSS1	15060104	06/01/15	1100
03	SDP-01(3.0-4.0)	AGC9A	15060105	06/01/15	1126
04	SDP-01(8.0-9.0)	AGC9B	15060106	06/01/15	1151
05	SDP-02(18.5-19.5	AGC9D	15060108	06/01/15	1243
06	SDP-02(22.0-23.5	AGC9E	15060109	06/01/15	1308
07	SDP-03(6.5-8.0)	AGC9F	15060110	06/01/15	1334
08	SDP-03(23.5-24.5	AGC9G	15060111	06/01/15	1400
09	SDP-04(1.5-3.0)	AGC9H	15060112	06/01/15	1425
10	SDP-04(1.5-3.0)	AGC9HMS	15060113	06/01/15	1451
11	SDP-04(1.5-3.0)	AGC9HMSD	15060114	06/01/15	1517
12	SDP-04(10.5-12.0	AGC9I	15060115	06/01/15	1542
13	SDP-05(6.5-7.5)	AGC9J	15060116	06/01/15	1608
14	SDP-05(17.5-19.0	AGC9K	15060117	06/01/15	1634
15	AGC9MBS1	AGC9MBS1	15060118	06/01/15	1659
16	SDP-02(16.0-17.5	AGC9C	15060119	06/01/15	1725
17					
18					
19					
20					

6B

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGC9 Project: POS SILVER

Instrument ID: NT8 Calibration Date: 04/13/15

LAB FILE ID: RRF0.1=15041303 RRF0.5=15041308 RRF1 =15041305
RRF2.5=15041302 RRF5 =15041306 RRF10 =15041307

COMPOUND	RRF 0.1	RRF 0.5	RRF 1	RRF 2.5	RRF 5	RRF 10	___ RRF	%RSD /R^2
Naphthalene	0.986	0.893	1.045	0.924	0.994	0.937	0.963	5.7
2-Methylnaphthalene	0.550	0.548	0.613	0.564	0.602	0.569	0.574	4.7
1-methylnaphthalene	0.589	0.507	0.578	0.546	0.579	0.549	0.558	5.4
Biphenyl	1.365	1.093	1.303	1.177	1.276	1.198	1.235	7.9
2,6-Dimethylnaphthalene	0.902	0.837	0.974	0.887	0.962	0.926	0.915	5.6
Acenaphthylene	1.422	1.288	1.535	1.435	1.595	1.488	1.460	7.3
Acenaphthene	0.976	0.877	1.034	0.927	1.041	0.976	0.972	6.5
Dibenzofuran	1.376	1.247	1.455	1.293	1.409	1.285	1.344	6.1
1,6,7-Trimethylnaphthalene	0.873	0.807	0.948	0.898	0.980	0.956	0.910	7.0
Fluorene	1.007	0.964	1.179	1.069	1.182	1.111	1.085	8.2
Dibenzothiophene	0.987	0.866	0.968	0.895	0.936	0.845	0.916	6.2
Phenanthrene	1.060	0.881	1.007	0.927	0.960	0.886	0.954	7.4
Anthracene	0.842	0.759	0.912	0.868	0.920	0.850	0.858	6.8
Carbazole	0.760	0.711	0.759	0.748	0.803	0.750	0.755	3.9
1-Methylphenanthrene	0.690	0.660	0.805	0.741	0.788	0.744	0.738	7.5
Fluoranthene	1.253	1.004	1.180	1.081	1.139	1.034	1.115	8.4
Pyrene	1.259	0.989	1.118	1.101	1.139	1.084	1.115	7.8
Benzo(a)anthracene	1.030	0.874	1.035	1.001	1.053	1.027	1.003	6.6
Chrysene	1.230	0.850	1.015	0.959	1.001	0.980	1.006	12.4
Benzo(b)fluoranthene	1.086	0.953	1.086	1.018	1.104	1.055	1.050	5.4
Benzo(k)fluoranthene	1.086	0.907	1.101	1.012	1.141	1.049	1.049	7.9
Benzo(j)fluoranthene	1.112	0.844	1.045	1.010	1.096	1.038	1.024	9.4
Benzo(e)pyrene	1.262	0.909	1.094	0.995	1.089	1.021	1.062	11.2
Benzo(a)pyrene	1.059	0.802	0.944	0.872	0.992	0.950	0.936	9.6
Perylene	0.979	0.849	1.022	0.949	1.045	0.990	0.972	7.1
Indeno(1,2,3-cd)pyrene	1.062	0.971	1.182	1.107	1.237	1.189	1.125	8.7
Dibenzo(a,h)anthracene	0.892	0.749	0.946	0.900	1.011	0.998	0.916	10.4
Benzo(g,h,i)perylene	0.946	0.879	1.033	0.975	1.079	1.025	0.990	7.2
2-Methylnaphthalene-d10	0.676	0.534	0.633	0.588	0.636	0.597	0.611	8.0
Fluoranthene-d10	1.004	0.901	1.037	0.967	1.028	0.966	0.984	5.1
Dibenzo(a,h)anthracene-d14	0.746	0.649	0.782	0.756	0.816	0.821	0.762	8.3

<- Outside QC limits: %RSD <20% or R^2 > 0.990

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGC9 Project: POS SILVER

Instrument ID: NT8 Cont. Calib. Date: 06/01/15

Init. Calib. Date: 04/13/15 Cont. Calib. Time: 1006

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.963	0.965	0.700	AVRG	0.2
2-Methylnaphthalene	0.574	0.596	0.400	AVRG	3.8
Acenaphthylene	1.460	1.544	0.900	AVRG	5.8
Acenaphthene	0.972	0.997	0.900	AVRG	2.6
Dibenzofuran	1.344	1.405	0.800	AVRG	4.5
Fluorene	1.085	1.178	0.900	AVRG	8.6
Phenanthrene	0.954	0.961	0.700	AVRG	0.7
Anthracene	0.858	0.867	0.700	AVRG	1.0
Fluoranthene	1.115	1.115	0.600	AVRG	0.0
Pyrene	1.115	1.050	0.600	AVRG	-5.8
Benzo(a)anthracene	1.003	0.974	0.800	AVRG	-2.9
Chrysene	1.006	0.943	0.700	AVRG	-6.3
Benzo(b)fluoranthene	1.050	0.997	0.700	AVRG	-5.0
Benzo(k)fluoranthene	1.049	0.984	0.700	AVRG	-6.2
Benzo(j)fluoranthene	1.024	0.942	0.010	AVRG	-8.0
Benzo(a)pyrene	0.936	0.872	0.700	AVRG	-6.8
Indeno(1,2,3-cd)pyrene	1.125	1.125	0.500	AVRG	0.0
Dibenzo(a,h)anthracene	0.916	0.927	0.400	AVRG	1.2
Benzo(g,h,i)perylene	0.990	0.968	0.500	AVRG	-2.2
1-methylnaphthalene	0.558	0.540	0.010	AVRG	-3.2
Perylene	0.972	0.945	0.010	AVRG	-2.8
2-Methylnaphthalene-d10	0.611	0.584	0.010	AVRG	-4.4
Dibenzo(a,h)anthracene-d14	0.762	0.799	0.010	AVRG	4.8
Fluoranthene-d10	0.984	1.015	0.010	AVRG	3.2

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGC9 Project: POS SILVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 06/01/15

		IS1(NPT) AREA #	RT #	IS2(ANT) AREA #	RT #	IS3(PHN) AREA #	RT #
	ICAL MIDPT	343090	4.80	230598	7.07	373928	9.09
	UPPER LIMIT	686180		461196		747856	
	LOWER LIMIT	171545		115299		186964	
	CCAL	283432	4.74	184467	7.00	327794	9.02
	UPPER LIMIT		5.24		7.50		9.52
	LOWER LIMIT		4.24		6.50		8.52
01	AGC9LCSS1	391981	4.73	252012	7.00	438999	9.02
02	SDP-01(3.0-4	377292	4.73	242930	7.00	417344	9.02
03	SDP-01(8.0-9	413799	4.73	264789	7.00	470638	9.02
04	SDP-02(18.5-	423651	4.73	265558	7.00	469497	9.03
05	SDP-02(22.0-	442911	4.74	280647	7.00	486681	9.02
06	SDP-03(6.5-8	395146	4.73	256094	7.00	436464	9.02
07	SDP-03(23.5-	439275	4.73	270487	7.00	462404	9.02
08	SDP-04(1.5-3	429354	4.73	275713	7.00	485086	9.02
09	SDP-04(1.5-3	410309	4.73	259167	7.00	456382	9.03
10	SDP-04(1.5-3	411517	4.74	265334	7.00	470262	9.03
11	SDP-04(10.5-	437898	4.74	274531	7.00	531995	9.03
12	SDP-05(6.5-7	454624	4.73	281096	7.01	482592	9.03
13	SDP-05(17.5-	439044	4.74	284264	7.00	476262	9.02
14	AGC9MBS1	530212	4.73	340078	7.00	584672	9.02
15	SDP-02(16.0-	399256	4.74	253508	7.00	428793	9.03
16							
17							
18							
19							
20							

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGC9 · 8085 1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGC9 Project: POS SILVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 06/01/15

		IS4(CRY) AREA #	IS4(CRY) RT #	IS5(PRY) AREA #	IS5(PRY) RT #	AREA #	RT #
	ICAL MIDPT	381262	13.92	380825	17.76		
	UPPER LIMIT	762524		761650			
	LOWER LIMIT	190631		190412			
	CCAL	365607	13.81	368462	17.63		
	UPPER LIMIT		14.31		18.13		
	LOWER LIMIT		13.31		17.13		
01	AGC9LCSS1	468981	13.80	474941	17.62		
02	SDP-01(3.0-4	476019	13.80	483351	17.63		
03	SDP-01(8.0-9	503191	13.80	525851	17.63		
04	SDP-02(18.5-	550871	13.81	590491	17.65		
05	SDP-02(22.0-	528810	13.81	566805	17.64		
06	SDP-03(6.5-8	494112	13.81	534360	17.64		
07	SDP-03(23.5-	510304	13.81	558585	17.64		
08	SDP-04(1.5-3	566025	13.81	587485	17.64		
09	SDP-04(1.5-3	564495	13.82	592274	17.66		
10	SDP-04(1.5-3	552196	13.82	577008	17.65		
11	SDP-04(10.5-	629526	13.84	623755	17.67		
12	SDP-05(6.5-7	536965	13.81	589640	17.64		
13	SDP-05(17.5-	528231	13.81	558418	17.64		
14	AGC9MBS1	635638	13.81	672526	17.64		
15	SDP-02(16.0-	563083	13.82	608087	17.67		
16							
17							
18							
19							
20							

IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGC9 00052

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Selected Ion Monitoring GC/MS **Sample ID: RB-051415**
Extraction Method: SW3520C **SAMPLE**
Page 1 of 1

Lab Sample ID: AGC9L
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/20/15
Date Analyzed: 05/22/15 20:26
Instrument/Analyst: NT8/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	0.030	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.030	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.029	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.038	0.10	< 0.10 U
83-32-9	Acenaphthene	0.030	0.10	< 0.10 U
86-73-7	Fluorene	0.028	0.10	< 0.10 U
85-01-8	Phenanthrene	0.028	0.10	< 0.10 U
120-12-7	Anthracene	0.035	0.10	< 0.10 U
206-44-0	Fluoranthene	0.035	0.10	< 0.10 U
129-00-0	Pyrene	0.043	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.040	0.10	< 0.10 U
218-01-9	Chrysene	0.032	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.042	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.043	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.043	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.042	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.054	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.039	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.028	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.041	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	79.3%
d10-2-Methylnaphthalene	64.0%
d14-Dibenzo(a,h)anthracene	61.7%

AGC9 : 88653

ANALYTICAL RESOURCES INCORPORATED

SIM SW8270 SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	FLN	MNP	DBA	TOT OUT
MB-052015	88.0%	71.3%	93.3%	0
LCS-052015	89.0%	65.3%	91.3%	0
LCSD-052015	84.7%	62.0%	68.7%	0
RB-051415	79.3%	64.0%	61.7%	0

	LCS/MB LIMITS	QC LIMITS
(FLN) = d10-Fluoranthene	(46-121)	(46-121)
(MNP) = d10-2-Methylnaphthalene	(31-120)	(31-120)
(DBA) = d14-Dibenzo(a,h)anthracene	(10-125)	(10-125)

Prep Method: SW3520C
Log Number Range: 15-9442 to 15-9442

AGC9 . 00054

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LCS-052015
LAB CONTROL SAMPLE

Lab Sample ID: LCS-052015
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
Event: 1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/22/15 19:09
LCSD: 05/22/15 19:35
Instrument/Analyst LCS: NT8/JZ
LCSD: NT8/JZ

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Naphthalene	1.96	3.00	65.3%	1.89	3.00	63.0%	3.6%
2-Methylnaphthalene	2.13	3.00	71.0%	2.04	3.00	68.0%	4.3%
1-Methylnaphthalene	2.10	3.00	70.0%	1.99	3.00	66.3%	5.4%
Acenaphthylene	2.23	3.00	74.3%	2.09	3.00	69.7%	6.5%
Acenaphthene	2.30	3.00	76.7%	2.14	3.00	71.3%	7.2%
Fluorene	2.49	3.00	83.0%	2.30	3.00	76.7%	7.9%
Phenanthrene	2.39	3.00	79.7%	2.29	3.00	76.3%	4.3%
Anthracene	2.54	3.00	84.7%	2.41	3.00	80.3%	5.3%
Fluoranthene	2.58	3.00	86.0%	2.55	3.00	85.0%	1.2%
Pyrene	2.38	3.00	79.3%	2.29	3.00	76.3%	3.9%
Benzo(a)anthracene	2.55	3.00	85.0%	2.45	3.00	81.7%	4.0%
Chrysene	2.43	3.00	81.0%	2.42	3.00	80.7%	0.4%
Benzo(b)fluoranthene	2.70	3.00	90.0%	2.61	3.00	87.0%	3.4%
Benzo(k)fluoranthene	2.66	3.00	88.7%	2.53	3.00	84.3%	5.0%
Benzo(a)pyrene	2.52	3.00	84.0%	2.29	3.00	76.3%	9.6%
Indeno(1,2,3-cd)pyrene	2.66	3.00	88.7%	2.33	3.00	77.7%	13.2%
Dibenz(a,h)anthracene	2.76	3.00	92.0%	2.13	3.00	71.0%	25.8%
Benzo(g,h,i)perylene	2.58	3.00	86.0%	2.25	3.00	75.0%	13.7%
Dibenzofuran	2.33	3.00	77.7%	2.13	3.00	71.0%	9.0%
Total Benzofluoranthenes	7.43	9.00	82.6%	7.16	9.00	79.6%	3.7%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

SIM Semivolatile Surrogate Recovery

	LCS	LCSD
d10-Fluoranthene	89.0%	84.7%
d10-2-Methylnaphthalene	65.3%	62.0%
d14-Dibenzo(a,h)anthracene	91.3%	68.7%

4B

SEMIVOLATILE METHOD BLANK SUMMARY

BLANK NO.

AGC9MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No: AGC9

Project: POS SLIVER

Lab File ID: 15052211

Date Extracted: 05/20/15

Instrument ID: NT8

Date Analyzed: 05/22/15

Matrix: LIQUID

Time Analyzed: 1844

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	15052212	05/22/15
02	AGA8LCSDW1	AGA8LCSDW1	15052213	05/22/15
03	RB-051415	AGC9L	15052215	05/22/15
04				
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FORM IV SV

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PNAs by Selected Ion Monitoring GC/MS **Sample ID: MB-052015**
Extraction Method: SW3520C **METHOD BLANK**

Lab Sample ID: MB-052015
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/22/15 18:44
Instrument/Analyst: NT8/JZ

Sample Amount: 500 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00

CAS Number	Analyte	DL	LOQ	Result
91-20-3	Naphthalene	0.030	0.10	< 0.10 U
91-57-6	2-Methylnaphthalene	0.030	0.10	< 0.10 U
90-12-0	1-Methylnaphthalene	0.029	0.10	< 0.10 U
208-96-8	Acenaphthylene	0.038	0.10	< 0.10 U
83-32-9	Acenaphthene	0.030	0.10	< 0.10 U
86-73-7	Fluorene	0.028	0.10	< 0.10 U
85-01-8	Phenanthrene	0.028	0.10	< 0.10 U
120-12-7	Anthracene	0.035	0.10	< 0.10 U
206-44-0	Fluoranthene	0.035	0.10	< 0.10 U
129-00-0	Pyrene	0.043	0.10	< 0.10 U
56-55-3	Benzo(a)anthracene	0.040	0.10	< 0.10 U
218-01-9	Chrysene	0.032	0.10	< 0.10 U
205-99-2	Benzo(b)fluoranthene	0.042	0.10	< 0.10 U
207-08-9	Benzo(k)fluoranthene	0.043	0.10	< 0.10 U
50-32-8	Benzo(a)pyrene	0.043	0.10	< 0.10 U
193-39-5	Indeno(1,2,3-cd)pyrene	0.042	0.10	< 0.10 U
53-70-3	Dibenz(a,h)anthracene	0.054	0.10	< 0.10 U
191-24-2	Benzo(g,h,i)perylene	0.039	0.10	< 0.10 U
132-64-9	Dibenzofuran	0.028	0.10	< 0.10 U
TOTBFA	Total Benzofluoranthenes	0.041	0.10	< 0.10 U

Reported in µg/L (ppb)

SIM Semivolatile Surrogate Recovery

d10-Fluoranthene	88.0%
d10-2-Methylnaphthalene	71.3%
d14-Dibenzo(a,h)anthracene	93.3%

AGC9 0057

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 04/13/15 DFTPP Injection Time: 1211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	28.2
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	10.0 - 80.0% of mass 198	54.1
197	Less than 2.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.9
275	10.0 - 60.0% of mass 198	37.6
365	Greater than 1.0% of mass 198	5.06
441	0.0 - 24.0% of mass 442	12.2 (16.2)2
442	50.0 - 200.0% of mass 198	75.1
443	15.0 - 24.0% of mass 442	15.8 (21.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	IC25150413	SDD0030-CAL4	15041302	04/13/15	1222
02	IC01150413	SDD0030-CAL1	15041303	04/13/15	1250
03	IC1150413	SDD0030-CAL3	15041305	04/13/15	1341
04	IC5150413	SDD0030-CAL5	15041306	04/13/15	1407
05	IC10150413	SDD0030-CAL6	15041307	04/13/15	1432
06	IC05150413	SDD0030-CAL2	15041308	04/13/15	1458
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

Instrument ID: NT8 Project: POS SLIVER

DFTPP Injection Date: 05/22/15 DFTPP Injection Time: 1441

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	29.1
68	Less than 2.0% of mass 69	0.2 (0.4)1
69	Mass 69 relative abundance	55.3
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	10.0 - 80.0% of mass 198	54.5
197	Less than 2.0% of mass 198	0.3
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.8
275	10.0 - 60.0% of mass 198	36.5
365	Greater than 1.0% of mass 198	4.87
441	0.0 - 24.0% of mass 442	12.5 (16.1)2
442	50.0 - 200.0% of mass 198	77.8
443	15.0 - 24.0% of mass 442	16.8 (21.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV150522	ICV150522	15052202	05/22/15	1453
02	AGA8MBW1	AGA8MBW1	15052211	05/22/15	1844
03	AGA8LCSW1	AGA8LCSW1	15052212	05/22/15	1909
04	AGA8LCSDW1	AGA8LCSDW1	15052213	05/22/15	1935
05	RB-051415	AGC9L	15052215	05/22/15	2026
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6B

SEMIVOLATILE 8270-D INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGC9 Project: POS SLIVER

Instrument ID: NT8 Calibration Date: 04/13/15

LAB FILE ID: RRF0.1=15041303 RRF0.5=15041308 RRF1 =15041305
RRF2.5=15041302 RRF5 =15041306 RRF10 =15041307

COMPOUND	RRF 0.1	RRF 0.5	RRF 1	RRF 2.5	RRF 5	RRF 10	RRF	%RSD /R^2
Naphthalene	0.986	0.893	1.045	0.924	0.994	0.937	0.963	5.7
2-Methylnaphthalene	0.550	0.548	0.613	0.564	0.602	0.569	0.574	4.7
1-methylnaphthalene	0.589	0.507	0.578	0.546	0.579	0.549	0.558	5.4
Biphenyl	1.365	1.093	1.303	1.177	1.276	1.198	1.235	7.9
2,6-Dimethylnaphthalene	0.902	0.837	0.974	0.887	0.962	0.926	0.915	5.6
Acenaphthylene	1.422	1.288	1.535	1.435	1.595	1.488	1.460	7.3
Acenaphthene	0.976	0.877	1.034	0.927	1.041	0.976	0.972	6.5
Dibenzofuran	1.376	1.247	1.455	1.293	1.409	1.285	1.344	6.1
1,6,7-Trimethylnaphthalene	0.873	0.807	0.948	0.898	0.980	0.956	0.910	7.0
Fluorene	1.007	0.964	1.179	1.069	1.182	1.111	1.085	8.2
Dibenzothiophene	0.987	0.866	0.968	0.895	0.936	0.845	0.916	6.2
Phenanthrene	1.060	0.881	1.007	0.927	0.960	0.886	0.954	7.4
Anthracene	0.842	0.759	0.912	0.868	0.920	0.850	0.858	6.8
Carbazole	0.760	0.711	0.759	0.748	0.803	0.750	0.755	3.9
1-Methylphenanthrene	0.690	0.660	0.805	0.741	0.788	0.744	0.738	7.5
Fluoranthene	1.253	1.004	1.180	1.081	1.139	1.034	1.115	8.4
Pyrene	1.259	0.989	1.118	1.101	1.139	1.084	1.115	7.8
Benzo(a)anthracene	1.030	0.874	1.035	1.001	1.053	1.027	1.003	6.6
Chrysene	1.230	0.850	1.015	0.959	1.001	0.980	1.006	12.4
Benzo(b)fluoranthene	1.086	0.953	1.086	1.018	1.104	1.055	1.050	5.4
Benzo(k)fluoranthene	1.086	0.907	1.101	1.012	1.141	1.049	1.049	7.9
Benzo(j)fluoranthene	1.112	0.844	1.045	1.010	1.096	1.038	1.024	9.4
Benzo(e)pyrene	1.262	0.909	1.094	0.995	1.089	1.021	1.062	11.2
Benzo(a)pyrene	1.059	0.802	0.944	0.872	0.992	0.950	0.936	9.6
Perylene	0.979	0.849	1.022	0.949	1.045	0.990	0.972	7.1
Indeno(1,2,3-cd)pyrene	1.062	0.971	1.182	1.107	1.237	1.189	1.125	8.7
Dibenzo(a,h)anthracene	0.892	0.749	0.946	0.900	1.011	0.998	0.916	10.4
Benzo(g,h,i)perylene	0.946	0.879	1.033	0.975	1.079	1.025	0.990	7.2
2-Methylnaphthalene-d10	0.676	0.534	0.633	0.588	0.636	0.597	0.611	8.0
Fluoranthene-d10	1.004	0.901	1.037	0.967	1.028	0.966	0.984	5.1
Dibenzo(a,h)anthracene-d14	0.746	0.649	0.782	0.756	0.816	0.821	0.762	8.3

<- Outside QC limits: %RSD <20% or R^2 > 0.990

7B

SEMIVOLATILE 8270-D CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGC9 Project: POS SLIVER

Instrument ID: NT8 Cont. Calib. Date: 05/22/15

Init. Calib. Date: 04/13/15 Cont. Calib. Time: 1453

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
Naphthalene	0.963	0.940	0.700	AVRG	-2.4
2-Methylnaphthalene	0.574	0.584	0.400	AVRG	1.7
Acenaphthylene	1.460	1.540	0.900	AVRG	5.5
Acenaphthene	0.972	1.027	0.900	AVRG	5.6
Dibenzofuran	1.344	1.401	0.800	AVRG	4.2
Fluorene	1.085	1.204	0.900	AVRG	11.0
Phenanthrene	0.954	0.947	0.700	AVRG	-0.7
Anthracene	0.858	0.873	0.700	AVRG	1.7
Fluoranthene	1.115	1.117	0.600	AVRG	0.2
Pyrene	1.115	1.065	0.600	AVRG	-4.5
Benzo(a)anthracene	1.003	1.011	0.800	AVRG	0.8
Chrysene	1.006	0.978	0.700	AVRG	-2.8
Benzo(b)fluoranthene	1.050	1.042	0.700	AVRG	-0.8
Benzo(k)fluoranthene	1.049	1.043	0.700	AVRG	-0.6
Benzo(j)fluoranthene	1.024	1.017	0.010	AVRG	-0.7
Benzo(a)pyrene	0.936	0.903	0.700	AVRG	-3.5
Indeno(1,2,3-cd)pyrene	1.125	1.134	0.500	AVRG	0.8
Dibenzo(a,h)anthracene	0.916	0.948	0.400	AVRG	3.5
Benzo(g,h,i)perylene	0.990	0.976	0.500	AVRG	-1.4
1-methylnaphthalene	0.558	0.548	0.010	AVRG	-1.8
Perylene	0.972	0.948	0.010	AVRG	-2.5
2-Methylnaphthalene-d10	0.611	0.585	0.010	AVRG	-4.2
Dibenzo(a,h)anthracene-d14	0.762	0.816	0.010	AVRG	7.1
Fluoranthene-d10	0.984	1.002	0.010	AVRG	1.8

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII SV-1

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGC9 Project: POS SLIVER

Ical Midpoint ID: 15041302 Ical Date: 04/13/15

Instrument ID: NT8 Cont. Cal Date: 05/22/15

		IS1(NPT) AREA #	RT #	IS2(ANT) AREA #	RT #	IS3(PHN) AREA #	RT #
	ICAL MIDPT	343090	4.80	230598	7.07	373928	9.09
	UPPER LIMIT	686180		461196		747856	
	LOWER LIMIT	171545		115299		186964	
	CCAL	297291	4.75	191154	7.01	347015	9.03
	UPPER LIMIT		5.25		7.51		9.53
	LOWER LIMIT		4.25		6.51		8.53
01	AGA8MBW1	344358	4.74	232596	7.01	401626	9.03
02	AGA8LCSW1	375304	4.74	236209	7.01	423109	9.03
03	AGA8LCSDW1	365878	4.74	239375	7.01	424130	9.03
04	RB-051415	354755	4.74	241022	7.01	422461	9.03
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20							

IS1 = Naphthalene-d8
IS2 = Acenaphthene-d10
IS3 = Phenanthrene-d10

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

AGC9 00042

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC | Client: KENNEDY JENKS CONSULTANTS

ARI Job No: AGC9 | Project: POS SLIVER

Ical Midpoint ID: 15041302 | Ical Date: 04/13/15

Instrument ID: NT8 | Cont. Cal Date: 05/22/15

		IS4(CRY)		IS5(PRY)			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	381262	13.92	380825	17.76		
	UPPER LIMIT	762524		761650			
	LOWER LIMIT	190631		190412			
	CCAL	373266	13.82	374830	17.64		
	UPPER LIMIT		14.32		18.14		
	LOWER LIMIT		13.32		17.14		
01	AGA8MBW1	432555	13.81	413095	17.65		
02	AGA8LCSW1	473638	13.81	444966	17.64		
03	AGA8LCSDW1	478376	13.81	455442	17.64		
04	RB-051415	465993	13.81	433370	17.64		
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IS4 = Chrysene-d12
IS5 = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Cont. Cal
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Cont. Cal

* Values outside of QC limits.

PCB Analysis
Report and Summary QC Forms

ARI Job ID: AGC9

AGC9 00054

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: SDP-01(3.0-4.0)
SAMPLE

Lab Sample ID: AGC9A
LIMS ID: 15-9431
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 12:40
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.35 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 11.1%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.3	19	< 19 U
53469-21-9	Aroclor 1242	7.3	19	< 19 U
12672-29-6	Aroclor 1248	7.3	19	< 19 U
11097-69-1	**Aroclor 1254**	**7.3**	**19**	**200**
11096-82-5	**Aroclor 1260**	**2.8**	**19**	**120**
11104-28-2	Aroclor 1221	7.3	19	< 19 U
11141-16-5	Aroclor 1232	7.3	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	83.0%
Tetrachlorometaxylene	77.2%

AGC9 AGC9S

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-01(8.0-9.0)
SAMPLE

Lab Sample ID: AGC9B
LIMS ID: 15-9432
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 13:01
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.61 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 20.4%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	6.9	18	< 18 U
53469-21-9	Aroclor 1242	6.9	18	< 18 U
12672-29-6	Aroclor 1248	6.9	130	< 130 Y
11097-69-1	**Aroclor 1254**	**6.9**	**18**	**470**
11096-82-5	Aroclor 1260	2.6	44	< 44 Y
11104-28-2	Aroclor 1221	6.9	18	< 18 U
11141-16-5	Aroclor 1232	6.9	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.8%
Tetrachlorometaxylene	75.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-02(16.0-17.5)
SAMPLE

Lab Sample ID: AGC9C
LIMS ID: 15-9433
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 13:23
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.14 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.9%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.6	20	< 20 U
53469-21-9	Aroclor 1242	7.6	20	< 20 U
12672-29-6	Aroclor 1248	7.6	290	< 290 Y
11097-69-1	Aroclor 1254	7.6	490	< 490 Y
11096-82-5	Aroclor 1260	2.9	20	< 20 U
11104-28-2	Aroclor 1221	7.6	20	< 20 U
11141-16-5	Aroclor 1232	7.6	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	116%
Tetrachlorometaxylene	89.8%

FORM I

AGC9 00057

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-02(18.5-19.5)
SAMPLE

Lab Sample ID: AGC9D
LIMS ID: 15-9434
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 13:44
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.26 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 34.5%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.4	19	< 19 U
53469-21-9	Aroclor 1242	7.4	28	< 28 Y
12672-29-6	Aroclor 1248	7.4	19	< 19 U
11097-69-1	**Aroclor 1254**	**7.4**	**19**	**34**
11096-82-5	**Aroclor 1260**	**2.8**	**19**	**35 P**
11104-28-2	Aroclor 1221	7.4	19	< 19 U
11141-16-5	Aroclor 1232	7.4	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.5%
Tetrachlorometaxylene	83.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-02(22.0-23.5)
SAMPLE

Lab Sample ID: AGC9E
LIMS ID: 15-9435
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:05
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.31 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 24.3%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.3	19	< 19 U
53469-21-9	Aroclor 1242	7.3	19	< 19 U
12672-29-6	Aroclor 1248	7.3	19	< 19 U
11097-69-1	Aroclor 1254	7.3	19	< 19 U
11096-82-5	Aroclor 1260	2.8	19	< 19 U
11104-28-2	Aroclor 1221	7.3	19	< 19 U
11141-16-5	Aroclor 1232	7.3	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.0%
Tetrachlorometaxylene	71.8%

FORM I

AGC9.0065

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-03(6.5-8.0)
SAMPLE

Lab Sample ID: AGC9F
LIMS ID: 15-9436
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:27
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.56 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 8.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.0	18	< 18 U
53469-21-9	Aroclor 1242	7.0	18	< 18 U
12672-29-6	Aroclor 1248	7.0	27	< 27 Y
11097-69-1	**Aroclor 1254**	**7.0**	**18**	**170**
11096-82-5	**Aroclor 1260**	**2.6**	**18**	**32**
11104-28-2	Aroclor 1221	7.0	18	< 18 U
11141-16-5	Aroclor 1232	7.0	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.5%
Tetrachlorometaxylene	73.8%

FORM I

AGC9 : 00073

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-03(23.5-24.5)
SAMPLE

Lab Sample ID: AGC9G
LIMS ID: 15-9437
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 14:48
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.48 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 22.2%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.1	18	< 18 U
53469-21-9	Aroclor 1242	7.1	18	< 18 U
12672-29-6	Aroclor 1248	7.1	18	< 18 U
11097-69-1	**Aroclor 1254**	**7.1**	**18**	**14 J**
11096-82-5	Aroclor 1260	2.7	18	< 18 U
11104-28-2	Aroclor 1221	7.1	18	< 18 U
11141-16-5	Aroclor 1232	7.1	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.8%
Tetrachlorometaxylene	75.0%

FORM I

AGC9 : 06671

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
SAMPLE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 15:53
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.43 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.2	18	< 18 U
53469-21-9	Aroclor 1242	7.2	18	< 18 U
12672-29-6	Aroclor 1248	7.2	18	< 18 U
11097-69-1	**Aroclor 1254**	**7.2**	**18**	**90**
11096-82-5	**Aroclor 1260**	**2.7**	**18**	**68**
11104-28-2	Aroclor 1221	7.2	18	< 18 U
11141-16-5	Aroclor 1232	7.2	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	77.2%
Tetrachlorometaxylene	75.2%

FORM I

AGC9 00072

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-04(10.5-12.0)
SAMPLE

Lab Sample ID: AGC9I
LIMS ID: 15-9439
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:57
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.22 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 14.2%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.5	19	< 19 U
53469-21-9	Aroclor 1242	7.5	19	< 19 U
12672-29-6	Aroclor 1248	7.5	96	< 96 Y
11097-69-1	**Aroclor 1254**	**7.5**	**19**	**300**
11096-82-5	**Aroclor 1260**	**2.8**	**19**	**92**
11104-28-2	Aroclor 1221	7.5	19	< 19 U
11141-16-5	Aroclor 1232	7.5	19	< 19 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	79.8%
Tetrachlorometaxylene	75.0%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-05(6.5-7.5)
SAMPLE

Lab Sample ID: AGC9J
LIMS ID: 15-9440
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 17:18
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.69 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 19.0%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	6.9	18	< 18 U
53469-21-9	Aroclor 1242	6.9	18	< 18 U
12672-29-6	Aroclor 1248	6.9	18	< 18 U
11097-69-1	Aroclor 1254	6.9	18	< 18 U
11096-82-5	Aroclor 1260	2.6	18	< 18 U
11104-28-2	Aroclor 1221	6.9	18	< 18 U
11141-16-5	Aroclor 1232	6.9	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	75.2%
Tetrachlorometaxylene	70.2%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546

Sample ID: SDP-05(17.5-19.0)
SAMPLE

Lab Sample ID: AGC9K
LIMS ID: 15-9441
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 17:40
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.66 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 19.6%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	6.9	18	< 18 U
53469-21-9	Aroclor 1242	6.9	18	< 18 U
12672-29-6	Aroclor 1248	6.9	18	< 18 U
11097-69-1	Aroclor 1254	6.9	18	< 18 U
11096-82-5	Aroclor 1260	2.6	18	< 18 U
11104-28-2	Aroclor 1221	6.9	18	< 18 U
11141-16-5	Aroclor 1232	6.9	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.0%
Tetrachlorometaxylene	68.8%

AGC9 : 28075

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB SOIL/SOLID/SEDIMENT SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
SDP-01(3.0-4.0)	83.0%	40-133	77.2%	53-120	0
SDP-01(8.0-9.0)	82.8%	40-133	75.2%	53-120	0
SDP-02(16.0-17.5)	116%	40-133	89.8%	53-120	0
SDP-02(18.5-19.5)	80.5%	40-133	83.0%	53-120	0
SDP-02(22.0-23.5)	78.0%	40-133	71.8%	53-120	0
SDP-03(6.5-8.0)	78.5%	40-133	73.8%	53-120	0
SDP-03(23.5-24.5)	79.8%	40-133	75.0%	53-120	0
MB-052215	90.8%	40-133	81.5%	53-120	0
LCS-052215	87.8%	40-133	78.0%	53-120	0
SDP-04(1.5-3.0)	77.2%	40-133	75.2%	53-120	0
SDP-04(1.5-3.0) MS	80.0%	40-133	76.5%	53-120	0
SDP-04(1.5-3.0) MSD	82.0%	40-133	80.2%	53-120	0
SDP-04(10.5-12.0)	79.8%	40-133	75.0%	53-120	0
SDP-05(6.5-7.5)	75.2%	40-133	70.2%	53-120	0
SDP-05(17.5-19.0)	78.0%	40-133	68.8%	53-120	0

Microwave (MARS) Control Limits PCBSMP
Prep Method: SW3546
Log Number Range: 15-9431 to 15-9441

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
MS/MSD

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted MS/MSD: 05/22/15

Date Analyzed MS: 06/01/15 16:14
MSD: 06/01/15 16:35
Instrument/Analyst MS: ECD7/JGR
MSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount MS: 5.46 g-dry-wt
MSD: 5.45 g-dry-wt
Final Extract Volume MS: 5.0 mL
MSD: 5.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Silica Gel: No

Percent Moisture: 9.7%

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Aroclor 1016	< 18 U	403	458	88.0%	414	459	90.2%	2.7%
Aroclor 1260	68	482	458	90.4%	493	459	92.6%	2.3%

Results reported in µg/kg (ppb)
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:14
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.46 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.1	18	---
53469-21-9	Aroclor 1242	7.1	18	< 18 U
12672-29-6	Aroclor 1248	7.1	18	< 18 U
11097-69-1	**Aroclor 1254**	**7.1**	**18**	**220**
11096-82-5	Aroclor 1260	2.7	18	---
11104-28-2	Aroclor 1221	7.1	18	< 18 U
11141-16-5	Aroclor 1232	7.1	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	80.0%
Tetrachlorometaxylene	76.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD **Sample ID: SDP-04(1.5-3.0)**
Extraction Method: SW3546 **MATRIX SPIKE DUP**

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 16:35
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.45 g-dry-wt
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: 9.7%

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.2	18	---
53469-21-9	Aroclor 1242	7.2	18	< 18 U
12672-29-6	Aroclor 1248	7.2	18	< 18 U
11097-69-1	**Aroclor 1254**	**7.2**	**18**	**230**
11096-82-5	Aroclor 1260	2.7	18	---
11104-28-2	Aroclor 1221	7.2	18	< 18 U
11141-16-5	Aroclor 1232	7.2	18	< 18 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	82.0%
Tetrachlorometaxylene	80.2%

AGC9 00075

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD

Sample ID: LCS-052215
LAB CONTROL

Lab Sample ID: LCS-052215
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 12:18
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes
Florisil Cleanup: No

Sample Amount: 5.00 g-dry-wt
Final Extract Volume: 5.00 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

Analyte	Lab Control	Spike Added	Recovery
Aroclor 1016	428	500	85.6%
Aroclor 1260	468	500	93.6%

PCB Surrogate Recovery

Decachlorobiphenyl	87.8%
Tetrachlorometaxylene	78.0%

Results reported in µg/kg (ppb)

AGCS 00826

PCB METHOD BLANK SUMMARY

BLANK NO.

AGC9MBS1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No.: AGC9

Project: POS SLIVER

Lab Sample ID: AGC9MBS1

Lab File ID: 06011504

Date Extracted: 05/22/15

Matrix: SOLID

Date Analyzed: 06/01/15

Instrument ID: ECD7

Time Analyzed: 1157

GC Columns: ZB5/ZB35

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGC9LCSS1	AGC9LCSS1	06/01/15
02	SDP-01(3.0-4.0)	AGC9A	06/01/15
03	SDP-01(8.0-9.0)	AGC9B	06/01/15
04	SDP-02(16.0-17.5)	AGC9C	06/01/15
05	SDP-02(18.5-19.5)	AGC9D	06/01/15
06	SDP-02(22.0-23.5)	AGC9E	06/01/15
07	SDP-03(6.5-8.0)	AGC9F	06/01/15
08	SDP-03(23.5-24.5)	AGC9G	06/01/15
09	SDP-04(1.5-3.0)	AGC9H	06/01/15
10	SDP-04(1.5-3.0) MS	AGC9HMS	06/01/15
11	SDP-04(1.5-3.0) MSD	AGC9HMSD	06/01/15
12	SDP-04(10.5-12.0)	AGC9I	06/01/15
13	SDP-05(6.5-7.5)	AGC9J	06/01/15
14	SDP-05(17.5-19.0)	AGC9K	06/01/15

ALL RUNS ARE DUAL COLUMN

FORM IV PCB

AGC9 26081

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PSDDA PCB by GC/ECD
Extraction Method: SW3546
Page 1 of 1

Sample ID: MB-052215
METHOD BLANK

Lab Sample ID: MB-052215
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/03/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/22/15
Date Analyzed: 06/01/15 11:57
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes
Acid Cleanup: Yes

Sample Amount: 5.00 g
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No

Percent Moisture: NA

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	7.8	20	< 20 U
53469-21-9	Aroclor 1242	7.8	20	< 20 U
12672-29-6	Aroclor 1248	7.8	20	< 20 U
11097-69-1	Aroclor 1254	7.8	20	< 20 U
11096-82-5	Aroclor 1260	2.9	20	< 20 U
11104-28-2	Aroclor 1221	7.8	20	< 20 U
11141-16-5	Aroclor 1232	7.8	20	< 20 U

Reported in µg/kg (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	90.8%
Tetrachlorometaxylene	81.5%

FORM I

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 6.29- 6.49	0.5243	0.5274	0.5462	0.5187	0.5432	0.5951	0.5425	5.1
DCB 14.80-15.00	1.0363	0.9972	1.0191	0.9389	0.9796	1.0652	1.0060	4.4

Aroclor-1016 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 8.29- 8.49	0.0136	0.0136	0.0136	0.0122	0.0120	0.0122	0.0129	6.0
2 8.77- 8.97	0.0408	0.0409	0.0412	0.0371	0.0372	0.0393	0.0394	4.8
3 9.06- 9.26	0.0126	0.0142	0.0142	0.0130	0.0131	0.0138	0.0135	4.9
4 9.84-10.04	0.0145	0.0147	0.0148	0.0139	0.0137	0.0144	0.0143	3.1

AROCLOR AVERAGE %RSD = 4.7

Aroclor-1260 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 12.39-12.59	0.0300	0.0276	0.0271	0.0240	0.0235	0.0245	0.0261	9.7
2 13.06-13.26	0.0802	0.0834	0.0852	0.0811	0.0841	0.0929	0.0845	5.3
3 13.43-13.63	0.0387	0.0389	0.0398	0.0376	0.0385	0.0419	0.0392	3.7
4 13.53-13.73	0.0238	0.0237	0.0245	0.0227	0.0229	0.0244	0.0237	3.1
5 13.92-14.12	0.0123	0.0128	0.0134	0.0126	0.0129	0.0139	0.0130	4.5

AROCLOR AVERAGE %RSD = 5.3

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 5.85- 6.05	1.1169	1.0790	1.1065	1.0231	1.0452	1.1024	1.0789	3.5
DCB 14.77-14.97	1.0675	1.0011	0.9976	0.8905	0.9087	0.9214	0.9645	7.1

Aroclor-1016 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 7.97- 8.17	0.0497	0.0478	0.0465	0.0408	0.0391	0.0392	0.0438	10.8
2 8.74- 8.94	0.1042	0.0989	0.0975	0.0864	0.0847	0.0871	0.0931	8.7
3 9.18- 9.38	0.0264	0.0256	0.0252	0.0224	0.0220	0.0225	0.0240	8.0
4 9.94-10.14	0.0185	0.0181	0.0180	0.0158	0.0154	0.0159	0.0170	8.1

AROCLOR AVERAGE %RSD = 8.9

Aroclor-1260 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 12.31-12.51	0.0845	0.0774	0.0750	0.0664	0.0636	0.0635	0.0717	12.0
2 13.02-13.22	0.1781	0.1765	0.1731	0.1592	0.1565	0.1591	0.1671	5.9
3 13.49-13.69	0.0573	0.0543	0.0531	0.0468	0.0466	0.0462	0.0507	9.4
4 13.54-13.74	0.1225	0.1165	0.1155	0.1022	0.1021	0.1018	0.1101	8.3

AROCLOR AVERAGE %RSD = 8.9

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.023	4.92- 5.12	0.00326
2	6.999	6.90- 7.10	0.00510
3	7.123	7.02- 7.22	0.01438

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.026	4.93- 5.13	0.00185
2	6.999	6.90- 7.10	0.00352
3	7.126	7.03- 7.23	0.00960
4	8.830	8.73- 8.93	0.01605

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.868	8.77- 8.97	0.02886
2	9.162	9.06- 9.26	0.01033
3	10.332	10.23-10.43	0.00963
4	10.634	10.53-10.73	0.01442

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.415	9.32- 9.52	0.00919
2	9.930	9.83-10.03	0.01954
3	10.379	10.28-10.48	0.02270
4	10.624	10.52-10.72	0.02296

AGC9 00045

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.393	10.29-10.49	0.01461
2	10.712	10.61-10.81	0.02088
3	11.092	10.99-11.19	0.01694
4	11.229	11.13-11.33	0.03196
5	11.942	11.84-12.04	0.02291

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.467	12.37-12.57	0.04717
2	13.143	13.04-13.24	0.13122
3	13.513	13.41-13.61	0.04136
4	13.675	13.57-13.77	0.07177
5	14.216	14.12-14.32	0.06421

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.612	13.51-13.71	0.12401
2	13.674	13.57-13.77	0.14535
3	13.996	13.90-14.10	0.12995
4	14.597	14.50-14.70	0.45431

AGCS 00046

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.018	4.92- 5.12	0.00831
2	6.720	6.62- 6.82	0.01390
3	7.015	6.92- 7.12	0.00785
4	7.150	7.05- 7.25	0.02401

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.021	4.92- 5.12	0.00505
2	7.153	7.05- 7.25	0.01695
3	8.029	7.93- 8.13	0.01987
4	9.247	9.15- 9.35	0.01020

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.070	7.97- 8.17	0.03218
2	8.843	8.74- 8.94	0.06793
3	10.401	10.30-10.50	0.02366
4	10.758	10.66-10.86	0.02878

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	8.823	8.72- 8.92	0.04409
2	9.833	9.73- 9.93	0.03523
3	10.390	10.29-10.49	0.03734
4	10.746	10.65-10.85	0.04820

AGC9 8082T

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.638	10.54-10.74	0.04214
2	10.732	10.63-10.83	0.01997
3	11.166	11.07-11.27	0.03293
4	11.318	11.22-11.42	0.07025
5	12.096	12.00-12.20	0.04197

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.394	12.29-12.49	0.12680
2	12.836	12.74-12.94	0.11918
3	13.100	13.00-13.20	0.24458
4	13.570	13.47-13.67	0.10546
5	14.212	14.11-14.31	0.08290

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.569	13.47-13.67	0.18747
2	13.628	13.53-13.73	0.17713
3	13.953	13.85-14.05	0.14275
4	14.573	14.47-14.67	0.40246

AGC9 - 00088

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1242 Time Analyzed :1000

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.84	8.77	8.97	254.6	250.0	1.8
Aroclor-1242-2	9.14	9.06	9.26	254.9	250.0	1.9
Aroclor-1242-3	10.31	10.23	10.43	265.4	250.0	6.2
Aroclor-1242-4	10.62	10.53	10.73	279.4	250.0	11.8

AROCLOR AVG: 263.6 CAL %D = 5.4

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1242 Time Analyzed :1000

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.04	7.97	8.17	256.9	250.0	2.8
Aroclor-1242-2	8.82	8.74	8.94	245.0	250.0	-2.0
Aroclor-1242-3	10.38	10.30	10.50	250.5	250.0	0.2
Aroclor-1242-4	10.74	10.66	10.86	247.2	250.0	-1.1

AROCLOR AVG: 249.9 CAL %D = 0.0

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1021

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.37	8.29	8.49	256.6	250.0	2.6
Aroclor-1016-2	8.85	8.77	8.97	253.3	250.0	1.3
Aroclor-1016-3	9.15	9.06	9.26	263.2	250.0	5.3
Aroclor-1016-4	9.93	9.84	10.04	261.5	250.0	4.6

AROCLOR AVG: 258.6 CAL %D = 3.5

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1021

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.48	12.39	12.59	282.5	250.0	13.0
Aroclor-1260-2	13.15	13.06	13.26	282.7	250.0	13.1
Aroclor-1260-3	13.52	13.43	13.63	278.3	250.0	11.3
Aroclor-1260-4	13.62	13.53	13.73	281.3	250.0	12.5
Aroclor-1260-5	14.02	13.92	14.12	280.3	250.0	12.1

AROCLOR AVG: 281.0 CAL %D = 12.4

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1021

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.05	7.97	8.17	248.3	250.0	-0.7
Aroclor-1016-2	8.83	8.74	8.94	239.9	250.0	-4.0
Aroclor-1016-3	9.26	9.18	9.38	249.1	250.0	-0.4
Aroclor-1016-4	10.02	9.94	10.14	236.7	250.0	-5.3

AROCLOR AVG: 243.5 CAL %D = -2.6

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1021

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.31	12.51	226.9	250.0	-9.2
Aroclor-1260-2	13.11	13.02	13.22	229.3	250.0	-8.3
Aroclor-1260-3	13.58	13.49	13.69	219.9	250.0	-12.0
Aroclor-1260-4	13.63	13.54	13.74	221.6	250.0	-11.4

AROCLOR AVG: 224.4 CAL %D = -10.2

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1248 Time Analyzed :1510

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	9.43	9.32	9.52	252.6	250.0	1.0
Aroclor-1248-2	9.94	9.83	10.03	254.4	250.0	1.8
Aroclor-1248-3	10.39	10.28	10.48	255.6	250.0	2.2
Aroclor-1248-4	10.63	10.52	10.72	259.5	250.0	3.8

AROCLOR AVG: 255.5 CAL %D = 2.2

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1248 Time Analyzed :1510

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1248-1	8.84	8.72	8.92	249.7	250.0	-0.1
Aroclor-1248-2	9.84	9.73	9.93	243.9	250.0	-2.4
Aroclor-1248-3	10.40	10.29	10.49	241.8	250.0	-3.3
Aroclor-1248-4	10.75	10.65	10.85	239.2	250.0	-4.3

AROCLOR AVG: 243.7 CAL %D = -2.5

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1531

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.39	8.29	8.49	255.9	250.0	2.3
Aroclor-1016-2	8.87	8.77	8.97	251.9	250.0	0.8
Aroclor-1016-3	9.16	9.06	9.26	262.5	250.0	5.0
Aroclor-1016-4	9.94	9.84	10.04	259.5	250.0	3.8

AROCLOR AVG: 257.4 CAL %D = 3.0

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1531

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.49	12.39	12.59	275.3	250.0	10.1
Aroclor-1260-2	13.16	13.06	13.26	278.0	250.0	11.2
Aroclor-1260-3	13.53	13.43	13.63	273.6	250.0	9.4
Aroclor-1260-4	13.63	13.53	13.73	276.6	250.0	10.6
Aroclor-1260-5	14.02	13.92	14.12	277.9	250.0	11.2

AROCLOR AVG: 276.3 CAL %D = 10.5

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1531

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.07	7.97	8.17	248.1	250.0	-0.8
Aroclor-1016-2	8.84	8.74	8.94	241.7	250.0	-3.3
Aroclor-1016-3	9.28	9.18	9.38	249.5	250.0	-0.2
Aroclor-1016-4	10.04	9.94	10.14	232.9	250.0	-6.8

AROCLOR AVG: 243.1 CAL %D = -2.8

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1531

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.41	12.31	12.51	228.7	250.0	-8.5
Aroclor-1260-2	13.12	13.02	13.22	231.0	250.0	-7.6
Aroclor-1260-3	13.58	13.49	13.69	223.4	250.0	-10.6
Aroclor-1260-4	13.64	13.54	13.74	228.6	250.0	-8.6

AROCLOR AVG: 227.9 CAL %D = -8.8

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1254 Time Analyzed :1801

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.40	10.29	10.49	249.9	250.0	-0.0
Aroclor-1254-2	10.71	10.61	10.81	254.1	250.0	1.6
Aroclor-1254-3	11.09	10.99	11.19	255.2	250.0	2.1
Aroclor-1254-4	11.23	11.13	11.33	255.7	250.0	2.3
Aroclor-1254-5	11.94	11.84	12.04	255.9	250.0	2.3

AROCLOR AVG: 254.2 CAL %D = 1.7

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1254 Time Analyzed :1801

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.64	10.54	10.74	243.0	250.0	-2.8
Aroclor-1254-2	10.73	10.63	10.83	249.2	250.0	-0.3
Aroclor-1254-3	11.17	11.07	11.27	242.4	250.0	-3.0
Aroclor-1254-4	11.32	11.22	11.42	234.3	250.0	-6.3
Aroclor-1254-5	12.10	12.00	12.20	240.9	250.0	-3.6

AROCLOR AVG: 242.0 CAL %D = -3.2

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1823

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.38	8.29	8.49	256.0	250.0	2.4
Aroclor-1016-2	8.87	8.77	8.97	252.7	250.0	1.1
Aroclor-1016-3	9.16	9.06	9.26	263.5	250.0	5.4
Aroclor-1016-4	9.94	9.84	10.04	259.4	250.0	3.7

AROCLOR AVG: 257.9 CAL %D = 3.1

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1823

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.49	12.39	12.59	271.6	250.0	8.6
Aroclor-1260-2	13.16	13.06	13.26	275.4	250.0	10.2
Aroclor-1260-3	13.53	13.43	13.63	270.9	250.0	8.4
Aroclor-1260-4	13.63	13.53	13.73	273.3	250.0	9.3
Aroclor-1260-5	14.02	13.92	14.12	274.2	250.0	9.7

AROCLOR AVG: 273.1 CAL %D = 9.2

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1823

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.07	7.97	8.17	247.5	250.0	-1.0
Aroclor-1016-2	8.84	8.74	8.94	241.1	250.0	-3.6
Aroclor-1016-3	9.28	9.18	9.38	248.4	250.0	-0.6
Aroclor-1016-4	10.04	9.94	10.14	231.3	250.0	-7.5

AROCLOR AVG: 242.1 CAL %D = -3.2

Date Analyzed :06/01/15

Lab Standard ID: AR1660 Time Analyzed :1823

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.41	12.31	12.51	231.7	250.0	-7.3
Aroclor-1260-2	13.12	13.02	13.22	233.4	250.0	-6.6
Aroclor-1260-3	13.58	13.49	13.69	226.4	250.0	-9.4
Aroclor-1260-4	13.64	13.54	13.74	230.7	250.0	-7.7

AROCLOR AVG: 230.6 CAL %D = -7.8

FORM VII PCB

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	5449431	3.349	5633814	15.142
	UPPER LIMIT	10898862	3.449	11267628	15.242
	LOWER LIMIT	2724716	3.249	2816907	15.042

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	5364462	3.346	5547552	15.142
02		0.25PPMAR166	05/27/15	1811	5449431	3.349	5633814	15.142
03		0.02PPMAR166	05/27/15	1833	5444099	3.348	5676446	15.142
04		0.05PPMAR166	05/27/15	1854	5268631	3.345	5493956	15.142
05		1PPMAR1660	05/27/15	1915	4843983	3.347	5005102	15.142
06		0.1PPMAR1660	05/27/15	1937	5165460	3.348	5387445	15.143
07		0.5PPMAR1660	05/27/15	1958	5176005	3.347	5390218	15.143
08		AR1242	05/27/15	2020	5337516	3.344	5573924	15.142
09		AR1248	05/27/15	2041	5300438	3.347	5560964	15.142
10		AR1254	05/27/15	2102	5232643	3.344	5441303	15.142
11		AR2162	05/27/15	2124	5278972	3.343	5544225	15.141
12		AR3268	05/27/15	2145	5332927	3.345	5498000	15.142
13	ZZZZZ	ZZZZZ	05/27/15	2207	5348403	3.348	5628466	15.143
14	ZZZZZ	ZZZZZ	05/27/15	2228	5313543	3.347	5448595	15.142
15	ZZZZZ	ZZZZZ	05/27/15	2249	5283025	3.346	5563146	15.142
16	ZZZZZ	ZZZZZ	05/27/15	2311	5217434	3.346	5473683	15.141
17	ZZZZZ	ZZZZZ	05/27/15	2332	5327597	3.347	5510995	15.141
18	ZZZZZ	ZZZZZ	05/27/15	2354	5291377	3.346	5478047	15.141
19		AR1242	06/01/15	1000	5261745	3.350	4917776	15.149
20		AR1660	06/01/15	1021	5034372	3.364	4788034	15.149
21	AGC9MBS1	AGC9MBS1	06/01/15	1157	5502698	3.322	5697175	15.148
22	AGC9LCSS1	AGC9LCSS1	06/01/15	1218	5650356	3.352	5778029	15.148
23	SDP-01(3.0-4	AGC9A	06/01/15	1240	5914091	3.365	5819276	15.150
24	SDP-01(8.0-9	AGC9B	06/01/15	1301	5863407	3.372	5845079	15.151
25	SDP-02(16.0-	AGC9C	06/01/15	1323	5693115	3.374	5101685	15.153
26	SDP-02(18.5-	AGC9D	06/01/15	1344	6012648	3.377	5125958	15.151
27	SDP-02(22.0-	AGC9E	06/01/15	1405	6063623	3.376	5349408	15.151
28	SDP-03(6.5-8	AGC9F	06/01/15	1427	5879291	3.378	5393474	15.151
29	SDP-03(23.5-	AGC9G	06/01/15	1448	5731652	3.378	5349736	15.151
30		AR1248	06/01/15	1510	5325226	3.380	5260221	15.152
31		AR1660	06/01/15	1531	5119769	3.379	4961407	15.151
32	SDP-04(1.5-3	AGC9H	06/01/15	1553	5850926	3.375	5624341	15.151

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

FORM 8

PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

					IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
				ICAL MIDPT	5449431	3.349	5633814	15.142
				UPPER LIMIT	10898862	3.449	11267628	15.242
				LOWER LIMIT	2724716	3.249	2816907	15.042
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	IS1 RT	IS2 AREA	IS2 RT
33	SDP-04(1.5-3	AGC9HMS	06/01/15	1614	5916810	3.377	5597815	15.151
34	SDP-04(1.5-3	AGC9HMSD	06/01/15	1635	5752364	3.379	5363111	15.151
35	SDP-04(10.5-	AGC9I	06/01/15	1657	5811891	3.379	5250297	15.151
36	SDP-05(6.5-7	AGC9J	06/01/15	1718	5735307	3.379	5596398	15.152
37	SDP-05(17.5-	AGC9K	06/01/15	1740	5951278	3.379	6004275	15.152
38		AR1254	06/01/15	1801	5497704	3.378	5431715	15.152
39		AR1660	06/01/15	1823	5143320	3.379	5141482	15.151

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGC9:00193

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	13059494	3.699	8980422	15.445
	UPPER LIMIT	26118988	3.799	17960844	15.545
	LOWER LIMIT	6529747	3.599	4490211	15.345

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	12796516	3.695	8835826	15.445
02		0.25PPMAR166	05/27/15	1811	13059494	3.699	8980422	15.445
03		0.02PPMAR166	05/27/15	1833	13077546	3.697	9069474	15.444
04		0.05PPMAR166	05/27/15	1854	12739883	3.695	8861124	15.444
05		1PPMAR1660	05/27/15	1915	11620227	3.696	8524199	15.445
06		0.1PPMAR1660	05/27/15	1937	12572695	3.698	8906734	15.445
07		0.5PPMAR1660	05/27/15	1958	12702598	3.696	8989742	15.445
08		AR1242	05/27/15	2020	12964295	3.694	9247281	15.445
09		AR1248	05/27/15	2041	12820555	3.698	9271038	15.445
10		AR1254	05/27/15	2102	12686823	3.693	9119341	15.444
11		AR2162	05/27/15	2124	12591250	3.694	9419455	15.445
12		AR3268	05/27/15	2145	12844090	3.694	9415095	15.445
13	ZZZZZ	ZZZZZ	05/27/15	2207	12940835	3.697	9714071	15.445
14	ZZZZZ	ZZZZZ	05/27/15	2228	12729044	3.697	9658995	15.445
15	ZZZZZ	ZZZZZ	05/27/15	2249	12806439	3.695	9699512	15.444
16	ZZZZZ	ZZZZZ	05/27/15	2311	12694649	3.696	9548705	15.445
17	ZZZZZ	ZZZZZ	05/27/15	2332	12767315	3.697	9637779	15.444
18	ZZZZZ	ZZZZZ	05/27/15	2354	12775400	3.696	9670669	15.445
19		AR1242	06/01/15	1000	11916765	3.699	8317065	15.450
20		AR1660	06/01/15	1021	11878558	3.714	8320333	15.450
21	AGC9MBS1	AGC9MBS1	06/01/15	1157	13041422	3.654	9269178	15.447
22	AGC9LCSS1	AGC9LCSS1	06/01/15	1218	13045224	3.702	9553346	15.449
23	SDP-01(3.0-4	AGC9A	06/01/15	1240	13532961	3.714	10173797	15.451
24	SDP-01(8.0-9	AGC9B	06/01/15	1301	13233222	3.722	10272345	15.452
25	SDP-02(16.0-	AGC9C	06/01/15	1323	12406397	3.725	9254042	15.452
26	SDP-02(18.5-	AGC9D	06/01/15	1344	13166116	3.728	8900742	15.452
27	SDP-02(22.0-	AGC9E	06/01/15	1405	13130266	3.727	9305743	15.451
28	SDP-03(6.5-8	AGC9F	06/01/15	1427	13443972	3.728	9324908	15.453
29	SDP-03(23.5-	AGC9G	06/01/15	1448	13084819	3.729	9546978	15.452
30		AR1248	06/01/15	1510	12644660	3.730	8957832	15.454
31		AR1660	06/01/15	1531	12175727	3.730	8500039	15.453
32	SDP-04(1.5-3	AGC9H	06/01/15	1553	13778749	3.727	9815637	15.453

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGCS : 001805

FORM 8

PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No.: AGC9 Project: POS SILVER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	13059494	3.699	8980422	15.445
	UPPER LIMIT	26118988	3.799	17960844	15.545
	LOWER LIMIT	6529747	3.599	4490211	15.345

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
33	SDP-04(1.5-3	AGC9HMS	06/01/15	1614	14021004	3.728	9854598	15.453
34	SDP-04(1.5-3	AGC9HMSD	06/01/15	1635	13625330	3.729	9621573	15.453
35	SDP-04(10.5-	AGC9I	06/01/15	1657	13135636	3.729	9665821	15.452
36	SDP-05(6.5-7	AGC9J	06/01/15	1718	13389023	3.729	9715678	15.453
37	SDP-05(17.5-	AGC9K	06/01/15	1740	14037577	3.730	10625260	15.453
38		AR1254	06/01/15	1801	13088186	3.729	9321958	15.453
39		AR1660	06/01/15	1823	12379324	3.729	8915634	15.453

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min

IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGC9 2015

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A
Extraction Method: SW3510C
Page 1 of 1

Sample ID: RB-051415
SAMPLE

Lab Sample ID: AGC9L
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted: 05/20/15
Date Analyzed: 05/28/15 12:45
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.13	1.0	< 1.0 U
53469-21-9	Aroclor 1242	0.15	1.0	< 1.0 U
12672-29-6	Aroclor 1248	0.15	1.0	< 1.0 U
11097-69-1	Aroclor 1254	0.15	1.0	< 1.0 U
11096-82-5	Aroclor 1260	0.15	1.0	< 1.0 U
11104-28-2	Aroclor 1221	0.15	1.0	< 1.0 U
11141-16-5	Aroclor 1232	0.15	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	66.2%
Tetrachlorometaxylene	72.5%

FORM I

ANALYTICAL RESOURCES INCORPORATED

SW8082/PCB WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	DCBP % REC	DCBP LCL-UCL	TCMX % REC	TCMX LCL-UCL	TOT OUT
MB-052015	78.5%	38-120	70.2%	29-120	0
LCS-052015	81.2%	38-120	78.2%	29-120	0
LCSD-052015	75.5%	38-120	78.8%	29-120	0
RB-051415	66.2%	38-120	72.5%	29-120	0

Prep Method: SW3510C
Log Number Range: 15-9442 to 15-9442

FORM-II SW8082

AGC9 00196

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A

Sample ID: LCS-052015
LCS/LCSD

Lab Sample ID: LCS-052015
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/28/15 11:40
LCSD: 05/28/15 12:02
Instrument/Analyst LCS: ECD7/JGR
LCSD: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 5.0 mL
LCSD: 5.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Silica Gel: No
Acid Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Aroclor 1016	4.54	5.00	90.8%	4.44	5.00	88.8%	2.2%
Aroclor 1260	4.35	5.00	87.0%	4.28	5.00	85.6%	1.6%

PCB Surrogate Recovery

	LCS	LCSD
Decachlorobiphenyl	81.2%	75.5%
Tetrachlorometaxylene	78.2%	78.8%

Results reported in µg/L
RPD calculated using sample concentrations per SW846.

4

PCB METHOD BLANK SUMMARY

BLANK NO.

AGA8MBW1

Lab Name: ANALYTICAL RESOURCES INC

Client: KJC

ARI Job No.: AGA8

Project: POS SLIVER

Lab Sample ID: AGA8MBW1

Lab File ID: 05271559

Date Extracted: 05/20/15

Matrix: LIQUID

Date Analyzed: 05/28/15

Instrument ID: ECD7

Time Analyzed: 1119

GC Columns: ZB5/ZB35

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	05/28/15
02	AGA8LCSDW1	AGA8LCSDW1	05/28/15
03	RB-051315	AGA8J	05/28/15
04	RB-051415	AGC9L	05/28/15

ALL RUNS ARE DUAL COLUMN

FORM IV PCB

AGC9 : 05119

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
PCB by GC/ECD Method SW8082A **Sample ID: MB-052015**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-052015
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/28/15 11:19
Instrument/Analyst: ECD7/JGR
GPC Cleanup: No
Sulfur Cleanup: Yes

Sample Amount: 500 mL
Final Extract Volume: 5.0 mL
Dilution Factor: 1.00
Silica Gel: No
Acid Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result
12674-11-2	Aroclor 1016	0.13	1.0	< 1.0 U
53469-21-9	Aroclor 1242	0.15	1.0	< 1.0 U
12672-29-6	Aroclor 1248	0.15	1.0	< 1.0 U
11097-69-1	Aroclor 1254	0.15	1.0	< 1.0 U
11096-82-5	Aroclor 1260	0.15	1.0	< 1.0 U
11104-28-2	Aroclor 1221	0.15	1.0	< 1.0 U
11141-16-5	Aroclor 1232	0.15	1.0	< 1.0 U

Reported in µg/L (ppb)

PCB Surrogate Recovery

Decachlorobiphenyl	78.5%
Tetrachlorometaxylene	70.2%

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX 6.25- 6.45	0.5243	0.5274	0.5462	0.5187	0.5432	0.5951	0.5425	5.1
DCB 14.79-14.99	1.0363	0.9972	1.0191	0.9389	0.9796	1.0652	1.0060	4.4

Aroclor-1016 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 8.25- 8.45	0.0136	0.0136	0.0136	0.0122	0.0120	0.0122	0.0129	6.0
2 8.73- 8.93	0.0408	0.0409	0.0412	0.0371	0.0372	0.0393	0.0394	4.8
3 9.03- 9.23	0.0126	0.0142	0.0142	0.0130	0.0131	0.0138	0.0135	4.9
4 9.81-10.01	0.0145	0.0147	0.0148	0.0139	0.0137	0.0144	0.0143	3.1

AROCLOR AVERAGE %RSD = 4.7

Aroclor-1260 Peak RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1 12.37-12.57	0.0300	0.0276	0.0271	0.0240	0.0235	0.0245	0.0261	9.7
2 13.04-13.24	0.0802	0.0834	0.0852	0.0811	0.0841	0.0929	0.0845	5.3
3 13.41-13.61	0.0387	0.0389	0.0398	0.0376	0.0385	0.0419	0.0392	3.7
4 13.51-13.71	0.0238	0.0237	0.0245	0.0227	0.0229	0.0244	0.0237	3.1
5 13.91-14.11	0.0123	0.0128	0.0134	0.0126	0.0129	0.0139	0.0130	4.5

AROCLOR AVERAGE %RSD = 5.3

6F

8082 INITIAL CALIBRATION OF AROCLOR 1016/1260

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/27/15

SURROGATES

	RT WIN	LVL1	LVL2	LVL3	LVL4	LVL5	LVL6	MEAN	%RSD
TCX	5.81- 6.01	1.1169	1.0790	1.1065	1.0231	1.0452	1.1024	1.0789	3.5
DCB	14.76-14.96	1.0675	1.0011	0.9976	0.8905	0.9087	0.9214	0.9645	7.1

Aroclor-1016 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	7.93- 8.13	0.0497	0.0478	0.0465	0.0408	0.0391	0.0392	0.0438	10.8
2	8.71- 8.91	0.1042	0.0989	0.0975	0.0864	0.0847	0.0871	0.0931	8.7
3	9.15- 9.35	0.0264	0.0256	0.0252	0.0224	0.0220	0.0225	0.0240	8.0
4	9.91-10.11	0.0185	0.0181	0.0180	0.0158	0.0154	0.0159	0.0170	8.1

AROCLOR AVERAGE %RSD = 8.9

Aroclor-1260 Peak	RT WIN	LVL1 .02	LVL2 0.05	LVL3 0.1	LVL4 .25	LVL5 0.5	LVL6 1.0	MEAN	%RSD R^2
1	12.30-12.50	0.0845	0.0774	0.0750	0.0664	0.0636	0.0635	0.0717	12.0
2	13.00-13.20	0.1781	0.1765	0.1731	0.1592	0.1565	0.1591	0.1671	5.9
3	13.47-13.67	0.0573	0.0543	0.0531	0.0468	0.0466	0.0462	0.0507	9.4
4	13.53-13.73	0.1225	0.1165	0.1155	0.1022	0.1021	0.1018	0.1101	8.3

AROCLOR AVERAGE %RSD = 8.9

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.023	4.92- 5.12	0.00326
2	6.999	6.90- 7.10	0.00510
3	7.123	7.02- 7.22	0.01438

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.026	4.93- 5.13	0.00185
2	6.999	6.90- 7.10	0.00352
3	7.126	7.03- 7.23	0.00960
4	8.830	8.73- 8.93	0.01605

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.834	8.73- 8.93	0.02886
2	9.130	9.03- 9.23	0.01033
3	10.305	10.20-10.40	0.00963
4	10.608	10.51-10.71	0.01442

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	9.396	9.30- 9.50	0.00919
2	9.912	9.81-10.01	0.01954
3	10.362	10.26-10.46	0.02270
4	10.608	10.51-10.71	0.02296

AGS 02114

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.361	10.26-10.46	0.01461
2	10.682	10.58-10.78	0.02088
3	11.065	10.96-11.16	0.01694
4	11.203	11.10-11.30	0.03196
5	11.919	11.82-12.02	0.02291

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.467	12.37-12.57	0.04717
2	13.143	13.04-13.24	0.13122
3	13.513	13.41-13.61	0.04136
4	13.675	13.57-13.77	0.07177
5	14.216	14.12-14.32	0.06421

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.612	13.51-13.71	0.12401
2	13.674	13.57-13.77	0.14535
3	13.996	13.90-14.10	0.12995
4	14.597	14.50-14.70	0.45431

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1221			
Peak	RT	RT WIN	Cal Factor
1	5.018	4.92- 5.12	0.00831
2	6.720	6.62- 6.82	0.01390
3	7.015	6.92- 7.12	0.00785
4	7.150	7.05- 7.25	0.02401

Aroclor-1232			
Peak	RT	RT WIN	Cal Factor
1	5.021	4.92- 5.12	0.00505
2	7.153	7.05- 7.25	0.01695
3	8.029	7.93- 8.13	0.01987
4	9.247	9.15- 9.35	0.01020

Aroclor-1242			
Peak	RT	RT WIN	Cal Factor
1	8.033	7.93- 8.13	0.03218
2	8.811	8.71- 8.91	0.06793
3	10.376	10.28-10.48	0.02366
4	10.734	10.63-10.83	0.02878

Aroclor-1248			
Peak	RT	RT WIN	Cal Factor
1	8.804	8.70- 8.90	0.04409
2	9.816	9.72- 9.92	0.03523
3	10.376	10.28-10.48	0.03734
4	10.732	10.63-10.83	0.04820

6G

8082 INITIAL CALIBRATION OF SINGLE POINT PCBs

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Instrument ID: ECD7

Calibration Date: 05/28/15

Aroclor-1254			
Peak	RT	RT WIN	Cal Factor
1	10.608	10.51-10.71	0.04214
2	10.702	10.60-10.80	0.01997
3	11.139	11.04-11.24	0.03293
4	11.291	11.19-11.39	0.07025
5	12.072	11.97-12.17	0.04197

Aroclor-1262			
Peak	RT	RT WIN	Cal Factor
1	12.394	12.29-12.49	0.12680
2	12.836	12.74-12.94	0.11918
3	13.100	13.00-13.20	0.24458
4	13.570	13.47-13.67	0.10546
5	14.212	14.11-14.31	0.08290

Aroclor-1268			
Peak	RT	RT WIN	Cal Factor
1	13.569	13.47-13.67	0.18747
2	13.628	13.53-13.73	0.17713
3	13.953	13.85-14.05	0.14275
4	14.573	14.47-14.67	0.40246

AGS 0217

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242 Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.83	8.73	8.93	253.8	250.0	1.5
Aroclor-1242-2	9.13	9.03	9.23	253.1	250.0	1.2
Aroclor-1242-3	10.30	10.20	10.40	252.2	250.0	0.9
Aroclor-1242-4	10.61	10.51	10.71	254.3	250.0	1.7

AROCLOR AVG: 253.3 CAL %D = 1.3

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC

Client: URS

ARI Job No.: AGA8

Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35

Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1242

Time Analyzed :0932

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1242-1	8.03	7.93	8.13	250.3	250.0	0.1
Aroclor-1242-2	8.81	8.71	8.91	247.6	250.0	-0.9
Aroclor-1242-3	10.38	10.28	10.48	242.6	250.0	-3.0
Aroclor-1242-4	10.73	10.63	10.83	243.5	250.0	-2.6

AROCLOR AVG: 246.0 CAL %D = -1.6

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.0	250.0	-2.4
Aroclor-1016-2	8.83	8.73	8.93	242.4	250.0	-3.0
Aroclor-1016-3	9.13	9.03	9.23	252.3	250.0	0.9
Aroclor-1016-4	9.91	9.81	10.01	249.4	250.0	-0.2

AROCLOR AVG: 247.0 CAL %D = -1.2

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	247.9	250.0	-0.8
Aroclor-1260-2	13.14	13.04	13.24	254.6	250.0	1.8
Aroclor-1260-3	13.51	13.41	13.61	252.7	250.0	1.1
Aroclor-1260-4	13.61	13.51	13.71	253.0	250.0	1.2
Aroclor-1260-5	14.01	13.91	14.11	252.8	250.0	1.1

AROCLOR AVG: 252.2 CAL %D = 0.9

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	238.5	250.0	-4.6
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	241.8	250.0	-3.3
Aroclor-1016-4	10.01	9.91	10.11	235.2	250.0	-5.9

AROCLOR AVG: 237.9 CAL %D = -4.8

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :0953

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	224.0	250.0	-10.4
Aroclor-1260-2	13.10	13.00	13.20	224.2	250.0	-10.3
Aroclor-1260-3	13.57	13.47	13.67	216.8	250.0	-13.3
Aroclor-1260-4	13.62	13.53	13.73	221.0	250.0	-11.6

AROCLOR AVG: 221.5 CAL %D = -11.4

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254 Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.37	10.26	10.46	254.5	250.0	1.8
Aroclor-1254-2	10.69	10.58	10.78	255.1	250.0	2.0
Aroclor-1254-3	11.07	10.96	11.16	255.9	250.0	2.4
Aroclor-1254-4	11.21	11.10	11.30	255.6	250.0	2.2
Aroclor-1254-5	11.92	11.82	12.02	258.5	250.0	3.4

AROCLOR AVG: 255.9 CAL %D = 2.4

FORM VII PCB

7F
PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1254 Time Analyzed :1306

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1254-1	10.62	10.51	10.71	251.4	250.0	0.6
Aroclor-1254-2	10.71	10.60	10.80	253.5	250.0	1.4
Aroclor-1254-3	11.15	11.04	11.24	252.0	250.0	0.8
Aroclor-1254-4	11.30	11.19	11.39	250.6	250.0	0.2
Aroclor-1254-5	12.08	11.97	12.17	252.6	250.0	1.0

AROCLOR AVG: 252.0 CAL %D = 0.8

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.35	8.25	8.45	244.6	250.0	-2.2
Aroclor-1016-2	8.83	8.73	8.93	242.3	250.0	-3.1
Aroclor-1016-3	9.13	9.03	9.23	251.1	250.0	0.4
Aroclor-1016-4	9.91	9.81	10.01	249.2	250.0	-0.3

AROCLOR AVG: 246.8 CAL %D = -1.3

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.47	12.37	12.57	239.3	250.0	-4.3
Aroclor-1260-2	13.14	13.04	13.24	245.7	250.0	-1.7
Aroclor-1260-3	13.51	13.41	13.61	244.8	250.0	-2.1
Aroclor-1260-4	13.61	13.51	13.71	246.1	250.0	-1.6
Aroclor-1260-5	14.01	13.91	14.11	249.4	250.0	-0.2

AROCLOR AVG: 245.1 CAL %D = -2.0

FORM VII PCB

7F

PCB CALIBRATION VERIFICATION SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 Intrument: ECD7

Init. Calib. Date: 05/27/15

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1016-1	8.03	7.93	8.13	239.1	250.0	-4.4
Aroclor-1016-2	8.81	8.71	8.91	236.0	250.0	-5.6
Aroclor-1016-3	9.25	9.15	9.35	240.3	250.0	-3.9
Aroclor-1016-4	10.01	9.91	10.11	235.8	250.0	-5.7

AROCLOR AVG: 237.8 CAL %D = -4.9

Date Analyzed :05/28/15

Lab Standard ID: AR1660 Time Analyzed :1328

COMPOUND/PEAK NO.	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
Aroclor-1260-1	12.40	12.30	12.50	215.9	250.0	-13.6
Aroclor-1260-2	13.10	13.00	13.20	222.4	250.0	-11.0
Aroclor-1260-3	13.57	13.47	13.67	220.0	250.0	-12.0
Aroclor-1260-4	13.62	13.53	13.73	223.9	250.0	-10.4

AROCLOR AVG: 220.6 CAL %D = -11.8

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB5 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	5449431	3.349	5633814	15.142
	UPPER LIMIT	10898862	3.449	11267628	15.242
	LOWER LIMIT	2724716	3.249	2816907	15.042

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	5364462	3.346	5547552	15.142
02		0.25PPMAR166	05/27/15	1811	5449431	3.349	5633814	15.142
03		0.02PPMAR166	05/27/15	1833	5444099	3.348	5676446	15.142
04		0.05PPMAR166	05/27/15	1854	5268631	3.345	5493956	15.142
05		1PPMAR1660	05/27/15	1915	4843983	3.347	5005102	15.142
06		0.1PPMAR1660	05/27/15	1937	5165460	3.348	5387445	15.143
07		0.5PPMAR1660	05/27/15	1958	5176005	3.347	5390218	15.143
08		AR1242	05/27/15	2020	5337516	3.344	5573924	15.142
09		AR1248	05/27/15	2041	5300438	3.347	5560964	15.142
10		AR1254	05/27/15	2102	5232643	3.344	5441303	15.142
11		AR2162	05/27/15	2124	5278972	3.343	5544225	15.141
12		AR3268	05/27/15	2145	5332927	3.345	5498000	15.142
13	ZZZZZ	ZZZZZ	05/27/15	2207	5348403	3.348	5628466	15.143
14	ZZZZZ	ZZZZZ	05/27/15	2228	5313543	3.347	5448595	15.142
15	ZZZZZ	ZZZZZ	05/27/15	2249	5283025	3.346	5563146	15.142
16	ZZZZZ	ZZZZZ	05/27/15	2311	5217434	3.346	5473683	15.141
17	ZZZZZ	ZZZZZ	05/27/15	2332	5327597	3.347	5510995	15.141
18	ZZZZZ	ZZZZZ	05/27/15	2354	5291377	3.346	5478047	15.141
19		AR1242	05/28/15	0932	5420555	3.349	5318139	15.142
20		AR1660	05/28/15	0953	5393241	3.351	5446526	15.143
21	AGA8MBW1	AGA8MBW1	05/28/15	1119	5703109	3.350	5845942	15.143
22	AGA8LCSW1	AGA8LCSW1	05/28/15	1140	5691416	3.353	5903690	15.143
23	AGA8LCSDW1	AGA8LCSDW1	05/28/15	1202	5653869	3.350	5856732	15.143
24	RB-051315	AGA8J	05/28/15	1223	5582012	3.355	5950071	15.143
25	RB-051415	AGC9L	05/28/15	1245	5793312	3.355	6186299	15.142
26		AR1254	05/28/15	1306	5362657	3.350	5699387	15.142
27		AR1660	05/28/15	1328	5407167	3.350	5748876	15.143

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

FORM 8
PCB INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: URS

ARI Job No.: AGA8 Project: LINDSAY QUARTERY GROUNDWATER

GC Column: ZB35 ID: 0.53(mm) Instrument ID: ECD7

Init. Calib. Date: 05/27/15

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

		IS1 AREA	RT	IS2 AREA	RT
	ICAL MIDPT	13059494	3.699	8980422	15.445
	UPPER LIMIT	26118988	3.799	17960844	15.545
	LOWER LIMIT	6529747	3.599	4490211	15.345

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME	IS1 AREA	RT	IS2 AREA	RT
01	ZZZZZ	ZZZZZ	05/27/15	1750	12796516	3.695	8835826	15.445
02		0.25PPMAR166	05/27/15	1811	13059494	3.699	8980422	15.445
03		0.02PPMAR166	05/27/15	1833	13077546	3.697	9069474	15.444
04		0.05PPMAR166	05/27/15	1854	12739883	3.695	8861124	15.444
05		1PPMAR1660	05/27/15	1915	11620227	3.696	8524199	15.445
06		0.1PPMAR1660	05/27/15	1937	12572695	3.698	8906734	15.445
07		0.5PPMAR1660	05/27/15	1958	12702598	3.696	8989742	15.445
08		AR1242	05/27/15	2020	12964295	3.694	9247281	15.445
09		AR1248	05/27/15	2041	12820555	3.698	9271038	15.445
10		AR1254	05/27/15	2102	12686823	3.693	9119341	15.444
11		AR2162	05/27/15	2124	12591250	3.694	9419455	15.445
12		AR3268	05/27/15	2145	12844090	3.694	9415095	15.445
13	ZZZZZ	ZZZZZ	05/27/15	2207	12940835	3.697	9714071	15.445
14	ZZZZZ	ZZZZZ	05/27/15	2228	12729044	3.697	9658995	15.445
15	ZZZZZ	ZZZZZ	05/27/15	2249	12806439	3.695	9699512	15.444
16	ZZZZZ	ZZZZZ	05/27/15	2311	12694649	3.696	9548705	15.445
17	ZZZZZ	ZZZZZ	05/27/15	2332	12767315	3.697	9637779	15.444
18	ZZZZZ	ZZZZZ	05/27/15	2354	12775400	3.696	9670669	15.445
19		AR1242	05/28/15	0932	13103463	3.699	9200397	15.446
20		AR1660	05/28/15	0953	13124437	3.700	9338057	15.446
21	AGA8MBW1	AGA8MBW1	05/28/15	1119	13961066	3.700	10072454	15.446
22	AGA8LCSW1	AGA8LCSW1	05/28/15	1140	13914766	3.702	10200852	15.445
23	AGA8LCSDW1	AGA8LCSDW1	05/28/15	1202	14041479	3.699	10142562	15.446
24	RB-051315	AGA8J	05/28/15	1223	13779002	3.704	10173905	15.446
25	RB-051415	AGC9L	05/28/15	1245	14056128	3.703	10537392	15.445
26		AR1254	05/28/15	1306	13048646	3.698	9966703	15.445
27		AR1660	05/28/15	1328	13180150	3.700	10153131	15.445

IS1 = 1-Bromo-2-Nitrobenzene RT Window = RT +/- 0.1 min
IS2 = Hexabromobiphenyl

* Indicates value outside QC Limits

AGC9:80127

TPHD Analysis
Report and Summary QC Forms

ARI Job ID: AGC9

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3546
Page 1 of 1

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Matrix: Soil

Date Received: 05/14/15

Data Release Authorized:
Reported: 05/28/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	RL	MDL
AGC9C	SDP-02(16.0-17.5)	05/27/15	10	Diesel	< 290 U	290	79
15-9433		FID4A		**Motor Oil**	**2,400**	590	150
				HC ID	MOTOR OIL		
				o-Terphenyl	D		
AGC9D	SDP-02(18.5-19.5)	05/27/15	1.0	**Diesel**	**58**	7.6	2.1
15-9434		FID4A		**Motor Oil**	**130**	15	3.8
				HC ID	DIESEL/MOTOR OIL		
				o-Terphenyl	75.1%		
AGC9E	SDP-02(22.0-23.5)	05/27/15	1.0	**Diesel**	**8.8**	6.6	1.8
15-9435		FID4A		**Motor Oil**	**43**	13	3.3
				HC ID	DRO/MOTOR OIL		
				o-Terphenyl	76.4%		
MB-052015	Method Blank	05/26/15	1.0	Diesel	< 5.0 U	5.0	1.4
15-9438		FID4A		Motor Oil	< 10 U	10	2.5
				HC ID	---		
				o-Terphenyl	92.0%		
AGC9H	SDP-04(1.5-3.0)	05/27/15	1.0	**Diesel**	**40**	5.5	1.5
15-9438		FID4A		**Motor Oil**	**120**	11	2.7
				HC ID	DIESEL/MOTOR OIL		
				o-Terphenyl	68.7%		
AGC9I	SDP-04(10.5-12.0)	05/27/15	1.0	**Diesel**	**170**	5.8	1.6
15-9439		FID4A		**Motor Oil**	**440**	12	2.9
				HC ID	DRO/MOTOR OIL		
				o-Terphenyl	62.9%		

Reported in mg/kg (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

AGC9 . 0029

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	OTER	TOT OUT
SDP-02(16.0-17.5)	D	0
SDP-02(18.5-19.5)	75.1%	0
SDP-02(22.0-23.5)	76.4%	0
052015MB	92.0%	0
052015LCS	92.1%	0
SDP-04(1.5-3.0)	68.7%	0
SDP-04(1.5-3.0) MS	74.5%	0
SDP-04(1.5-3.0) MSD	69.8%	0
SDP-04(10.5-12.0)	62.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3546
Log Number Range: 15-9433 to 15-9439

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
MS/MSD

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Date Extracted MS/MSD: 05/20/15

Date Analyzed MS: 05/27/15 02:17
MSD: 05/27/15 02:40
Instrument/Analyst MS: FID4A/ML
MSD: FID4A/ML

Sample Amount MS: 9.06 g-dry-wt
MSD: 9.05 g-dry-wt
Final Extract Volume MS: 1.0 mL
MSD: 1.0 mL
Dilution Factor MS: 1.00
MSD: 1.00
Percent Moisture: 9.7%

Range	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Diesel	40	167	166	76.5%	169	166	77.7%	1.2%

TPHD Surrogate Recovery

	MS	MSD
o-Terphenyl	74.5%	69.8%

Results reported in mg/kg
RPD calculated using sample concentrations per SW846.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-052015
LAB CONTROL

Lab Sample ID: LCS-052015
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 05/28/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted: 05/20/15
Date Analyzed: 05/26/15 20:50
Instrument/Analyst: FID4A/ML

Sample Amount: 10.0 g-dry-wt
Final Extract Volume: 1.0 mL
Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
Diesel	135	150	90.0%

TPHD Surrogate Recovery

o-Terphenyl	92.1%

Results reported in mg/kg

FORM III

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

ARI Job: AGC9
Matrix: Soil Project: POS Sliver
Date Received: 05/14/15 1496007.00

ARI ID	Client ID	Client Amt	Final Vol	Basis	Prep Date
15-9433-AGC9C	SDP-02(16.0-17.5)	8.52 g	5.00 mL	D	05/20/15
15-9434-AGC9D	SDP-02(18.5-19.5)	6.58 g	1.00 mL	D	05/20/15
15-9435-AGC9E	SDP-02(22.0-23.5)	7.59 g	1.00 mL	D	05/20/15
15-9438-052015MB1	Method Blank	10.0 g	1.00 mL	-	05/20/15
15-9438-052015LCS1	Lab Control	10.0 g	1.00 mL	-	05/20/15
15-9438-AGC9H	SDP-04(1.5-3.0)	9.04 g	1.00 mL	D	05/20/15
15-9438-AGC9HMS	SDP-04(1.5-3.0)	9.06 g	1.00 mL	D	05/20/15
15-9438-AGC9HMSD	SDP-04(1.5-3.0)	9.05 g	1.00 mL	D	05/20/15
15-9439-AGC9I	SDP-04(10.5-12.0)	8.63 g	1.00 mL	D	05/20/15

Basis: D=Dry Weight W=As Received

TPH METHOD BLANK SUMMARY

BLANK NO.

AGA8MBS1

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project No.: POS SILVER

Date Extracted: 05/20/15 Matrix: SOLID

Date Analyzed : 05/26/15 Instrument ID : FID4A

Time Analyzed : 2026

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSS1	AGA8LCSS1	05/26/15
02	SDP-10(15.5-	AGA8B	05/26/15
03	SDP-08(12.0-	AGA8E	05/26/15
04	SDP-07(1.5-3	AGA8F	05/26/15
05	SDP-07(1.5-3	AGA8FMS	05/26/15
06	SDP-07(1.5-3	AGA8FMSD	05/26/15
07	SDP-06(12.5-	AGA8H	05/26/15
08	SDP-06(10.0-	AGA8I	05/27/15
09	SDP-02(16.0-	AGC9C	05/27/15
10	SDP-02(18.5-	AGC9D	05/27/15
11	SDP-02(22.0-	AGC9E	05/27/15
12	SDP-04(1.5-3	AGC9H	05/27/15
13	SDP-04(1.5-3	AGC9HMS	05/27/15
14	SDP-04(1.5-3	AGC9HMSD	05/27/15
15	SDP-04(10.5-	AGC9I	05/27/15
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

ARCS 8818W

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID4A.I Project: POS Silver

Calibration Date: 16-MAR-2015 SDG No.: AGA8/AGC9

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	16883	16837	16662	16474	16073	16315	16541	1.9
AK Diesel	20602	20180	19759	19321	19009	19111	19664	3.2
OR Diesel	20711	20284	19885	19446	19141	19237	19784	3.2
Cal Diesel	20550	20136	19710	19279	18948	19058	19614	3.2
o-Terph	24171	23714	23513	23246	22946	20666	23043	5.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.522-7.247)
AK Diesel C10-C25 (2.648-7.546)
OR Diesel C10-C28 (2.648-8.396)
Cal Diesel C10-C24 (2.648-7.247)

Calibration Files	Analysis Time
0316a004.d	16-MAR-2015 11:25
0316a005.d	16-MAR-2015 11:49
0316a006.d	16-MAR-2015 12:13
0316a007.d	16-MAR-2015 12:37
0316a008.d	16-MAR-2015 13:01
0316a009.d	16-MAR-2015 13:25

AGC9 : 20135

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID4A.I Project: POS Silver

Calibration Date: 16-MAR-2015 SDG No.: AGA8/AGC9

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	16578	15811	15675	15221	14468	13582	15222	7.0
Triac Surr	20574	20462	20163	20117	19665	19261	20040	2.5

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0316a011.d	16-MAR-2015 14:12
0316a012.d	16-MAR-2015 14:36
0316a013.d	16-MAR-2015 15:00
0316a014.d	16-MAR-2015 15:24
0316a015.d	16-MAR-2015 15:48
0316a016.d	16-MAR-2015 16:12

AGC9 : 8818

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 16-MAR-2015 Project: POS Silver

CCal Date: 26-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 11:49 Lab ID: DIESEL#1

Instrument: FID4A.I Lab File Name: 15052603.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4006487	242.2	250	-3.1	
AK102 (C10-C25)	4720175	240.0	250	-4.0	
NASDies(C10-C24)	4710705	240.2	250	-3.9	
Terphenyl	1020814	44.3	45	-1.6	
Creos (C12-C22)	3882671	1013.2	250	305.3	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 16-MAR-2015 Project: POS Silver

CCal Date: 26-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 12:12 Lab ID: MOIL#1

Instrument: FID4A.I Lab File Name: 15052604.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7084867	465.4	500	-6.9	
AK103 (C25-C36)	5995754	651.6	500	30.3	<-
OR MOIL(C28-C40)	5790804	766.7	500	53.3	
CRUDE(Tol-C40)	8613033	1140.4	500	128.1	
n-Triacontane	810530	40.4	45	-10.1	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8 / AGC9

Analysis Time: 16:53

Lab ID: DIESEL#2

Instrument: FID4A.I

Lab File Name: 15052615.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4168075	252.0	250	0.8	
AK102 (C10-C25)	4896793	249.0	250	-0.4	
NASDies(C10-C24)	4886584	249.1	250	-0.3	
Terphenyl	1025118	44.5	45	-1.1	
Creos (C12-C22)	4035002	1052.9	250	321.2	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 16-MAR-2015 Project: POS Silver

CCal Date: 26-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 17:17 Lab ID: MOIL#2

Instrument: FID4A.I Lab File Name: 15052616.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	6594975	433.3	500	-13.3
AK103 (C25-C36)	5460684	593.4	500	18.7
OR MOIL(C28-C40)	5408987	716.2	500	43.2
CRUDE(Tol-C40)	8262000	1093.9	500	118.8
n-Triacontane	800381	39.9	45	-11.2

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

ARCO 00116

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 26-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 23:33

Lab ID: DIESEL#3

Instrument: FID4A.I

Lab File Name: 15052632.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4008260	242.3	250	-3.1	
AK102 (C10-C25)	4687715	238.4	250	-4.6	
NASDies(C10-C24)	4676975	238.5	250	-4.6	
Terphenyl	1016971	44.1	45	-1.9	
Creos (C12-C22)	3908704	1019.9	250	308.0	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 16-MAR-2015 Project: POS Silver

CCal Date: 26-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 23:56 Lab ID: MOIL#3

Instrument: FID4A.I Lab File Name: 15052633.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7450659	489.5	500	-2.1	
AK103 (C25-C36)	6322318	687.1	500	37.4	<-
OR MOIL(C28-C40)	6322313	837.1	500	67.4	
CRUDE(Tol-C40)	9232745	1222.4	500	144.5	
n-Triacontane	867580	43.3	45	-3.8	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: Kennedy Jenks

ICal Date: 16-MAR-2015

Project: POS Silver

CCal Date: 27-MAY-2015

SDG No.: AGA8/AGC9

Analysis Time: 03:27

Lab ID: DIESEL#4

Instrument: FID4A.I

Lab File Name: 15052642.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D	
WADies(C12-C24)	4034577	243.9	250	-2.4	
AK102 (C10-C25)	4707321	239.4	250	-4.2	
NASDies(C10-C24)	4690929	239.2	250	-4.3	
Terphenyl	1002308	43.5	45	-3.3	
Creos (C12-C22)	3920847	1023.1	250	309.2	<-

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

ARCS-001113

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC.
Client: Kennedy Jenks

ICal Date: 16-MAR-2015
Project: POS Silver

CCal Date: 27-MAY-2015
SDG No.: AGA8/AGC9

Analysis Time: 03:51
Lab ID: MOIL#4

Instrument: FID4A.I
Lab File Name: 15052643.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	7937306	521.4	500	4.3	
AK103 (C25-C36)	6528208	709.4	500	41.9	<-
OR MOIL(C28-C40)	7044146	932.7	500	86.5	
CRUDE(Tol-C40)	9956781	1318.3	500	163.7	
n-Triacontane	861670	43.0	45	-4.5	

* Surrogate areas are subtracted from range areas
<- Indicates a %D outside QC limits

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project: POS SILVER

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.43 TRIAC: 8.90

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT0526	05/26/15	1102	5.43	8.90
02		IB0526	05/26/15	1125	5.43	8.89
03	POS SILVER	DIESEL#1	05/26/15	1149	5.43	8.88
04	POS SILVER	MOIL#1	05/26/15	1212	5.44	8.89
05	POS SILVER	DIESEL#2	05/26/15	1653	5.43	8.88
06	POS SILVER	MOIL#2	05/26/15	1717	5.44	8.89
07	AGA8MBS1	AGA8MBS1	05/26/15	2026	5.43	8.88
08	AGA8LCSS1	AGA8LCSS1	05/26/15	2050	5.44	8.88
09	SDP-10(15.5-	AGA8B	05/26/15	2113	5.44	8.88
10	SDP-08(12.0-	AGA8E	05/26/15	2137	5.43	8.88
11	SDP-07(1.5-3	AGA8F	05/26/15	2200	5.42	8.86
12	SDP-07(1.5-3	AGA8FMS	05/26/15	2223	5.43	8.87
13	SDP-07(1.5-3	AGA8FMSD	05/26/15	2247	5.43	8.87
14	SDP-06(12.5-	AGA8H	05/26/15	2310	5.43	8.88
15	POS SILVER	DIESEL#3	05/26/15	2333	5.43	8.89
16	POS SILVER	MOIL#3	05/26/15	2356	5.44	8.89
17	SDP-06(10.0-	AGA8I	05/27/15	0020	5.43	8.88
18	SDP-02(16.0-	AGC9C	05/27/15	0043		
19	SDP-02(18.5-	AGC9D	05/27/15	0107	5.44	8.89
20	SDP-02(22.0-	AGC9E	05/27/15	0130	5.44	8.88
21	SDP-04(1.5-3	AGC9H	05/27/15	0154	5.43	8.90
22	SDP-04(1.5-3	AGC9HMS	05/27/15	0217	5.44	8.89
23	SDP-04(1.5-3	AGC9HMSD	05/27/15	0240	5.44	8.89
24	SDP-04(10.5-	AGC9I	05/27/15	0304	5.44	8.91
25	POS SILVER	DIESEL#4	05/27/15	0327	5.44	8.86
26	POS SILVER	MOIL#4	05/27/15	0351	5.43	8.89

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: Kennedy Jenks

SDG No.: AGA8/AGC9 Project: POS Silver

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.52 TRIAC: 9.00

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	03/16/15	1014	5.53	9.01
02		SDC0026-IBL1	03/16/15	1037	5.52	9.00
03		SDC0026-IBL2	03/16/15	1101	5.52	8.99
04		SDC0026-CAL1	03/16/15	1125	5.52	8.99
05		SDC0026-CAL2	03/16/15	1149	5.52	8.99
06		SDC0026-CAL3	03/16/15	1213	5.53	8.99
07		SDC0026-CAL4	03/16/15	1237	5.54	8.99
08		SDC0026-CAL5	03/16/15	1301	5.55	8.98
09		SDC0026-CAL6	03/16/15	1325	5.57	8.98
10		SDC0026-SCV1	03/16/15	1349	5.53	8.99
11		SDC0026-CAL7	03/16/15	1412	5.52	8.98
12		SDC0026-CAL8	03/16/15	1436	5.52	8.99
13		SDC0026-CAL9	03/16/15	1500	5.52	9.00
14		SDC0026-CALA	03/16/15	1524	5.52	9.02
15		SDC0026-CALB	03/16/15	1548	5.52	9.06*
16		SDC0026-CALC	03/16/15	1612	5.52	9.10*
17		SDC0026-SCV2	03/16/15	1636	5.52	9.00

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

AGC9 : 8216

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Matrix: Water

Date Received: 05/14/15

Data Release Authorized:
Reported: 05/22/15

ARI ID	Sample ID	Analysis Date	DF	Range	Result	LOQ	DL
MB-052015	Method Blank	05/21/15	1.0	Diesel Range	< 0.10 U	0.10	0.02
15-9442		FID9		Motor Oil Range	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	87.1%		
AGC9L	RB-051415	05/21/15	1.0	Diesel	< 0.10 U	0.10	0.02
15-9442		FID9		Motor Oil	< 0.20 U	0.20	0.04
				HC ID	---		
				o-Terphenyl	87.1%		

Reported in mg/L (ppm)

Diesel quantitation on total peaks in the range from C12 to C24.
Motor Oil quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-052015
LCS/LCSD

Lab Sample ID: LCS-052015
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 05/22/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 05/20/15

Date Analyzed LCS: 05/21/15 19:40
LCSD: 05/21/15 20:01
Instrument/Analyst LCS: FID9/ML
LCSD: FID9/ML

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.76	3.00	92.0%	2.71	3.00	90.3%	1.8%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	85.0%	83.9%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

FORM III

ANALYTICAL RESOURCES INCORPORATED

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Client ID	OTER	TOT OUT
MB-052015	87.1%	0
LCS-052015	85.0%	0
LCSD-052015	83.9%	0
RB-051415	87.1%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 15-9442 to 15-9442

ANALYTICAL RESOURCES INCORPORATED

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 05/14/15

ARI Job: AGC9
Project: POS Sliver
1496007.00

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
15-9442-052015MB1	Method Blank	500 mL	1.00 mL	05/20/15
15-9442-052015LCS1	Lab Control	500 mL	1.00 mL	05/20/15
15-9442-052015LCSD1	Lab Control Dup	500 mL	1.00 mL	05/20/15
15-9442-AGC9L	RB-051415	500 mL	1.00 mL	05/20/15

TPH METHOD BLANK SUMMARY

BLANK NO.

AGA8MBW1

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project No.: POS SILVER

Date Extracted: 05/20/15 Matrix: LIQUID

Date Analyzed : 05/21/15 Instrument ID : FID9

Time Analyzed : 1919

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED
01	AGA8LCSW1	AGA8LCSW1	05/21/15
02	AGA8LCSDW1	AGA8LCSDW1	05/21/15
03	RB-051315	AGA8J	05/21/15
04	RB-051415	AGC9L	05/21/15
05			
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6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID9.I Project: POS Silver

Calibration Date: 20-MAY-2015 SDG No.: AGA8/AGC9

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	18660	17772	16466	16978	17515	17079	17412	4.4
AK Diesel	20995	20425	18918	19828	20369	19865	20067	3.5
OR Diesel	21403	20596	19068	19965	20505	19985	20254	3.9
Cal Diesel	20881	20329	18840	19760	20309	19809	19988	3.5
o-Terph	19203	22044	22123	22324	22968	23064	21954	6.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.970-7.460)
AK Diesel C10-C25 (2.984-7.712)
OR Diesel C10-C28 (2.984-8.406)
Cal Diesel C10-C24 (2.984-7.460)

Calibration Files	Analysis Time
15052009.d	20-MAY-2015 17:25
15052010.d	20-MAY-2015 17:46
15052011.d	20-MAY-2015 18:08
15052012.d	20-MAY-2015 18:29
15052013.d	20-MAY-2015 18:50
15052014.d	20-MAY-2015 19:12

AGC9 - 30152

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

Instrument: FID9.I Project: POS Silver

Calibration Date: 20-MAY-2015 SDG No.: AGA8/AGC9

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	15206	14015	14211	14189	14255	13758	14273	3.5
Triac Surr	13043	14500	15844	17434	18319	18364	16251	13.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
15052016.d	20-MAY-2015 19:54
15052017.d	20-MAY-2015 20:15
15052018.d	20-MAY-2015 20:36
15052019.d	20-MAY-2015 20:58
15052020.d	20-MAY-2015 21:19
15052021.d	20-MAY-2015 21:40

AGC9 0119

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 14:42 Lab ID: DIESEL#1

Instrument: FID9.I Lab File Name: 15052103.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	4190600	240.7	250	-3.7
AK102 (C10-C25)	4840525	241.2	250	-3.5
ITDies(C10-C24)	4820061	241.1	250	-3.5
Terphenyl	956256	43.6	45	-3.2

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

AGC9 8015W

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 15:04 Lab ID: MOIL#1

Instrument: FID9.I Lab File Name: 15052104.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D
WAMoil(C24-C38)	7186887	503.6	500	0.7
AK103 (C25-C36)	6081700	389.9	500	-22.0
n-Triacontane	764127	47.0	45	4.5

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36

ARCS - 2915

7a

DIESEL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 21:04 Lab ID: DIESEL#2

Instrument: FID9.I Lab File Name: 15052121.d

Diesel Range	Area*	CalcAmnt	NomAmnt	% D
WADies(C12-C24)	4275054	245.5	250	-1.8
AK102 (C10-C25)	4919195	245.1	250	-1.9
ITDies(C10-C24)	4899587	245.1	250	-1.9
Terphenyl	954270	43.5	45	-3.4

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA Diesel C12-C24
AK Diesel C10-C25

7a

MOTOR OIL CONTINUING CALIBRATION VERIFICATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: Kennedy Jenks

ICal Date: 20-MAY-2015 Project: POS Silver

CCal Date: 21-MAY-2015 SDG No.: AGA8/AGC9

Analysis Time: 21:26 Lab ID: MOIL#2

Instrument: FID9.I Lab File Name: 15052122.d

M.oil Range	Area*	CalcAmnt	NomAmnt	% D	
WAMoil(C24-C38)	6764973	474.1	500	-5.2	
AK103 (C25-C36)	5727137	367.1	500	-26.6	<-
n-Triacontane	717035	44.1	45	-1.9	

* Surrogate areas are subtracted from range areas

<- Indicates a %D outside QC limits

Quant Ranges : WA M.Oil C24-C38
AK M.Oil C25-C36

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

SDG No.: AGA8/AGC9 Project: POS SILVER

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.96 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RT	05/21/15	1359	5.96	8.82
02	IB	IB	05/21/15	1421	5.96	8.82
03	POS SILVER	DIESEL#1	05/21/15	1442	5.96	8.80
04	POS SILVER	MOIL#1	05/21/15	1504	5.97	8.82
05	AGA8MBW1	AGA8MBW1	05/21/15	1919	5.96	8.81
06	AGA8LCSW1	AGA8LCSW1	05/21/15	1940	5.97	8.82
07	AGA8LCSDW1	AGA8LCSDW1	05/21/15	2001	5.97	8.81
08	RB-051315	AGA8J	05/21/15	2022	5.96	8.81
09	RB-051415	AGC9L	05/21/15	2043	5.96	8.81
10	POS SILVER	DIESEL#2	05/21/15	2104	5.96	8.82
11	POS SILVER	MOIL#2	05/21/15	2126	5.96	8.82

	QC LIMITS
TERPH = o-terph	(+/- 0.05 MINUTES)
TRIAC = Triacon Surr	(+/- 0.05 MINUTES)

* Values outside of QC limits.

8
TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client: Kennedy Jenks

SDG No.: AGA8/AGC9 Project: POS Silver

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.97 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		SDE0049-IBL1	05/20/15	1642	5.97	8.82
02		SDE0049-IBL2	05/20/15	1703	5.96	8.81
03		SDE0049-CAL1	05/20/15	1725	5.95	8.81
04		SDE0049-CAL2	05/20/15	1746	5.96	8.82
05		SDE0049-CAL3	05/20/15	1808	5.97	8.82
06		SDE0049-CAL4	05/20/15	1829	5.97	8.81
07		SDE0049-CAL5	05/20/15	1850	5.99	8.82
08		SDE0049-CAL6	05/20/15	1912	6.02	8.82
09		SDE0049-SCV1	05/20/15	1933	5.96	8.81
10		SDE0049-CAL7	05/20/15	1954	5.95	8.81
11		SDE0049-CAL8	05/20/15	2015	5.96	8.81
12		SDE0049-CAL9	05/20/15	2036	5.96	8.82
13		SDE0049-CALA	05/20/15	2058	5.96	8.83
14		SDE0049-CALB	05/20/15	2119	5.96	8.85
15		SDE0049-CALC	05/20/15	2140	5.96	8.89*
16		SDE0049-SCV2	05/20/15	2201	5.96	8.82

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

Metals Analysis
Report and Summary QC Forms

ARI Job ID: AGC9

AGC9 08:58

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
SDP-01(3.0-4.0)	AGC9A	15-9431	
SDP-01(8.0-9.0)	AGC9B	15-9432	
SDP-02(16.0-17.5)	AGC9C	15-9433	
SDP-02(18.5-19.5)	AGC9D	15-9434	
SDP-02(22.0-23.5)	AGC9E	15-9435	
SDP-03(6.5-8.0)	AGC9F	15-9436	
SDP-03(23.5-24.5)	AGC9G	15-9437	
SDP-04(1.5-3.0)	AGC9H	15-9438	
SDP-04(1.5-3.0)D	AGC9HDUP	15-9438	
SDP-04(1.5-3.0)S	AGC9HSPK	15-9438	
SDP-04(10.5-12.0)	AGC9I	15-9439	
SDP-05(6.5-7.5)	AGC9J	15-9440	
SDP-05(17.5-19.0)	AGC9K	15-9441	
PBS	AGC9MB1	15-9441	
LCSS	AGC9MB1SPK	15-9441	
RB-051415	AGC9L	15-9442	
RB-051415D	AGC9LDUP	15-9442	
RB-051415S	AGC9LSPK	15-9442	
PBW	AGC9MB2	15-9442	
LCSW	AGC9MB2SPK	15-9442	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments:

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 6/2/15 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-01(3.0-4.0)
SAMPLE

Lab Sample ID: AGC9A
LIMS ID: 15-9431
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 92.2%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.09	0.2	**12.9**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.5	**39.2**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**0.2**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.041	0.5	**120**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.039	0.5	**154**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.05	0.1	**62.1**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0011	0.02	**0.02**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.54	**0.11**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.214	**0.075**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.36	4	**102**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGCS 00152

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-01(8.0-9.0)
SAMPLE

Lab Sample ID: AGC9B
LIMS ID: 15-9432
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 82.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**20.1**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.6	**70.6**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**4.8**	
3050B	05/18/15	6020A	05/29/15	**7440-47-3**	**Chromium**	0.11	1	**686**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.041	0.6	**228**	
3050B	05/18/15	6020A	05/29/15	**7439-92-1**	**Lead**	0.13	0.3	**594**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0015	0.03	**0.03**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.57	**0.19**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.2	**0.6**	
3050B	05/18/15	6020A	05/29/15	**7440-66-6**	**Zinc**	1.0	10	**520**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGC9 - 0016

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-02(16.0-17.5)
SAMPLE

Lab Sample ID: AGC9C
LIMS ID: 15-9433
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 83.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**10.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.6	**80.6**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**0.9**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.045	0.6	**37.9**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.042	0.6	**65.1**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**108**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0015	0.03	**0.16**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.12	0.59	**0.24**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.236	**0.189**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.40	5	**266**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-02(18.5-19.5)
SAMPLE

Lab Sample ID: AGC9D
LIMS ID: 15-9434
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 66.6%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.12	0.3	**18.3**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.08	0.7	**100**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.1	**0.3**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.054	0.7	**19.5**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.051	0.7	**25.9**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.07	0.1	**9.6**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0017	0.03	**0.07**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.14	0.71	**0.23**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.011	0.285	**0.100**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.48	6	**68**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-02(22.0-23.5)
SAMPLE

Lab Sample ID: AGC9E
LIMS ID: 15-9435
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 75.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.11	0.3	**75.4**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.7	**38.3**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.02	0.13	**0.10**	J
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.050	0.7	**15.2**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.047	0.7	**16.8**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**5.8**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0013	0.02	**0.02**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.13	0.65	**0.20**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.010	0.261	**0.065**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.44	5	**58**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-03(6.5-8.0)
SAMPLE

Lab Sample ID: AGC9F
LIMS ID: 15-9436
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 87.0%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**24.2**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.6	**104**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**0.7**	
3050B	05/18/15	6020A	05/29/15	**7440-47-3**	**Chromium**	0.11	1	**542**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.040	0.6	**126**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.05	0.1	**144**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0011	0.0220	**0.0088**	**J**
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.56	**0.36**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.2	**1.0**	
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.38	4	**187**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-03(23.5-24.5)
SAMPLE

Lab Sample ID: AGC9G
LIMS ID: 15-9437
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 77.8%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.11	0.2	**3.6**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.07	0.6	**66.2**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**0.8**	
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.046	0.6	**17.8**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.044	0.6	**21.6**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.06	0.1	**6.4**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0012	0.02	**0.03**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.12	0.61	**0.23**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.010	0.242	**0.061**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.41	5	**40**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
SAMPLE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 90.5%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.09	0.2	**19.8**	
3050B	05/18/15	6020A	05/29/15	**7440-39-3**	**Barium**	0.6	5	**254**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**3.0**	
3050B	05/18/15	6020A	05/29/15	**7440-47-3**	**Chromium**	0.40	5	**351**	
3050B	05/18/15	6020A	05/29/15	**7440-50-8**	**Copper**	0.38	5	**284**	
3050B	05/18/15	6020A	05/29/15	**7439-92-1**	**Lead**	0.5	1	**363**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0013	0.03	**0.30**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.10	0.53	**0.34**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.008	0.2	**0.5**	
3050B	05/18/15	6020A	05/29/15	**7440-66-6**	**Zinc**	3.6	40	**1,110**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGC9 00169

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SDP-04(10.5-12.0)
SAMPLE

Lab Sample ID: AGC9I
LIMS ID: 15-9439
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 85.4%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.09	0.2	**20.8**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.5	**255**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.1	**4.5**	
3050B	05/18/15	6020A	05/29/15	**7440-47-3**	**Chromium**	0.41	5	**682**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.039	0.5	**273**	
3050B	05/18/15	6020A	05/29/15	**7439-92-1**	**Lead**	0.5	1	**2,120**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0011	0.02	**0.10**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.54	**0.26**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.2	**1.1**	
3050B	05/18/15	6020A	05/29/15	**7440-66-6**	**Zinc**	3.6	40	**1,910**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SDP-05(6.5-7.5)
SAMPLE

Lab Sample ID: AGC9J
LIMS ID: 15-9440
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 83.9%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**14.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.6	**49.8**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.11	**0.06**	J
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.042	0.6	**13.7**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.040	0.6	**20.3**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.05	0.1	**3.1**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0014	0.03	**0.04**	
3050B	05/18/15	6020A	05/28/15	**7782-49-2**	**Selenium**	0.11	0.55	**0.20**	J
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.222	**0.044**	J
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.38	4	**47**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: SDP-05(17.5-19.0)
SAMPLE

Lab Sample ID: AGC9K
LIMS ID: 15-9441
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Percent Total Solids: 84.1%

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	**7440-38-2**	**Arsenic**	0.10	0.2	**5.5**	
3050B	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.06	0.6	**18.6**	
3050B	05/18/15	6020A	05/28/15	**7440-43-9**	**Cadmium**	0.01	0.11	**0.11**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.043	0.6	**9.2**	
3050B	05/18/15	6020A	05/28/15	**7440-50-8**	**Copper**	0.041	0.6	**8.0**	
3050B	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.05	0.1	**1.0**	
CLP	05/18/15	7471A	05/22/15	**7439-97-6**	**Mercury**	0.0013	0.0241	**0.0072**	**J**
3050B	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.11	0.6	0.6	U
3050B	05/18/15	6020A	05/28/15	**7440-22-4**	**Silver**	0.009	0.229	**0.023**	**J**
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.39	5	**20**	

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGC9 00172

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: SDP-04(1.5-3.0)
MATRIX SPIKE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6020A	19.8	46.5	26.3	102%	
Barium	6020A	254	376	26.3	464%	H
Cadmium	6020A	3.0	28.4	26.3	96.6%	
Chromium	6020A	351	506	26.3	589%	H
Copper	6020A	284	200	26.3	-319%	H
Lead	6020A	363	398	26.3	133%	H
Mercury	7471A	0.30	0.50	0.258	77.5%	
Selenium	6020A	0.5 U	76.1	84.1	90.5%	
Silver	6020A	0.5	25.3	26.3	94.3%	
Zinc	6020A	1,110	1,160	84.1	59.5%	H

Reported in mg/kg-dry

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

AGC9 : 0001 T2

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
Page 1 of 1

Sample ID: SDP-04(1.5-3.0)
DUPLICATE

Lab Sample ID: AGC9H
LIMS ID: 15-9438
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6020A	19.8	21.0	5.9%	+/- 20%	
Barium	6020A	254	359	34.3%	+/- 20%	*
Cadmium	6020A	3.0	3.9	26.1%	+/- 20%	*
Chromium	6020A	351	646	59.2%	+/- 20%	*
Copper	6020A	284	390	31.5%	+/- 20%	*
Lead	6020A	363	425	15.7%	+/- 20%	
Mercury	7471A	0.30	0.49	48.1%	+/- 20%	*
Selenium	6020A	0.5 U	0.5 U	0.0%	+/- 0.5	L
Silver	6020A	0.5	0.6	18.2%	+/- 0.2	L
Zinc	6020A	1,110	1,320	17.3%	+/- 20%	

Reported in mg/kg-dry

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: AGC9LCS
LIMS ID: 15-9441
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6020A	29.9	25.0	120%	
Barium	6020A	25.3	25.0	101%	
Cadmium	6020A	24.6	25.0	98.4%	
Chromium	6020A	26.1	25.0	104%	
Copper	6020A	25.5	25.0	102%	
Lead	6020A	24.7	25.0	98.8%	
Mercury	7471A	0.59	0.50	118%	
Selenium	6020A	77.7	80.0	97.1%	
Silver	6020A	25.0	25.0	100%	
Zinc	6020A	81	80	101%	

Reported in mg/kg-dry

N-Control limit not met
NA-Not Applicable, Analyte Not Spiked
Control Limits: 80-120%

AGC 0017

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AGC9MB
LIMS ID: 15-9441
Matrix: Soil
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Percent Total Solids: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/kg	Q
3050B	05/18/15	6020A	05/28/15	7440-38-2	Arsenic	0.09	0.2	0.2	U
3050B	05/18/15	6020A	05/28/15	7440-39-3	Barium	0.06	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7440-43-9	Cadmium	0.01	0.1	0.1	U
3050B	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.038	0.500	**0.060**	**J**
3050B	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.036	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7439-92-1	Lead	0.05	0.1	0.1	U
CLP	05/18/15	7471A	05/22/15	7439-97-6	Mercury	0.0013	0.02	0.02	U
3050B	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.10	0.5	0.5	U
3050B	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.008	0.2	0.2	U
3050B	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.34	4.00	**0.75**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

AGC 0015

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: RB-051415
SAMPLE

Lab Sample ID: AGC9L
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/L	Q
200.8	05/18/15	6020A	05/28/15	7440-38-2	Arsenic	0.00005	0.0002	0.0002	U
200.8	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.000020	0.000500	**0.000050**	**J**
200.8	05/18/15	6020A	05/28/15	7440-43-9	Cadmium	0.00001	0.0001	0.0001	U
200.8	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.000045	0.000500	**0.000090**	**J**
200.8	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.00016	0.0005	0.0005	U
200.8	05/18/15	6020A	05/28/15	7439-92-1	Lead	0.00005	0.0001	0.0001	U
7470A	05/18/15	7470A	05/20/15	7439-97-6	Mercury	0.000007	0.0001	0.0001	U
200.8	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.00013	0.0005	0.0005	U
200.8	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.000008	0.0002	0.0002	U
200.8	05/18/15	6020A	05/29/15	**7440-66-6**	**Zinc**	0.0005	0.0040	**0.0032**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS

Sample ID: RB-051415
MATRIX SPIKE

Lab Sample ID: AGC9L
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6020A	0.0002 U	0.0280	0.0250	112%	
Barium	6020A	0.0005 U	0.0250	0.0250	100%	
Cadmium	6020A	0.0001 U	0.0234	0.0250	93.6%	
Chromium	6020A	0.0005 U	0.0257	0.0250	103%	
Copper	6020A	0.0005 U	0.0249	0.0250	99.6%	
Lead	6020A	0.0001 U	0.0250	0.0250	100%	
Mercury	7470A	0.0001 U	0.0010	0.0010	100%	
Selenium	6020A	0.0005 U	0.0710	0.0800	88.8%	
Silver	6020A	0.0002 U	0.0249	0.0250	99.6%	
Zinc	6020A	0.004 U	0.076	0.080	95.0%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked

Percent Recovery Limits: 75-125%

AGC9 00178

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS
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Sample ID: RB-051415
DUPLICATE

Lab Sample ID: AGC9L
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6020A	0.0002 U	0.0002 U	0.0%	+/- 0.0002	L
Barium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Cadmium	6020A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Chromium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Copper	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Lead	6020A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Selenium	6020A	0.0005 U	0.0005 U	0.0%	+/- 0.0005	L
Silver	6020A	0.0002 U	0.0002 U	0.0%	+/- 0.0002	L
Zinc	6020A	0.004 U	0.004 U	0.0%	+/- 0.004	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: LAB CONTROL**

Lab Sample ID: AGC9LCS
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Spike Found	Spike Added	% Recovery	Q
Arsenic	6020A	0.0284	0.0250	114%	
Barium	6020A	0.0249	0.0250	99.6%	
Cadmium	6020A	0.0240	0.0250	96.0%	
Chromium	6020A	0.0250	0.0250	100%	
Copper	6020A	0.0251	0.0250	100%	
Lead	6020A	0.0249	0.0250	99.6%	
Mercury	7470A	0.0018	0.0020	90.0%	
Selenium	6020A	0.0735	0.0800	91.9%	
Silver	6020A	0.0249	0.0250	99.6%	
Zinc	6020A	0.079	0.080	98.8%	

Reported in mg/L

N-Control limit not met
Control Limits: 80-120%

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TOTAL METALS **Sample ID: METHOD BLANK**

Lab Sample ID: AGC9MB
LIMS ID: 15-9442
Matrix: Water
Data Release Authorized:
Reported: 06/01/15

QC Report No: AGC9-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	DL	LOQ	mg/L	Q
200.8	05/18/15	6020A	05/28/15	7440-38-2	Arsenic	0.00005	0.0002	0.0002	U
200.8	05/18/15	6020A	05/28/15	**7440-39-3**	**Barium**	0.000020	0.000500	**0.000170**	**J**
200.8	05/18/15	6020A	05/28/15	7440-43-9	Cadmium	0.00001	0.0001	0.0001	U
200.8	05/18/15	6020A	05/28/15	**7440-47-3**	**Chromium**	0.000045	0.000500	**0.000180**	**J**
200.8	05/18/15	6020A	05/28/15	7440-50-8	Copper	0.00016	0.0005	0.0005	U
200.8	05/18/15	6020A	05/28/15	**7439-92-1**	**Lead**	0.00005	0.00010	**0.00008**	**J**
7470A	05/18/15	7470A	05/20/15	7439-97-6	Mercury	0.000007	0.0001	0.0001	U
200.8	05/18/15	6020A	05/28/15	7782-49-2	Selenium	0.00013	0.0005	0.0005	U
200.8	05/18/15	6020A	05/28/15	7440-22-4	Silver	0.000008	0.0002	0.0002	U
200.8	05/18/15	6020A	05/28/15	**7440-66-6**	**Zinc**	0.0005	0.0040	**0.0011**	**J**

U-Analyte undetected at given DL
J-Analyte detected between DL and LOQ
DL-Method Detection Limit

Results reported below the LOQ are for statistical purposes only and have not been evaluated by either an analyst or data reviewer.

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	PMS	MS052811	50.0	53.71	**107.4**	50.0	49.85	**99.7**	51.18	**102.4**	49.70	**99.4**	50.48	**101.0**	49.84	**99.7**
Barium	BA	PMS	MS052811	50.0	49.93	**99.9**	50.0	50.13	**100.3**	49.17	**98.3**	49.69	**99.4**	48.75	**97.5**	49.19	**98.4**
Cadmium	CD	PMS	MS052811	50.0	49.34	**98.7**	50.0	50.54	**101.1**	49.75	**99.5**	49.63	**99.3**	50.58	**101.2**	50.60	**101.2**
Chromium	CR	PMS	MS052811	50.0	50.63	**101.3**	50.0	50.76	**101.5**	52.18	**104.4**	50.21	**100.4**	50.60	**101.2**	49.92	**99.8**
Copper	CU	PMS	MS052811	50.0	50.96	**101.9**	50.0	49.63	**99.3**	51.05	**102.1**	49.29	**98.6**	50.22	**100.4**	49.43	**98.9**
Lead	PB	PMS	MS052811	50.0	49.92	**99.8**	50.0	49.46	**98.9**	49.50	**99.0**	49.57	**99.1**	51.94	**103.9**	51.72	**103.4**
Mercury	HG	CVA	HG052002	8.0	7.74	**96.8**	4.0	3.93	**98.3**	3.82	**95.5**	3.80	**95.0**				
Selenium	SE	PMS	MS052811	80.0	77.37	**96.7**	50.0	50.21	**100.4**	52.02	**104.0**	50.58	**101.2**	51.33	**102.7**	51.42	**102.8**
Silver	AG	PMS	MS052811	50.0	48.83	**97.7**	50.0	49.57	**99.1**	50.04	**100.1**	49.02	**98.0**	50.97	**101.9**	51.14	**102.3**
Zinc	ZN	PMS	MS052811	50.0	50.88	**101.8**	50.0	49.40	**98.8**	52.06	**104.1**	49.89	**99.8**	51.19	**102.4**	50.82	**101.6**

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	PMS	MS052811	50.0	50.89	101.8	50.32	100.6	50.76	101.5	50.30	100.6	50.21	100.4	50.25	100.5
Barium	BA	PMS	MS052811	50.0	48.55	97.1	50.43	100.9	50.48	101.0	50.77	101.5	49.82	99.6	51.26	102.5
Cadmium	CD	PMS	MS052811	50.0	49.67	99.3	50.64	101.3	50.19	100.4	50.25	100.5	49.51	99.0	50.20	100.4
Chromium	CR	PMS	MS052811	50.0	50.93	101.9	50.17	100.3	51.45	102.9	50.61	101.2	50.96	101.9	52.81	105.6
Copper	CU	PMS	MS052811	50.0	50.67	101.3	50.22	100.4	50.19	100.4	50.03	100.1	49.41	98.8	49.55	99.1
Lead	PB	PMS	MS052811	50.0	51.07	102.1	50.93	101.9	49.76	99.5	48.98	98.0	49.23	98.5	49.09	98.2
Mercury	HG	CVA	HG052002	4.0												
Selenium	SE	PMS	MS052811	50.0	53.04	106.1	51.39	102.8	51.76	103.5	51.21	102.4	50.16	100.3	49.98	100.0
Silver	AG	PMS	MS052811	50.0	49.71	99.4	49.86	99.7	49.00	98.0	49.34	98.7	48.86	97.7	48.64	97.3
Zinc	ZN	PMS	MS052811	50.0	52.89	105.8	51.66	103.3	51.06	102.1	50.10	100.2	49.75	99.5	51.04	102.1

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	CCVTV	CCV12	%R	CCV13	%R	CCV14	%R	CCV15	%R	CCV16	%R	CCV17	%R
Arsenic	AS	PMS	MS052811	50.0	49.77	**99.5**	50.63	**101.3**								
Barium	BA	PMS	MS052811	50.0	50.70	**101.4**	50.97	**101.9**								
Cadmium	CD	PMS	MS052811	50.0	50.61	**101.2**	50.14	**100.3**								
Chromium	CR	PMS	MS052811	50.0	51.14	**102.3**	50.82	**101.6**								
Copper	CU	PMS	MS052811	50.0	48.97	**97.9**	50.01	**100.0**								
Lead	PB	PMS	MS052811	50.0	50.21	**100.4**	49.74	**99.5**								
Mercury	HG	CVA	HG052002	4.0												
Selenium	SE	PMS	MS052811	50.0	50.00	**100.0**	50.50	**101.0**								
Silver	AG	PMS	MS052811	50.0	49.36	**98.7**	47.95	**95.9**								
Zinc	ZN	PMS	MS052811	50.0	50.36	**100.7**	51.11	**102.2**								

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Barium	BA	PMS	MS052911	50.0	49.87	99.7	50.0	48.88	97.8	48.49	97.0	48.66	97.3				
Chromium	CR	PMS	MS052911	50.0	49.22	98.4	50.0	49.94	99.9	49.11	98.2	49.17	98.3				
Copper	CU	PMS	MS052911	50.0	52.34	104.7	50.0	49.76	99.5	49.02	98.0	49.10	98.2				
Lead	PB	PMS	MS052911	50.0	49.70	99.4	50.0	48.17	96.3	48.46	96.9	49.12	98.2				
Mercury	HG	CVA	HG052202	8.0	8.44	105.5	4.0	4.03	100.8	4.02	100.5	4.04	101.0	4.01	100.3	4.05	101.3
Zinc	ZN	PMS	MS052911	50.0	51.33	102.7	50.0	50.24	100.5	49.93	99.9	51.03	102.1				

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Barium	BA	PMS	MS052911	50.0												
Chromium	CR	PMS	MS052911	50.0												
Copper	CU	PMS	MS052911	50.0												
Lead	PB	PMS	MS052911	50.0												
Mercury	HG	CVA	HG052202	4.0	4.05	101.3	4.05	101.3	4.06	101.5						
Zinc	ZN	PMS	MS052911	50.0												

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	PMS	MS052811	0.2	0.24	**120.0**										
Barium	BA	PMS	MS052811	0.5	0.49	**98.0**										
Cadmium	CD	PMS	MS052811	0.1	0.10	**100.0**										
Chromium	CR	PMS	MS052811	0.5	0.49	**98.0**										
Copper	CU	PMS	MS052811	0.5	0.53	**106.0**										
Lead	PB	PMS	MS052811	0.1	0.11	**110.0**										
Mercury	HG	CVA	HG052002	0.1	0.07	**70.0**										
Selenium	SE	PMS	MS052811	0.5	0.52	**104.0**										
Silver	AG	PMS	MS052811	0.2	0.21	**105.0**										
Zinc	ZN	PMS	MS052811	4.0	3.94	**98.5**										

Control Limits: no control limits have been established by the EPA at this time.

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Barium	BA	PMS	MS052911	0.5	0.49	**98.0**										
Chromium	CR	PMS	MS052911	0.5	0.55	**110.0**										
Copper	CU	PMS	MS052911	0.5	0.52	**104.0**										
Lead	PB	PMS	MS052911	0.1	0.10	**100.0**										
Mercury	HG	CVA	HG052202	0.1	0.09	**90.0**										
Zinc	ZN	PMS	MS052911	4.0	5.24	**131.0**										

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Barium	BA	PMS	MS052811	200.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	CD	PMS	MS052811	5.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chromium	CR	PMS	MS052811	10.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Copper	CU	PMS	MS052811	25.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Lead	PB	PMS	MS052811	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Mercury	HG	CVA	HG052002	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Selenium	SE	PMS	MS052811	5.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Silver	AG	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Zinc	ZN	PMS	MS052811	20.0	4.0	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AGC9

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Barium	BA	PMS	MS052811	200.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	CD	PMS	MS052811	5.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Chromium	CR	PMS	MS052811	10.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Copper	CU	PMS	MS052811	25.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Lead	PB	PMS	MS052811	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Mercury	HG	CVA	HG052002	0.2	0.1												
Selenium	SE	PMS	MS052811	5.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Silver	AG	PMS	MS052811	10.0	0.2	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Zinc	ZN	PMS	MS052811	20.0	4.0	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U	4.0	U

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

UNITS: ug/L

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB12	C	CCB13	C	CCB14	C	CCB15	C	CCB16	C	CCB17	C
Arsenic	AS	PMS	MS052811	10.0	0.2	0.2	U	0.2	U								
Barium	BA	PMS	MS052811	200.0	0.5	0.5	U	0.5	U								
Cadmium	CD	PMS	MS052811	5.0	0.1	0.1	U	0.1	U								
Chromium	CR	PMS	MS052811	10.0	0.5	0.5	U	0.5	U								
Copper	CU	PMS	MS052811	25.0	0.5	0.5	U	0.5	U								
Lead	PB	PMS	MS052811	3.0	0.1	0.1	U	0.1	U								
Mercury	HG	CVA	HG052002	0.2	0.1												
Selenium	SE	PMS	MS052811	5.0	0.5	0.5	U	0.5	U								
Silver	AG	PMS	MS052811	10.0	0.2	0.2	U	0.2	U								
Zinc	ZN	PMS	MS052811	20.0	4.0	4.0	U	4.0	U								

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AGC9

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Barium	BA	PMS	MS052911	200.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U				
Chromium	CR	PMS	MS052911	10.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U				
Copper	CU	PMS	MS052911	25.0	0.5	0.5	U	0.5	U	0.5	U	0.5	U				
Lead	PB	PMS	MS052911	3.0	0.1	0.1	U	0.1	U	0.1	U	0.1	U				
Mercury	HG	CVA	HG052202	0.2	0.1	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Zinc	ZN	PMS	MS052911	20.0	4.0	4.0	U	4.0	U	4.0	U	4.0	U				

25159.0054

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AGC9

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Barium	BA	PMS	MS052911	200.0	0.5												
Chromium	CR	PMS	MS052911	10.0	0.5												
Copper	CU	PMS	MS052911	25.0	0.5												
Lead	PB	PMS	MS052911	3.0	0.1												
Mercury	HG	CVA	HG052202	0.2	0.1	0.1	U	0.1	U	0.1	U						
Zinc	ZN	PMS	MS052911	20.0	4.0												

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

ICS SOURCE: I.V.

PROJECT: POS Sliver

RUNID: MS052811

SDG: AGC9

INSTRUMENT ID: NEXION 300D

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Arsenic		20	0.1	17.7	**88.5**						
Cadmium		20	0.0	19.1	**95.5**						
Chromium		20	0.5	19.8	**99.0**						
Copper		20	1.1	20.7	**103.5**						
Manganese		20	0.1	19.6	**98.0**						
Nickel		20	0.3	20.0	**100.0**						
Silver		20	0.0	19.9	**99.5**						
Zinc		20	0.2	19.2	**96.0**						

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

ICS SOURCE: I.V.

PROJECT: POS Sliver

RUNID: MS052911

SDG: AGC9

INSTRUMENT ID: NEXION 300D

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Arsenic		20	0.1	17.5	**87.5**						
Cadmium		20	0.0	18.7	**93.5**						
Chromium		20	0.6	19.6	**98.0**						
Copper		20	1.2	20.5	**102.5**						
Manganese		20	0.1	19.5	**97.5**						
Nickel		20	0.3	20.2	**101.0**						
Silver		20	0.0	19.0	**95.0**						
Zinc		20	1.1	19.8	**99.0**						

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9 UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	PMS	NEXION 300D MS	0.00		10	0.2	4/1/2012		
Barium	BA	PMS	NEXION 300D MS	0.00		200	0.5	4/1/2012		
Cadmium	CD	PMS	NEXION 300D MS	0.00		5	0.1	4/1/2012		
Chromium	CR	PMS	NEXION 300D MS	0.00		10	0.5	4/1/2012		
Copper	CU	PMS	NEXION 300D MS	0.00		25	0.5	4/1/2012		
Lead	PB	PMS	NEXION 300D MS	0.00		3	0.1	4/1/2012		
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2012		
Selenium	SE	PMS	NEXION 300D MS	0.00		5	0.5	4/1/2012		
Silver	AG	PMS	NEXION 300D MS	0.00		10	0.2	4/1/2012		
Zinc	ZN	PMS	NEXION 300D MS	0.00		20	4.0	4/1/2012		

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

ANALYSIS METHOD: PMS

ARI PREP CODE: SWN

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-01(3.0-4.0)	AGC9A	1.012	0.0	50.0
SDP-01(8.0-9.0)	AGC9B	1.054	0.0	50.0
SDP-02(16.0-17.5)	AGC9C	1.013	0.0	50.0
SDP-02(18.5-19.5)	AGC9D	1.055	0.0	50.0
SDP-02(22.0-23.5)	AGC9E	1.015	0.0	50.0
SDP-03(6.5-8.0)	AGC9F	1.035	0.0	50.0
SDP-03(23.5-24.5)	AGC9G	1.061	0.0	50.0
SDP-04(1.5-3.0)	AGC9H	1.052	0.0	50.0
SDP-04(1.5-3.0)D	AGC9HDUP	1.054	0.0	50.0
SDP-04(1.5-3.0)S	AGC9HSPK	1.052	0.0	50.0
SDP-04(10.5-12.0)	AGC9I	1.092	0.0	50.0
SDP-05(6.5-7.5)	AGC9J	1.075	0.0	50.0
SDP-05(17.5-19.0)	AGC9K	1.039	0.0	50.0
PBS	AGC9MB1	1.000	0.0	50.0
LCSS	AGC9MB1SPK	1.000	0.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

ANALYSIS METHOD: PMS

ARI PREP CODE: REN

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RB-051415	AGC9L	0.000	50.0	25.0
RB-051415D	AGC9LDUP	0.000	50.0	25.0
RB-051415S	AGC9LSPK	0.000	50.0	25.0
PBW	AGC9MB2	0.000	50.0	25.0
LCSW	AGC9MB2SPK	0.000	50.0	25.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

ANALYSIS METHOD: CVA

ARI PREP CODE: SMM

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-01(3.0-4.0)	AGC9A	0.247	0.0	50.0
SDP-01(8.0-9.0)	AGC9B	0.211	0.0	50.0
SDP-02(16.0-17.5)	AGC9C	0.202	0.0	50.0
SDP-02(18.5-19.5)	AGC9D	0.236	0.0	50.0
SDP-02(22.0-23.5)	AGC9E	0.270	0.0	50.0
SDP-03(6.5-8.0)	AGC9F	0.261	0.0	50.0
SDP-03(23.5-24.5)	AGC9G	0.279	0.0	50.0
SDP-04(1.5-3.0)	AGC9H	0.213	0.0	50.0
SDP-04(1.5-3.0)D	AGC9HDUP	0.211	0.0	50.0
SDP-04(1.5-3.0)S	AGC9HSPK	0.214	0.0	50.0
SDP-04(10.5-12.0)	AGC9I	0.283	0.0	50.0
SDP-05(6.5-7.5)	AGC9J	0.223	0.0	50.0
SDP-05(17.5-19.0)	AGC9K	0.247	0.0	50.0
PBS	AGC9MB1	0.200	0.0	50.0
LCSW	AGC9MB1SPK	0.200	0.0	50.0

AGC9 : 2015

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AGC9

ANALYSIS METHOD: CVA

ARI PREP CODE: TWM

PREPDATE: 5/18/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
RB-051415	AGC9L	0.000	20.0	20.0
RB-051415D	AGC9LDUP	0.000	20.0	20.0
RB-051415S	AGC9LSPK	0.000	20.0	20.0
PBW	AGC9MB2	0.000	20.0	20.0
LCSW	AGC9MB2SPK	0.000	20.0	20.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGC9 | RUNID: MS052811 | METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	08310		X		X		X			X		X	X									X		X							X
S1	S1	1.00	08350		X		X		X			X		X	X									X		X							X
S2	S2	1.00	08380		X		X		X			X		X	X									X		X							X
S3	S3	1.00	08420		X		X		X			X		X	X									X		X							X
S4	S4	1.00	08470		X		X		X			X		X	X									X		X							X
S5	S5	1.00	08510																														
ZZZZZZ	Rinse sampl	1.00	08560																														
ICV	MICV	1.00	09030		X		X		X			X		X	X									X		X							X
ICB	ICB	1.00	09090		X		X		X			X		X	X									X		X							X
CCV	MCCV1	1.00	09130		X		X		X			X		X	X									X		X							X
CCB	CCB1	1.00	09190		X		X		X			X		X	X									X		X							X
ZZZZZZ	ZZZZZZ	1.00	09230																														
ZZZZZZ	ZZZZZZ	1.00	09260																														
ZZZZZZ	ZZZZZZ	1.00	09320																														
ZZZZZZ	LR200	1.00	09390																														
ZZZZZZ	LR300	1.00	09450																														
ZZZZZZ	B1	1.00	09520																														
ZZZZZZ	B2	1.00	09570																														
ZZZZZZ	B3	1.00	10060																														
ZZZZZZ	B4	1.00	10120																														
ZZZZZZ	B5	1.00	10190																														
CCV	MCCV2	1.00	10240		X		X		X			X		X	X									X		X							X
CCB	CCB2	1.00	10310		X		X		X			X		X	X									X		X							X
S0	S0	1.00	10430		X		X		X			X		X	X									X		X							X
CCV	MCCV3	1.00	10470		X		X		X			X		X	X									X		X							X
CCB	CCB3	1.00	10530		X		X		X			X		X	X									X		X							X
CRI	MCRI	1.00	10570		X		X		X			X		X	X									X		X							X
ICSA	ICSAI	1.00	11010		X		X		X			X		X	X									X		X							X
ZZZZZZ	ZZZZZZ	1.00	11070																														
ICSAB	ICSABI	1.00	11150		X		X		X			X		X	X									X		X							X
ZZZZZZ	B6	1.00	11210																														
CCV	MCCV4	1.00	11270		X		X		X			X		X	X									X		X							X
CCB	CCB4	1.00	11330		X		X		X			X		X	X									X		X							X
S0	S0	1.00	11420		X		X		X			X		X	X									X		X							X
CCV	MCCV5	1.00	11460		X		X		X			X		X	X									X		X							X

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGC9 | RUNID: MS052811 METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
CCB	CCB5	1.00	11520		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGO7MB	2.00	11570																														
ZZZZZZ	AGP2MB	2.00	12000																														
ZZZZZZ	AGP2A	2.00	12040																														
ZZZZZZ	AGP0A	2.00	12080																														
ZZZZZZ	AGO8A	2.00	12110																														
ZZZZZZ	AGO7A	5.00	12150																														
ZZZZZZ	AGO7A	2.00	12190																														
ZZZZZZ	AGO7MBSPK	2.00	12220																														
ZZZZZZ	AGP2MBSPK	2.00	12260																														
ZZZZZZ	AGE0MBSPK	2.00	12300																														
CCV	MCCV6	1.00	12350		X		X		X			X		X	X									X		X							X
CCB	CCB6	1.00	12410		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGA8MB1	20.00	12510																														
ZZZZZZ	AGA8A	20.00	12540																														
ZZZZZZ	AGA8B	20.00	12580																														
ZZZZZZ	AGA8C	20.00	13020																														
ZZZZZZ	AGA8FDUP	20.00	13050																														
ZZZZZZ	AGA8F	20.00	13090																														
ZZZZZZ	AGA8FSPK	20.00	13130																														
ZZZZZZ	AGA8FPOST	20.00	13160																														
ZZZZZZ	AGA8MB1SPK	20.00	13200																														
ZZZZZZ	AGE0MBSPK	2.00	13240																														
CCV	MCCV7	1.00	13280		X		X		X			X		X	X									X		X							X
CCB	CCB7	1.00	13350		X		X		X			X		X	X									X		X							X
S0	S0	1.00	13450		X		X		X			X		X	X									X		X							X
CCV	MCCV8	1.00	13480		X		X		X			X		X	X									X		X							X
CCB	CCB8	1.00	13550		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGA8MB2	2.00	14030																														
ZZZZZZ	AGA8JDUP	2.00	14060																														
ZZZZZZ	AGA8J	2.00	14100																														
ZZZZZZ	AGA8JSPK	2.00	14140																														
ZZZZZZ	AGA8D	20.00	14170																														
ZZZZZZ	AGA8E	20.00	14210																														
ZZZZZZ	AGA8G	20.00	14250																														

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGC9 | RUNID: MS052811 METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AGA8H	20.00	14290																													
ZZZZZZ	AGA8I	20.00	14320																													
ZZZZZZ	AGA8MB2SPK	2.00	14360																													
CCV	MCCV9	1.00	14410		X		X		X			X		X	X									X		X						X
CCB	CCB9	1.00	14470		X		X		X			X		X	X									X		X						X
ZZZZZZ	AGA8A	50.00	14550																													
ZZZZZZ	AGA8B	50.00	14590																													
ZZZZZZ	AGA8FDUP	50.00	15030																													
ZZZZZZ	AGA8F	50.00	15060																													
ZZZZZZ	AGA8FSPK	50.00	15100																													
ZZZZZZ	AGA8FDUP	200.00	15140																													
ZZZZZZ	AGA8F	200.00	15170																													
ZZZZZZ	AGA8FSPK	200.00	15210																													
ZZZZZZ	AGA8FSPK	20.00	15250																													
ZZZZZZ	AGA8MB1SPK	20.00	15280																													
CCV	MCCV10	1.00	15330		X		X		X			X		X	X									X		X						X
CCB	CCB10	1.00	15400		X		X		X			X		X	X									X		X						X
PBS	AGC9MB1	20.00	15540		X		X		X			X		X	X									X		X						X
ZZZZZZ	AGA8J	2.00	15590																													
ZZZZZZ	AGA8D	50.00	16030																													
ZZZZZZ	AGA8FDUP	500.00	16180																													
ZZZZZZ	AGA8F	500.00	16220																													
ZZZZZZ	AGA8FSPK	500.00	16250																													
ZZZZZZ	AGA8FSPK	2000.00	16290																													
SDP-01(3.0-4.0)	AGC9A	20.00	16330		X		X		X			X		X	X									X		X						X
SDP-01(8.0-9.0)	AGC9B	20.00	16360		X		X		X			X			X											X						
LCSS	AGC9MB1SPK	20.00	16400		X		X		X			X		X	X									X		X						X
CCV	MCCV11	1.00	16450		X		X		X			X		X	X									X		X						X
CCB	CCB11	1.00	16510		X		X		X			X		X	X									X		X						X
SDP-02(16.0-17.5)	AGC9C	20.00	17120		X		X		X			X		X	X									X		X						X
SDP-02(18.5-19.5)	AGC9D	20.00	17150		X		X		X			X		X	X									X		X						X
SDP-02(22.0-23.5)	AGC9E	20.00	17190		X		X		X			X		X	X									X		X						X
SDP-03(6.5-8.0)	AGC9F	20.00	17230		X		X		X			X			X									X		X						X
SDP-03(23.5-24.5)	AGC9G	20.00	17260		X		X		X			X		X	X									X		X						X
SDP-04(10.5-12.0)	AGC9I	20.00	17300		X		X		X			X			X											X						

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/28/2015

SDG: AGC9 | RUNID: MS052811 | METHOD: PMS | END DATE: 5/28/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
SDP-04(1.5-3.0)D	AGC9HDUP	20.00	17340		X		X					X														X							
SDP-04(1.5-3.0)	AGC9H	20.00	17370		X		X					X														X							
SDP-04(1.5-3.0)S	AGC9HSPK	20.00	17410		X		X					X														X							
ZZZZZZ	ZZZZZZ	20.00	17450																														
CCV	MCCV12	1.00	17500		X		X		X			X		X	X									X		X							X
CCB	CCB12	1.00	17560		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGG4MB	2.00	18000																														
PBW	AGC9MB2	2.00	18030		X		X		X			X		X	X									X		X							X
RB-051415D	AGC9LDUP	2.00	18070		X		X		X			X		X	X									X		X							X
RB-051415	AGC9L	2.00	18110		X		X		X			X		X	X									X		X							
RB-051415S	AGC9LSPK	2.00	18140		X		X		X			X		X	X									X		X							X
SDP-05(6.5-7.5)	AGC9J	20.00	18180		X		X		X			X		X	X									X		X							X
SDP-05(17.5-19.0)	AGC9K	20.00	18220		X		X		X			X		X	X									X		X							X
ZZZZZZ	AGF8MBSPK	20.00	18250																														
ZZZZZZ	AGG4MBSPK	2.00	18290																														
LCSW	AGC9MB2SPK	2.00	18330		X		X		X			X		X	X									X		X							X
CCV	MCCV13	1.00	18380		X		X		X			X		X	X									X		X							X
CCB	CCB13	1.00	18440		X		X		X			X		X	X									X		X							X

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: NEXION 300D MS | START DATE: 5/29/2015

SDG: AGC9 | RUNID: MS052911 | METHOD: PMS | END DATE: 5/29/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09100						X					X	X									X									X
S1	S1	1.00	09140						X					X	X									X									X
S2	S2	1.00	09180						X					X	X									X									X
S3	S3	1.00	09220						X					X	X									X									X
S4	S4	1.00	09260						X					X	X									X									X
S5	S5	1.00	09300																														
ZZZZZZ	Rinse sampl	1.00	09360																														
ICV	MICV	1.00	09450						X					X	X									X									X
ICB	ICB	1.00	09520						X					X	X									X									X
CCV	MCCV1	1.00	09550						X					X	X									X									X
CCB	CCB1	1.00	10010						X					X	X									X									X
CRI	MCRI	1.00	10050						X					X	X									X									X
ICSA	ICSAI	1.00	10090						X					X	X									X									X
ICSAB	ICSABI	1.00	10150						X					X	X									X									X
ZZZZZZ	LR200	1.00	10210																														
ZZZZZZ	LR300	1.00	10280																														
ZZZZZZ	B1	1.00	10340																														
ZZZZZZ	B2	1.00	10400																														
ZZZZZZ	ZZZZZZ	1.00	10450																														
ZZZZZZ	ZZZZZZ	1.00	10520																														
CCV	MCCV2	1.00	10580						X					X	X									X									X
CCB	CCB2	1.00	11050						X					X	X									X									X
ZZZZZZ	AGP4MB1	20.00	11120																														
RB-051415	AGC9L	2.00	11150																														X
ZZZZZZ	AGP4A	20.00	11190																														
SDP-01(8.0-9.0)	AGC9B	50.00	11230											X										X									X
SDP-03(6.5-8.0)	AGC9F	50.00	11260											X																			
SDP-04(10.5-12.0)	AGC9I	200.00	11300											X										X									X
SDP-04(1.5-3.0)D	AGC9HDUP	200.00	11340						X					X	X									X									X
SDP-04(1.5-3.0)	AGC9H	200.00	11370						X					X	X									X									X
SDP-04(1.5-3.0)S	AGC9HSPK	200.00	11410						X					X	X									X									X
ZZZZZZ	AGP4MB1SPK	20.00	11450																														
CCV	MCCV3	1.00	11500						X					X	X									X									X
CCB	CCB3	1.00	11560						X					X	X									X									X

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/20/2015

SDG: AGC9 | RUNID: HG052002 | METHOD: CVA | END DATE: 5/20/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	09502														X															
S0.1	S0.1	1.00	09530														X															
S0.5	S0.5	1.00	09544														X															
S1	S1	1.00	09562														X															
S2	S2	1.00	09575														X															
S5	S5	1.00	09593														X															
S10	S10	1.00	10011														X															
ICV	AICV	1.00	10041														X															
ICB	ICB	1.00	10070														X															
CCV	ACCV1	1.00	10084														X															
CCB	CCB1	1.00	10102														X															
CRA	CRA	1.00	10120														X															
ZZZZZZ	AGA8MB2	1.00	10133																													
ZZZZZZ	AGA8MB2SPK	1.00	10151																													
ZZZZZZ	AGA8J	1.00	10164																													
ZZZZZZ	AGA8JDUP	1.00	10182																													
ZZZZZZ	AGA8JSPK	1.00	10200																													
PBW	AGC9MB2	1.00	10213														X															
LCSW	AGC9MB2SPK	1.00	10231														X															
RB-051415	AGC9L	1.00	10245														X															
RB-051415D	AGC9LDUP	1.00	10263														X															
CCV	ACCV2	1.00	10281														X															
CCB	CCB2	1.00	10295														X															
RB-051415S	AGC9LSPK	1.00	10312														X															
ZZZZZZ	AGB1MB1	1.00	10330																													
ZZZZZZ	AGB1MB1SPK	1.00	10343																													
ZZZZZZ	AGB1A	1.00	10361																													
ZZZZZZ	AGB1ADUP	1.00	10375																													
ZZZZZZ	AGB1ASPK	1.00	10392																													
ZZZZZZ	AGB1B	1.00	10410																													
ZZZZZZ	AGB1C	1.00	10424																													
ZZZZZZ	AGB1D	1.00	10441																													
CCV	ACCV3	1.00	10455														X															
CCB	CCB3	1.00	10473														X															

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGC9 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	10082														X																
S0.1	S0.1	1.00	10100														X																
S0.5	S0.5	1.00	10114														X																
S1	S1	1.00	10131														X																
S2	S2	1.00	10145														X																
S5	S5	1.00	10163														X																
S10	S10	1.00	10181														X																
ICV	AICV	1.00	10202																														
CCV	ACCV1	1.00	10220														X																
ICV	AICV	1.00	10303														X																
ICB	ICB	1.00	10333														X																
CCV	ACCV1	1.00	10351														X																
CCB	CCB1	1.00	10365														X																
CRA	CRA	1.00	10383														X																
PBW	AGC9MB1	1.00	10400														X																
LCSW	AGC9MB1SPK	1.00	10414														X																
SDP-01(3.0-4.0)	AGC9A	1.00	10431														X																
SDP-01(8.0-9.0)	AGC9B	1.00	10445														X																
SDP-02(16.0-17.5)	AGC9C	1.00	10463														X																
SDP-02(18.5-19.5)	AGC9D	1.00	10480														X																
SDP-02(22.0-23.5)	AGC9E	1.00	10494														X																
SDP-03(6.5-8.0)	AGC9F	1.00	10512														X																
SDP-03(23.5-24.5)	AGC9G	1.00	10530														X																
CCV	ACCV2	1.00	10544														X																
CCB	CCB2	1.00	10562														X																
SDP-04(1.5-3.0)	AGC9H	1.00	10575														X																
SDP-04(1.5-3.0)D	AGC9HDUP	1.00	10593														X																
SDP-04(1.5-3.0)S	AGC9HSPK	1.00	11010														X																
SDP-04(10.5-12.0)	AGC9I	1.00	11024														X																
SDP-05(6.5-7.5)	AGC9J	1.00	11042														X																
SDP-05(17.5-19.0)	AGC9K	1.00	11055														X																
CCV	ACCV3	1.00	11073														X																
CCB	CCB3	1.00	11091														X																
ZZZZZZ	AGA8MB1	1.00	11112																														
ZZZZZZ	AGA8MB1SPK	1.00	11125																														

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGC9 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AGA8A	1.00	11143																														
ZZZZZZ	AGA8B	1.00	11160																														
ZZZZZZ	AGA8C	1.00	11174																														
ZZZZZZ	AGA8D	1.00	11191																														
ZZZZZZ	AGA8E	1.00	11205																														
ZZZZZZ	AGA8F	1.00	11222																														
ZZZZZZ	AGA8FDUP	1.00	11240																														
ZZZZZZ	AGA8FSPK	1.00	11254																														
CCV	ACCV4	1.00	11272														X																
CCB	CCB4	1.00	11290														X																
ZZZZZZ	AGA8G	1.00	11304																														
ZZZZZZ	AGA8H	1.00	11322																														
ZZZZZZ	AGA8I	1.00	11335																														
ZZZZZZ	AGB8MB1	1.00	11353																														
ZZZZZZ	AGB8MB1SPK	1.00	11370																														
ZZZZZZ	AGB8A	1.00	11384																														
ZZZZZZ	AGB8B	1.00	11401																														
ZZZZZZ	AGG2MB1	1.00	11415																														
ZZZZZZ	AGG2MB1SPK	1.00	11433																														
ZZZZZZ	AGG2A	1.00	11450																														
CCV	ACCV5	1.00	11464														X																
CCB	CCB5	1.00	11482														X																
ZZZZZZ	AGG2ADUP	1.00	11500																														
ZZZZZZ	AGG2ASPK	1.00	11514																														
ZZZZZZ	AGG2B	1.00	11532																														
ZZZZZZ	AGG2C	1.00	11550																														
ZZZZZZ	AGG2D	1.00	11563																														
CCV	ACCV6	1.00	11581														X																
CCB	CCB6	1.00	11595														X																
ZZZZZZ	AGF8MB	1.00	12013																														
ZZZZZZ	AGF8MBSPK	1.00	12031																														
ZZZZZZ	AGF8A	1.00	12044																														
ZZZZZZ	AGF8ADUP	1.00	12062																														
ZZZZZZ	AGF8ASPK	1.00	12080																														
ZZZZZZ	AGF8B	1.00	12093																														

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 5/22/2015

SDG: AGC9 | RUNID: HG052202 | METHOD: CVA | END DATE: 5/22/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AGF9A	1.00	12111																														
ZZZZZZ	AGF9B	1.00	12125																														
CCV	ACCV7	1.00	12143														X																
CCB	CCB7	1.00	12161														X																
SDP-04(1.5-3.0)	AGC9H	1.00	12175																														
SDP-04(1.5-3.0)D	AGC9HDUP	1.00	12193																														
SDP-04(1.5-3.0)S	AGC9HSPK	1.00	12211																														
ZZZZZZ	AGA8F	1.00	12224																														
ZZZZZZ	AGA8FDUP	1.00	12242																														
ZZZZZZ	AGA8FSPK	1.00	12260																														
CCV	ACCV8	1.00	12273														X																
CCB	CCB8	1.00	12291														X																

Total Solids

ARI Job ID: AGC9

Extractions Total Solids-extts
Data By: Tonya Goodell
Created: 5/19/15

Worklist: 4225
Analyst: TG
Comments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

	ARI ID CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AGC9A 15-9431 SDP-01(3.0-4.0)	1.17	10.41	9.38	88.9	No	5.62	11.25	14.06
2.	AGC9B 15-9432 SDP-01(8.0-9.0)	1.15	10.55	8.63	79.6	No	6.28	12.56	15.70
3.	AGC9C 15-9433 SDP-02(16.0-17.5)	1.17	10.41	9.03	85.1	No	5.88	11.75	14.69
4.	AGC9D 15-9434 SDP-02(18.5-19.5)	1.15	10.26	7.12	65.5	No	7.63	15.27	19.08
5.	AGC9E 15-9435 SDP-02(22.0-23.5)	1.16	10.12	7.94	75.7	No	6.61	13.21	16.51
6.	AGC9F 15-9436 SDP-03(6.5-8.0)	1.15	10.14	9.37	91.4	No	5.47	10.94	13.68
7.	AGC9G 15-9437 SDP-03(23.5-24.5)	1.13	10.29	8.26	77.8	No	6.43	12.85	16.07
8.	AGC9H 15-9438 SDP-04(1.5-3.0)	1.16	10.19	9.31	90.3	No	5.54	11.07	13.84
9.	AGC9I 15-9439 SDP-04(10.5-12.0)	1.16	10.80	9.43	85.8	No	5.83	11.66	14.57
10.	AGC9J 15-9440 SDP-05(6.5-7.5)	1.18	10.15	8.45	81.0	No	6.17	12.35	15.43
11.	AGC9K 15-9441 SDP-05(17.5-19.0)	1.18	10.94	9.03	80.4	No	6.22	12.44	15.55

AGC9 : 00211

Extractions Total Solids-extts
Data By: Tonya Goodell
Created: 5/19/15

Worklist: 4225
Analyst: TG
Comments:

Oven ID: Ø15

Balance ID: B334705934

Samples In: Date: 5/19/15 Time: 16:15 Temp: 104 Analyst: LM

Samples Out: Date: 5/20/15 Time: Ø814 Temp: 143 Analyst: SP

	ARI ID / CLIENT ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% TS	Dcnt	5g	10g	12.5g
1.	AGC9A 15-9431 SDP-01(3.0-4.0)	1.17	10.41	9.38		No			
2.	AGC9B 15-9432 SDP-01(8.0-9.0)	1.15	1055	8.63		No			
3.	AGC9C 15-9433 SDP-02(16.0-17.5)	1.17	10.41	9.03		No			
4.	AGC9D 15-9434 SDP-02(18.5-19.5)	1.15	1026	7.12		No			
5.	AGC9E 15-9435 SDP-02(22.0-23.5)	1.16	1012	7.94		No			
6.	AGC9F 15-9436 SDP-03(6.5-8.0)	1.15	10.14	9.37 8.26		No			
7.	AGC9G 15-9437 SDP-03(23.5-24.5)	1.13	1029	~~8.77~~ SP 5/20/15		No			
8.	AGC9H 15-9438 SDP-04(1.5-3.0)	1.16	10.19	9.31		No			
9.	AGC9I 15-9439 SDP-04(10.5-12.0)	1.16	10.80	9.43		No			
10.	AGC9J 15-9440 SDP-05(6.5-7.5)	1.18	1015	8.45		No			
11.	AGC9K 15-9441 SDP-05(17.5-19.0)	1.18	1094	9.03		No			

AGCS 00212

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Total Solids Bench Sheet

Laboratory Section: Metals

Oven Identification: 07 Balance ID: 068755

Samples in Oven: Date: 5/18/15 Time: 1205 Temp: 104°C Analyst: MB

Removed from Oven: Date: 5/19/15 Time: 0750 Temp. 103°C Analyst: MB

ARI Sample ID		Tare Weight (g)	Tare + Sample Wet (g)	Tare + Sample Dry (g)	Date & Time Last Weight	Final Weighting >12 hrs[1]
AGCA	A	1.001	10.323	9.595	–	✓
"	B	0.973	10.110	8.536	–	✓
"	C	1.010	10.686	9.114	–	✓
"	D	1.035	10.092	7.069	–	✓
"	E	0.984	10.656	8.283	–	✓
"	F	1.035	10.165	8.975	–	✓
"	G	0.990	10.160	8.128	–	✓
"	H	0.993	10.108	9.239	–	✓
"	I	1.021	10.039	8.724	–	✓
"	J	0.986	10.225	8.735	–	✓
"	K	1.007	10.228	8.763	–	✓
			5/19/15 MB			

1) Place a check mark in this column if samples have dried > 12 but < 24 hours. When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S. Use a 2nd bench sheet for additional weightings

ARCA 06213

SIM PAH Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGC9

AGC9 - 0821H

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8270D) SIM PNA (Soil) / Sediment
Microwave (3546) (SOP # 3304S)

Element Batch BDE0048

Preparation Test SIM PNA # 5

In-House (5ppb)

ARI Job No(s) AGC9 Page 1 of 2 Batch set up by: JH

Bottle #	Extraction Requirements	Weight Extracted (eq. to 10g dry wt)	(REQ/Opt) GPC (1:1) 1 2 3	(REQ/ Sulfur Clean (1:1) (Transfer Rinse)	(REQ/Opt) Silica Gel Clean (1:1) Y / N	Final Effective Volume	Volume to Lab	Comments	Verify Client ID / Analyst/Date Microwave 1 2 3 / Analyst/Date
	AGC9 MBS	10.00g	(1:1) Y N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		Pre GPC KD 80°C (No Exchange) 1 2 3 4 5 6
	SBS	10.00g	(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		RH 5/26/15 Analyst/Date
	~~SBS Dup~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
	~~QLS~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
1	AGC9 A	12.28	(1 1) Y N	(1.1)	(1:1) Y / N	0.5mL	0.5mL	see notes 1SE0013 -01A	Pre GPC TurboVap 1 2 3 4
1	B	13.01	(1 1) Y / N	(1:1)	(1:1) Y / N			-02A	DC 5/27/15
1	C	12.11	~~(1:1) 1:2~~ Y / N	(1.1)	(1:1) Y / N	~~0.5mL~~ 1 mL	0.5mL	see notes -03A	Analyst/Date
1	D	16.18	(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL	-04A	Post GPC KD 80°C
1	E	14.33	(1 1) Y / N	(1 1)	(1 1) Y / N	0.5mL	0.5mL	see notes -05A	RH Hex X (2 X 20mL) 5/26/15 100°C
1	F	11.20	(1:1) Y / N	(1 1)	(1.1) Y / N	0.5mL	0.5mL	-06A	1 2 3 4 5 6 Analyst/Date
1	G	13.07	(1:1) Y / N	(1.1)	(1:1) Y / N	0.5mL	0.5mL	-07A	Pre Cleanups TurboVap 1 2 3 4
1	H	12.01	(1:1) Y / N	(1.1)	(1:1) Y / N	0.5mL	0.5mL	-08A	5/28/15 Analyst/Date
1	HMS	12.08	(1:1) Y / N	(1.1)	(1:1) Y / N	0.5mL	0.5mL	-08A	Post Cleanups TurboVap 1 2 3 4 5
1	HMSD	12.16	(1.1) Y / N	(1.1)	(1:1) Y / N	0.5mL	0.5mL	-08A	5/29/15 Analyst/Date
Analyst/Date	5/22/15		DC 5/27/15	GM 5/27/15	GM 5/27/15	GM 5/29/15	GM 5/29/15	GM 5/27/15	Reviewed by/Date GM 5/29/15

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	B (D0013-04)	15/75µg/mL	100µL	12/12/15	TG	
Spike	15 (D0111-04)	15/75µg/mL	100µL	3/13/16	TG	
~~QLS Spike~~	~~4 ( )~~	~~1µg/mL~~	~~50µL~~			
Extraction Time: 12:13				Balance ID: B334705934		

SPECIAL INSTRUCTIONS: 1. Weigh into beakers-lightly dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add 1:1 DCM/ACE to the vessels (until solvent is 3" above soil layer after homogenization). 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-re-homogenize while hot-then let cool 15 min in cold water and Ice . Re-homogenize while cool. 7. Decant 1:1 DCM/ACE into Erlenmeyer flask with sodium sulfate in the bottom and funnel containing neutral glasswool. 8. Rinse with DCM 9. Microwave a 2nd time using 80:20 DCM/ACE 10. Let cool and decant solvent then empty the soil into the funnel and rinse with DCM. 11. *IF GPC is Req*= KD (~~Small or Large drying column~~) to 5mL at 80°C. 12. ~~*IF GPC is NOT Req*= KD to 5mL at 80-85°C.~~ Exchange to Hexane (2 X 20mL) to 5mL at 100°C 13. TurboVap. 14. Sulfur Clean=Transfer rinse. 15. Silica Clean-up=Any Color=REQ (All or none). 16. TurboVap. 17. Vial in DCM.

A. Need Total Solids Y / N B. Archive/Freeze Y / N

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8270D) SIM PNA Soil/ Sediment
Microwave (3546) (SOP # 3304S)

Preparation Test SIM PNA # 5 In-House (5ppb)

ARI Job No(s) AGC9 Page 2 of 2 Batch set up by: SH

Bottle #	Extraction Requirements	Weight Extracted (eq. to 10g dry wt)	(REQ/ Opt) GPC (1,1) 1 2 3	(REQ/ Sulfur Clean (1:1) (Transfer Rinse)	(REQ/Opt) Silica Gel Clean (1:1) Y / N	Final Effective Volume	Volume to Lab	Comments	Verify Client ID / Analyst/Date Microwave 1 2 3 / Analyst/Date Pre GPC KD 80°C (No Exchange) 0 2 3 4 5 6 / Analyst/Date Pre GPC TurboVap 1 2 3 4 / Analyst/Date Post GPC KD 80°C Hex X (2 X 20mL) 100°C 0 2 3 4 5 6 / Analyst/Date Pre Cleanups TurboVap 1 2 3 4 / Analyst/Date Post Cleanups TurboVap 1 2 3 4 5 / Analyst/Date
	~~MBS~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
	~~SBS~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
	~~SBS Dup.~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		
	~~QLS~~	~~10.00g~~	~~(1:1) Y / N~~	~~(1:1)~~	~~(1:1) Y / N~~	~~0.5mL~~	~~0.5mL~~		KH 5/26/15
1	AGC9 I	12.18	(1:1) (Y) N	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	see no 15E0913-09A	
1	J	13.3	(1:1) (Y) N	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	-10A	DC 5/27/15
1	K	13.82	(1:1) (Y) N	(1:1)	(1:1) (Y) N	0.5mL	0.5mL	Solvent -11A	
			(1:1) Y / N	(1:1)	(1:1) Y / N	~~0.5mL~~	~~0.5mL~~		
			(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		RH 5/27/15
			(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		
			(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		GM 5/28/15
			(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		
			(1:1) Y / N	(1:1)	(1:1) Y / N	0.5mL	0.5mL		
			(1:1) Y / N	(1:1)	(1:1) Y / N	~~0.5mL~~	~~0.5mL~~		GM 5/29/15
Analyst/Date LR 5/22/15			KJ 5/27/15	GM 5/27/15	GM 5/29/15	GM 5/27/15	GM 5/29/15	GM 5/27/15	Reviewed by/Date GM 5/29/15

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	B (D0913S4)	15/75µg/mL	100µL	12/12/15	LR	
~~Spike~~	~~15 ( )~~	~~15/75µg/mL~~	~~100µL~~			
~~QLS Spike~~	~~4 ( )~~	~~1µg/mL~~	~~50µL~~			
Extraction Time:	2.13			Balance ID:	B334705434	

SPECIAL INSTRUCTIONS: 1. Weigh into beakers-lightly dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add 1:1 DCM/ACE to the vessels (until solvent is 3" above soil layer after homogenization). 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-re-homogenize while hot-then let cool 15 min in cold water and Ice . Re-homogenize while cool. 7. Decant 1:1 DCM/ACE into Erlenmeyer flask with sodium sulfate in the bottom and funnel containing neutral glasswool. 8. Rinse with DCM 9. Microwave a 2nd time using 80:20 DCM/ACE 10. Let cool and decant solvent then empty the soil into the funnel and rinse with DCM. 11. *IF GPC is Req*= KD (Small or Large drying column) to 5mL at 80°C. 12. *IF GPC is NOT Req*= KD to 5mL at 80-85°C. Exchange to Hexane (2 X 20mL) to 5mL at 100°C 13. TurboVap. 14. Sulfur Clean=Transfer rinse. 15. Silica Clean-up=Any Color=REQ (All or none). 16. TurboVap. 17. Vial in DCM.

A. Need Total Solids Y / N B. Archive/Freeze Y / N

AGC9 - 0021S

Organic Extractions
Reagent and Solutions Identification

(8270D) SIM PNA Soil/Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) AGC9

(8270D) SIM PNA Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station:	Microwave
Anhydrous Sodium Sulfate: (D001874)	
Neutral Glasswool: (D001090)	
1:1 Methylene Chloride/Acetone: (D002073)	
80:20 Methylene Chloride/Acetone: (D002074)	
Methylene Chloride: (D002078)	RH 5/22/15 Analyst/Date
Pre-GPC KD Station:	Pre-GPC KD
Neutral Glasswool: (NA)	RH
Anhydrous Sodium Sulfate: (NA)	5/26/15
Methylene Chloride: (D002226)	Analyst/Date
GPC Filter Prep:	GPC Filter Prep
Methylene Chloride: (D002226)	DO 5/27/15
	Analyst/Date
GPC Station:	GPC
Acetone: (D002345)	DO 5/27/15
Methylene Chloride: (D002226)	
1:1 DCM/ACE : D002234	
Post GPC KD Station:	Analyst/Date
Methylene Chloride: (D002226)	Post GPC KD
Hexane: (D001893)	RH
	5/28/15
Vialing Station:	Analyst/Date
Methylene Chloride: (D002226)	Vialing
Hexane: (D001893)	GM 5/29/15
Copper: (NA)	Analyst/Date
Silica Gel (SPE) Darts: (D001907)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: A6C9 Client ID: Kennedy/Jenks Consultants

Parameter: SIM PNA Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= A-K	KH 5/19/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	
Sample C (-83A) was conc to 4mL and split into 2 vials for GPC. Both vials were collected into 1 flask	DC 5/27/15
GPC malfunction on sample A6C9C. Failed to inject second fraction. As per Mark Wendner- processed extract as 1:2.	SE 5/28/15
Sample A concentrated to ~ 380 uL on final Blow down	GM 5/27/15
Sample C concentrated to ~ 310 uL	
Sample E ——→ ~ 240 uL	
Reviewed by/Date:	
0556F Sample I ——→ ~ 360 uL	
Sample K ——→ ~ 350 uL	6/2/15

Revision 10
09/12/13

A6C9-0021A

Incorporated
Analytical Chemists and
Consultants

Element Batch BDE0941

(8270D) SIM PNA-Water
Liquid/Liquid (3520C) (SOP # 3311S)

Preparation Test SIM PNA # 3 (SPNAWLL)

In-House (0.1ppb)

ARI Job No(s) AGA8, AGC9 Page 1 of 1 Batch set up by: ~~JH~~

Bottle #	Extraction Requirements	Volume Extracted	Disassemble Liq/Liq (Mantle #)	(Opt) Silica Gel Clean (1:1) Y/N	Final Effective Volume	Volume to Lab	Comments	Verify Client ID
	AGA8 MBW	500mL	14	(1:1) Y/N	0.5mL	0.5mL		AR 05/20/15
	SBW	500mL	15	(1:1) Y/N	0.5mL	0.5mL		
	SBW Dup	500mL	16	(1:1) Y/N	0.5mL	0.5mL		Analyst/Date
	~~QLS~~	~~500mL~~		(1:1) Y/N	~~0.5mL~~	~~0.5mL~~		KD 80-85°C
3	AGA8 J	500mL	17	(1:1) Y/N	0.5mL	0.5mL	15E0911-1C	Hexane Exchange (2 X 10mL) 100°C ①2③4 5 6
3	AGC9 L	500mL	25	(1:1) Y/N	0.5mL	0.5mL	15E0913-12C	RH 5/22/15
		~~500mL~~		(1:1) Y/N	~~0.5mL~~	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		Analyst/Date
		500mL		(1:1) Y/N	0.5mL	0.5mL		TurboVap 1 2 ③④ Pre-Silica Gel Clean
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		GM 5/22/15
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		Analyst/Date
		500mL		(1:1) Y/N	0.5mL	0.5mL		TurboVap 1 2 3 Post Silica Gel Clean
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		500mL		(1:1) Y/N	0.5mL	0.5mL		
		~~500mL~~		(1:1) Y/N	~~0.5mL~~	~~0.5mL~~		
Analyst/Date	AR 05/20/15	05/21/15			GM 5/22/15	GM 5/22/15	GM 5/22/15	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	B (0904534)	15/75µg/mL	100µL	12/12/15	AR	JH
Spike	15 (0901666)	15/75µg/mL	100µL	3/13/16	AR	JH
~~QLS Spike~~	~~4 ( )~~	~~1µg/mL~~	~~50µL~~			
Extraction Time: 14:30		Liq/Liq Start: 14:45			Liq/Liq Stop: 03:50	

SPECIAL INSTRUCTIONS: 1. Use 500mL Liq/Liq Body 2. Add 20-25mL Hexane. 3. Add ~200mL DCM to Liq/Liq.
4. Add surr/spik. 5. Extract minimum 8 hrs. 6. KD (no drying column) to 5mL at 80°.
7. Exchange (2 X with 10mL) to Hexane at 100°. 8. TurboVap. 9. Silica Clean-up Opt-Any Color=REQ (All or none).
10. TurboVap (if Silica Clean). 11. Vial in DCM.

~~Archive~~ Y/N

AGC9 SW213

Organic Extractions
Reagent and Solutions Identification

(8270D) SIM PNA-Water
Liquid/Liquid (3520C) (SOP # 3311S)

ARI Job No(s) AGA8, AGC9

(8270D) SIM PNA Aqueous:	Analyst/Date
Liquid/Liquid Station: Methylene Chloride: (I# DØØ) 1906 Hexane: (I# DØØ1893 Anhydrous Sodium Sulfate: (I# + jar date 5/6/15)	Liq/Liq DD 5/21/15 AK Ø5/2Ø/15
KD Station: DØØ1874 Methylene Chloride: (I#) DØØ1906 Hexane: (I#) DØØ1893	KD EH 5/22/15
Vialing Station: Methylene Chloride: (I#) DØØ19Ø6 Hexane: (I# NA) Silica Gel (SPE) Darts: (I# NA)	Vialing GM 5/22/15

AGC9 - 00339

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/AGC9

Client ID: Kennedy Jenks Consultants

Parameter: SIM PNA

Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: 3/21/16

SIM PAH Raw Data
Initial Calibration

ARI Job ID: AGC9

Checklist for SEQUENCE SDD0030

4/14/2015

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-SVOA

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JZ	04/14/2015
2	DFTPP Tune met criteria	YES	JZ	04/14/2015
3	DDT breakdown <20%	YES	JZ	04/14/2015
4	Peak Tailing factor <= 2%	YES	JZ	04/14/2015
5	ICal meets 20% RSD, LR COD, and QR COD limits	YES	JZ	04/14/2015
6	NO ICAL Q Flag applied	YES	JZ	04/14/2015
7	Manual integrations include before/after pictures	NA	JZ	04/14/2015
8	Spectral Library matches updated	YES	JZ	04/14/2015
9	Internal Standard areas within 50-200% from reference	YES	JZ	04/14/2015
10	Minimum response factors met	YES	JZ	04/14/2015
11	All SCV within +/- 20% (DOD)	YES	JZ	04/14/2015
12	All SCV within +/- 30%	NA	JZ	04/14/2015
13	NO Linear or Quadratic fits used	YES	JZ	04/14/2015
14	NO Calibration points dropped	YES	JZ	04/14/2015
15	Additional notes	NA	JZ	04/14/2015
16	Reviewer approval (Reviewer)	YES	BB	04/14/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SDD0030

Instrument: NT8
Calibnration ID: YD00019

Printed: 4/14/2015 2:41:46PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
SDD0030-TUN1	QC		1		D001500			
SDD0030-CAL1	QC		2		D001493	D000019		
SDD0030-CAL2	QC		3		D001494	D000019		
SDD0030-CAL3	QC		4		D001495	D000019		
SDD0030-CAL4	QC		5		D001496	D000019		
SDD0030-CAL5	QC		6		D001497	D000019		
SDD0030-CAL6	QC		7		D001498	D000019		
SDD0030-SCV1	QC		8		D000028	D000019		

Samples Loaded By — 4/13/15 Date

Data Processed By — 4/14/15 Date

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-APR-2015 12:22
End Cal Date : 13-APR-2015 14:58
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Cal Date : 14-Apr-2015 14:09 jianqing
Curve Type : Average

Calibration File Names:
Level 1: /chem3/nt8.i/20150413.b/15041303.d
Level 2: /chem3/nt8.i/20150413.b/15041308.d
Level 3: /chem3/nt8.i/20150413.b/15041305.d
Level 4: /chem3/nt8.i/20150413.b/15041302.d
Level 5: /chem3/nt8.i/20150413.b/15041306.d
Level 6: /chem3/nt8.i/20150413.b/15041307.d

JB 04/14/15

	Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	___ RRF	% RSD
7	Naphthalene	0.98660	0.89342	1.04523	0.92458	0.99407	0.93677	0.96345	5.740
14	2-Methylnaphthalene	0.54967	0.54822	0.61332	0.56429	0.60201	0.56941	0.57449	4.735
15	1-methylnaphthalene	0.58949	0.50735	0.57813	0.54649	0.57911	0.54908	0.55829	5.446
19	Biphenyl	1.36462	1.09284	1 30261	1.17718	1.27602	1.19753	1.23514	7.935
20	2,6-Dimethylnaphthalene	0 90160	0.83727	0.97424	0.88694	0.96258	0.92551	0.91469	5.551
21	Acenaphthylene	1.42170	1.28820	1.53504	1.43485	1.59536	1.48856	1.46062	7.270
23	Acenaphthene	0.97588	0.87692	1.03395	0.92685	1.04101	0.97650	0.97186	6.461
11	Dibenzofuran	1.37609	1.24689	1 45513	1.29266	1.40896	1.28481	1.34410	6.060
24	1,6,7-Trimethylnaphthalene	0.87285	0.80712	0.94836	0.89808	0.97987	0.95585	0.91036	7.044
25	Fluorene	1.00732	0.96445	1.17894	1.06912	1.18259	1.11061	1.08551	8.221
27	Dibenzothiophene	0.98691	0.86590	0.96759	0.89495	0.93579	0.84495	0.91602	6.192
30	Phenanthrene	1.05972	0.88117	1.00683	0.92744	0.96025	0.88580	0.95354	7.367
31	Anthracene	0.84195	0.75899	0.91231	0.86817	0.91958	0.84975	0.85847	6.787
26	Carbazole	0.75958	0.71134	0.75916	0.74752	0.80297	0.75047	0.75518	3.893
33	1-Methylphenanthrene	0.68954	0.65996	0.80530	0.74144	0.78799	0.74384	0.73801	7.547
36	Fluoranthene	1.25325	1.00457	1.18009	1.08084	1.13868	1 03409	1 11525	8.394
39	Pyrene	1.25899	0.98940	1.11797	1.10068	1.13889	1.08352	1.11491	7.849
46	Benzo(a)anthracene	1.02962	0.87353	1.03526	1.00093	1.05305	1.02688	1 00322	6.551
48	Chrysene	1.22975	0.85002	1.01508	0.95934	1.00110	0.97999	1.00588	12.366
51	Benzo(b)fluoranthene	1.08589	0.95268	1.08577	1.01801	1.10425	1.05520	1.05030	5.391
52	Benzo(k)fluoranthene	1.08599	0.90696	1.10136	1.01167	1.14117	1.04941	1.04943	7.878

ARS 00025

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-APR-2015 12:22
End Cal Date : 13-APR-2015 14:58
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Cal Date : 14-Apr-2015 14:09 jianqing
Curve Type : Average

Compound	0.10000 Level 1	0.50000 Level 2	1.000 Level 3	2.500 Level 4	5.000 Level 5	10.000 Level 6	___ RRF	% RSD
251 Benzo(j)fluoranthene	1.11175	0.84378	1.04470	1.01018	1.09600	1.03766	1.02402	9.385
55 Benzo(e)pyrene	1.26158	0.90916	1.09392	0.99543	1.08911	1.02124	1.06174	11.227
54 Benzo(a)pyrene	1.05864	0.80190	0.94457	0.87161	0.99200	0.95012	0.93648	9.620
57 Perylene	0.97900	0.84872	1.02180	0.94909	1.04479	0.98954	0.97216	7.106
63 Indeno(1,2,3-cd)pyrene	1.06229	0.97099	1.18233	1.10705	1.23711	1.18904	1.12480	8.704
62 Dibenzo(a,h)anthracene	0.89226	0.74922	0.94628	0.90017	1.01096	0.99789	0.91613	10.386
61 Benzo(g,h,i)perylene	0.94568	0.87881	1.03290	0.97473	1.07900	1.02531	0.98941	7.227
$ 12 2-Methylnaphthalene-d10	0.67646	0.53383	0.63324	0.58854	0.63562	0.59674	0.61074	8.038
$ 253 Fluoranthene-d10	1.00360	0.90106	1.03729	0.96715	1.02801	0.96555	0.98378	5.116
$ 60 Dibenzo(a,h)anthracene-d14	0.74635	0.64901	0.78183	0.75566	0.81593	0.82135	0.76169	8.277

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Batch File: /chem3/nt8.i/20150413.b
Inst ID: nt8.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	15041302	15041303	15041305	15041306	15041307	15041308
INJ.DATE:	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015	13-APR-2015
INJ.TIME:	12:22	12:50	13.41	14:07	14:32	14:58

04/14/15

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	6 Naphthalene-d8	4.802	4.799	4 802	4.802	4 802	4.805	4.802	1.802-7.802	4.802	0.002
	7 Naphthalene	4.831	4.831	4 831	4.831	4.831	4.831	4.831	1.831-7.831	4.831	0.000
$	12 2-Methylnaphthalene-d1	5.526	5.526	5.529	5.530	5.529	5.529	5.526	2.526-8.526	5.528	0.002
	14 2-Methylnaphthalene	5.574	5.574	5.577	5.577	5.577	5.577	5.574	2.574-8.574	5 576	0.002
	15 1-methylnaphthalene	5.770	5.764	5.770	5.770	5.773	5.770	5.770	2.770-8.770	5.769	0.003
	19 Biphenyl	6.228	6.228	6.228	6.231	6.231	6.228	6.228	3.228-9.228	6.229	0.002
	20 2,6-Dimethylnaphthalen	6.272	6.273	6 273	6.273	6.276	6.272	6.272	3.272-9.272	6.273	0.001
	21 Acenaphthylene	6.959	6.959	6.959	6.959	6.962	6.959	6.959	3.959-9.959	6.959	0.001
*	22 Acenaphthene-d10	7.069	7.069	7.069	7.069	7.069	7.069	7.069	4.069-10.069	7.069	0.000
	23 Acenaphthene	7.117	7.120	7.120	7.120	7.120	7.120	7.117	4.117-10.117	7.119	0.001
	11 Dibenzofuran	7.269	7.269	7.269	7.269	7.268	7.265	7.269	4.269-10.268	7.268	0.001
	24 1,6,7-Trimethylnaphtha	7.335	7.332	7.335	7.335	7.335	7.335	7.335	4.335-10.335	7.334	0.001
	25 Fluorene	7.740	7.737	7.743	7.740	7.743	7.740	7.740	4.740-10.740	7.740	0.002
	27 Dibenzothiophene	8.963	8 963	8.963	8.963	8.966	8.963	8.963	5.963-11.963	8.964	0.001
*	28 Phenanthrene-d10	9.090	9.090	9.090	9.090	9.090	9.090	9.090	6.090-12 090	9.090	0.000
	30 Phenanthrene	9.125	9.122	9.125	9.125	9.128	9.125	9.125	6.125-12.125	9.125	0.002
	31 Anthracene	9.166	9.159	9.163	9.166	9.166	9.162	9.166	6.166-12.166	9.164	0.003

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: 4/14/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Batch File: /chem3/nt8.i/20150413.b
Inst ID: nt8.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	26 Carbazole	9.672	9.675	9 672	9.672	9.671	9.668	9.672	6.672-12.672	9.672	0.002
	33 1-Methylphenanthrene	9.883	9.884	9.884	9.884	9.886	9.880	9.883	6.883-12.883	9.883	0.002
	36 Fluoranthene	10.851	10.854	10.851	10.854	10.854	10.851	10.851	7.851-13.851	10.853	0 002
$	253 Fluoranthene-d10	10.816	10.813	10.813	10.816	10 819	10.813	10.816	7.816-13.816	10.815	0.003
	39 Pyrene	11.354	11.354	11.351	11.354	11 357	11.351	11.354	8.354-14.354	11.353	0 002
	46 Benzo(a)anthracene	13.792	13.789	13.792	13.792	13 798	13.788	13.792	10.792-16.792	13.792	0.003
*	47 Chrysene-d12	13.918	13.915	13.915	13.915	13.915	13.915	13.918	10.918-16.918	13.916	0.001
	48 Chrysene	13.991	13.985	13.988	13.991	13.994	13.988	13.991	10.991-16.991	13.989	0.003
*	29 Fluorene-d10	13.795	13.776	13.779	13.795	13.795	13.795	13.795	10.795-16.795	13.789	0.009
	51 Benzo(b)fluoranthene	16.492	16.483	16.489	16.495	16.505	16.486	16.492	13.492-19.492	16.491	0.008
	52 Benzo(k)fluoranthene	16.549	16.549	16.546	16.555	16.565	16.552	16.549	13.549-19.549	16.553	0.007
	251 Benzo(j)fluoranthene	16.628	16.631	16.625	16.631	16 644	16.628	16.628	13.628-19.628	16.631	0.007
	55 Benzo(e)pyrene	17.399	17.396	17.396	17.406	17.412	17.396	17.399	14.399-20.399	17.401	0.007
	54 Benzo(a)pyrene	17.529	17.529	17.526	17.532	17.542	17.529	17.529	14.529-20.529	17.531	0.005
*	56 Perylene-d12	17.763	17.757	17.760	17.760	17.760	17.757	17.763	14.763-20.763	17.759	0.002
	57 Perylene	17.833	17.823	17.833	17.839	17.845	17.833	17.833	14.833-20.833	17.834	0.007
$	60 Dibenzo(a,h)anthracene	20.087	20.084	20.081	20.094	20.109	20.078	20.087	17.087-23.087	20.089	0.011
	63 Indeno(1,2,3-cd)pyrene	20.201	20.192	20.195	20.211	20.223	20.195	20.201	17.201-23.201	20.203	0.012
	62 Dibenzo(a,h)anthracene	20.185	20.192	20.179	20.192	20.210	20.188	20.185	17.185-23 185	20.191	0.011
	61 Benzo(g,h,i)perylene	21.194	21.191	21.194	21.200	21.222	21.191	21.194	18.194-24.194	21.199	0.012

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 4/13/15 Analysis: SIMPAH Analyst: AR

GC Program: SIMPAH Column No: 1242228 Column Type: RXi-17Sil MS

Instrument Tune (.U or .CT.): LF0413 EM Voltage: 1800

Calibration File: _____ Curve Date: 4/13/15 Injection Vol.: 1µl

IS/SS	Ical/Ccal	LCS/ICV
C007519	D000216	D000027
		D000456

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150413.b

	Time	Filename	LabID	ClientId	DF											
1	1211	15041301.d	SDD0030-TUN1	DFTPP150413	1	NO ISTDS FOUND										
2	1222	15041302.d	SDD0030-CAL4	IC25150413	1	4 80	343090	7 07	230598	9 09	373928	13.92	381262	17.76	380825	
3	1250	15041303.d	SDD0030-CAL1	IC01150413	1	4 80	354612	7.07	237223	9.09	376365	13 92	394650	17.76	388989	
4	1315	15041304.d	IC05150414	IC05150413	1	4.81	173922	7.07	110517	9 09	187774	13 92	193661	17.75	186289	
						w/25ng/ml added on NR										
5	1341	15041305.d	SDD0030-CAL3	IC1150413	1	4.80	367481	7 07	242831	9.09	404962	13 92	421977	17 76	408072	
6	1407	15041306.d	SDD0030-CAL5	IC5150413	1	4 80	372032	7 07	241476	9.09	411722	13 92	425415	17 76	409924	
7	1432	15041307.d	SDD0030-CAL6	IC10150413	1	4.80	409499	7.07	262568	9 09	448359	13.91	452115	17 76	457765	
8	1458	15041308.d	SDD0030-CAL2	IC05150413	1	4 81	459490	7.07	302339	9 09	478448	13.91	503143	17.76	510079	
9	1654	15041309.d	SDD0030-SCV1	SCV150413	1	4.80	396827	7 07	256683	9 09	413213	13.92	440508	17 76	436031	
10	1720	15041310.d	AD90MBW1	AD90MBW1	1	4.80	402780	7.07	261655	9.09	428082	13 91	452471	17 75	382226	
12	1746	15041311.d	AD90LCSW1	AD90LCSW1	1	4 80	414743	7 07	279704	9.09	469332	13 92	476572	17.76	418683	
12	1811	15041312.d	AD90LCSDW1	AD90LCSDW1	1	4 80	428283	7 07	283155	9 09	487586	13 92	489751	17 76	437580	
13	1837	15041313.d	AD90C	MW-2D-040215	1	4 80	399479	7 07	277412	9.09	456455	13.91	467075	17 76	386856	
14	1902	15041314.d	AD90E	MW-31D-04021	1	4.79	424441	7 07	291662	9 09	498984	13 91	521324	17 76	443961	
15	1928	15041315.d	AD90F	MW-31S-04021	1	4.80	448215	7 07	287883	9 09	482094	13.91	504500	17.76	430882	
16	1954	15041316.d	AE11C	MW-38D-04031	1	4 79	438556	7 07	294032	9 09	500835	13 91	518196	17.76	441406	
17	2019	15041317.d	AE53D	MW-1	1	4 79	406660	7 07	264551	9 09	457323	13 91	482180	17.75	435673	
18	2045	15041318.d	AE53E	MW-2	1	4.79	426404	7.07	285165	9.09	475447	13.92	501232	17 76	435056	
19	2110	15041319.d	AE53F	MW-3	1	4.80	442978	7 07	277753	9.09	475460	13 91	501220	17 76	412354	
20	2136	15041320.d	CCV150413	CCV150413	1	4 80	445024	7.07	290655	9.09	476584	13.92	486017	17.76	480807	

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

AR 04/14/15

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150413.b

ARI Job No.: SDD0 Method: FSIMPNA150413.m Instrument: nt8.i Date: 13-APR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1222	15041302.d	SDD0030-CAL4	IC25150413	1	NO MANUAL INTEGRATION
1250	15041303.d	SDD0030-CAL1	IC01150413	1	NO MANUAL INTEGRATION
1341	15041305.d	SDD0030-CAL3	IC1150413	1	NO MANUAL INTEGRATION
1407	15041306.d	SDD0030-CAL5	IC5150413	1	NO MANUAL INTEGRATION
1432	15041307.d	SDD0030-CAL6	IC10150413	1	NO MANUAL INTEGRATION
1458	15041308.d	SDD0030-CAL2	IC05150413	1	NO MANUAL INTEGRATION
1654	15041309.d	SDD0030-SCV1	SCV150413	1	NO MANUAL INTEGRATION

04/14/15

Data File: /chem3/nt8.1/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

Instrument: nt8.1

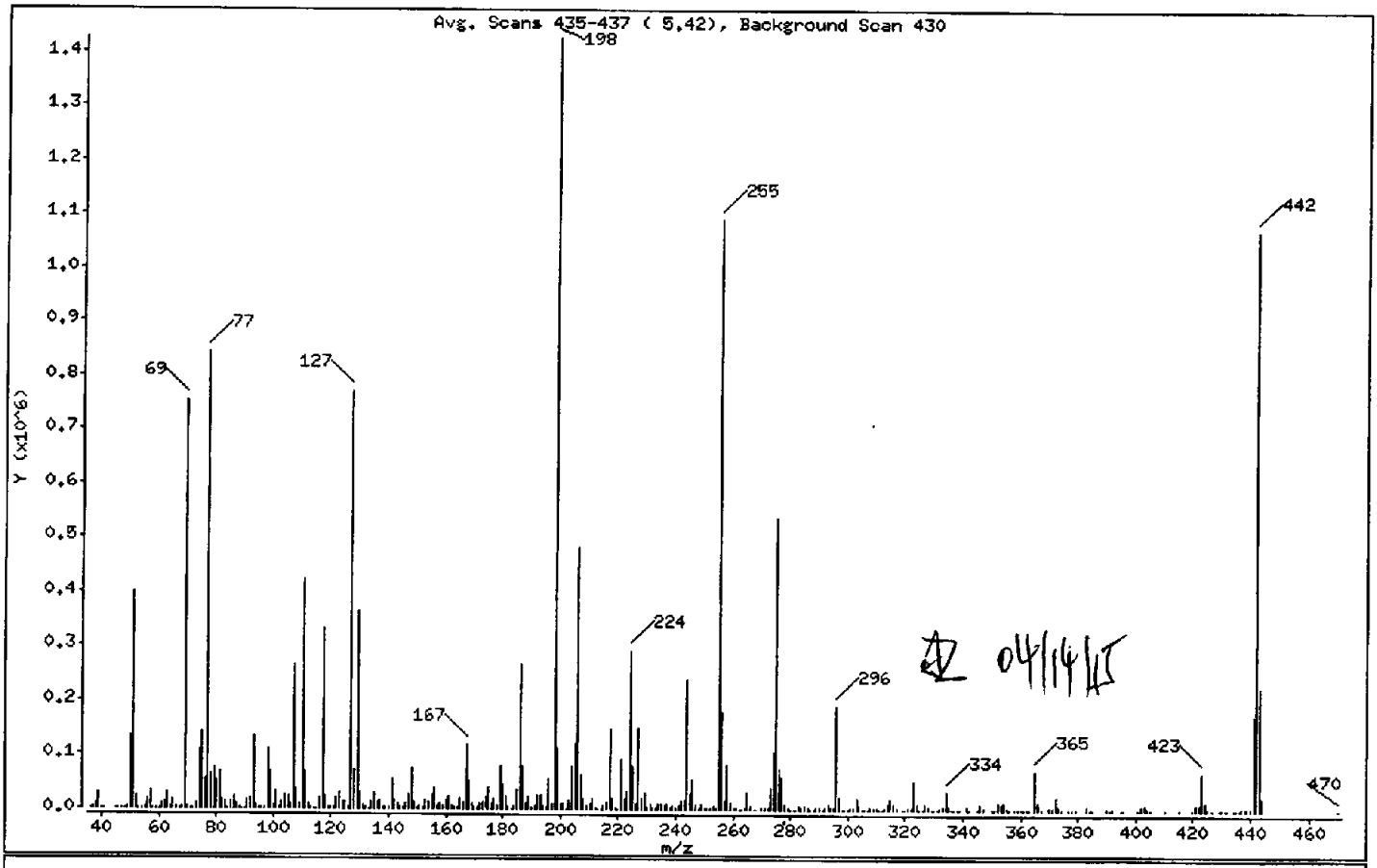
Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

1 dftpp



04/14/15

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	28.16
68	Less than 2.00% of mass 69	0.24 (0.45)
69	Mass 69 relative abundance	52.87
70	Less than 2.00% of mass 69	0.27 (0.51)
127	10.00 - 80.00% of mass 198	54.06
197	Less than 2.00% of mass 198	0.60
199	5.00 - 9.00% of mass 198	7.89
275	10.00 - 60.00% of mass 198	37.61
365	Greater than 1.00% of mass 198	5.06
441	0.01 - 24.00% of mass 442	12.17 (16.21)
442	50.00 - 200.00% of mass 198	75.07
443	15.00 - 24.00% of mass 442	15.79 (21.03)

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413 Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi Column diameter: 0.32

Data File: 15041301.d
Spectrum: Avg. Scans 435-437 (5.42), Background Scan 430
Location of Maximum: 198.00
Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	35	132.00	3084	227.00	149888	324.00	9567
37.00	2782	133.00	1296	228.00	20104	325.00	1181
38.00	8480	134.00	13132	229.00	29456	326.00	967
39.00	29744	135.00	30696	230.00	3690	327.00	11155
40.00	1486	136.00	13516	231.00	11376	328.00	5669
41.00	521	137.00	16848	232.00	2041	329.00	1310
42.00	44	138.00	3094	233.00	3067	330.00	879
43.00	362	139.00	2378	234.00	9408	331.00	538
45.00	816	140.00	4331	235.00	9386	332.00	3225
46.00	137	141.00	54360	236.00	7811	333.00	5673
47.00	148	142.00	17064	237.00	9627	334.00	33432
48.00	924	143.00	10440	238.00	1776	335.00	8163
49.00	4281	144.00	3493	239.00	6063	336.00	915
50.00	133056	145.00	2547	240.00	4524	337.00	146
51.00	401408	146.00	11343	241.00	7957	338.00	88
52.00	22912	147.00	27784	242.00	17760	339.00	1041
53.00	1305	148.00	75880	243.00	17624	340.00	947
54.00	136	149.00	12846	244.00	238400	341.00	5344
55.00	3906	150.00	3330	245.00	29104	342.00	1141
56.00	17664	151.00	5321	246.00	57136	343.00	237
57.00	32384	152.00	4866	247.00	10736	345.00	523
58.00	1487	153.00	17848	248.00	1923	346.00	10853
59.00	824	154.00	11845	249.00	9283	347.00	2484
60.00	807	155.00	25920	250.00	2029	350.00	449
61.00	9080	156.00	40704	251.00	1975	351.00	1276
62.00	13437	157.00	6484	252.00	2792	352.00	13550
63.00	29864	158.00	10154	253.00	5282	353.00	9800
64.00	4160	159.00	8016	254.00	4222	354.00	14104
65.00	14803	160.00	15352	255.00	1091584	355.00	2938
66.00	1710	161.00	21536	256.00	178880	356.00	402
67.00	413	162.00	6083	257.00	15238	358.00	268
68.00	3364	163.00	2008	258.00	82808	359.00	978
69.00	753600	164.00	2275	259.00	14544	360.00	207
70.00	3816	165.00	20768	260.00	2010	361.00	586
71.00	806	166.00	13767	261.00	2983	362.00	84

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 15041301.d

Spectrum: Avg. Scans 435-437 (5.42), Background Scan 430

Location of Maximum: 198.00

Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	710	167.00	118912	262.00	549	363.00	147
73.00	9753	168.00	52896	263.00	1179	365.00	72072
74.00	107688	169.00	8330	264.00	3508	366.00	11983
75.00	139904	170.00	3634	265.00	33696	367.00	776
76.00	56712	171.00	4636	266.00	5542	370.00	1771
77.00	842304	172.00	8930	267.00	555	371.00	3350
78.00	64336	173.00	13072	268.00	587	372.00	22728
79.00	75592	174.00	22008	270.00	1650	373.00	5744
80.00	51152	175.00	40760	271.00	2983	374.00	649
81.00	67752	176.00	9035	272.00	3991	377.00	887
82.00	16424	177.00	19704	273.00	38456	378.00	584
83.00	13729	178.00	6678	274.00	103776	379.00	382
84.00	1183	179.00	80000	275.00	536064	383.00	5464
85.00	13108	180.00	44888	276.00	76224	384.00	1228
86.00	22152	181.00	22216	277.00	58968	385.00	471
87.00	9310	182.00	4593	278.00	9267	389.00	432
88.00	2748	183.00	1494	279.00	1717	390.00	3285
89.00	1241	184.00	6726	280.00	274	391.00	1625
90.00	438	185.00	36776	281.00	807	392.00	1770
91.00	15236	186.00	264768	282.00	1510	393.00	234
92.00	19240	187.00	79464	283.00	5483	395.00	411
93.00	134976	188.00	8700	284.00	4682	396.00	282
94.00	8016	189.00	21752	285.00	8161	397.00	387
95.00	1956	190.00	3509	286.00	1742	401.00	1154
96.00	4029	191.00	7718	287.00	207	402.00	7347
97.00	2143	192.00	24856	288.00	705	403.00	11161
98.00	110488	193.00	27376	289.00	2594	404.00	3845
99.00	67632	194.00	5600	290.00	1854	405.00	606
100.00	6767	195.00	2461	291.00	1550	410.00	118
101.00	31968	196.00	57320	292.00	2914	415.00	1229
102.00	1891	197.00	8500	293.00	11461	420.00	621
103.00	11871	198.00	1425408	294.00	2715	421.00	9177
104.00	24600	199.00	112464	295.00	3880	422.00	8410
105.00	23480	200.00	10594	296.00	191488	423.00	67320
106.00	9930	201.00	9546	297.00	24328	424.00	12020

Data File: /chem3/nt8.i/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

Instrument: nt8.i

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32

Data File: 15041301.d

Spectrum: Avg. Scans 435-437 (5.42), Background Scan 430

Location of Maximum: 198.00

Number of points: 376

m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	265216	202.00	943	298.00	1532	426.00	1698
108.00	37280	203.00	16181	299.00	429	427.00	120
109.00	8643	204.00	77800	300.00	322	428.00	359
110.00	421568	205.00	122584	301.00	2611	429.00	84
111.00	69840	206.00	481472	302.00	3828	430.00	923
112.00	10268	207.00	62496	303.00	19928	431.00	913
113.00	3152	208.00	20192	304.00	5261	432.00	309
114.00	635	209.00	6404	305.00	844	434.00	756
115.00	787	210.00	9460	306.00	252	435.00	1116
116.00	19896	211.00	19408	307.00	89	436.00	694
117.00	332032	212.00	1734	308.00	2307	437.00	2086
118.00	21912	213.00	1529	309.00	1789	438.00	3497
119.00	1972	214.00	554	310.00	1911	439.00	3970
120.00	2869	215.00	6602	311.00	381	440.00	3182
121.00	1825	216.00	14311	312.00	730	441.00	173440
122.00	19600	217.00	145984	313.00	1672	442.00	1070080
123.00	30640	218.00	20336	314.00	8633	443.00	225024
124.00	13699	219.00	1960	315.00	20504	444.00	21560
125.00	12740	220.00	633	316.00	10139	445.00	927
126.00	1766	221.00	91016	317.00	1748	455.00	572
127.00	770560	222.00	18648	319.00	231	470.00	226
128.00	71680	223.00	32528	320.00	1183		
129.00	362240	224.00	293184	321.00	4755		
130.00	30384	225.00	79648	322.00	2758		
131.00	5835	226.00	9627	323.00	51016		

Data File: /chem3/nt8.1/20150413.b/tune.b/15041301.d

Date : 13-APR-2015 12:11

Client ID: DFTPP150413

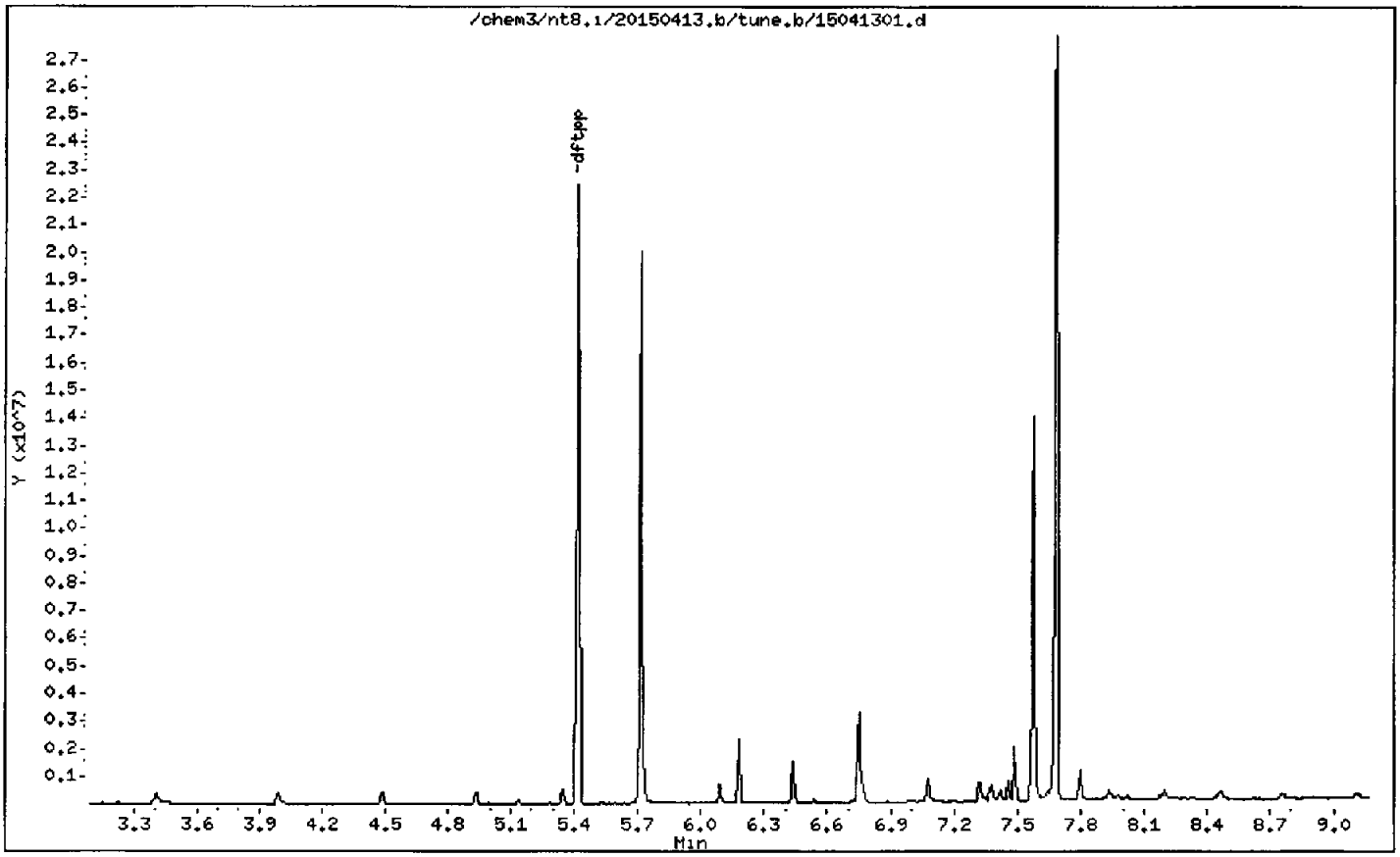
Instrument: nt8.1

Sample Info: DFTPP150413

Operator: JZ

Column phase: ZB-5msi

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150413.b/ddt.b/15041301.d ARI ID: DDT150413
Method: /chem3/nt8.i/20150413.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 13-APR-2015 12:11 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.713	1520726
Benzidine	7.580	3322136
4,4'-DDE	7.082	14272
4,4'-DDD	7.489	254514
4,4'-DDT	7.687	3109084

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

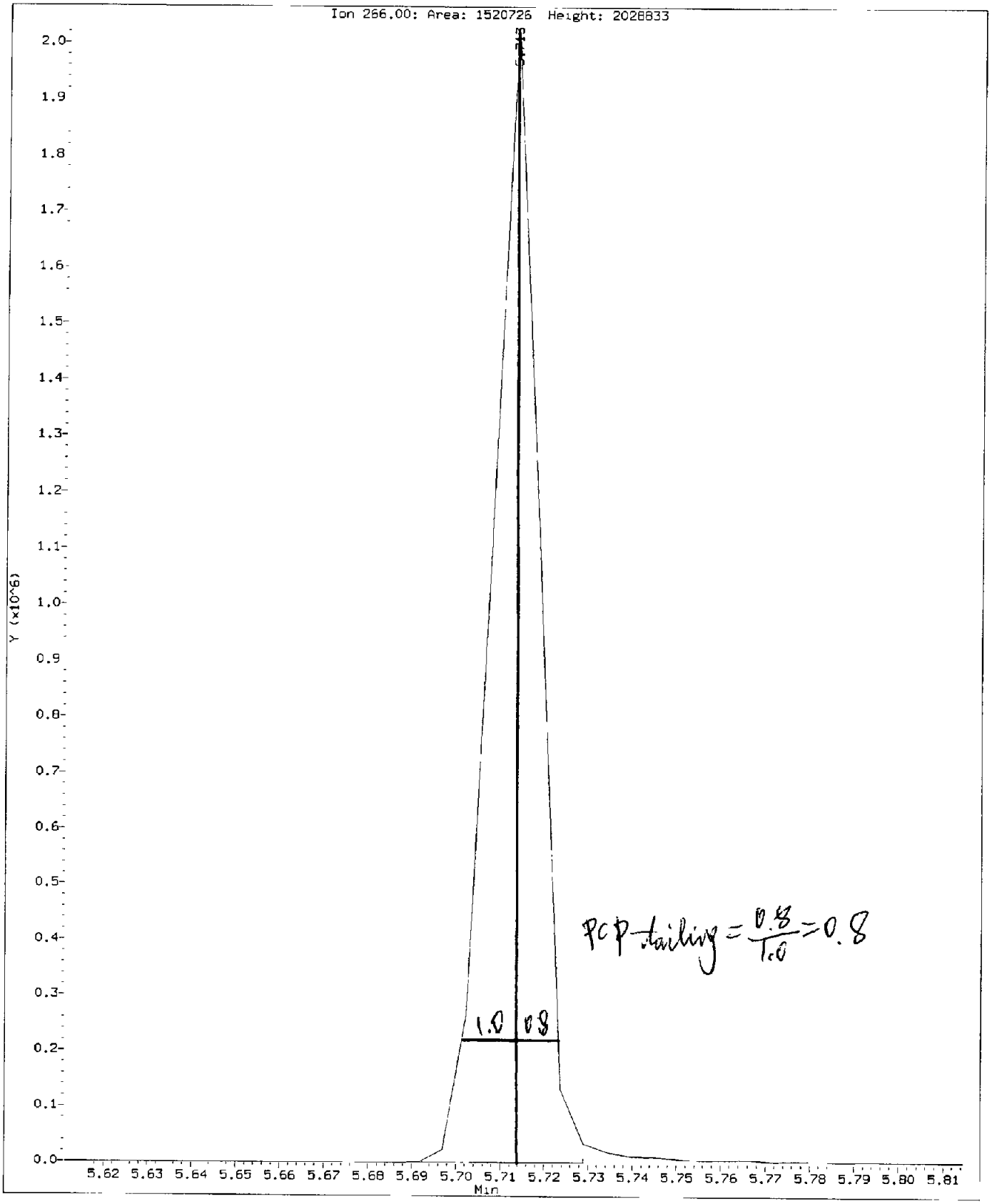
$$\text{DDT Percent Breakdown} = \frac{(14272 + 254514) * 100}{(14272 + 254514 + 3109084)}$$

DDT Percent Breakdown = 8.0 %

ok R 04/14/15

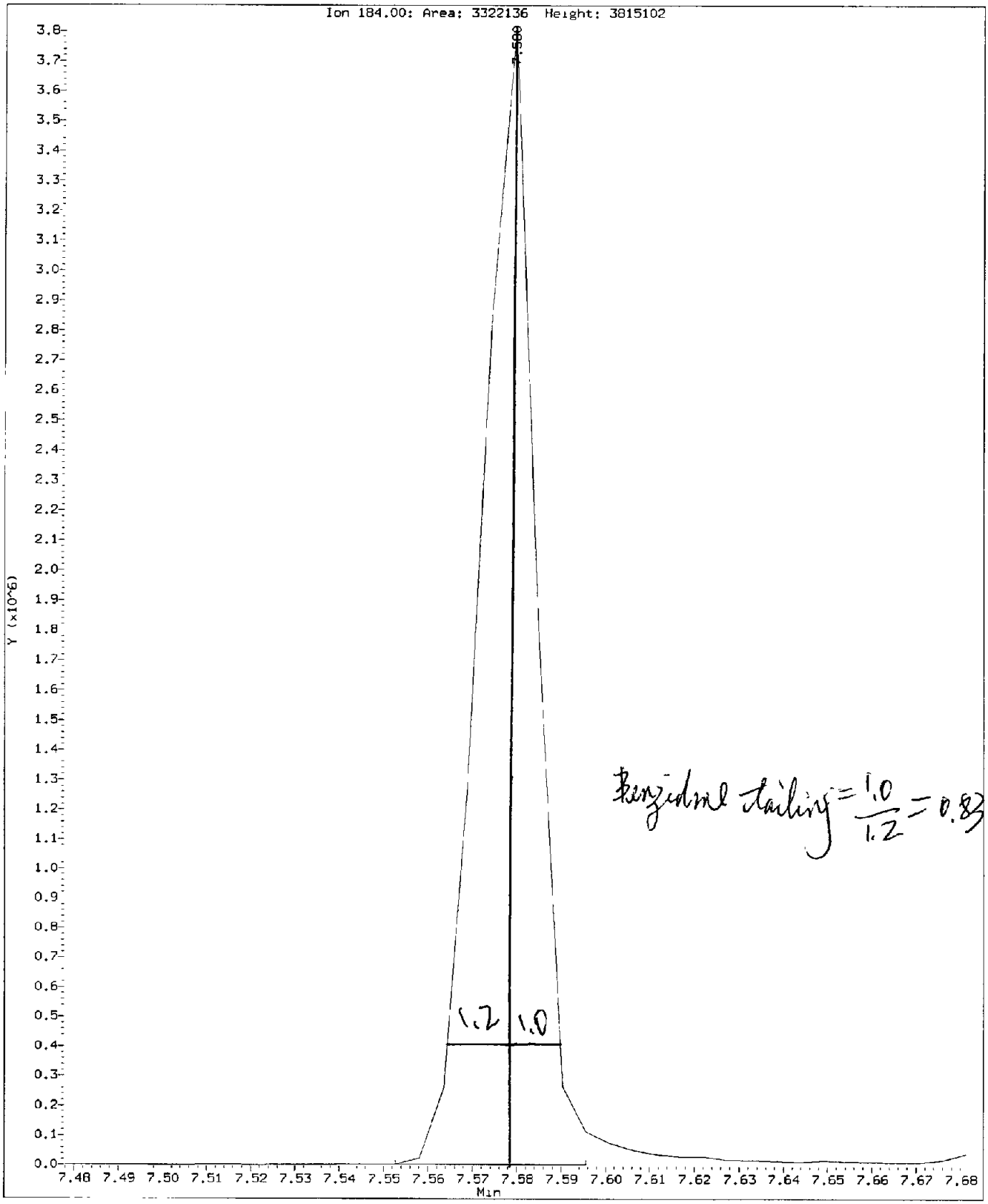
Data File: /chem3/nt8.i/20150413.b/ddt.b/15041301.d
Injection Date: 13-APR-2015 12:11
Instrument: nt8.i
Client Sample ID: DDT150413

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.1/20150413.b/ddt.b/15041301.d
Injection Date: 13-APR-2015 12:11
Instrument: nt8.1
Client Sample ID: DDT150413

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041303.d
Lab Smp Id: SDD30-CAL1 Client Smp ID: IC01150413
Inj Date : 13-APR-2015 12:50
Operator : JZ Inst ID: nt8.i
Smp Info : IC01150413
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:09 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

4/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.799	4.799	(1.000)	354612	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.007)	17493	0.10000	0.1024
$	12 2-Methylnaphthalene-d10	152	5.526	5.526	(1.152)	11994	0.10000	0.1108
	14 2-Methylnaphthalene	141	5.574	5.574	(1.161)	9746	0.10000	0.09568
	15 1-methylnaphthalene	141	5.764	5 764	(1.201)	10452	0.10000	0.1056
	19 Biphenyl	154	6.228	6.228	(0.881)	16186	0.10000	0.1105
	20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	10694	0.10000	0.09857
	21 Acenaphthylene	152	6.959	6.959	(0.984)	16863	0.10000	0.09734
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	237223	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	11575	0.10000	0.1004
	11 Dibenzofuran	168	7.269	7.269	(1.028)	16322	0.10000	0.1024
	24 1,6,7-Trimethylnaphthalene	170	7.332	7.332	(1.037)	10353	0.10000	0.09588
	25 Fluorene	166	7.737	7.737	(1.094)	11948	0 10000	0.09280
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	18572	0.10000	0.1077
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	376365	2.00000	
	30 Phenanthrene	178	9.122	9.122	(1.003)	19942	0.10000	0.1111
	31 Anthracene	178	9.159	9.159	(1.008)	15844	0.10000	0.09808
	26 Carbazole	167	9 675	9 675	(1.064)	14294	0.10000	0.1006
	33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	12976	0.10000	0.09344
	36 Fluoranthene	202	10.854	10.854	(1.194)	23584	0.10000	0.1124
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	18886	0.10000	0.1020
	39 Pyrene	202	11.354	11.354	(0.816)	24843	0.10000	0.1129
	46 Benzo(a)anthracene	228	13.789	13.789	(0.991)	20317	0.10000	0.1026
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	394650	2.00000	
	48 Chrysene	228	13.985	13.985	(1.005)	24266	0.10000	0.1223
	51 Benzo(b)fluoranthene	252	16.483	16.483	(0.928)	21120	0.10000	0.1034
	52 Benzo(k)fluoranthene	252	16.549	16.549	(0.932)	21122	0.10000	0.1035

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.631	16.631	(0.937)	21623	0.10000	0.1086
55	Benzo(e)pyrene	252	17.396	17.396	(0.980)	24537	0.10000	0.1188
54	Benzo(a)pyrene	252	17 529	17.529	(0.987)	20590	0.10000	0.1130
* 56	Perylene-d12	264	17.757	17.757	(1.000)	388989	2.00000	
57	Perylene	252	17.823	17.823	(1 004)	19041	0.10000	0.1007
$ 60	Dibenzo(a,h)anthracene-d14	292	20.084	20.084	(1.131)	14516	0.10000	0.09799
63	Indeno(1,2,3-cd)pyrene	276	20.192	20.192	(1 137)	20661	0.10000	0.09444
62	Dibenzo(a,h)anthracene	278	20.192	20.192	(1.137)	17354	0.10000	0.09740
61	Benzo(g,h,i)perylene	276	21.191	21.191	(1.193)	18393	0.10000	0.09558

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041303.d
Lab Smp Id: SDD30-CAL1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC01150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	354612	3.36
22 Acenaphthene-d10	230598	115299	461196	237223	2.87
28 Phenanthrene-d10	373928	186964	747856	376365	0.65
47 Chrysene-d12	381262	190631	762524	394650	3.51
56 Perylene-d12	380825	190412	761650	388989	2.14

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	-0.06
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.03

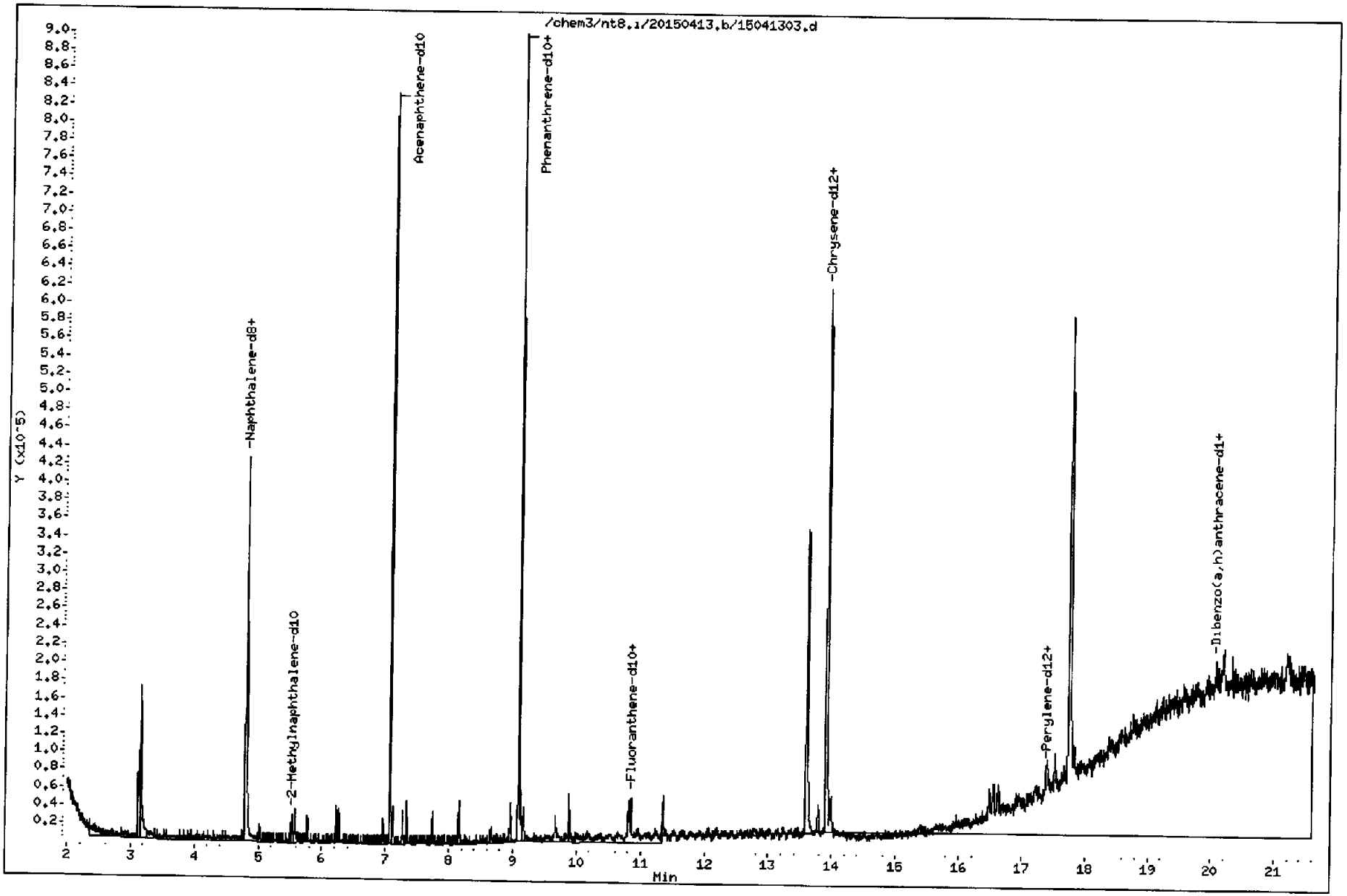
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150413.b/15041303.d
Date : 13-APR-2015 12:50
Client ID: IC01150413
Sample Info: IC01150413

Column phase: ZB-35

Instrument: nt8.1

Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15041303.d

Lab ID: SDD30-CAL1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS
20.192	Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene
20.192	Dibenzo(a,h)anthracene and Indeno(1,2,3-cd)pyrene

Quant Method: ICAL

04/14/15

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041308.d
Lab Smp Id: SDD30-CAL2 Client Smp ID: IC05150413
Inj Date : 13-APR-2015 14:58
Operator : JZ Inst ID: nt8.i
Smp Info : IC05150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:58 Cal File: 15041308.d
Als bottle: 8 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.805	4.802	(1.000)	459490	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.005)	102629	0.50000	0.4636
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	61322	0.50000	0.4370
	14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	62975	0.50000	0.4771
	15 1-methylnaphthalene	141	5.770	5.770	(1.201)	58281	0.50000	0.4544
	19 Biphenyl	154	6.228	6.228	(0.881)	82602	0.50000	0.4424
	20 2,6-Dimethylnaphthalene	156	6.272	6.273	(0.887)	63285	0 50000	0 4577
	21 Acenaphthylene	152	6.959	6.959	(0.984)	97368	0 50000	0.4410
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	302339	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	66282	0.50000	0.4512
	11 Dibenzofuran	168	7.265	7.269	(1.028)	94246	0.50000	0.4638
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1 038)	61006	0.50000	0.4433
	25 Fluorene	166	7.740	7.743	(1.095)	72898	0.50000	0.4442
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	103572	0.50000	0.4726
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	478448	2.00000	
	30 Phenanthrene	178	9.125	9.125	(1.004)	105399	0.50000	0.4624
	31 Anthracene	178	9.162	9 163	(1.008)	90784	0.50000	0.4422
	26 Carbazole	167	9.668	9.672	(1.064)	85085	0.50000	0.4637
	33 1-Methylphenanthrene	192	9.880	9.884	(1.087)	78939	0.50000	0.4471
	36 Fluoranthene	202	10.851	10.851	(1.194)	120159	0.50000	0.4506
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	107777	0.50000	0.4580
	39 Pyrene	202	11.351	11.351	(0.816)	124453	0.50000	0.4438
	46 Benzo(a)anthracene	228	13.788	13.792	(0.991)	109877	0.50000	0.4354
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	503143	2.00000	
	48 Chrysene	228	13.988	13.988	(1.005)	106920	0 50000	0.4224
	51 Benzo(b)fluoranthene	252	16.486	16.489	(0.928)	121486	0.50000	0.4511
	52 Benzo(k)fluoranthene	252	16.552	16.546	(0.932)	115655	0.50000	0.4306

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.628	16.625	(0.936)	107598	0.50000	0.4127
55	Benzo(e)pyrene	252	17.396	17.396	(0.980)	115936	0.50000	0.4257
54	Benzo(a)pyrene	252	17.529	17.526	(0.987)	102258	0.50000	0.4237
* 56	Perylene-d12	264	17.757	17.760	(1.000)	510079	2.00000	
57	Perylene	252	17.833	17.833	(1.004)	108228	0.50000	0.4350
$ 60	Dibenzo(a,h)anthracene-d14	292	20.078	20.081	(1.131)	82762	0.50000	0.4260
63	Indeno(1,2,3-cd)pyrene	276	20.195	20.195	(1.137)	123820	0.50000	0.4302
62	Dibenzo(a,h)anthracene	278	20.188	20.179	(1.137)	95540	0.50000	0.4277
61	Benzo(g,h,i)perylene	276	21.191	21.194	(1.193)	112066	0.50000	0.4426

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041308.d
Lab Smp Id: SDD30-CAL2
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC05150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	459490	33.93
22 Acenaphthene-d10	230598	115299	461196	302339	31.11
28 Phenanthrene-d10	373928	186964	747856	478448	27.95
47 Chrysene-d12	381262	190631	762524	503143	31.97
56 Perylene-d12	380825	190412	761650	510079	33.94

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.81	0.06
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.91	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.04

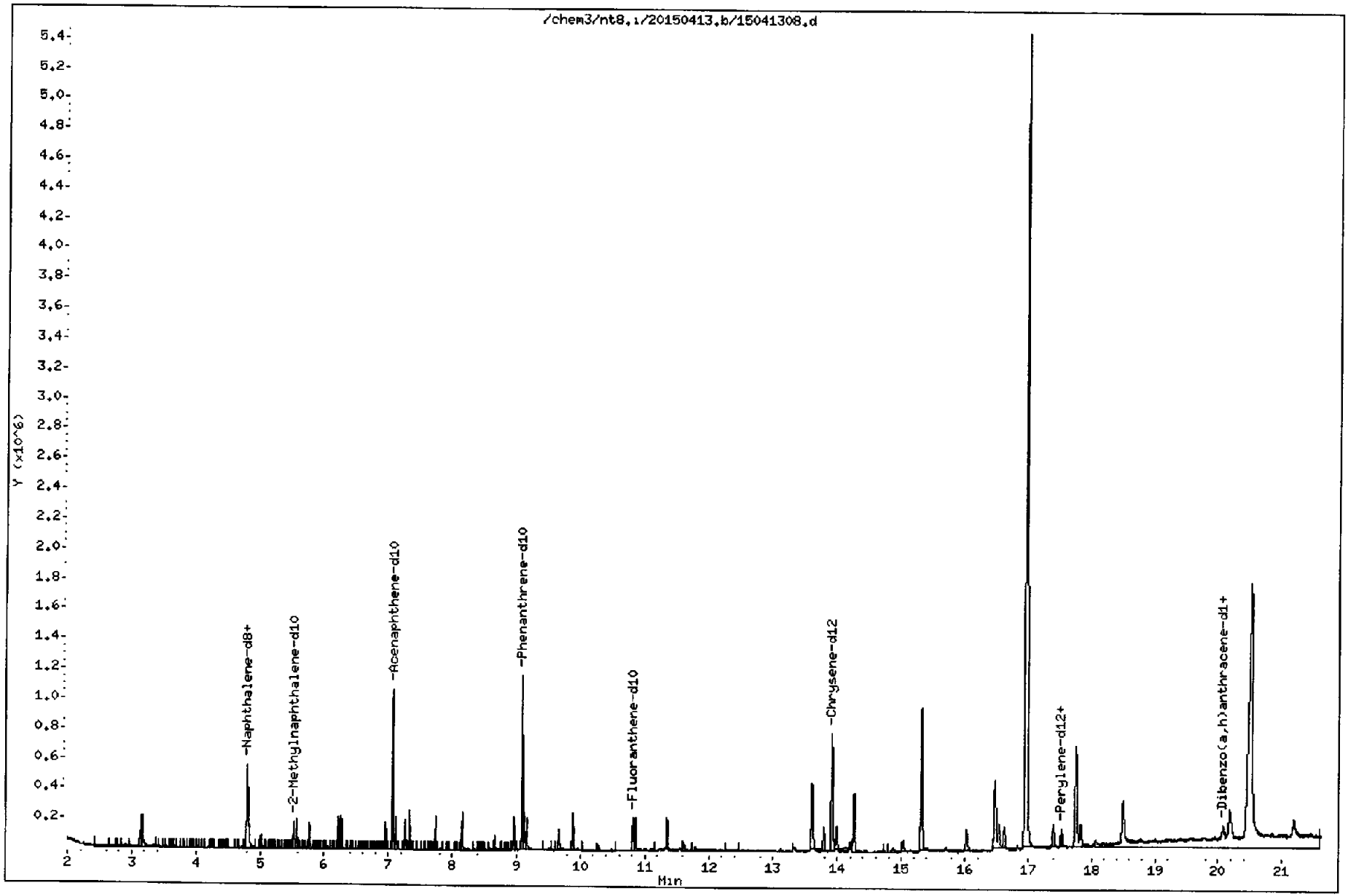
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041308.d
Date : 13-APR-2015 14:58
Client ID: IC05150413
Sample Info: IC05150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041308.d

Lab ID: SDD30-CAL2, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041305.d
Lab Smp Id: SDD30-CAL3 Client Smp ID: IC1150413
Inj Date : 13-APR-2015 13:41
Operator : JZ Inst ID: nt8.i
Smp Info : IC1150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 13:41 Cal File: 15041305.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.802	4.802	(1.000)	367481	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.006)	192052	1.00000	1.085
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	116351	1.00000	1.037
	14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	112691	1.00000	1.068
	15 1-methylnaphthalene	141	5.770	5.770	(1.201)	106226	1.00000	1.036
	19 Biphenyl	154	6 228	6.228	(0.881)	158157	1.00000	1.055
	20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	118288	1.00000	1.065
	21 Acenaphthylene	152	6.959	6.959	(0.984)	186378	1.00000	1.051
*	22 Acenaphthene-d10	164	7.069	7 069	(1.000)	242831	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	125538	1.00000	1.064
	11 Dibenzofuran	168	7.269	7.269	(1.028)	176675	1.00000	1.083
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	115146	1.00000	1.042
	25 Fluorene	166	7.743	7.743	(1.095)	143142	1.00000	1.086
	27 Dibenzothiophene	184	8.963	8.963	(0.986)	195918	1.00000	1.056
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	404962	2.00000	
	30 Phenanthrene	178	9.125	9.125	(1.004)	203863	1.00000	1.056
	31 Anthracene	178	9.163	9.163	(1.008)	184725	1.00000	1.063
	26 Carbazole	167	9.672	9.672	(1.064)	153716	1.00000	1.005
	33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	163058	1.00000	1.091
	36 Fluoranthene	202	10.851	10.851	(1.194)	238946	1.00000	1.058
$	253 Fluoranthene-d10	212	10.813	10.813	(1.190)	210032	1.00000	1.054
	39 Pyrene	202	11.351	11.351	(0.816)	235878	1.00000	1.003
	46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	218429	1.00000	1.032
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	421977	2.00000	
	48 Chrysene	228	13.988	13.988	(1.005)	214171	1.00000	1.009
	51 Benzo(b)fluoranthene	252	16.489	16.489	(0.928)	221537	1.00000	1.032
	52 Benzo(k)fluoranthene	252	16.546	16.546	(0.932)	224718	1.00000	1.047

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
	251 Benzo(j)fluoranthene	252	16.625	16 625	(0.936)	213156	1.00000	1.018
	55 Benzo(e)pyrene	252	17.396	17 396	(0.980)	223200	1.00000	1 028
	54 Benzo(a)pyrene	252	17.526	17.526	(0.987)	192727	1.00000	1.006
*	56 Perylene-d12	264	17.760	17.760	(1.000)	408072	2.00000	
	57 Perylene	252	17.833	17.833	(1.004)	208483	1.00000	1.049
$	60 Dibenzo(a,h)anthracene-d14	292	20.081	20.081	(1.131)	159522	1.00000	1.025
	63 Indeno(1,2,3-cd)pyrene	276	20.195	20.195	(1.137)	241237	1.00000	1.049
	62 Dibenzo(a,h)anthracene	278	20.179	20.179	(1.136)	193075	1 00000	1.082
	61 Benzo(g,h,i)perylene	276	21.194	21.194	(1.193)	210748	1.00000	1.042

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041305.d
Lab Smp Id: SDD30-CAL3
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC1150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	367481	7.11
22 Acenaphthene-d10	230598	115299	461196	242831	5.30
28 Phenanthrene-d10	373928	186964	747856	404962	8.30
47 Chrysene-d12	381262	190631	762524	421977	10.68
56 Perylene-d12	380825	190412	761650	408072	7.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

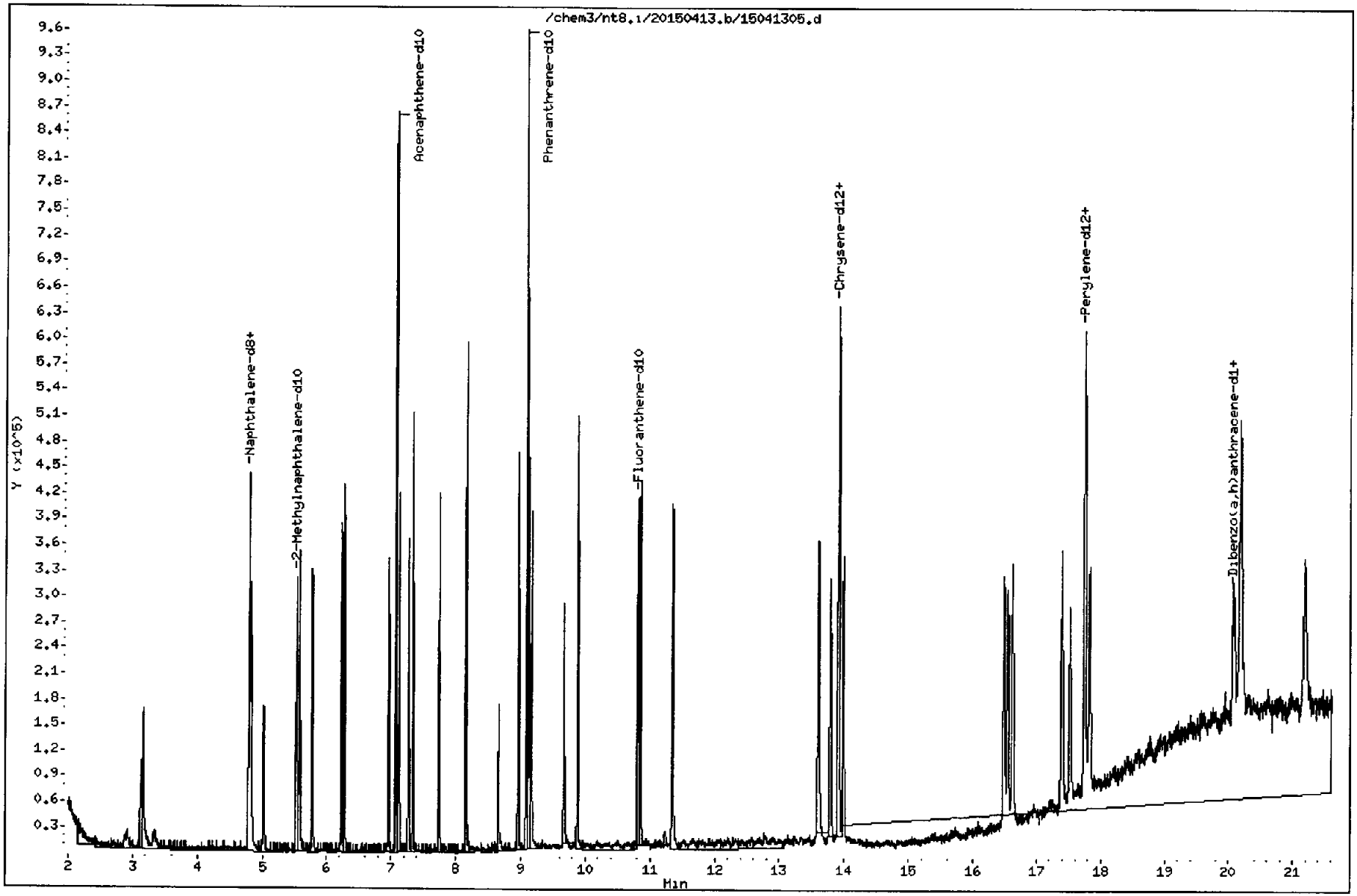
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041305.d
Date : 13-APR-2015 13:41
Client ID: IC1150413
Sample Info: IC1150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041305.d

Lab ID: SDD30-CAL3, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041302.d
Lab Smp Id: SDD30-CAL4 Client Smp ID: IC25150413
Inj Date : 13-APR-2015 12:22
Operator : JZ Inst ID: nt8.i
Smp Info : IC25150413
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:22 Cal File: 15041302.d
Als bottle: 2 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.802	4.802	(1.000)	343090	2.00000	
7 Naphthalene	128	4.831	4.831	(1.006)	396517	2.50000	2.399
$ 12 2-Methylnaphthalene-d10	152	5.526	5.529	(1.151)	252402	2.50000	2.409
14 2-Methylnaphthalene	141	5.574	5.577	(1.161)	242001	2.50000	2.456
15 1-methylnaphthalene	141	5.770	5.770	(1.201)	234371	2.50000	2.447
19 Biphenyl	154	6.228	6.228	(0.881)	339320	2.50000	2.383
20 2,6-Dimethylnaphthalene	156	6.272	6.273	(0.887)	255658	2.50000	2.424
21 Acenaphthylene	152	6.959	6.959	(0.984)	413592	2.50000	2.456
* 22 Acenaphthene-d10	164	7.069	7.069	(1.000)	230598	2.00000	
23 Acenaphthene	153	7.117	7.120	(1.007)	267163	2.50000	2.384
11 Dibenzofuran	168	7.269	7.269	(1.028)	372605	2.50000	2.404
24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	258870	2.50000	2.467
25 Fluorene	166	7.740	7.743	(1.095)	308171	2.50000	2.462
27 Dibenzothiophene	184	8.963	8.963	(0.986)	418308	2.50000	2.443
* 28 Phenanthrene-d10	188	9.090	9.090	(1.000)	373928	2.00000	
30 Phenanthrene	178	9.125	9.125	(1.004)	433495	2.50000	2.433
31 Anthracene	178	9.166	9.163	(1.008)	405791	2.50000	2.529
26 Carbazole	167	9.672	9.672	(1.064)	349396	2.50000	2.436
33 1-Methylphenanthrene	192	9.883	9.884	(1.087)	346555	2.50000	2.512
36 Fluoranthene	202	10.851	10.851	(1.194)	505195	2.50000	2.424
$ 253 Fluoranthene-d10	212	10.816	10.813	(1.190)	452054	2.50000	2.458
39 Pyrene	202	11.354	11.351	(0.816)	524558	2.50000	2.470
46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	477023	2.50000	2.496
* 47 Chrysene-d12	240	13.918	13.915	(1.000)	381262	2.00000	
48 Chrysene	228	13.991	13.988	(1.005)	457201	2.50000	2.385
51 Benzo(b)fluoranthene	252	16.492	16.489	(0.928)	484605	2.50000	2.415
52 Benzo(k)fluoranthene	252	16.549	16.546	(0.932)	481588	2.50000	2.402

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.628	16.625	(0.936)	480879	2.50000	2.457
55	Benzo(e)pyrene	252	17.399	17.396	(0.980)	473855	2.50000	2.335
54	Benzo(a)pyrene	252	17.529	17.526	(0.987)	414914	2.50000	2.314
* 56	Perylene-d12	264	17.763	17.760	(1.000)	380825	2.00000	
57	Perylene	252	17.833	17.833	(1.004)	451796	2.50000	2.432
$ 60	Dibenzo(a,h)anthracene-d14	292	20.087	20.081	(1.131)	359716	2.50000	2.495
63	Indeno(1,2,3-cd)pyrene	276	20.201	20.195	(1.137)	526991	2.50000	2.452
62	Dibenzo(a,h)anthracene	278	20.185	20 179	(1.136)	428508	2.50000	2.569
61	Benzo(g,h,i)perylene	276	21.194	21.194	(1.193)	464000	2.50000	2 455

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041302.d
Lab Smp Id: SDD30-CAL4
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC25150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	343090	0.00
22 Acenaphthene-d10	230598	115299	461196	230598	0.00
28 Phenanthrene-d10	373928	186964	747856	373928	0.00
47 Chrysene-d12	381262	190631	762524	381262	0.00
56 Perylene-d12	380825	190412	761650	380825	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	0.00
56 Perylene-d12	17.76	17.26	18.26	17.76	0.00

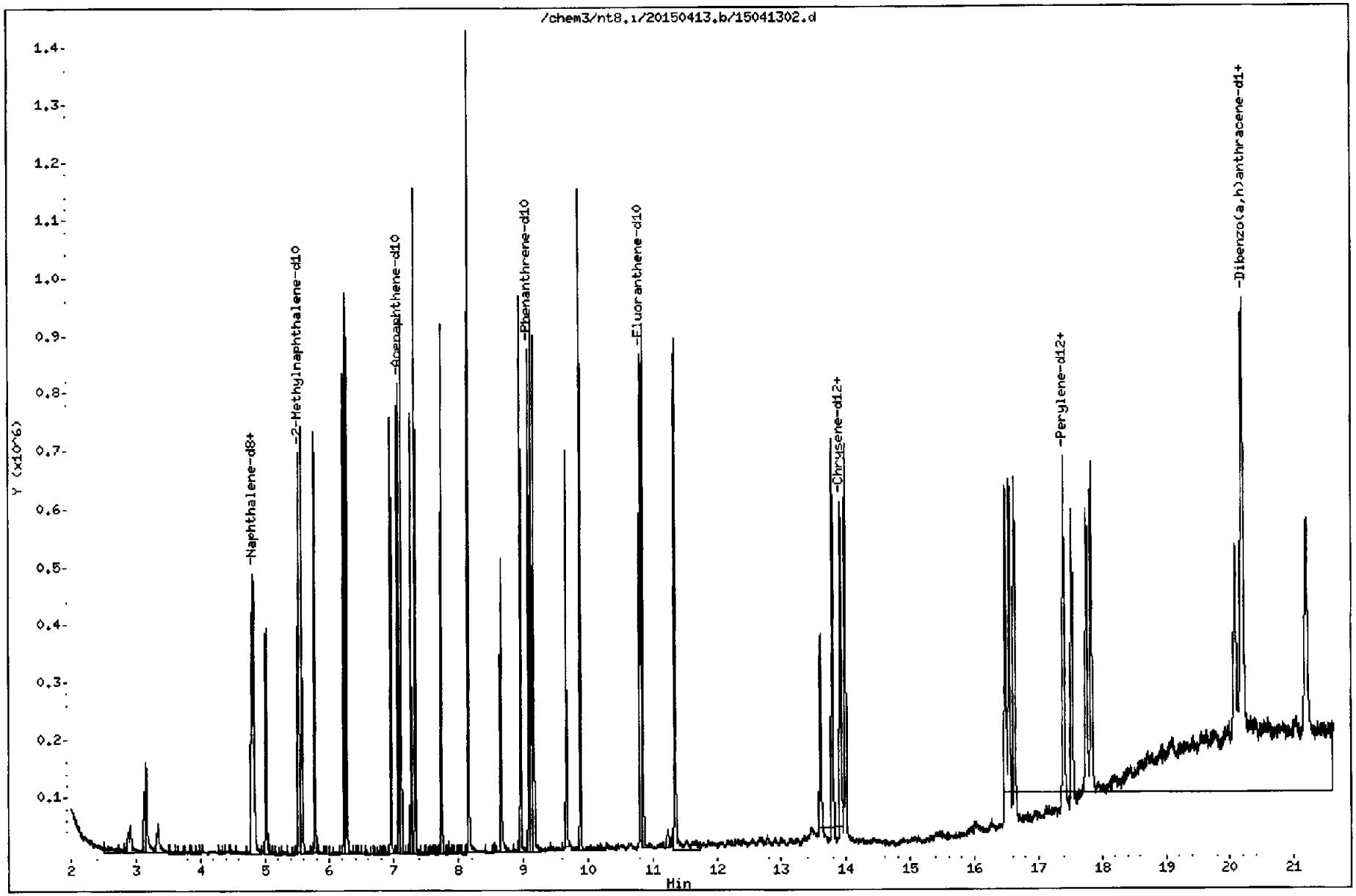
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041302.d
Date : 13-APR-2015 12:22
Client ID: IC25150413
Sample Info: IC25150413

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041302.d

Lab ID: SDD30-CAL4, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041306.d
Lab Smp Id: SDD30-CAL5 Client Smp ID: IC5150413
Inj Date : 13-APR-2015 14:07
Operator : JZ Inst ID: nt8.i
Smp Info : IC5150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:07 Cal File: 15041306.d
Als bottle: 6 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

JZ 04/14/15

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.802	4.802	(1.000)	372032	2.00000	
7 Naphthalene	128	4.831	4.831	(1.006)	924565	5.00000	5.153
$ 12 2-Methylnaphthalene-d10	152	5.530	5.529	(1.151)	591180	5.00000	5.204
14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	559916	5.00000	5.241
15 1-methylnaphthalene	141	5.770	5.770	(1.201)	538618	5.00000	5.184
19 Biphenyl	154	6.231	6.228	(0.881)	770321	5.00000	5.166
20 2,6-Dimethylnaphthalene	156	6.273	6.273	(0.887)	581098	5.00000	5.262
21 Acenaphthylene	152	6.959	6.959	(0.984)	963103	5.00000	5.461
* 22 Acenaphthene-d10	164	7 069	7.069	(1.000)	241476	2.00000	
23 Acenaphthene	153	7.120	7.120	(1.007)	628450	5.00000	5 356
11 Dibenzofuran	168	7 269	7.269	(1.028)	850576	5.00000	5.240
24 1,6,7-Trimethylnaphthalene	170	7 335	7.335	(1.038)	591540	5.00000	5.383
25 Fluorene	166	7.740	7.743	(1.095)	713916	5.00000	5.452
27 Dibenzothiophene	184	8 963	8.963	(0.986)	963210	5.00000	5.108
* 28 Phenanthrene-d10	188	9 090	9.090	(1.000)	411722	2.00000	
30 Phenanthrene	178	9.125	9.125	(1.004)	988393	5.00000	5.038
31 Anthracene	178	9 166	9.163	(1.008)	946532	5.00000	5.327
26 Carbazole	167	9.672	9.672	(1.064)	826501	5.00000	5.320
33 1-Methylphenanthrene	192	9.884	9.884	(1.087)	811083	5.00000	5.338
36 Fluoranthene	202	10.854	10.851	(1.194)	1172047	5 00000	5.106
$ 253 Fluoranthene-d10	212	10.816	10.813	(1.190)	1058133	5.00000	5.225
39 Pyrene	202	11.354	11.351	(0.816)	1211251	5.00000	5.110
46 Benzo(a)anthracene	228	13.792	13.792	(0.991)	1119956	5.00000	5.249
* 47 Chrysene-d12	240	13.915	13.915	(1.000)	425415	2.00000	
48 Chrysene	228	13.991	13.988	(1.005)	1064705	5.00000	4.963
51 Benzo(b)fluoranthene	252	16.495	16.489	(0.929)	1131642	5.00000	5.217
52 Benzo(k)fluoranthene	252	16.555	16.546	(0.932)	1169479	5.00000	5.418

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
251	Benzo(j)fluoranthene	252	16.631	16.625	(0.936)	1123189	5.00000	5.345
55	Benzo(e)pyrene	252	17.406	17.396	(0.980)	1116129	5.00000	5.099
54	Benzo(a)pyrene	252	17.532	17.526	(0.987)	1016610	5.00000	5.241
* 56	Perylene-d12	264	17.760	17.760	(1.000)	409924	2.00000	
57	Perylene	252	17.839	17.833	(1.004)	1070708	5.00000	5.375
$ 60	Dibenzo(a,h)anthracene-d14	292	20.094	20 081	(1.131)	836172	5.00000	5.420
63	Indeno(1,2,3-cd)pyrene	276	20.211	20.195	(1.138)	1267799	5.00000	5.472
62	Dibenzo(a,h)anthracene	278	20.192	20 179	(1.137)	1036040	5.00000	5.771
61	Benzo(g,h,i)perylene	276	21.200	21.194	(1.194)	1105769	5.00000	5.435

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041306.d
Lab Smp Id: SDD30-CAL5
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC5150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	372032	8.44
22 Acenaphthene-d10	230598	115299	461196	241476	4.72
28 Phenanthrene-d10	373928	186964	747856	411722	10.11
47 Chrysene-d12	381262	190631	762524	425415	11.58
56 Perylene-d12	380825	190412	761650	409924	7.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

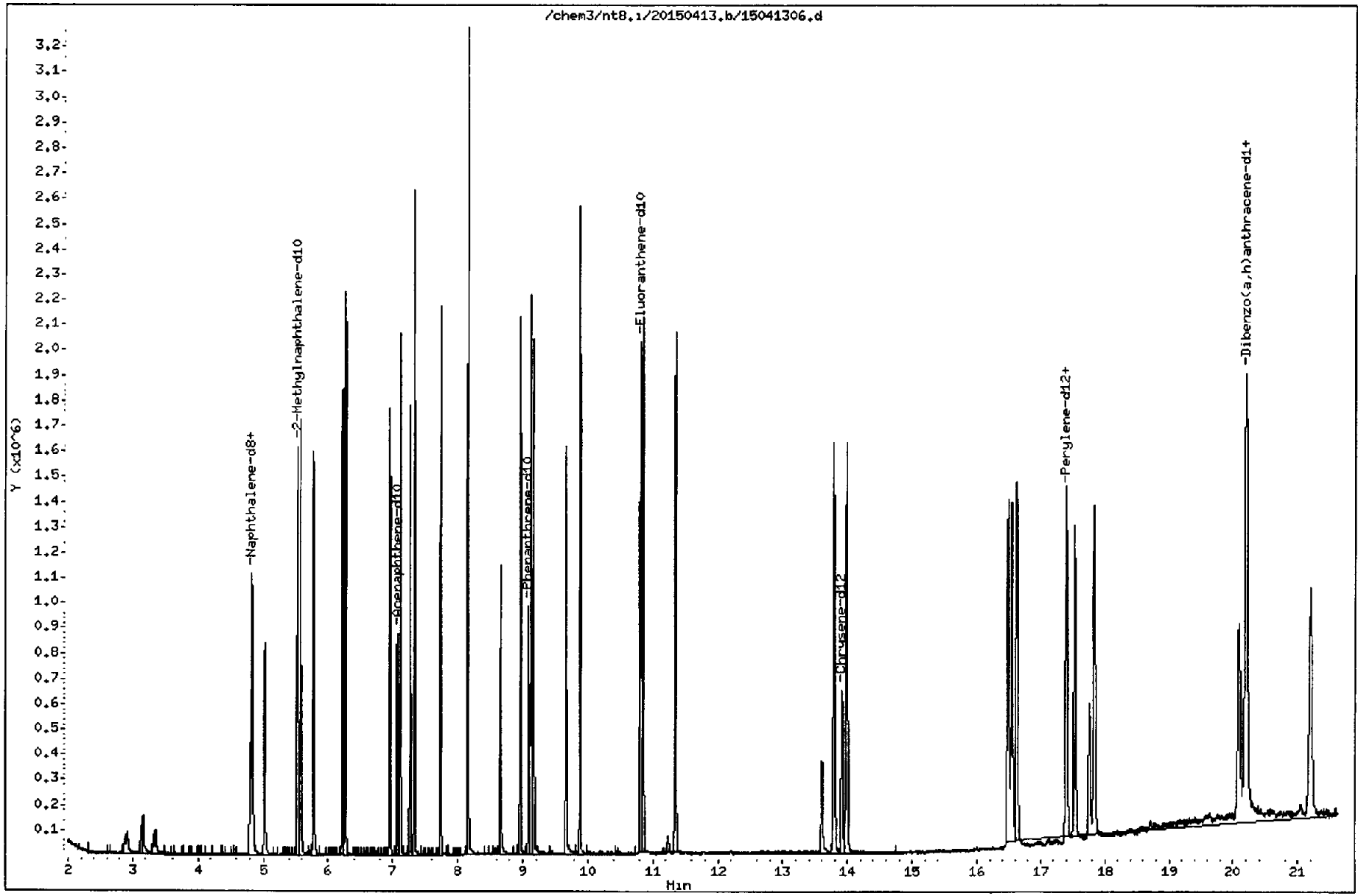
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041306.d
Date : 13-APR-2015 14:07
Client ID: IC5150413
Sample Info: IC5150413,

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15041306.d

Lab ID: SDD30-CAL5, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041307.d
Lab Smp Id: SDD30-CAL6 Client Smp ID: IC10150413
Inj Date : 13-APR-2015 14:32
Operator : JZ Inst ID: nt8.i
Smp Info : IC10150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:03 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 14:32 Cal File: 15041307.d
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: FSIMPNAICL.sub
Target Version: 3.50

04/14/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
*	6 Naphthalene-d8	136	4.802	4.802	(1.000)	409499	2.00000	
	7 Naphthalene	128	4.831	4.831	(1.006)	1918039	10.0000	9.713
$	12 2-Methylnaphthalene-d10	152	5.529	5.529	(1.151)	1221831	10.0000	9.771
	14 2-Methylnaphthalene	141	5.577	5.577	(1.161)	1165871	10.0000	9.914
	15 1-methylnaphthalene	141	5.773	5.770	(1.202)	1124247	10.0000	9.830
	19 Biphenyl	154	6.231	6.228	(0.881)	1572162	10.0000	9.696
	20 2,6-Dimethylnaphthalene	156	6.276	6.273	(0.888)	1215040	10.0000	10.12
	21 Acenaphthylene	152	6.962	6.959	(0.985)	1954243	10.0000	10.19
*	22 Acenaphthene-d10	164	7.069	7.069	(1.000)	262568	2.00000	
	23 Acenaphthene	153	7.120	7.120	(1.007)	1281982	10.0000	10.05
	11 Dibenzofuran	168	7.268	7.269	(1.028)	1686752	10.0000	9.556
	24 1,6,7-Trimethylnaphthalene	170	7.335	7.335	(1.038)	1254873	10.0000	10.50
	25 Fluorene	166	7.743	7.743	(1.095)	1458055	10.0000	10.24
	27 Dibenzothiophene	184	8.966	8.963	(0.986)	1894203	10.0000	9.224
*	28 Phenanthrene-d10	188	9.090	9.090	(1.000)	448359	2.00000	
	30 Phenanthrene	178	9.128	9.125	(1.004)	1985784	10.0000	9.295
	31 Anthracene	178	9.166	9.163	(1.008)	1904970	10.0000	9.844
	26 Carbazole	167	9.671	9.672	(1.064)	1682399	10.0000	9.944
	33 1-Methylphenanthrene	192	9.886	9.884	(1.088)	1667530	10.0000	10.08
	36 Fluoranthene	202	10.854	10.851	(1.194)	2318217	10.0000	9.274
$	253 Fluoranthene-d10	212	10.819	10.813	(1.190)	2164563	10.0000	9.815
	39 Pyrene	202	11.357	11.351	(0.816)	2449380	10.0000	9.723
	46 Benzo(a)anthracene	228	13.798	13.792	(0.992)	2321342	10.0000	10.24
*	47 Chrysene-d12	240	13.915	13.915	(1.000)	452115	2.00000	
	48 Chrysene	228	13.994	13.988	(1.006)	2215334	10.0000	9.716
	51 Benzo(b)fluoranthene	252	16.505	16.489	(0.929)	2415171	10.0000	9.970
	52 Benzo(k)fluoranthene	252	16.565	16.546	(0.933)	2401915	10.0000	9.965

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
	251 Benzo(j)fluoranthene	252	16.644	16.625	(0.937)	2375015	10.0000	10.12
	55 Benzo(e)pyrene	252	17.412	17.396	(0.980)	2337431	10.0000	9.563
	54 Benzo(a)pyrene	252	17.542	17.526	(0.988)	2174669	10.0000	10.04
*	56 Perylene-d12	264	17.760	17.760	(1.000)	457765	2.00000	
	57 Perylene	252	17.845	17.833	(1.005)	2264893	10.0000	10.18
$	60 Dibenzo(a,h)anthracene-d14	292	20.109	20.081	(1.132)	1879915	10.0000	10.91
	63 Indeno(1,2,3-cd)pyrene	276	20.223	20.195	(1.139)	2721505	10.0000	10.52
	62 Dibenzo(a,h)anthracene	278	20.210	20.179	(1.138)	2284005	10.0000	11.39
	61 Benzo(g,h,i)perylene	276	21.222	21.194	(1.195)	2346750	10.0000	10.33

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041307.d
Lab Smp Id: SDD30-CAL6
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: IC10150413
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	409499	19.36
22 Acenaphthene-d10	230598	115299	461196	262568	13.86
28 Phenanthrene-d10	373928	186964	747856	448359	19.91
47 Chrysene-d12	381262	190631	762524	452115	18.58
56 Perylene-d12	380825	190412	761650	457765	20.20

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	0.00
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.91	-0.02
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150413.b/15041307.d

Date : 13-APR-2015 14:32

Client ID: IC10150413

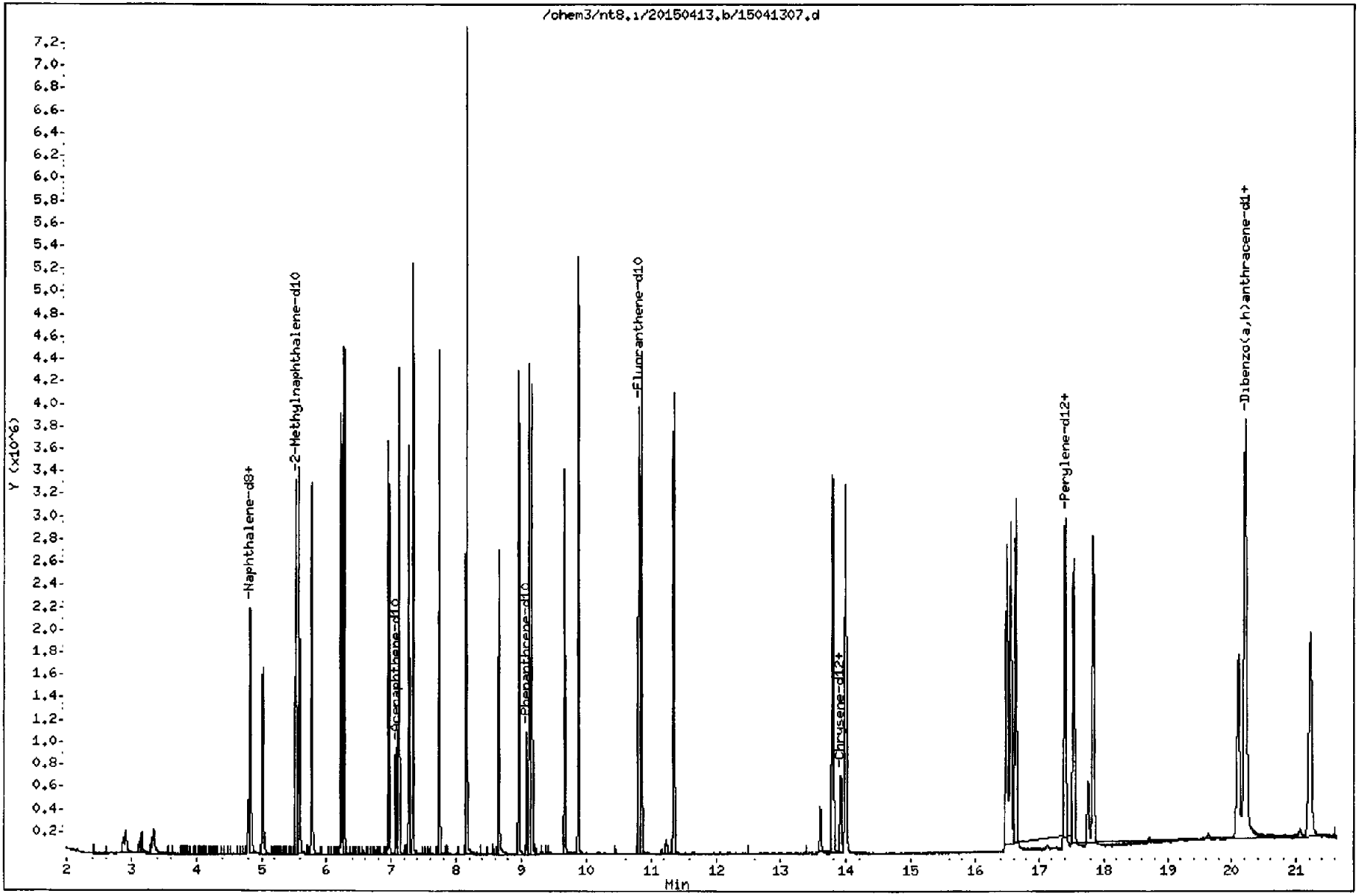
Sample Info: IC10150413,

Column phase: ZB-35

Instrument: nt8.i

Operator: JZ

Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15041307.d

Lab ID: SDD30-CAL6, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-APR-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150413.b/15041309.d
Lab Smp Id: SDD0030-SCV1 Client Smp ID: SCV150413
Inj Date : 13-APR-2015 16:54
Operator : JZ Inst ID: nt8.i
Smp Info : SCV150413,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Meth Date : 14-Apr-2015 14:13 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SIMPNAICV.sub
Target Version: 3.50

JZ 04/14/15

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.799	4.799	(1.000)	396827	2.00000	
7 Naphthalene	128	4.831	4.831	(1.007)	443976	2.32251	2.323
$ 12 2-Methylnaphthalene-d10	152	5.526	5.526	(1.152)	258316	2.13170	2.132
14 2-Methylnaphthalene	141	5.574	5.574	(1.161)	249152	2.18582	2.186
15 1-methylnaphthalene	141	5.767	5.764	(1.202)	249951	2.25647	2.256
21 Acenaphthylene	152	6.959	6.959	(0 984)	442842	2.36234	2.362
* 22 Acenaphthene-d10	164	7.069	7.069	(1.000)	256683	2.00000	
23 Acenaphthene	153	7.117	7.120	(1.007)	287870	2.30793	2.308
25 Fluorene	166	7.740	7.737	(1.095)	320800	2.30267	2.303
* 28 Phenanthrene-d10	188	9.090	9.090	(1.000)	413213	2.00000	
30 Phenanthrene	178	9.125	9.122	(1.004)	459146	2.33060	2.331
31 Anthracene	178	9.162	9.159	(1.008)	424354	2.39255	2.393
36 Fluoranthene	202	10.851	10.854	(1.194)	531021	2.30459	2.305
$ 253 Fluoranthene-d10	212	10.813	10.813	(1.190)	446225	2.19540	2.195
39 Pyrene	202	11.354	11.354	(0.816)	530850	2.16176	2.162
46 Benzo(a)anthracene	228	13.792	13.789	(0.991)	505205	2.28639	2.286

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
*	47 Chrysene-d12	240	13.918	13.915	(1.000)	440508	2.00000	
	48 Chrysene	228	13.988	13.985	(1.005)	497642	2.24620	2.246
	51 Benzo(b)fluoranthene	252	16.489	16.483	(0.929)	489120	2.13605	2.136
	52 Benzo(k)fluoranthene	252	16.549	16.549	(0 932)	520936	2.27689	2.277
	54 Benzo(a)pyrene	252	17 526	17.529	(0.987)	478284	2.34262	2.343
*	56 Perylene-d12	264	17.757	17 757	(1.000)	436031	2.00000	
$	60 Dibenzo(a,h)anthracene-d14	292	20.081	20.084	(1.131)	361419	2.17644	2 176
	63 Indeno(1,2,3-cd)pyrene	276	20.201	20.192	(1.138)	539813	2.20130	2.201
	62 Dibenzo(a,h)anthracene	278	20.188	20.192	(1.137)	462398	2.31510	2.315
	61 Benzo(g,h,i)perylene	276	21.197	21.191	(1.194)	469304	2.17566	2.176

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15041309.d
Lab Smp Id: SDD0030-SCV1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 13-APR-2015
Calibration Time: 12:22
Client Smp ID: SCV150413
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	396827	15.66
22 Acenaphthene-d10	230598	115299	461196	256683	11.31
28 Phenanthrene-d10	373928	186964	747856	413213	10.51
47 Chrysene-d12	381262	190631	762524	440508	15.54
56 Perylene-d12	380825	190412	761650	436031	14.50

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.80	4.30	5.30	4.80	-0.07
22 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
28 Phenanthrene-d10	9.09	8.59	9.59	9.09	0.00
47 Chrysene-d12	13.92	13.42	14.42	13.92	0.00
56 Perylene-d12	17.76	17.26	18.26	17.76	-0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: SDD0030-SCV1
Level: LOW
Data Type: MS DATA
SpikeList File: Simpnaicv.spk
Sublist File: SIMPNAICV.sub
Method File: /chem3/nt8.i/20150413.b/FSIMPNA150413.m
Misc Info: 15-

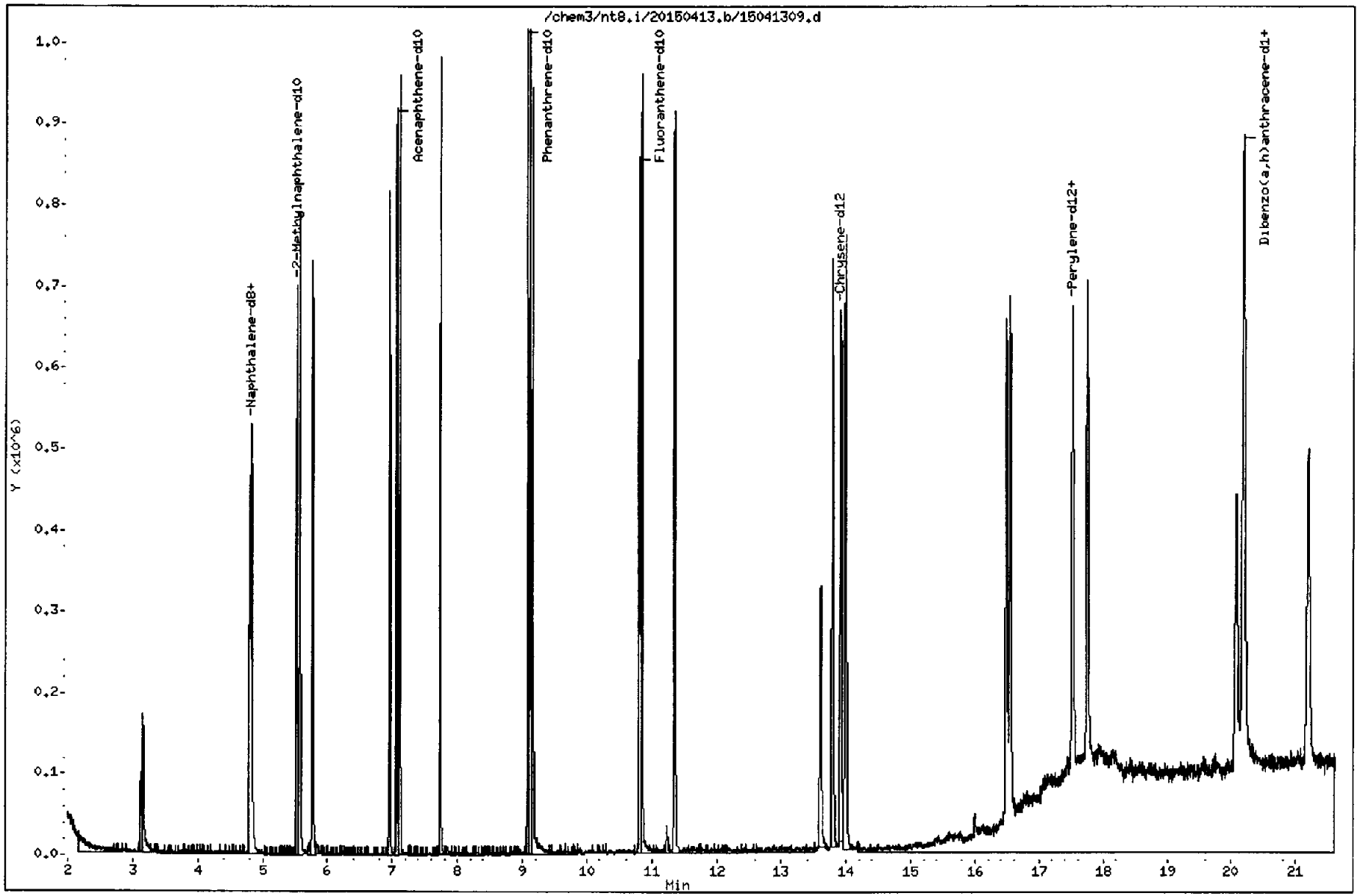
Client SDG: 20150413
Fraction: SV
Client Smp ID: SCV150413
Operator: JZ
SampleType: LCS
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	2.500	2.323	92.90	80-120
14 2-Methylnaphthalen	2.500	2.186	87.43	80-120
15 1-methylnaphthalen	2.500	2.256	90.26	80-120
21 Acenaphthylene	2.500	2.362	94.49	80-120
23 Acenaphthene	2.500	2.308	92.32	80-120
25 Fluorene	2.500	2.303	92.11	80-120
30 Phenanthrene	2.500	2.331	93.22	80-120
31 Anthracene	2.500	2.393	95.70	80-120
36 Fluoranthene	2.500	2.305	92.18	80-120
39 Pyrene	2.500	2.162	86.47	80-120
46 Benzo(a)anthracene	2.500	2.286	91.46	80-120
48 Chrysene	2.500	2.246	89.85	80-120
51 Benzo(b)fluoranthe	2.500	2.136	85.44	80-120
52 Benzo(k)fluoranthe	2.500	2.277	91.08	80-120
54 Benzo(a)pyrene	2.500	2.343	93.70	80-120
63 Indeno(1,2,3-cd)py	2.500	2.201	88.05	80-120
62 Dibenzo(a,h)anthra	2.500	2.315	92.60	80-120
61 Benzo(g,h,i)peryle	2.500	2.176	87.03	80-120

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	2.490	2.132	85.61	80-120
$ 253 Fluoranthene-d10	2.490	2.195	88.17	80-120
$ 60 Dibenzo(a,h)anthra	2.490	2.176	87.41	80-120

Data File: /chem3/nt8.i/20150413.b/15041309.d
Date : 13-APR-2015 16:54
Client ID: SCV150413
Sample Info: SCV150413,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15041309.d

Lab ID: SDD0030-SCV1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 13-AP

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

SIM PAH Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGC9

AGC9 : 00275

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC/MS SVOA Analyst Notes / Data Review Checklist

ELEMENT/NWA #.: AGCG Client: ~~Kennedy Jenks~~

METHOD: (**8270D** (SIM-SVOA)) **KRONE** (Butyl Tins) **8270D** (SVOA) **8270D** (OP Pest)

Instrument: NT-6 (NT-8) NT-10 NT11 NT12 NT14

Calibration Code: YD0009 Analysis Start Date: 6/1/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
DFTPP Tune met Criteria?	Y / N / ✓	Internal Standard within 50-200%?	(Y) / N / ✓
DDT Breakdown <20%?	(Y) / N / ✓	Retention Times within Windows?	(Y) / N / ✓
Peak Tailing Factor ≤2?	(Y) / N / ✓	Method Blank in Control?	(Y) / N / ✓
ICV/CCV Meets %D?	(Y) / N / ✓	BS/BSD Recovery in Control?	(Y) / N / ✓
ICAL Q Flag applied?	(NA) / Y / N / ✓	BS/BSD RPD ≤ 30%?	(NA) BS only
ICV/CCV Q flag applied?	(NA) / Y / N / ✓	MS / MSD Recovery in Control?	(Y) / N / ✓
Surrogate Recovery met?	(Y) / N / ✓	MS / MSD (RPD) ≤ 30%?	(NA) / ✓
Manual Integrations?	(Y) / N / ✓	Samples Diluted?	(Y) / N / ✓
Integration Summary?	(Y) / N / ✓	Special Analysis Request?	Y / (N) / ✓

Detail problems, corrective actions and/or other pertinent information below.

Samples A - K + LCS + MS/MSD. (See green sheet)

CCV included

Forms attached

Uploaded to Element, sequence #: SDF0009

(Review 1) Analyst: _____ **Date:** 6/2/15

(Review 2) Reviewer: _____ **Date:** 6/2/15

AGCG : 0076

Analytical Resources Inc.: Organics Instrument Log
NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 6/1/15 Analysis: SimPAH Analyst: R

GC Program: SimPAH Column No: 1 Ebe 124228 Column Type: RXi-17Sil MS

Instrument Tune (.U or .CT.): 1to413 EM Voltage: 1761

Calibration File: 1to60102 Curve Date: 4/13/15 Injection Vol.: 1µl

YD00019

IS/SS	Ical/Ccal	LCS/ICV
D002072	D002310	

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150601.b

	Time	Filename	LabID	ClientId	DF											
1	0954	15060101.d	DFTPP150601	DFTPP150601	1	NO ISTDS FOUND										
2	1006	15060102.d	ICV150601	ICV150601	1	4 74	283432	7 00	184467	9.02	327794	13 81	365607	17.63	368462	
3	1034	15060103.d	AGC9MBS1	AGC9MBS1	1	4.73	377617	7 00	244224	9 02	421399	13 80	459019	17 63	456390	
4	1100	15060104 d	AGC9LCSS1	AGC9LCSS1	1	4 73	391981	7 00	252012	9 02	438999	13 80	468981	17 62	474941	
5	1126	15060105.d	AGC9A	SDP-01(3 0-4	1	4 73	377292	7.00	242930	9 02	417344	13.80	476019	17.63	483351	
6	1151	15060106.d	AGC9B	SDP-01(8.0-9	1	4.73	413799	7 00	264789	9 02	470638	13 80	503191	17 63	525851	
7	1217	15060107.d	AGC9C	SDP-02(16 0-	10	4 74	449474	7 00	278927	9.02	471805	13.80	542094	17 63	598853	
8	1243	15060108.d	AGC9D	SDP-02(18 5-	1	4 73	423651	7 00	265558	9 03	469497	13 81	550871	17 65	590491	
9	1308	15060109.d	AGC9E	SDP-02(22.0-	1	4 74	442911	7 00	280647	9 02	486681	13.81	528810	17.64	566805	
10	1334	15060110.d	AGC9F	SDP-03(6 5-8	1	4 73	395146	7.00	256094	9 02	436464	13 81	494112	17 64	534360	
11	1400	15060111.d	AGC9G	SDP-03(23 5-	1	4 73	439275	7 00	270487	9 02	462404	13.81	510304	17.64	558585	
12	1425	15060112.d	AGC9H	SDP-04(1 5-3	1	4 73	429354	7.00	275713	9.02	485086	13.81	566025	17 64	587485	
13	1451	15060113.d	AGC9HMS	SDP-04(1 5-3	1	4.73	410309	7 00	259167	9 03	456382	13 82	564495	17.66	592274	
14	1517	15060114 d	AGC9HMSD	SDP-04(1 5-3	1	4 74	411517	7 00	265334	9 03	470262	13 82	552196	17 65	577008	
15	1542	15060115.d	AGC9I	SDP-04(10 5-	1	4 74	437898	7 00	274531	9 03	531995	13 84	629526	17 67	623755	
16	1608	15060116.d	AGC9J	SDP-05(6.5-7	1	4 73	454624	7 01	281096	9 03	482592	13 81	536965	17.64	589640	
17	1634	15060117.d	AGC9K	SDP-05(17 5-	1	4 74	439044	7.00	284264	9.02	476262	13.81	528231	17 64	558418	
18	1659	15060118.d	AGC9MBS1	AGC9MBS1	1	4.73	530212	7.00	340078	9 02	584672	13 81	635638	17 64	672526	
19	1725	15060119.d	AGC9C	SDP-02(16 0-	3	4 74	399256	7 00	253508	9 03	428793	13.82	563083	17.67	608087	
20	1751	15060120.d	AGN7MBS1	AGN7MBS1	1	4 74	423320	7.01	265694	9 03	435992	13.81	487269	17 65	549341	
21	1816	15060121.d	AGN7LCSS1	AGN7LCSS1	1	4 74	448453	7 00	276780	9.02	464509	13.81	493696	17 64	546535	
22	1842	15060122 d	AGN7LCSDS1	AGN7LCSDS1	1	4 73	435455	7 00	281792	9 02	488063	13 80	496073	17 64	532598	
23	1908	15060123.d	AGN7V	LCN-SED-13-I	1	4 74	441320	7 00	319562	9 02	537710	13 80	602801	17 63	681046	
24	1933	15060124.d	AGN7VMS	LCN-SED-13-I	1	4 73	440612	7.00	324371	9 03	560234	13 80	635498	17 64	708204	
25	1959	15060125.d	AGN7VMSD	LCN-SED-13-I	1	4 73	510745	7 00	316287	9 02	554333	13 81	630774	17.63	518852	
26	2025	15060126.d	AGN7W	LCN-SED-14B-	3	4 74	517807	7 00	300499	9.02	493014	13.81	640495	17 64	704827	
27	2050	15060127.d	CCV150601	CCV150601	1	4 74	351697	7 00	203016	9 02	357902	13 80	403593	17.63	507454	

contaminated AR

OJ AR

R 6/6/15

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150601.b

ARI Job No.: ICV1 Method: FSIMPNA150413.m Instrument: nt8.i Date: 01-JUN-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1006	15060102.d	ICV150601	ICV150601	1	NO MANUAL INTEGRATION
1100	15060104 d	AGC9LCSS1	AGC9LCSS1	1	NO MANUAL INTEGRATION
1126	15060105 d	AGC9A	SDP-01(3.0	1	NO MANUAL INTEGRATION
1151	15060106.d	AGC9B	SDP-01(8.0	1	NO MANUAL INTEGRATION
1243	15060108.d	AGC9D	SDP-02(18.	1	Benzo(a)pyrene, Dibenzo(a,h)anthracene,
1308	15060109 d	AGC9E	SDP-02(22.	1	Benzo(k)fluoranthene,
1334	15060110 d	AGC9F	SDP-03(6.5	1	Dibenzo(a,h)anthracene-d14,
1400	15060111.d	AGC9G	SDP-03(23.	1	NO MANUAL INTEGRATION
1425	15060112.d	AGC9H	SDP-04(1.5	1	NO MANUAL INTEGRATION
1451	15060113.d	AGC9HMS	SDP-04(1.5	1	NO MANUAL INTEGRATION
1517	15060114.d	AGC9HMSD	SDP-04(1.5	1	NO MANUAL INTEGRATION
1542	15060115.d	AGC9I	SDP-04(10.	1	NO MANUAL INTEGRATION
1608	15060116.d	AGC9J	SDP-05(6.5	1	NO MANUAL INTEGRATION
1634	15060117.d	AGC9K	SDP-05(17.	1	NO MANUAL INTEGRATION
1659	15060118.d	AGC9MBS1	AGC9MBS1	1	NO MANUAL INTEGRATION
1725	15060119.d	AGC9C	SDP-02(16.	3	NO MANUAL INTEGRATION
2050	15060127.d	CCV150601	CCV150601	1	NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt8.i/20150601.b

Instrument: nt8.i Date: 01-JUN-2015 Method: FSIMPNA150413.m

INITIAL CAL: 13-APR-2015

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 01-JUN-2015

Compound	%D
NO Q-FLAGS	

06/01/15

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 01-JUN-2015 10:06
Lab File ID: 15060102.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: ICV150601 Quant Type: ISTD
Method: /chem3/nt8.i/20150601.b/FSIMPNA150413.m

06/01/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0 96526	0.100	0.18787	20.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0 58447	0.100	-4.30163	20.00000	Averaged
14 2-Methylnaphthalene	0.57449	0 59571	0.100	3.69503	20.00000	Averaged
15 1-methylnaphthalene	0.55829	0.54050	0.100	-3 18623	20.00000	Averaged
21 Acenaphthylene	1.46062	1.54369	0.100	5.68703	20.00000	Averaged
23 Acenaphthene	0.97186	0.99680	0.100	2.56560	20.00000	Averaged
11 Dibenzofuran	1.34410	1.40465	0.100	4.50510	20.00000	Averaged
25 Fluorene	1.08551	1.17774	0.100	8.49595	20.00000	Averaged
30 Phenanthrene	0.95354	0.96148	0.100	0.83228	20.00000	Averaged
31 Anthracene	0 85847	0.86749	0.100	1.05111	20.00000	Averaged
36 Fluoranthene	1 11525	1.11482	0.100	-0.03877	20.00000	Averaged
$ 253 Fluoranthene-d10	0 98378	1.01503	0.100	3.17668	20.00000	Averaged
39 Pyrene	1 11491	1.05018	0.100	-5.80609	20.00000	Averaged
46 Benzo(a)anthracene	1.00322	0.97379	0.100	-2.93278	20.00000	Averaged
48 Chrysene	1.00588	0.94271	0.100	-6.27987	20.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	0.99690	0.100	-5.08456	20.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	0 98375	0.100	-6.25901	20 00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0 94194	0.100	-8.01497	20.00000	Averaged
54 Benzo(a)pyrene	0.93648	0 87228	0.100	-6.85515	20.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1 12515	0.100	0.03076	20.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0 79915	0.010	4.91802	20 00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0 92660	0.100	1.14284	20.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.96826	0.100	-2.13725	20.00000	Averaged
57 Perylene	0.97216	0.94471	0.100	-2.82381	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060102.d
Lab Smp Id: ICV150601 Client Smp ID: ICV150601
Inj Date : 01-JUN-2015 10:06
Operator : JZ Inst ID: nt8.i
Smp Info : ICV150601
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 13:19 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

6/01/15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6	Naphthalene-d8	136	4.739	4.739	(1.000)	283432	2.00000	
7	Naphthalene	128	4.767	4.767	(1.006)	341984	2.50000	2.505
$ 12	2-Methylnaphthalene-d10	152	5.463	5.463	(1.153)	207071	2.50000	2.392
14	2-Methylnaphthalene	141	5.510	5.510	(1.163)	211056	2 50000	2.592
15	1-methylnaphthalene	141	5.703	5.703	(1.204)	191493	2.50000	2.420
21	Acenaphthylene	152	6.892	6.892	(0.985)	355950	2 50000	2.642
* 22	Acenaphthene-d10	164	7.000	7.000	(1.000)	184467	2.00000	
23	Acenaphthene	153	7.050	7.050	(1.007)	229846	2 50000	2.564
11	Dibenzofuran	168	7.202	7 202	(1.029)	323890	2.50000	2.613
25	Fluorene	166	7.673	7 673	(1.096)	271567	2.50000	2.712
* 28	Phenanthrene-d10	188	9.020	9.020	(1.000)	327794	2.00000	
30	Phenanthrene	178	9.055	9 055	(1.004)	393958	2.50000	2 521
31	Anthracene	178	9.096	9.096	(1.008)	355448	2 50000	2.526
36	Fluoranthene	202	10.769	10.769	(1.194)	456790	2.50000	2.499
$ 253	Fluoranthene-d10	212	10.734	10.734	(1.190)	415900	2.50000	2.579
39	Pyrene	202	11.265	11.265	(0.816)	479942	2.50000	2.355
46	Benzo(a)anthracene	228	13.684	13.684	(0.991)	445032	2.50000	2.427
* 47	Chrysene-d12	240	13.807	13.807	(1.000)	365607	2.00000	
48	Chrysene	228	13.880	13.880	(1.005)	430828	2.50000	2 343
51	Benzo(b)fluoranthene	252	16.369	16.369	(0.928)	459151	2.50000	2.373
52	Benzo(k)fluoranthene	252	16.429	16.429	(0.932)	453092	2.50000	2.344
251	Benzo(j)fluoranthene	252	16.505	16 505	(0.936)	433837	2.50000	2.300
54	Benzo(a)pyrene	252	17.402	17 402	(0.987)	401752	2.50000	2.329
* 56	Perylene-d12	264	17.633	17.633	(1.000)	368462	2 00000	
63	Indeno(1,2,3-cd)pyrene	276	20.046	20 046	(1.137)	518219	2 50000	2.501
$ 60	Dibenzo(a,h)anthracene-d14	292	19 929	19.929	(1.130)	368070	2 50000	2 623
62	Dibenzo(a,h)anthracene	278	20 033	20.033	(1.136)	426772	2.50000	2.529

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.010	21.010	(1.192)	445960	2.50000	2.447
57 Perylene	252	17.706	17.706	(1.004)	435111	2.50000	2.429

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060102.d
Lab Smp Id: ICV150601
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: ICV150601
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	283432	-17.39
22 Acenaphthene-d10	230598	115299	461196	184467	-20.00
28 Phenanthrene-d10	373928	186964	747856	327794	-12.34
47 Chrysene-d12	381262	190631	762524	365607	-4.11
56 Perylene-d12	380825	190412	761650	368462	-3.25

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.63	0.00

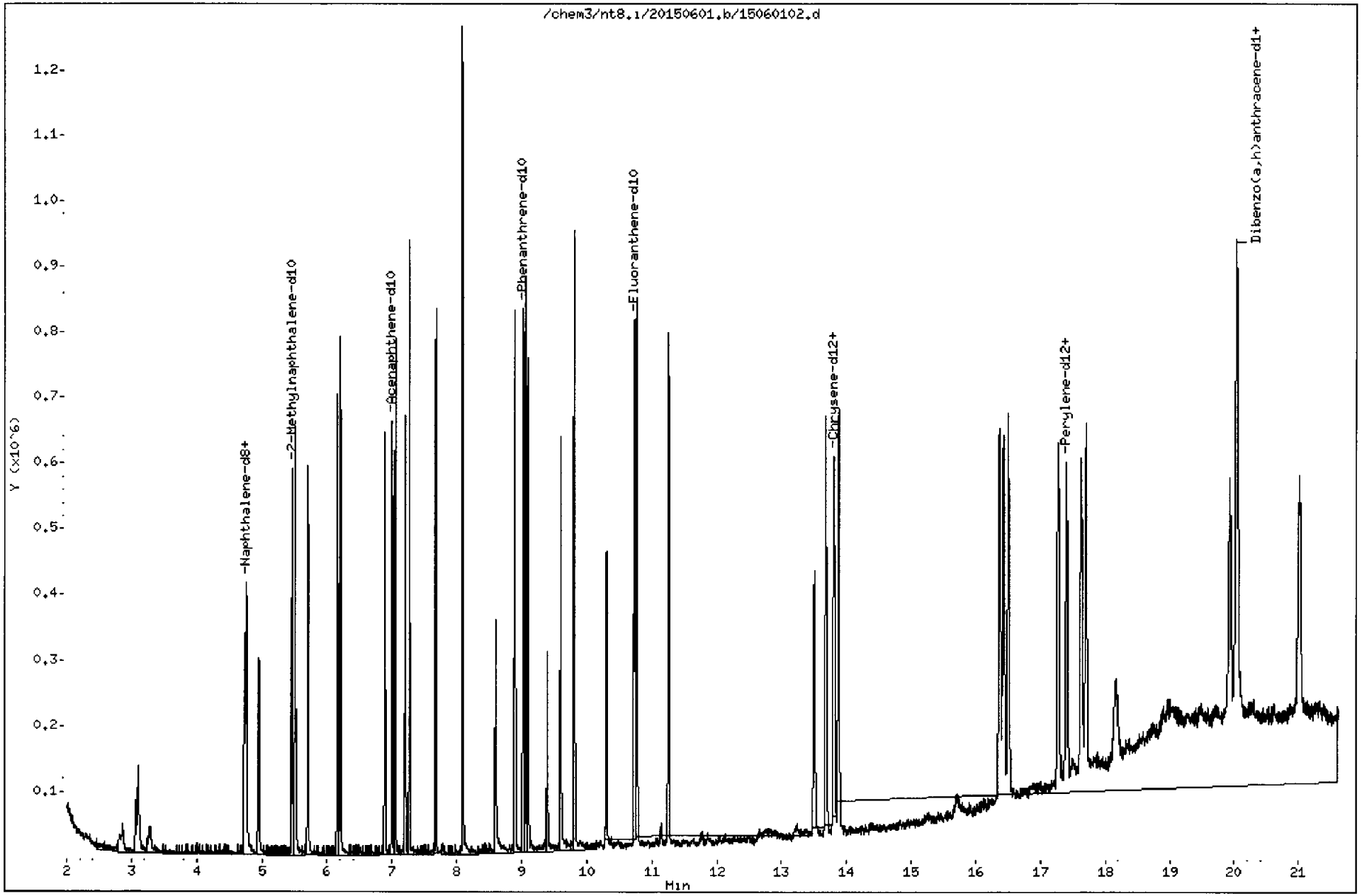
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150601.b/15060102.d
Date : 01-JUN-2015 10:06
Client ID: ICV150601
Sample Info: ICV150601

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15060102.d

Lab ID: ICV150601, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem3/nt8.1/20150601.b/tune.b/15060101.d

Date : 01-JUN-2015 09:54

Client ID: DFTPP150601

Instrument: nt8.1

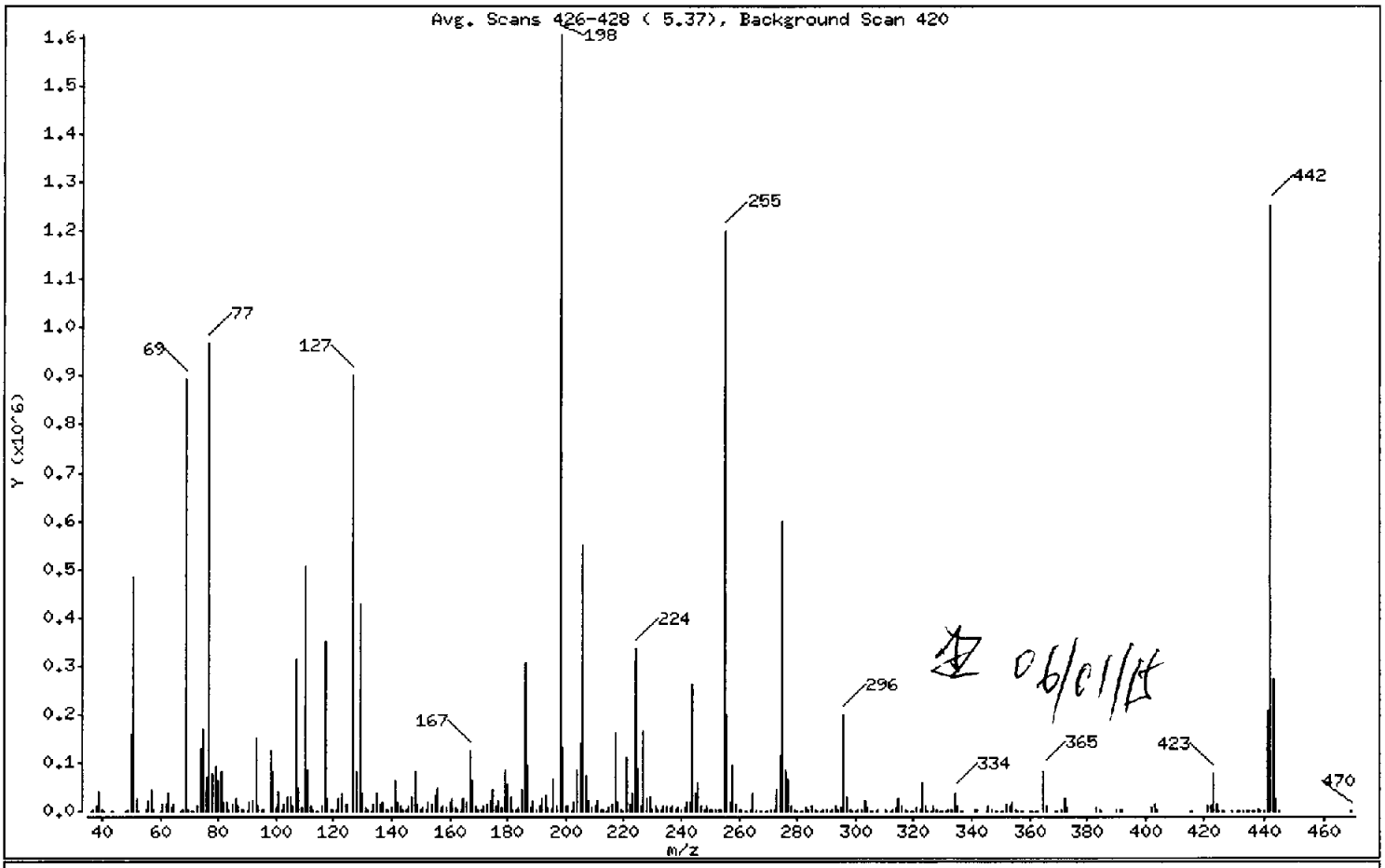
Sample Info: DFTPP150601

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	30.05
68	Less than 2.00% of mass 69	0.23 (0.41)
69	Mass 69 relative abundance	55.52
70	Less than 2.00% of mass 69	0.34 (0.62)
127	10.00 - 80.00% of mass 198	56.08
197	Less than 2.00% of mass 198	0.62
199	5.00 - 9.00% of mass 198	8.24
275	10.00 - 60.00% of mass 198	37.35
365	Greater than 1.00% of mass 198	5.04
441	0.01 - 24.00% of mass 442	12.87 (16.50)
442	50.00 - 200.00% of mass 198	77.95
443	15.00 - 24.00% of mass 442	17.00 (21.81)

Data File: /chem3/nt8.1/20150601.b/tune.b/15060101.d

Date : 01-JUN-2015 09:54

Client ID: DFTPP150601

Instrument: nt8.1

Sample Info: DFTPP150601

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

Data File: 15060101.d

Spectrum: Avg. Scans 426-428 (5.37), Background Scan 420

Location of Maximum: 198.00

Number of points: 381

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	404	134.00	14888	230.00	3796	326.00	1376
37.00	4455	135.00	36976	231.00	12262	327.00	11511
38.00	10577	136.00	15063	232.00	3131	328.00	5523
39.00	39432	137.00	18784	233.00	3045	329.00	1056
40.00	2091	138.00	4123	234.00	10857	330.00	170
41.00	955	139.00	2823	235.00	12018	331.00	105
42.00	591	140.00	6743	236.00	7143	332.00	5099
43.00	244	141.00	61816	237.00	9903	333.00	5309
44.00	500	142.00	19536	238.00	2006	334.00	36616
45.00	837	143.00	12171	239.00	6193	335.00	9999
47.00	537	144.00	3308	240.00	5089	336.00	1231
48.00	300	145.00	2095	241.00	8597	337.00	245
49.00	4139	146.00	12067	242.00	19464	339.00	1393
50.00	157504	147.00	30416	243.00	20312	340.00	622
51.00	482880	148.00	81168	244.00	261248	341.00	5483
52.00	26736	149.00	15311	245.00	35840	342.00	1993
53.00	1440	150.00	3720	246.00	59576	345.00	204
54.00	331	151.00	7752	247.00	12343	346.00	12738
55.00	5094	152.00	5100	248.00	3234	347.00	2045
56.00	20576	153.00	17392	249.00	9694	348.00	392
57.00	44832	154.00	13748	250.00	2158	349.00	313
58.00	2488	155.00	33432	251.00	2664	350.00	219
59.00	729	156.00	47016	252.00	3043	351.00	998
60.00	697	157.00	7619	253.00	5441	352.00	14959
61.00	13150	158.00	9982	254.00	3107	353.00	10939
62.00	15347	159.00	8806	255.00	1199616	354.00	17792
63.00	38072	160.00	17800	256.00	200320	355.00	3884
64.00	5653	161.00	24784	257.00	17664	356.00	547
65.00	16456	162.00	6874	258.00	96168	357.00	276
66.00	1395	163.00	2846	259.00	16020	358.00	263
67.00	1142	164.00	2483	260.00	2065	359.00	1473
68.00	3649	165.00	24376	261.00	2663	360.00	342
69.00	892288	166.00	17632	262.00	443	361.00	249
70.00	5524	167.00	126552	263.00	1282	362.00	459
71.00	1234	168.00	60968	264.00	2206	363.00	364

Date : 01-JUN-2015 09:54

Client ID: DFTPP150601 Instrument: nt8.i

Sample Info: DFTPP15v601

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15060101.d
Spectrum: Avg. Scans 426-428 (5.37), Background Scan 420
Location of Maximum: 198.00
Number of points: 381

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	686	169.00	9633	265.00	38080	365.00	81024
73.00	10426	170.00	4306	266.00	5040	366.00	11622
74.00	128024	171.00	4731	267.00	1107	367.00	982
75.00	169216	172.00	11424	268.00	415	369.00	129
76.00	68504	173.00	14958	269.00	173	370.00	1750
77.00	967936	174.00	23336	270.00	1442	371.00	4842
78.00	77720	175.00	43760	271.00	2969	372.00	24976
79.00	90656	176.00	12367	272.00	3720	373.00	6322
80.00	61800	177.00	22320	273.00	45256	374.00	488
81.00	82712	178.00	7450	274.00	115640	377.00	1364
82.00	19344	179.00	84640	275.00	600256	378.00	270
83.00	16760	180.00	56288	276.00	86576	379.00	184
84.00	2364	181.00	29256	277.00	65200	382.00	93
85.00	14907	182.00	4956	278.00	10176	383.00	7168
86.00	25024	183.00	2398	279.00	2336	384.00	2083
87.00	11307	184.00	7313	280.00	228	385.00	871
88.00	4351	185.00	43216	281.00	491	390.00	3583
89.00	1976	186.00	305152	282.00	1216	391.00	2725
90.00	705	187.00	94696	283.00	7019	392.00	1864
91.00	18512	188.00	8965	284.00	4242	393.00	307
92.00	22024	189.00	22216	285.00	10387	395.00	726
93.00	152896	190.00	3640	286.00	2125	397.00	231
94.00	9362	191.00	9582	287.00	405	401.00	1471
95.00	3031	192.00	26192	288.00	642	402.00	8461
96.00	5351	193.00	32272	289.00	2399	403.00	13681
97.00	244	194.00	6378	290.00	1920	404.00	5049
98.00	125096	195.00	4621	291.00	1566	405.00	724
99.00	82640	196.00	65784	292.00	3141	410.00	359
100.00	6836	197.00	9979	293.00	11763	414.00	107
101.00	40472	198.00	1607168	294.00	2886	415.00	851
102.00	2405	199.00	132416	295.00	6111	416.00	124
103.00	15528	200.00	10348	296.00	201280	418.00	141
104.00	28960	201.00	9639	297.00	27752	420.00	405
105.00	28976	202.00	714	298.00	2383	421.00	12404
106.00	11135	203.00	18048	299.00	848	422.00	11404

Date : 01-JUN-2015 09:54

Client ID: DFTPP150601 Instrument: nt8.1

Sample Info: DFTPP150601

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15060101.d
Spectrum: Avg. Scans 426-428 (5.37), Background Scan 420
Location of Maximum: 198.00
Number of points: 381

m/z	Y	m/z	Y	m/z	Y	m/z	Y
107.00	314176	204.00	85088	300.00	147	423.00	77984
108.00	49464	205.00	141888	301.00	2695	424.00	15626
109.00	7785	206.00	548928	302.00	3582	425.00	1303
110.00	507520	207.00	72576	303.00	21664	426.00	179
111.00	85680	208.00	23768	304.00	5970	427.00	254
112.00	11056	209.00	7471	305.00	665	429.00	494
113.00	4391	210.00	10168	306.00	190	431.00	122
114.00	1128	211.00	23968	307.00	482	432.00	272
115.00	1635	212.00	3118	308.00	2973	433.00	454
116.00	11180	213.00	1928	309.00	1743	434.00	715
117.00	350400	214.00	625	310.00	2138	435.00	722
118.00	25208	215.00	7939	311.00	613	436.00	1343
119.00	2937	216.00	14753	312.00	1281	437.00	1747
120.00	3642	217.00	161728	313.00	2028	438.00	3110
121.00	2052	218.00	19048	314.00	8860	439.00	1537
122.00	25560	219.00	2268	315.00	24064	440.00	603
123.00	35576	220.00	1129	316.00	12589	441.00	206784
124.00	15615	221.00	109104	317.00	2851	442.00	1252864
125.00	14678	222.00	16600	318.00	267	443.00	273280
127.00	901248	223.00	37224	319.00	192	444.00	27080
128.00	79888	224.00	335232	320.00	847	445.00	1382
129.00	428608	225.00	89440	321.00	6134	469.00	105
130.00	38624	226.00	10023	322.00	4039	470.00	254
131.00	6509	227.00	167808	323.00	58296		
132.00	4208	228.00	24032	324.00	10201		
133.00	1599	229.00	30880	325.00	1334		

Data File: /chem3/nt8.i/20150601.b/tune.b/15060101.d

Date : 01-JUN-2015 09:54

Client ID: DFTPP150601

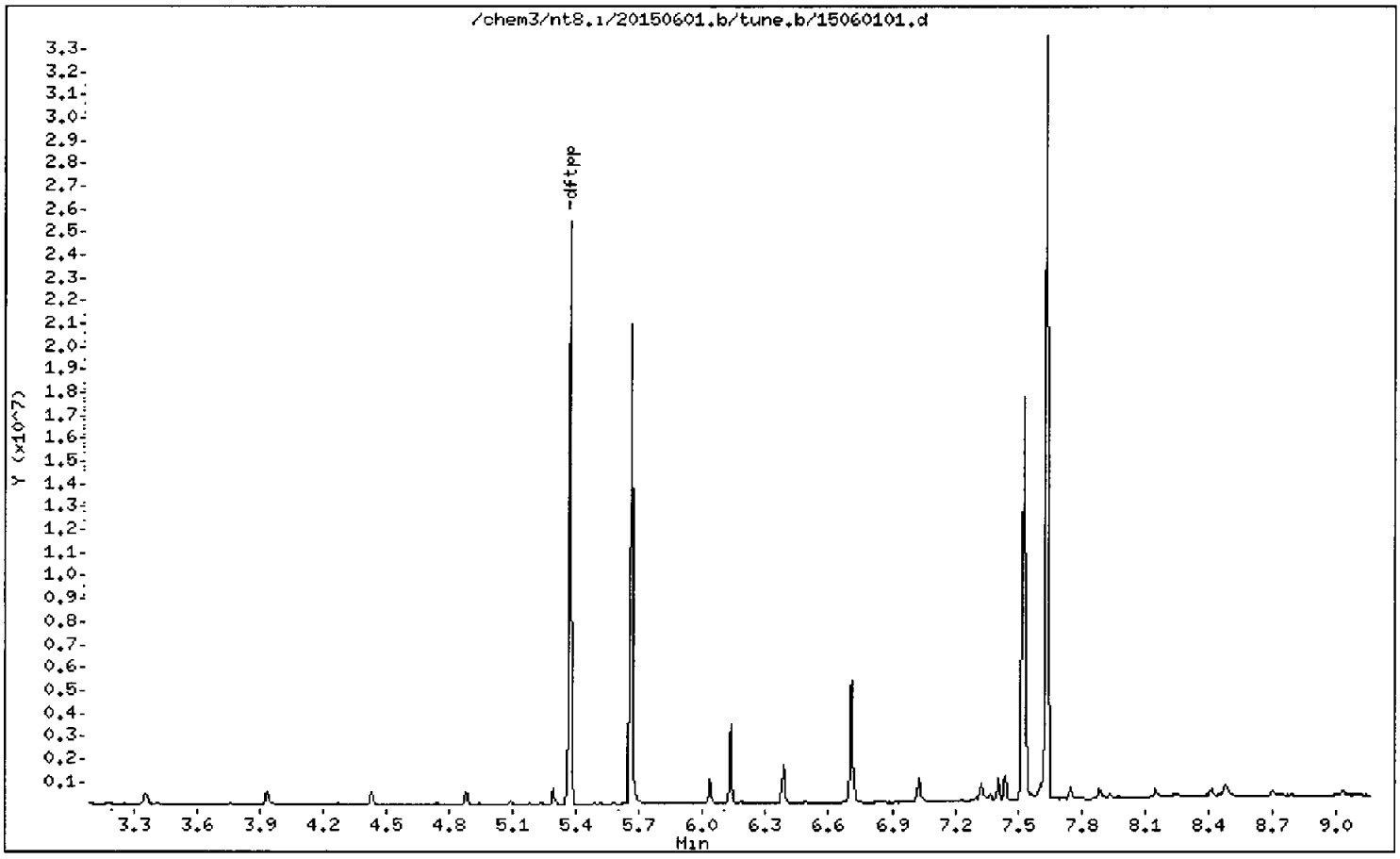
Instrument: nt8.i

Sample Info: DFTPP150601

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150601.b/ddt.b/15060101.d ARI ID: DDT150601
Method: /chem3/nt8.i/20150601.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 01-JUN-2015 09:54 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.665	1695897
Benzidine	7.532	4402599
4,4'-DDE	7.034	22918
4,4'-DDD	7.441	142018
4,4'-DDT	7.639	3655048

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

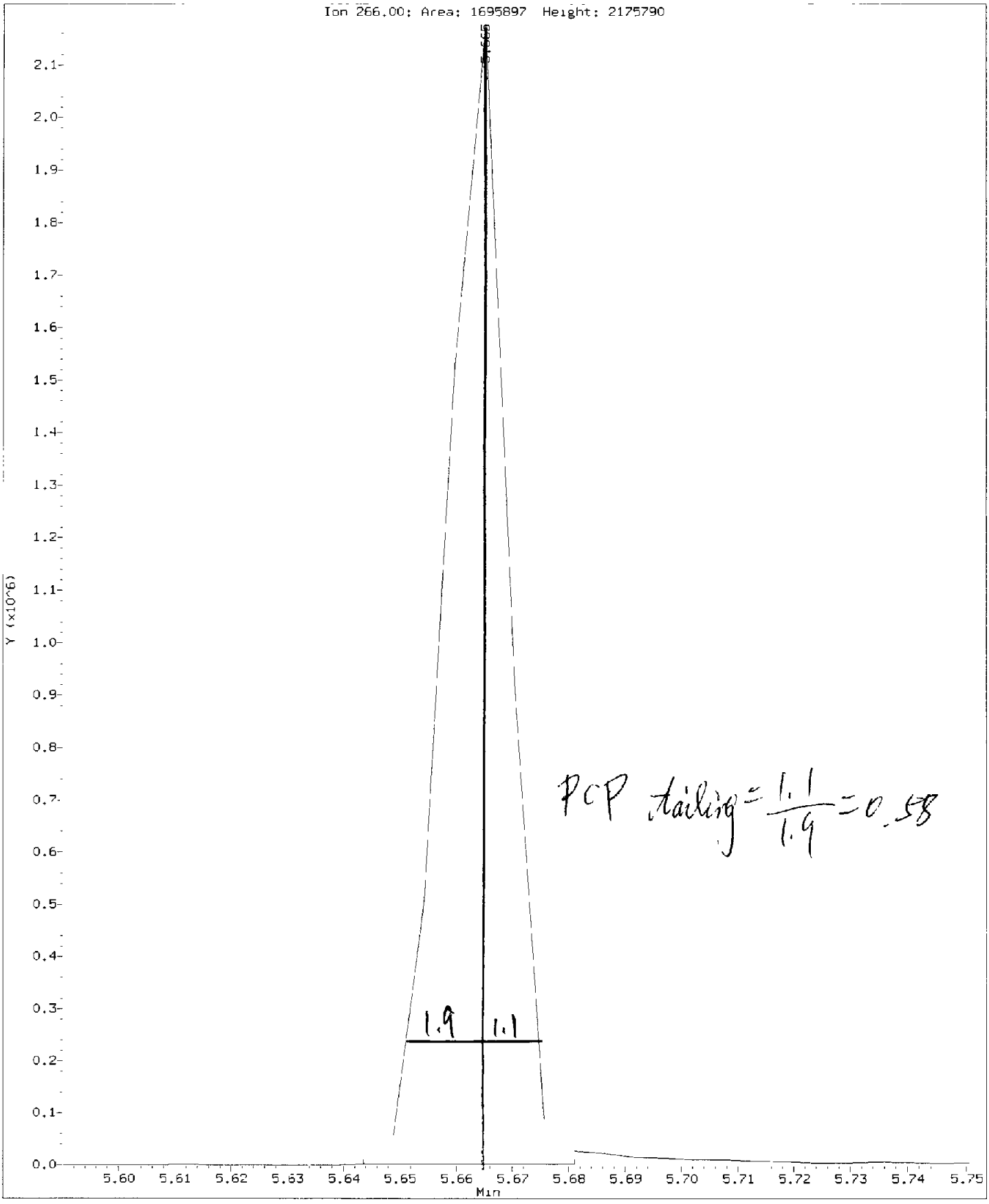
$$\text{DDT Percent Breakdown} = \frac{(22918 + 142018) * 100}{(22918 + 142018 + 3655048)}$$

DDT Percent Breakdown = 4.3 %

06/01/15

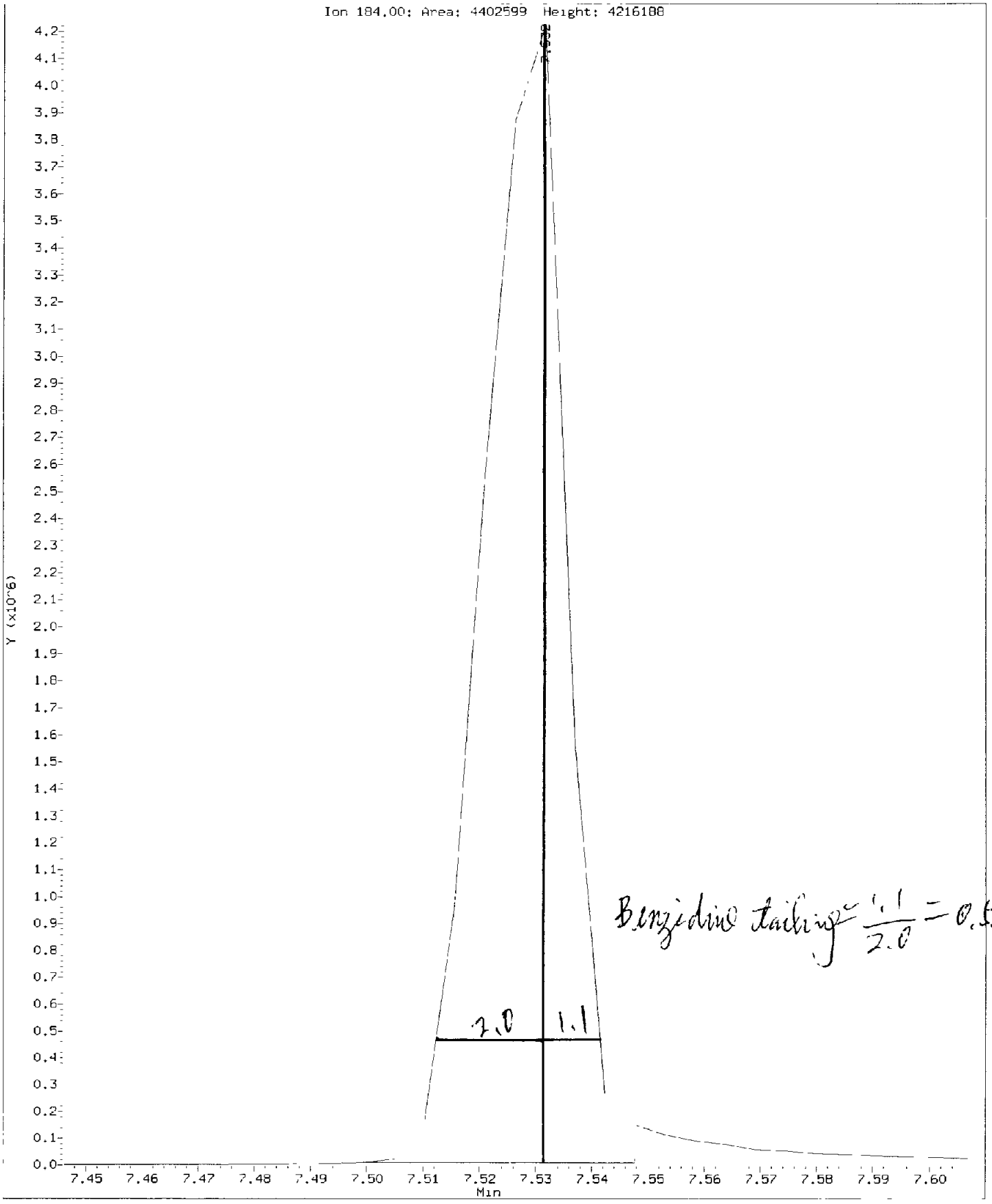
Data File: /chem3/nt8.i/20150601.b/ddt.b/15060101.d
Injection Date: 01-JUN-2015 09:54
Instrument: nt8.i
Client Sample ID: DDT150601

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.1/20150601.b/ddt.b/15060101.d
Injection Date: 01-JUN-2015 09:54
Instrument: nt8.1
Client Sample ID: DDT150601

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 01-JUN-2015 20:50
Lab File ID: 15060127.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: CCV150601 Quant Type: ISTD
Method: /chem3/nt8.i/20150601.b/ccv.b/FSIMPNA150413C.m

D. 06/02/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.96740	0 100	0.40924	50.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.62192	0.100	1 83037	50.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.61852	0.100	7.66510	50.00000	Averaged
15 1-methylnaphthalene	0.55829	0.58079	0.100	4.03187	50.00000	Averaged
21 Acenaphthylene	1.46062	1.53997	0.100	5.43248	50.00000	Averaged
23 Acenaphthene	0.97186	0.98665	0 100	1.52094	50.00000	Averaged
11 Dibenzofuran	1.34410	1.41767	0 100	5.47360	50.00000	Averaged
25 Fluorene	1 08551	1.24968	0 100	15.12401	50.00000	Averaged
30 Phenanthrene	0.95354	0.94588	0.100	-0.80349	50.00000	Averaged
31 Anthracene	0.85847	0.88972	0.100	3.64086	50.00000	Averaged
36 Fluoranthene	1.11525	1.10407	0.100	-1.00245	50.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	0.98338	0.100	-0.03971	50.00000	Averaged
39 Pyrene	1.11491	1.02612	0.100	-7.96451	50.00000	Averaged
46 Benzo(a)anthracene	1.00322	0.97847	0.100	-2.46663	50.00000	Averaged
48 Chrysene	1.00588	0.92848	0.100	-7.69449	50.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	0.98290	0 100	-6.41797	50.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	0.99084	0.100	-5.58285	50.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0.94129	0.100	-8.07843	50.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.85918	0.100	-8 25346	50.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.17120	0.100	4.12500	50.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.80892	0.010	6.20085	50.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.95539	0.100	4.28481	50.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	1.00276	0.100	1.34912	50.00000	Averaged
57 Perylene	0.97216	0.91593	0.100	-5.78433	50.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/ccv.b/15060127.d
Lab Smp Id: CCV150601 Client Smp ID: CCV150601
Inj Date : 01-JUN-2015 20:50
Operator : JZ Inst ID: nt8.i
Smp Info : CCV150601,
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/ccv.b/FSIMPNA150413C.m
Meth Date : 02-Jun-2015 15:40 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 27 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/04/15

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.742	4.742	(1.000)	351697	2.00000	
7 Naphthalene	128	4.771	4.771	(1.006)	425289	2 50000	2.510
$ 12 2-Methylnaphthalene-d10	152	5.466	5.466	(1.153)	273408	2.50000	2.546
14 2-Methylnaphthalene	141	5.514	5 514	(1.163)	271916	2.50000	2.692
15 1-methylnaphthalene	141	5.707	5 707	(1.203)	255330	2.50000	2.601
21 Acenaphthylene	152	6.892	6.892	(0.984)	390799	2.50000	2.636
* 22 Acenaphthene-d10	164	7.003	7.003	(1.000)	203016	2.00000	
23 Acenaphthene	153	7.050	7.050	(1.007)	250381	2.50000	2.538
11 Dibenzofuran	168	7.202	7.202	(1.028)	359762	2.50000	2.637
25 Fluorene	166	7.676	7.676	(1.096)	317132	2 50000	2.878
* 28 Phenanthrene-d10	188	9 024	9.024	(1.000)	357902	2 00000	
30 Phenanthrene	178	9 058	9.058	(1.004)	423165	2 50000	2.480
31 Anthracene	178	9.099	9.099	(1.008)	398041	2.50000	2.591
36 Fluoranthene	202	10 769	10.769	(1.193)	493938	2.50000	2.475
$ 253 Fluoranthene-d10	212	10 734	10.734	(1.190)	439944	2.50000	2.499
39 Pyrene	202	11.262	11.262	(0 816)	517667	2.50000	2.301
46 Benzo(a)anthracene	228	13.678	13.678	(0.991)	493629	2.50000	2.438
* 47 Chrysene-d12	240	13.801	13.801	(1.000)	403593	2.00000	
48 Chrysene	228	13.874	13.874	(1.005)	468411	2.50000	2.308
51 Benzo(b)fluoranthene	252	16.366	16.366	(0.928)	623468	2.50000	2.340
52 Benzo(k)fluoranthene	252	16.429	16.429	(0.932)	628509	2.50000	2.360
251 Benzo(j)fluoranthene	252	16.505	16.505	(0.936)	597077	2.50000	2.298
54 Benzo(a)pyrene	252	17.400	17.400	(0.987)	544995	2.50000	2.294
* 56 Perylene-d12	264	17.630	17.630	(1.000)	507454	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.049	20.049	(1.137)	742913	2.50000	2.603
$ 60 Dibenzo(a,h)anthracene-d14	292	19 932	19 932	(1.131)	513111	2.50000	2.655
62 Dibenzo(a,h)anthracene	278	20.037	20.037	(1.136)	606018	2.50000	2.607

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.020	21.020	(1.192)	636065	2.50000	2.534
57 Perylene	252	17.703	17.703	(1.004)	580988	2.50000	2.355

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060127.d
Lab Smp Id: CCV150601
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/ccv.b/FSIMPNA150413C.m
Misc Info: 15-

Calibration Date: 01-JUN-2015
Calibration Time: 20:50
Client Smp ID: CCV150601
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	351697	2.51
22 Acenaphthene-d10	230598	115299	461196	203016	-11.96
28 Phenanthrene-d10	373928	186964	747856	357902	-4.29
47 Chrysene-d12	381262	190631	762524	403593	5.86
56 Perylene-d12	380825	190412	761650	507454	33.25

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.80	13.30	14.30	13.80	0.00
56 Perylene-d12	17.63	17.13	18.13	17.63	0.00

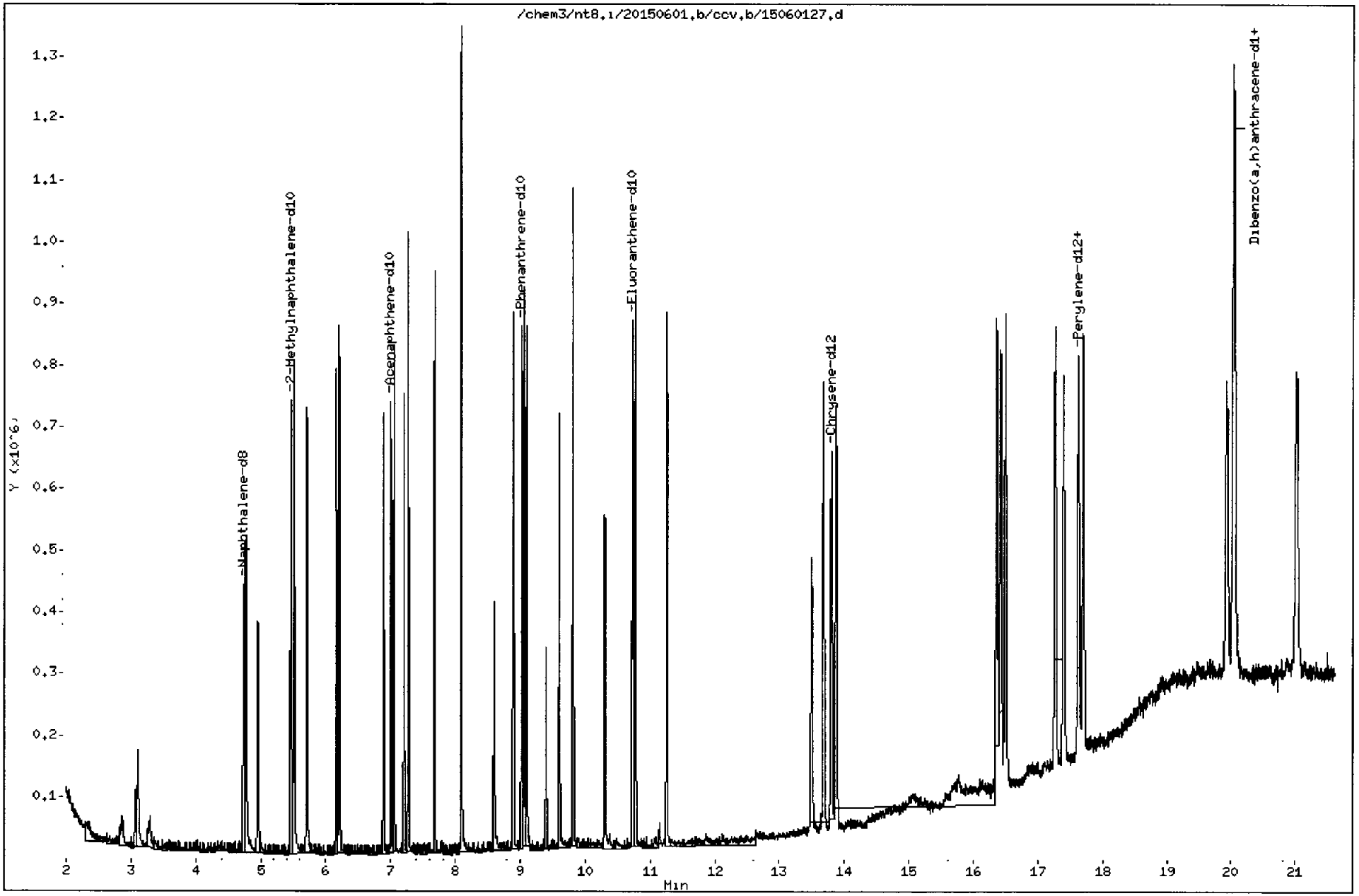
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.1/20150601.b/ccv.b/15060127.d
Date : 01-JUN-2015 20:50
Client ID: CCV150601
Sample Info: CCV150601,

Instrument: nt8.1

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15060127.d

Lab ID: CCV150601, Method: ccv.b/FSIMPNA150413C.m, Instrument: nt8.i, Date: 0

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060104.d
Lab Smp Id: AGC9LCSS1 Client Smp ID: AGC9LCSS1
Inj Date : 01-JUN-2015 11:00
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9LCSS1,
Misc Info : 15-9438
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 16:51 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	10.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.729	4.739	(1.000)	391981	2.00000	
7 Naphthalene	128	4.758	4.767	(1.006)	280003	1.48285	74.14
$ 12 2-Methylnaphthalene-d10	152	5.460	5.463	(1.154)	187828	1.56917	78.46
14 2-Methylnaphthalene	141	5.507	5.510	(1 164)	171272	1.52115	76.06
15 1-methylnaphthalene	141	5.703	5.703	(1.206)	152880	1.39720	69.86
21 Acenaphthylene	152	6.889	6.892	(0.984)	286016	1.55403	77.70
* 22 Acenaphthene-d10	164	7.000	7.000	(1.000)	252012	2.00000	
23 Acenaphthene	153	7.050	7.050	(1.007)	194914	1.59164	79.58
11 Dibenzofuran	168	7.199	7.202	(1.028)	278043	1.64168	82.08
25 Fluorene	166	7 673	7 673	(1.096)	240976	1.76177	88.09
* 28 Phenanthrene-d10	188	9.020	9.020	(1.000)	438999	2.00000	
30 Phenanthrene	178	9.055	9.055	(1.004)	382107	1.82563	91 28
31 Anthracene	178	9.096	9.096	(1.008)	331292	1.75815	87.91
36 Fluoranthene	202	10.766	10.769	(1.194)	489951	2.00145	100.1
$ 253 Fluoranthene-d10	212	10.731	10.734	(1.190)	504600	2.33678	116.8

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.262	11.265	(0 816)	522107	1.99707	99 85
	46 Benzo(a)anthracene	228	13.678	13.684	(0 991)	510247	2.16901	108 5
*	47 Chrysene-d12	240	13 801	13.807	(1.000)	468981	2.00000	
	48 Chrysene	228	13 871	13.880	(1 005)	480971	2.03914	102.0
	51 Benzo(b)fluoranthene	252	16 365	16.369	(0 929)	531108	2.12940	106.5
	52 Benzo(k)fluoranthene	252	16 422	16.429	(0 932)	528040	2.11886	105.9
	251 Benzo(j)fluoranthene	252	16 501	16.505	(0.936)	405483	1.66746	83.37
	54 Benzo(a)pyrene	252	17.396	17.402	(0.987)	422838	1.90137	95.07
*	56 Perylene-d12	264	17.624	17.633	(1.000)	474941	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.037	20.046	(1.137)	569558	2.13232	106.6
$	60 Dibenzo(a,h)anthracene-d14	292	19.923	19.929	(1.130)	464500	2.56802	128.4
	62 Dibenzo(a,h)anthracene	278	20.027	20.033	(1.136)	484530	2.22717	111.4
	61 Benzo(g,h,i)perylene	276	21.004	21.010	(1.192)	407585	1.73474	86.74
	57 Perylene	252	17.700	17.706	(1.004)	420261	1.82042	91.02

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060104.d
Lab Smp Id: AGC9LCSS1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: AGC9LCSS1
Level: LOW
Sample Type: Solid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	391981	14.25
22 Acenaphthene-d10	230598	115299	461196	252012	9.29
28 Phenanthrene-d10	373928	186964	747856	438999	17.40
47 Chrysene-d12	381262	190631	762524	468981	23.01
56 Perylene-d12	380825	190412	761650	474941	24.71

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.20
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.80	-0.05
56 Perylene-d12	17.63	17.13	18.13	17.62	-0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: KJC
Sample Matrix: SOLID
Lab Smp Id: AGC9LCSS1
Level: LOW
Data Type: MS DATA
SpikeList File: pnalcss.spk
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

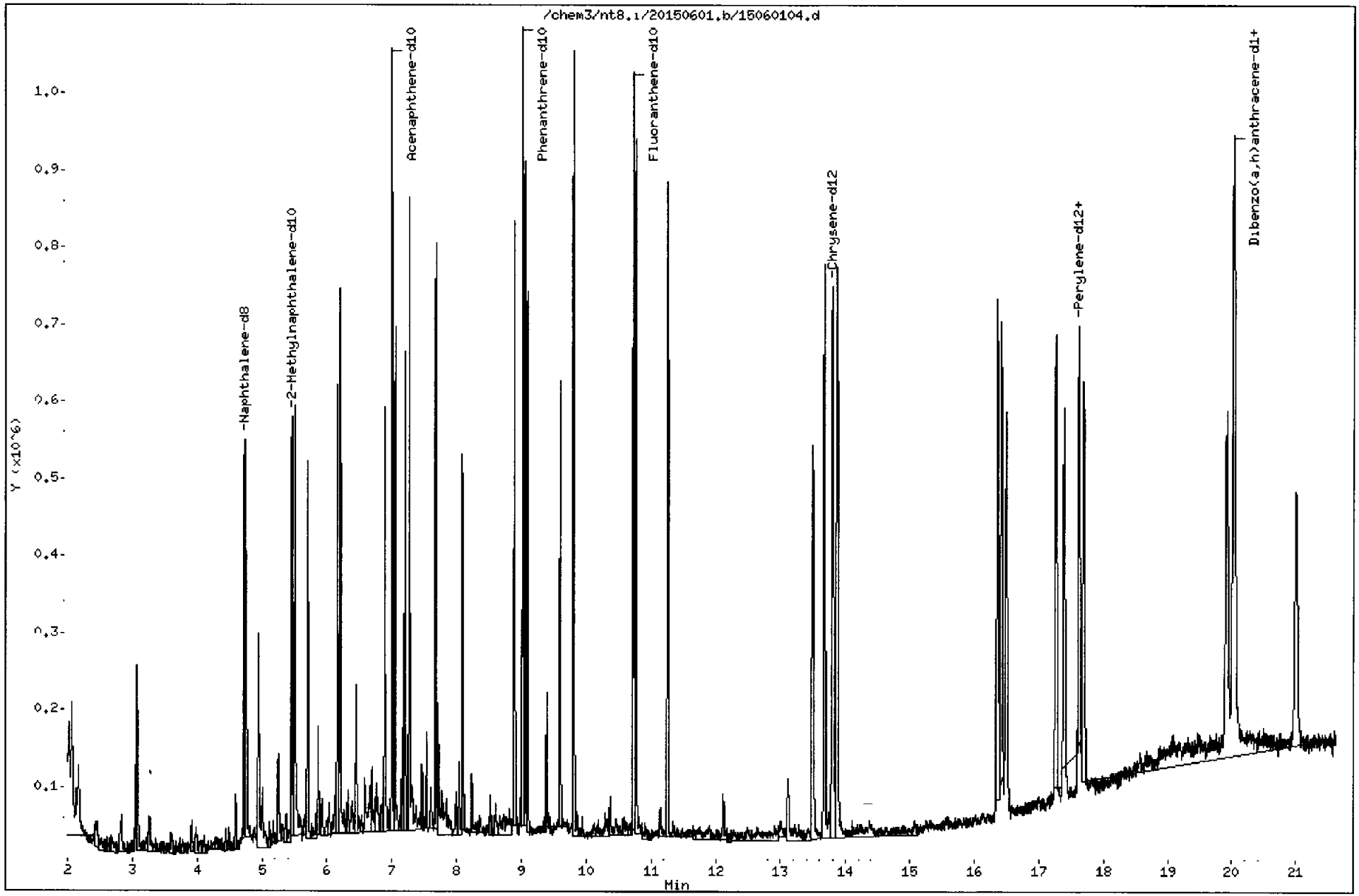
Client SDG: AGC9
Fraction: SV
Client Smp ID: AGC9LCSS1
Operator: JZ
SampleType: LCS
Quant Type: ISTD

	SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7	Naphthalene	150.0	74.14	49.43	36-120
14	2-Methylnaphthalen	150.0	76.06	50.71	35-120
15	1-methylnaphthalen	150.0	69.86	46.57	39-120
21	Acenaphthylene	150.0	77.70	51.80	35-120
23	Acenaphthene	150.0	79.58	53.05	39-120
11	Dibenzofuran	150.0	82.08	54.72	38-120
25	Fluorene	150.0	88.09	58.73	41-120
30	Phenanthrene	150.0	91.28	60.85	46-120
31	Anthracene	150.0	87.91	58.60	36-120
36	Fluoranthene	150.0	100.1	66.72	46-120
39	Pyrene	150.0	99.85	66.57	49-120
46	Benzo(a)anthracene	150.0	108.5	72.30	42-120
48	Chrysene	150.0	102.0	67.97	48-120
51	Benzo(b)fluoranthe	150.0	106.5	70.98	35-127
52	Benzo(k)fluoranthe	150.0	105.9	70.63	37-129
251	Benzo(j)fluoranthe	150.0	83.37	55.58	40-120
54	Benzo(a)pyrene	150.0	95.07	63.38	36-120
63	Indeno(1,2,3-cd)py	150.0	106.6	71.08	40-120
62	Dibenzo(a,h)anthra	150.0	111.4	74.24	38-120
61	Benzo(g,h,i)peryle	150.0	86.74	57.82	38-120
57	Perylene	150.0	91.02	60.68	44-120

	SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12	2-Methylnaphthalen	150.0	78.46	52.31	32-120
$ 253	Fluoranthene-d10	150.0	116.8	77.89	36-134
$ 60	Dibenzo(a,h)anthra	150.0	128.4	85.60	21-133

Data File: /chem3/nt8.i/20150601.b/15060104.d
Date : 01-JUN-2015 11:00
Client ID: AGC9LCSS1
Sample Info: AGC9LCSS1.
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15060104.d

Lab ID: AGC9LCSS1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060105.d
Lab Smp Id: AGC9A Client Smp ID: SDP-01(3.0-4.0)
Inj Date : 01-JUN-2015 11:26
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9A
Misc Info : 15-9431
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.28000	Weight of sample extracted (g)
M	11.10000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.733	4.739	(1.000)	377292	2.00000	
7 Naphthalene	128	4.758	4.767	(1.005)	34074	0.18748	8.587
$ 12 2-Methylnaphthalene-d10	152	5.460	5.463	(1.154)	165577	1.43714	65.82
14 2-Methylnaphthalene	141	5.507	5.510	(1.164)	20434	0.18855	8.636
15 1-methylnaphthalene	141	5.703	5.703	(1.205)	8922	0.08472	3.880
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.000	7.000	(1.000)	242930	2.00000	
23 Acenaphthene	153	7 050	7 050	(1.007)	6200	0.05253	2.406
11 Dibenzofuran	168	7.202	7.202	(1.029)	13628	0.08348	3.823
25 Fluorene	166	Compound Not Detected.					
* 28 Phenanthrene-d10	188	9.020	9.020	(1.000)	417344	2.00000	
30 Phenanthrene	178	9.055	9.055	(1.004)	162864	0.81851	37.49
31 Anthracene	178	9.096	9.096	(1.008)	30325	0 16928	7.753
36 Fluoranthene	202	10.769	10.769	(1.194)	237809	1.02186	46.80
$ 253 Fluoranthene-d10	212	10 731	10.734	(1.190)	456295	2 22273	101 8

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
	39 Pyrene	202	11.262	11.265	(0.816)	265371	1.00004	45.80
	46 Benzo(a)anthracene	228	13 678	13.684	(0.991)	123254	0.51619	23.64
*	47 Chrysene-d12	240	13.804	13.807	(1.000)	476019	2.00000	
	48 Chrysene	228	13 877	13.880	(1.005)	158363	0.66148	30.30
	51 Benzo(b)fluoranthene	252	16.365	16.369	(0.928)	129161	0.50884	23.31
	52 Benzo(k)fluoranthene	252	16.422	16.429	(0.931)	66620	0.26268	12.03
	251 Benzo(j)fluoranthene	252	16 498	16.505	(0.936)	65715	0.26554	12.16
	54 Benzo(a)pyrene	252	17 399	17.402	(0.987)	126838	0.56043	25.67
*	56 Perylene-d12	264	17.633	17.633	(1.000)	483351	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.046	20.046	(1.137)	111164	0.40894	18.73
$	60 Dibenzo(a,h)anthracene-d14	292	19.929	19.929	(1.130)	401652	2.18193	99.93
	62 Dibenzo(a,h)anthracene	278	20.033	20.033	(1.136)	23259	0.10505	4.812
	61 Benzo(g,h,i)perylene	276	21.004	21.010	(1.191)	146400	0.61226	28.04
	57 Perylene	252	17.706	17.706	(1.004)	49969	0.21269	9.741

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060105.d
Lab Smp Id: AGC9A
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9431

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-01(3.0-4.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	377292	9.97
22 Acenaphthene-d10	230598	115299	461196	242930	5.35
28 Phenanthrene-d10	373928	186964	747856	417344	11.61
47 Chrysene-d12	381262	190631	762524	476019	24.85
56 Perylene-d12	380825	190412	761650	483351	26.92

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.80	-0.02
56 Perylene-d12	17.63	17.13	18.13	17.63	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

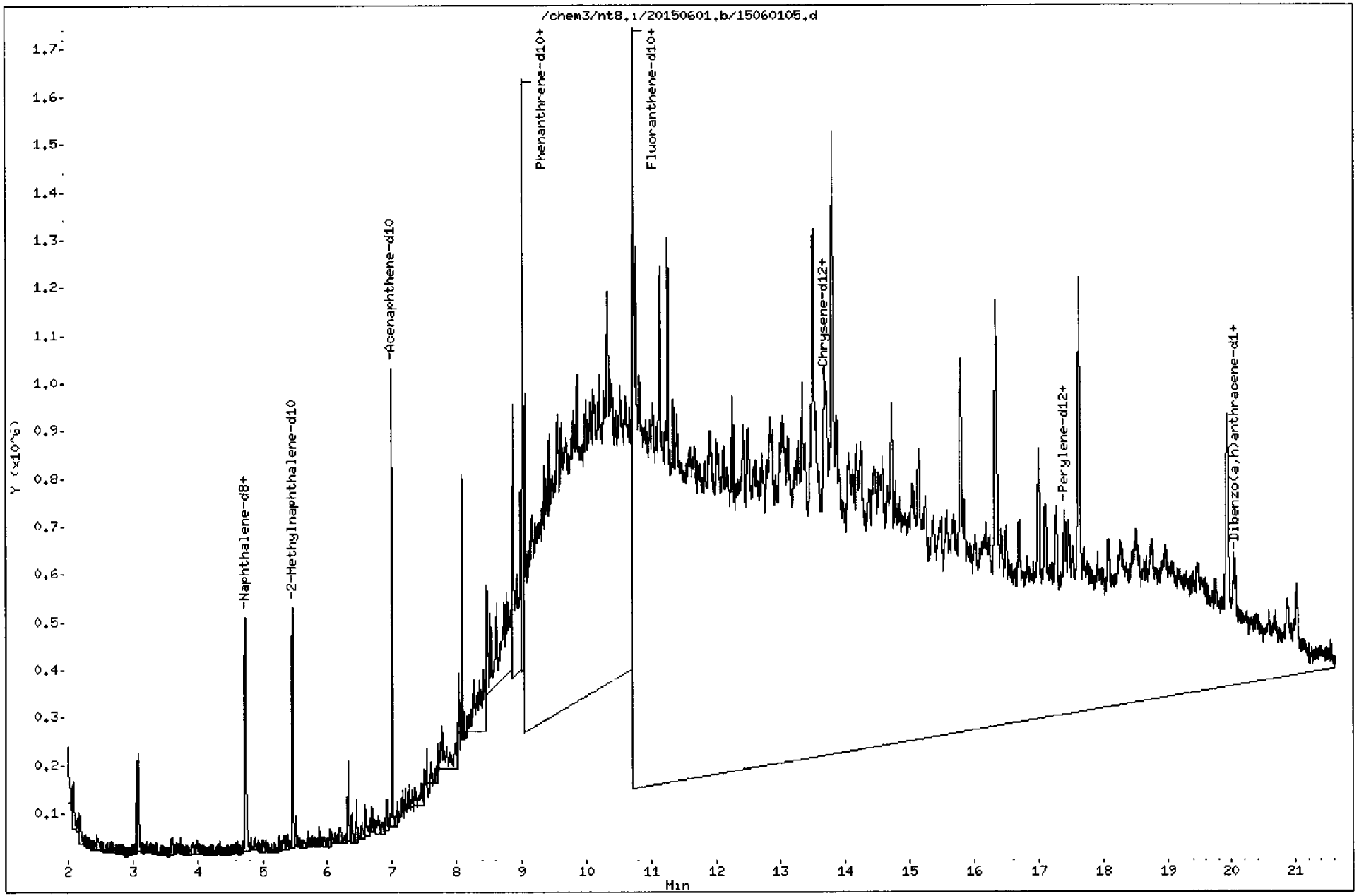
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9A
Client Smp ID: SDP-01(3.0-4.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9431

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	137.4	65.82	47.90	32-120
$ 253 Fluoranthene-d10	137.4	101.8	74.09	36-134
$ 60 Dibenzo(a,h)anthra	137.4	99.93	72.73	21-133

Data File: /chem3/nt8.i/20150601.b/15060105.d
Date : 01-JUN-2015 11:26
Client ID: SDP-01(3.0-4.0)
Sample Info: AGC9A
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

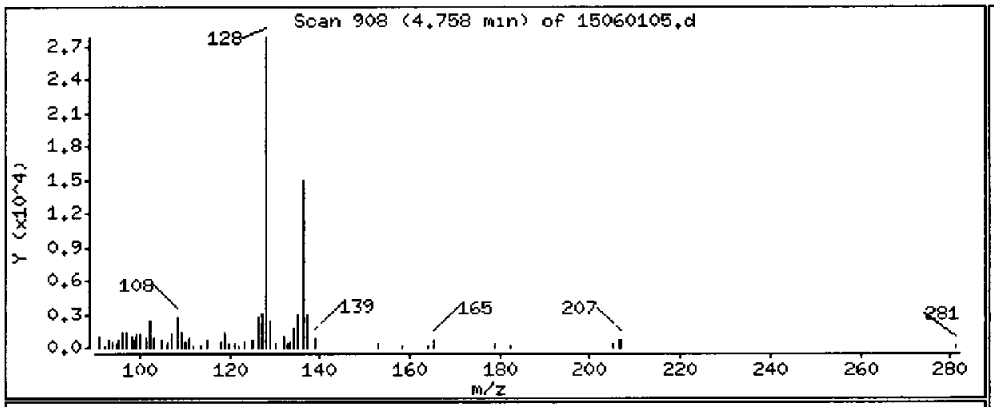
Operator: JZ

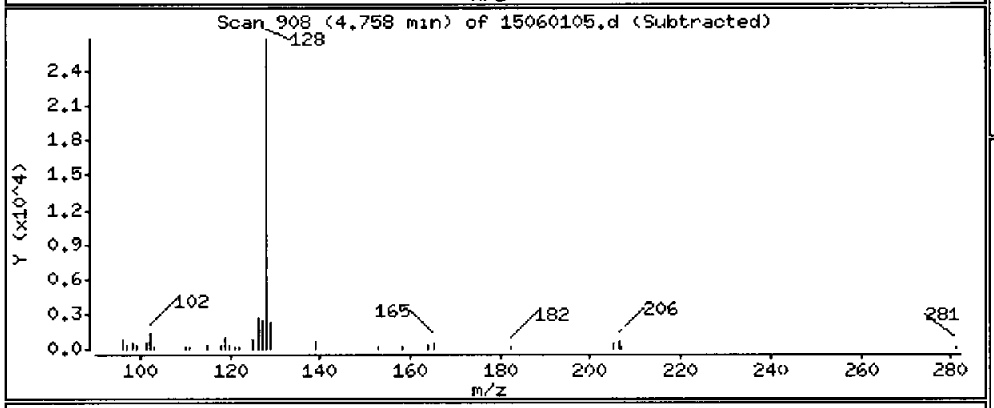
Column phase: ZB-35

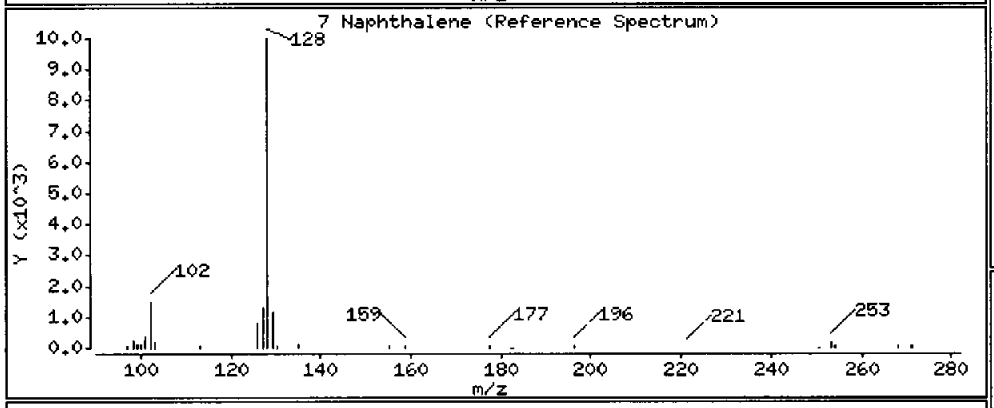
Column diameter: 0.25

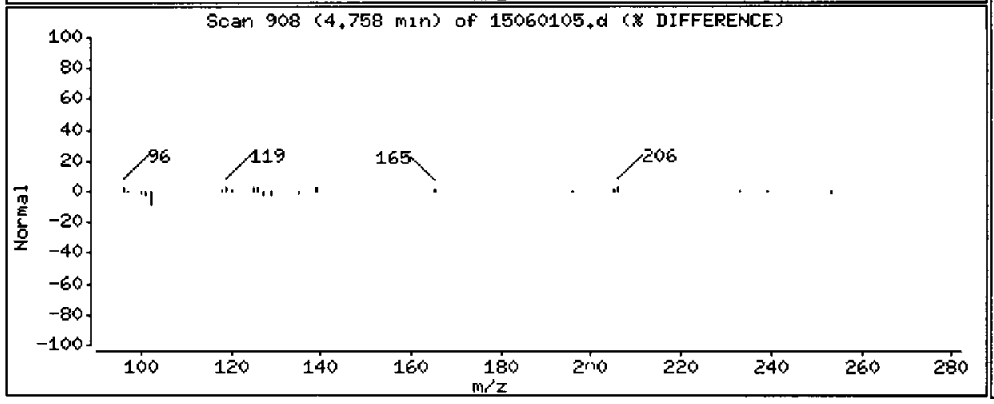
7 Naphthalene

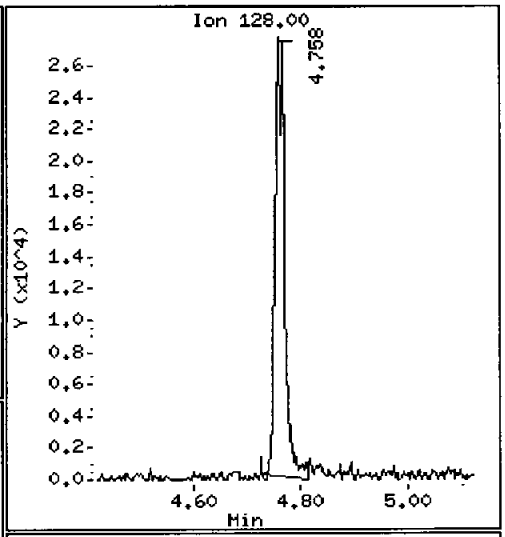
Concentration: 8.587 ug/kg

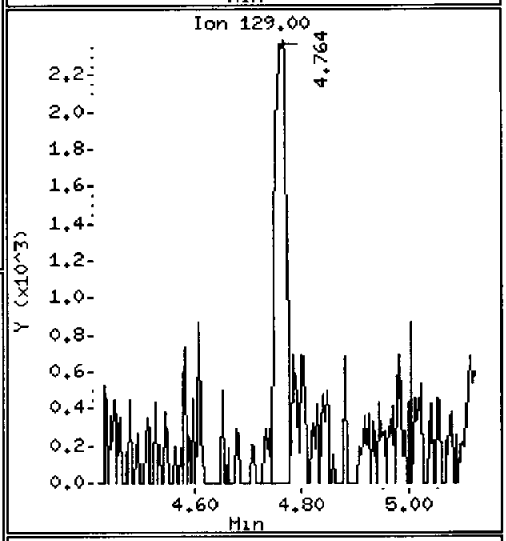


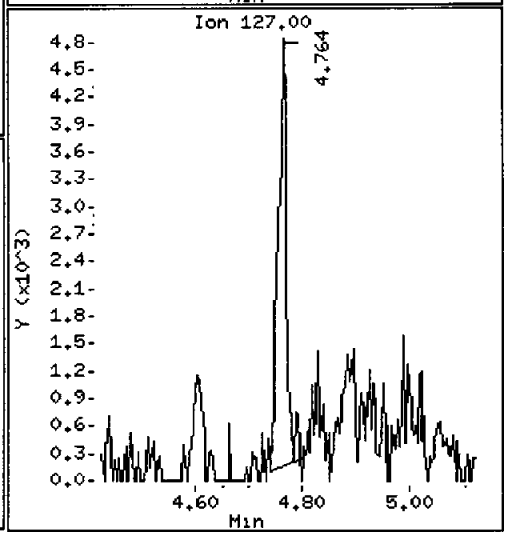












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

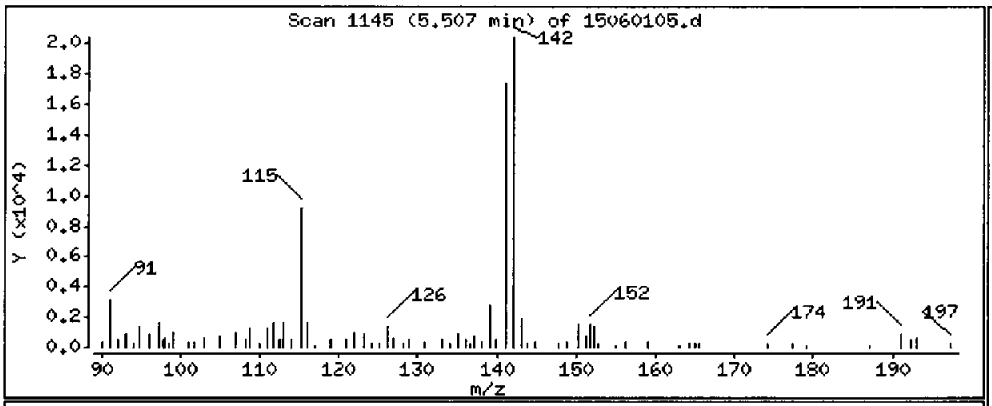
Operator: JZ

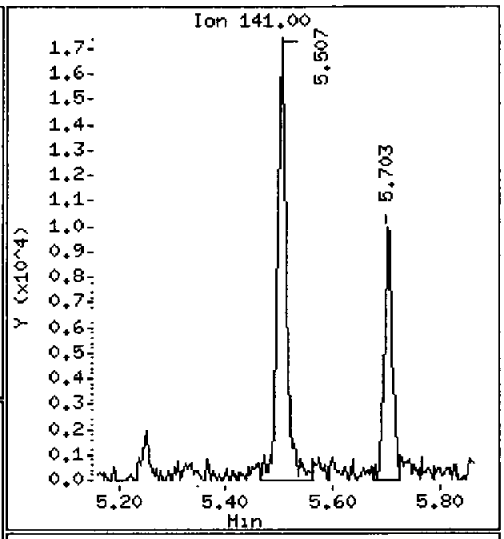
Column phase: ZB-35

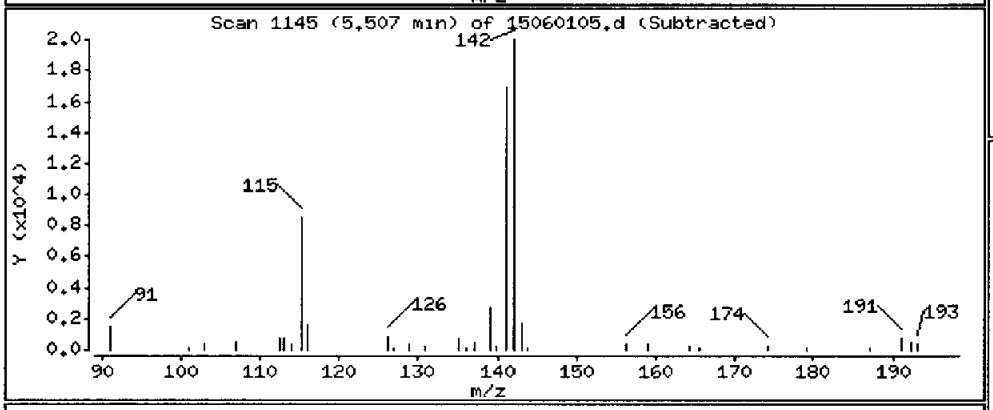
Column diameter: 0.25

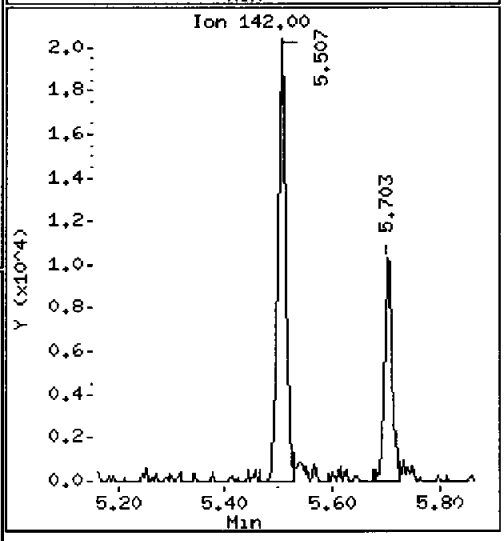
14 2-Methylnaphthalene

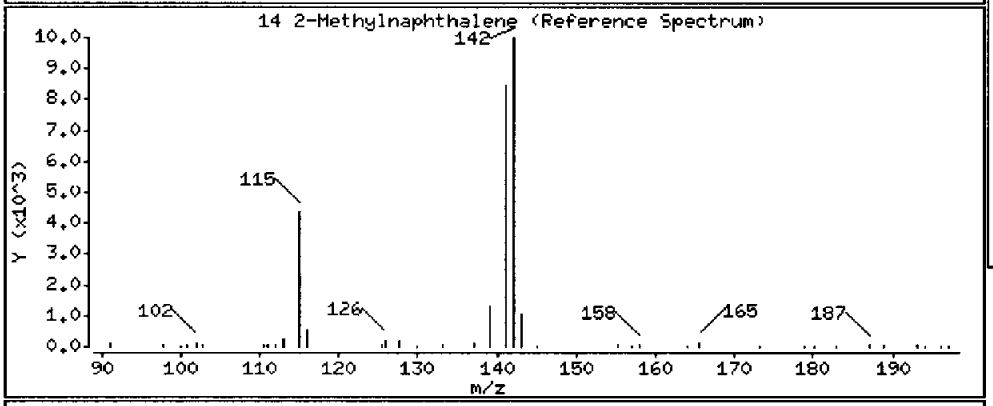
Concentration: 8.636 ug/kg

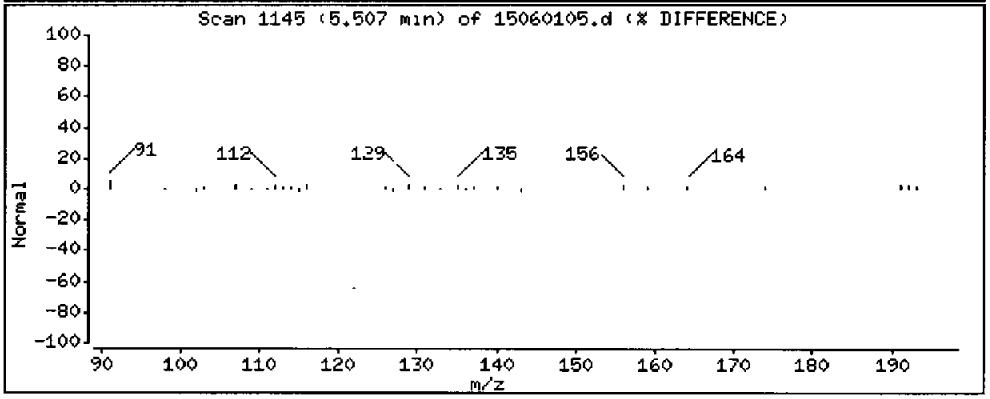












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

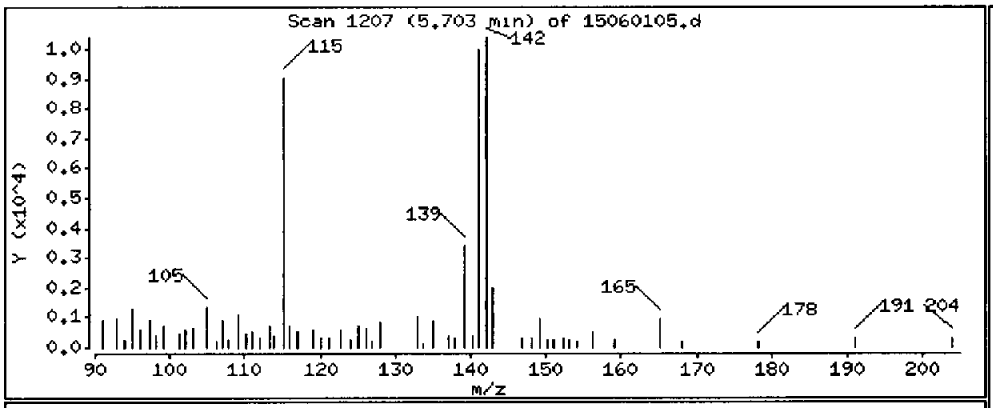
Operator: JZ

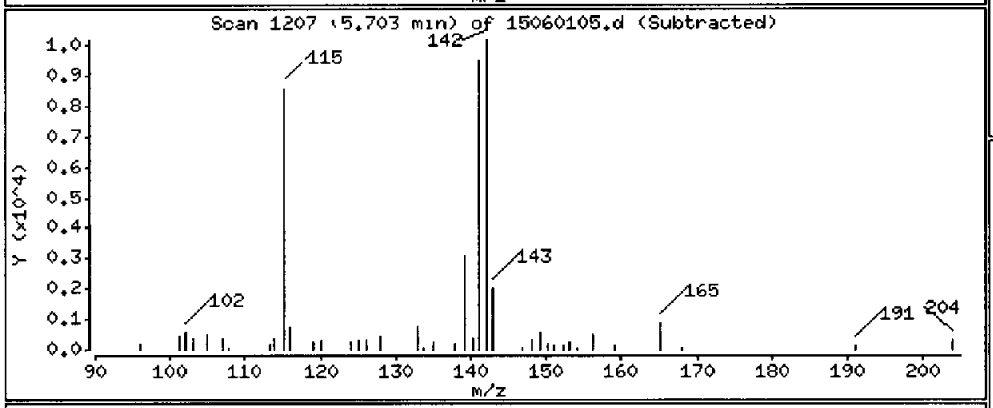
Column phase: ZB-35

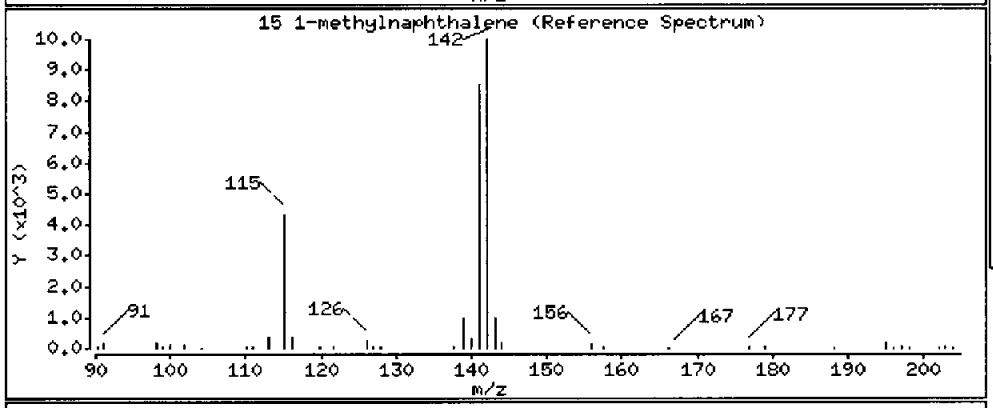
Column diameter: 0.25

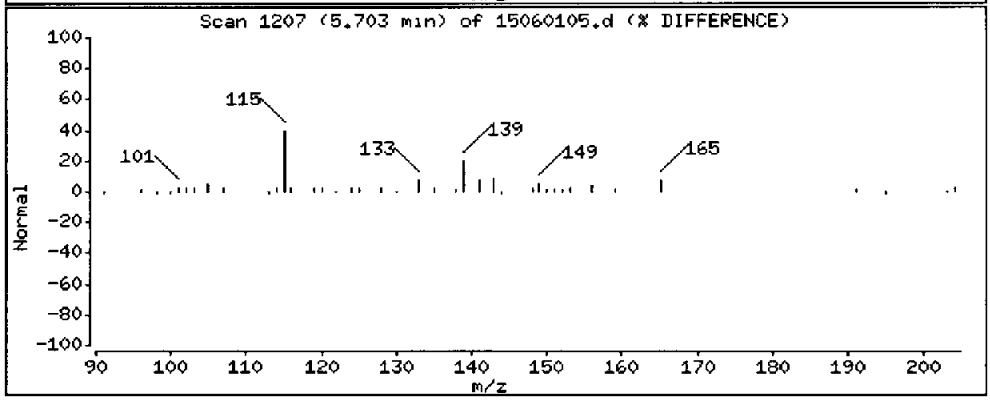
15 1-methylnaphthalene

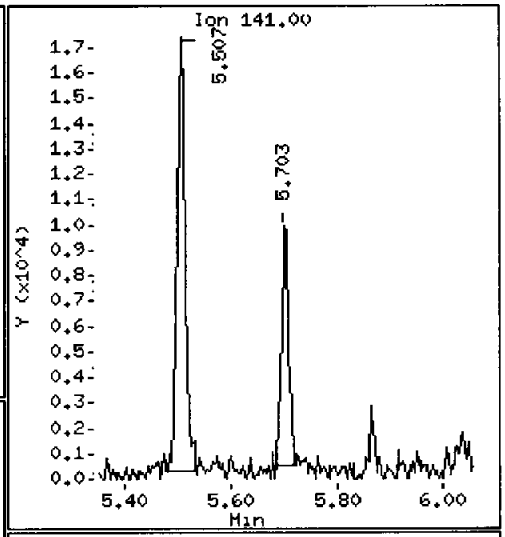
Concentration: 3.880 ug/kg

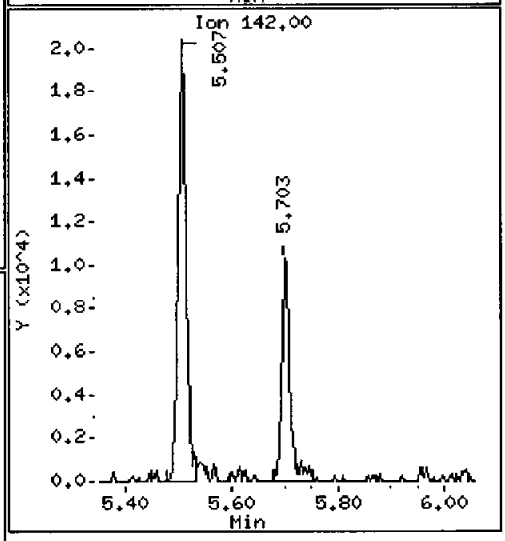












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

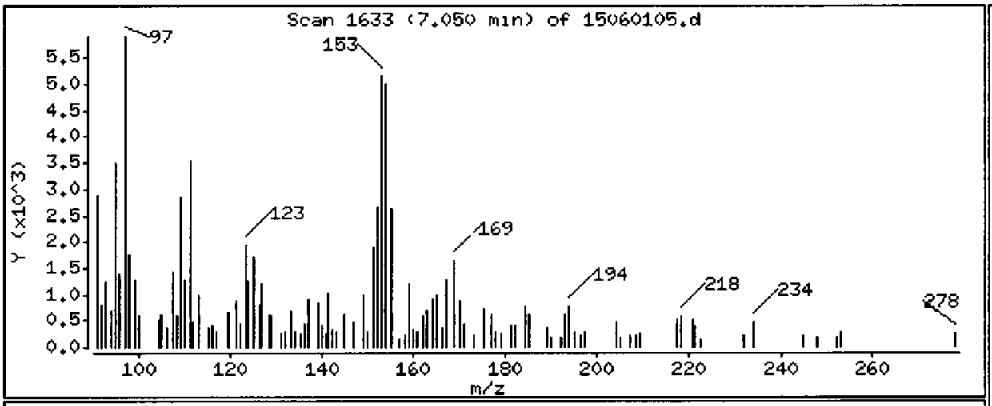
Operator: JZ

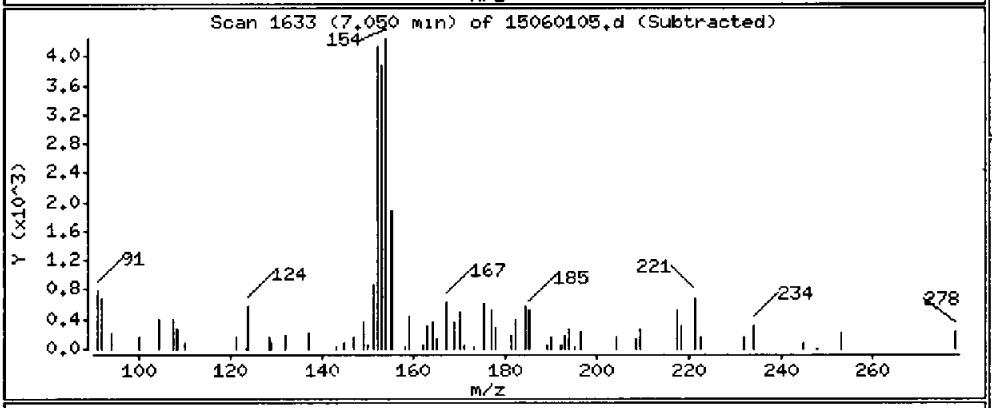
Column phase: ZB-35

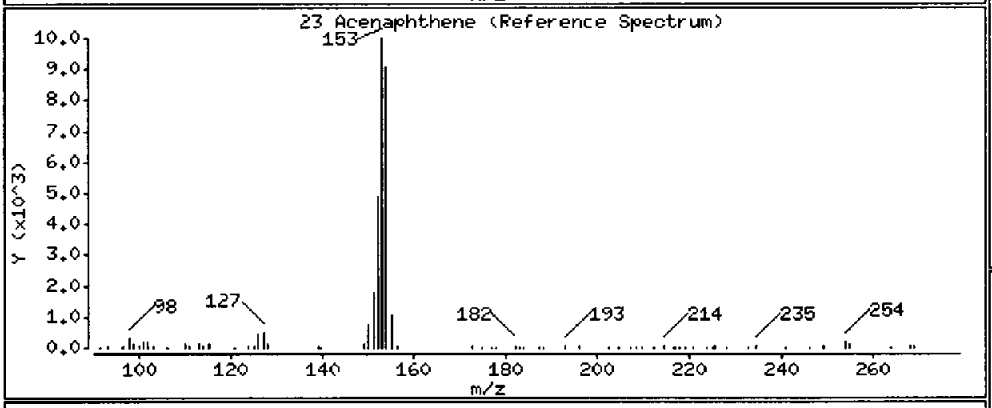
Column diameter: 0.25

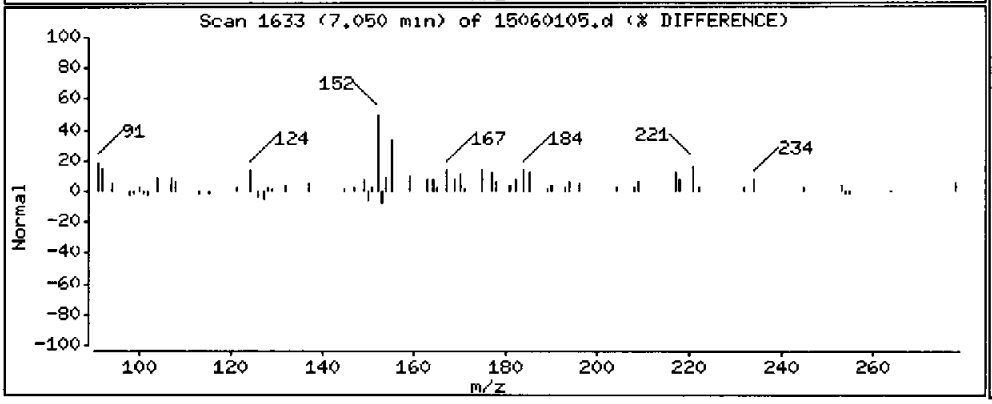
23 Acenaphthene

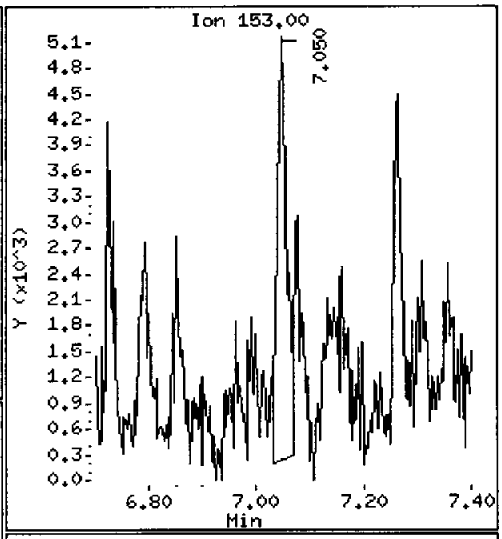
Concentration: 2.406 ug/kg

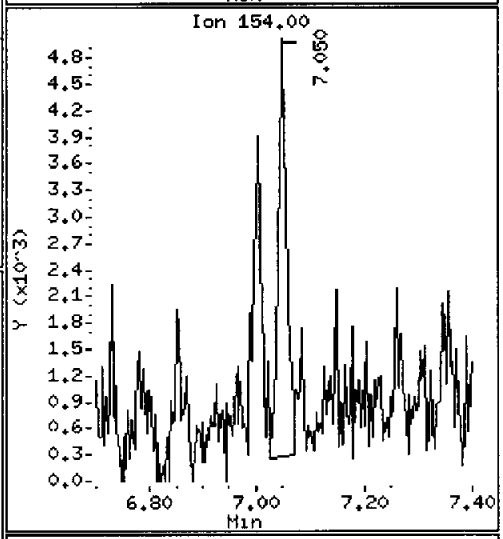


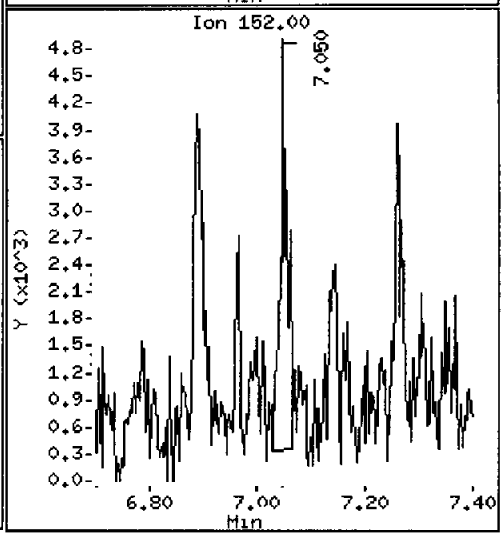












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

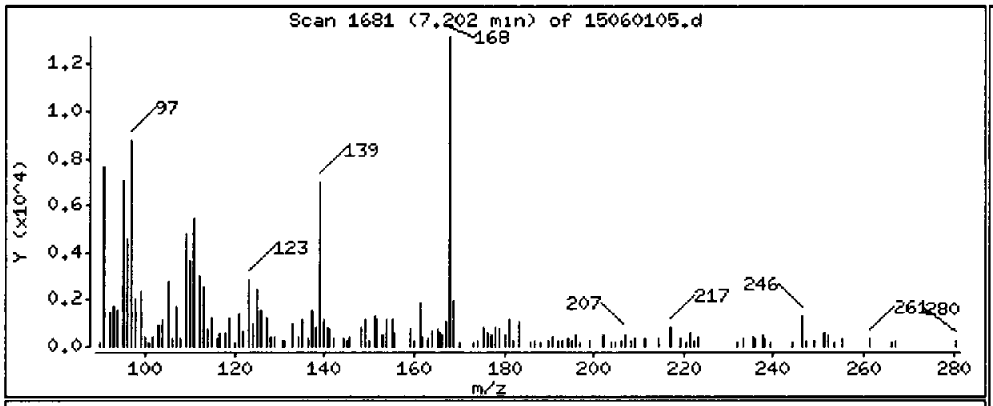
Operator: JZ

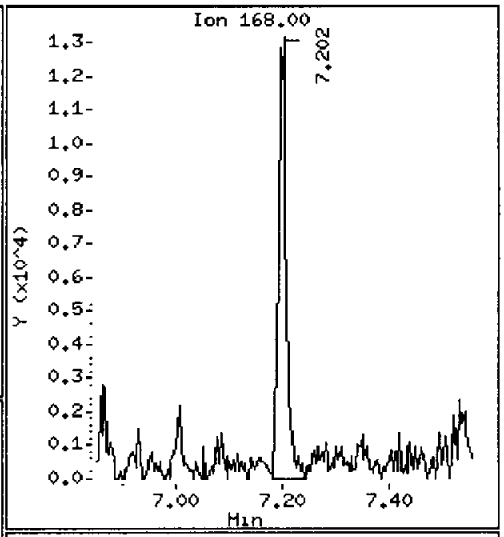
Column phase: ZB-35

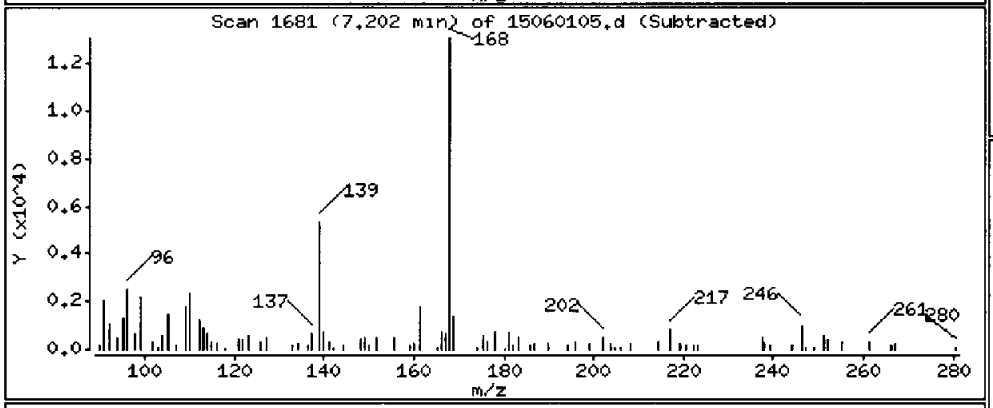
Column diameter: 0.25

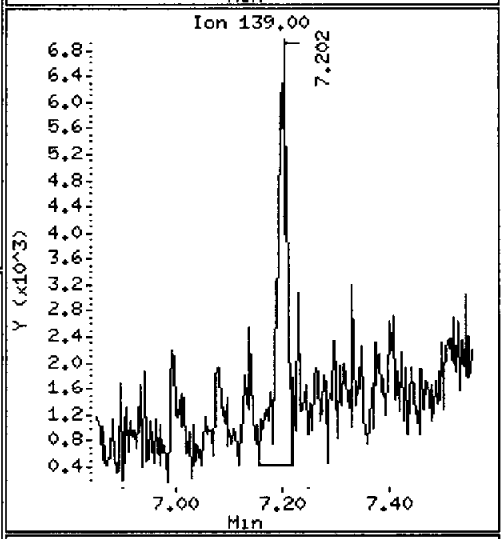
11 Dibenzofuran

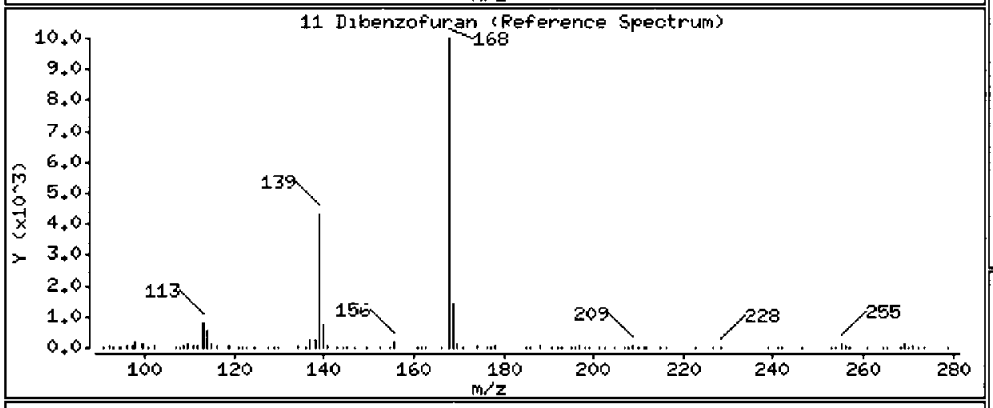
Concentration: 3.823 ug/kg

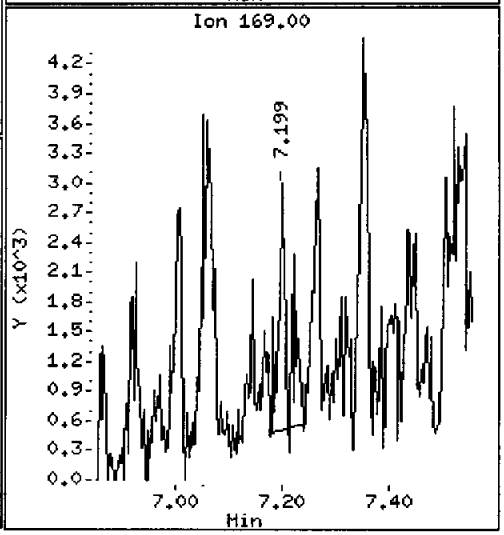


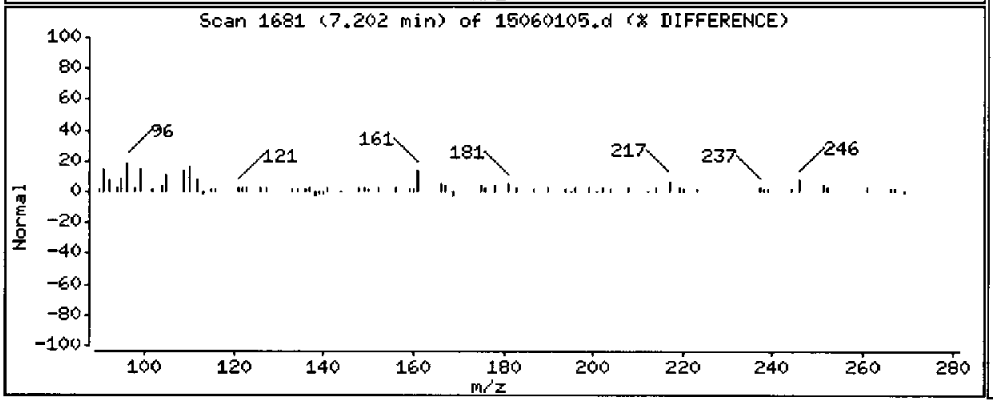












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

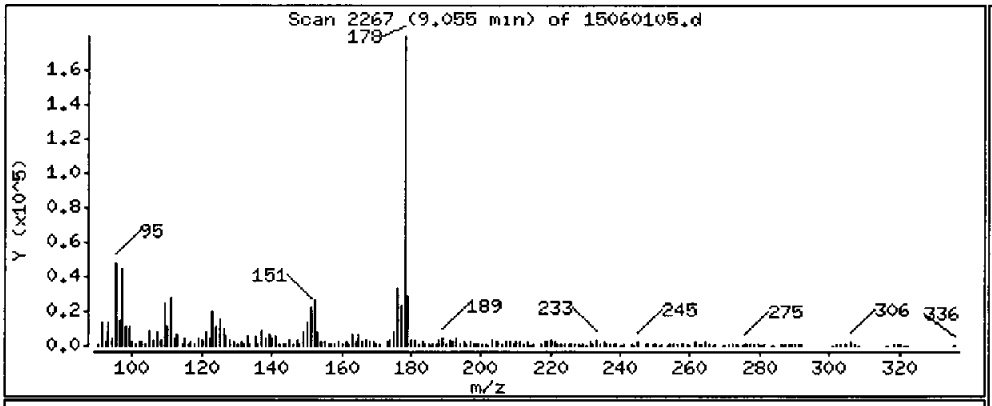
Operator: JZ

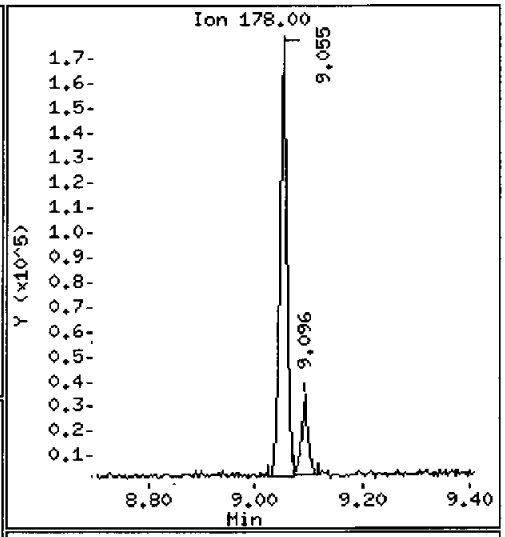
Column phase: ZB-35

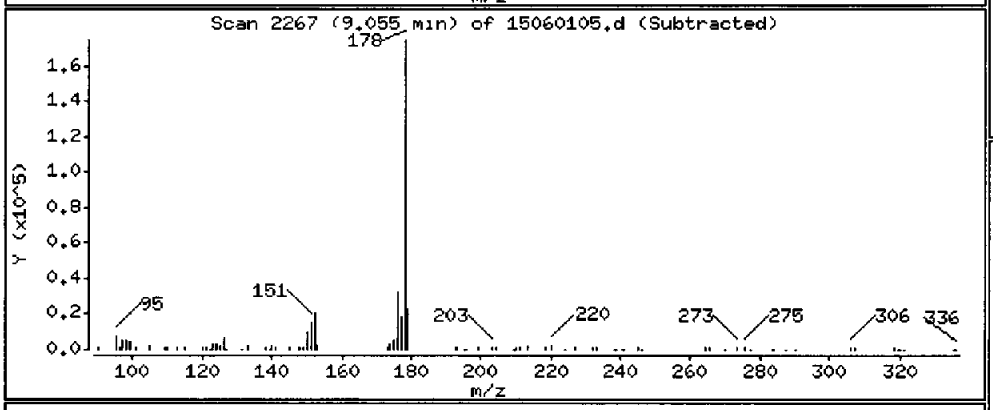
Column diameter: 0.25

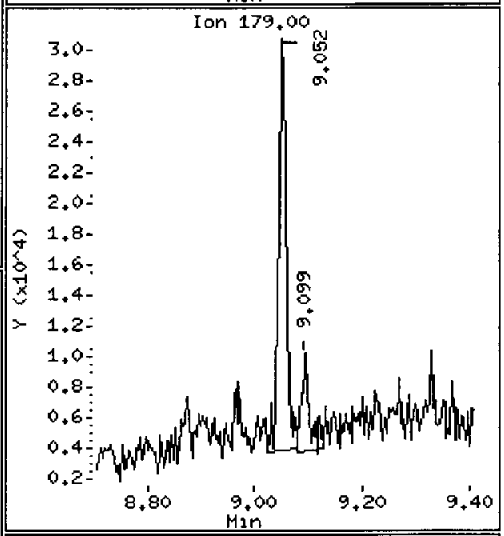
30 Phenanthrene

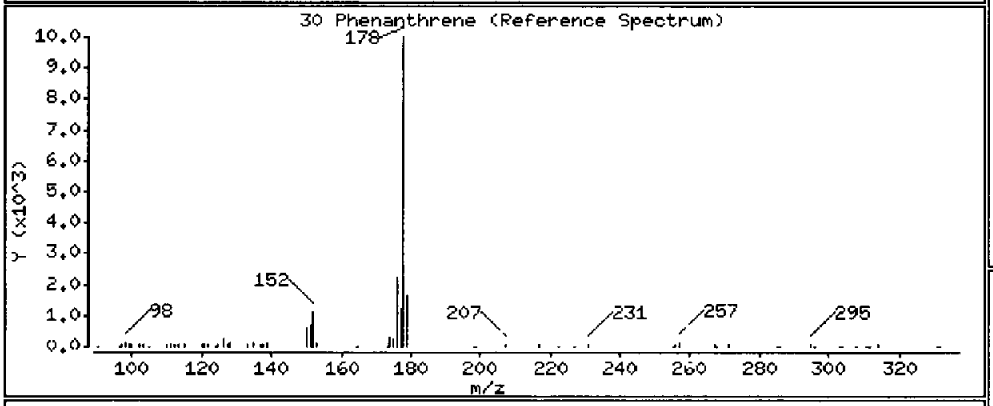
Concentration: 37.49 ug/kg

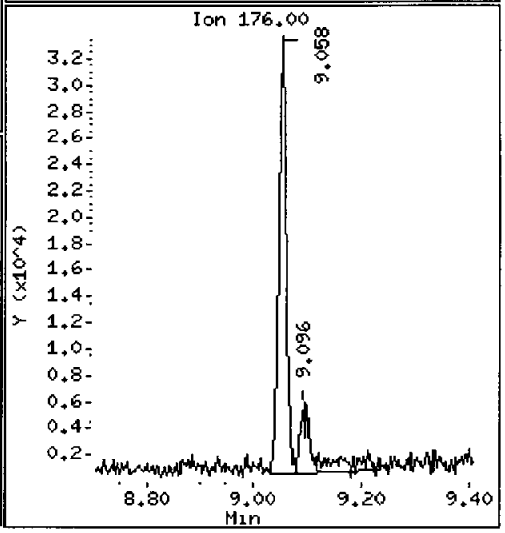


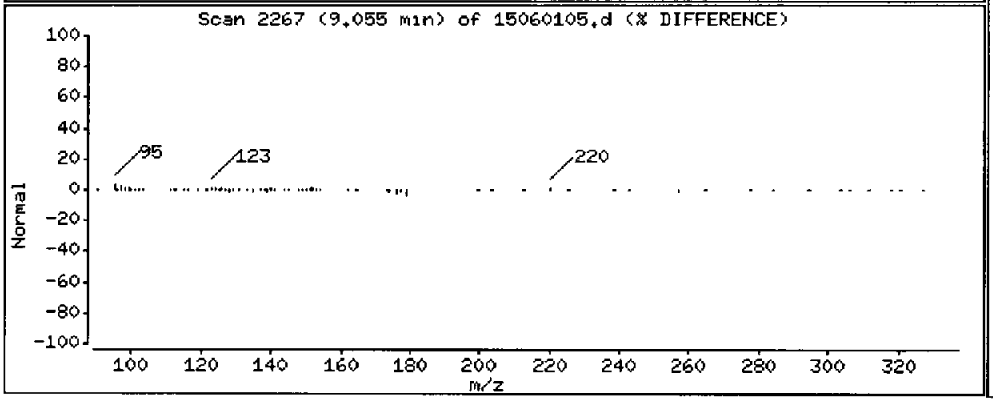












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

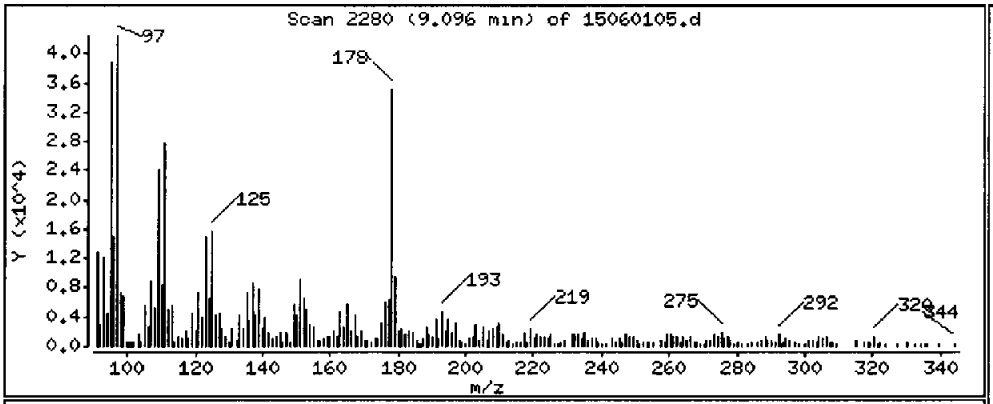
Operator: JZ

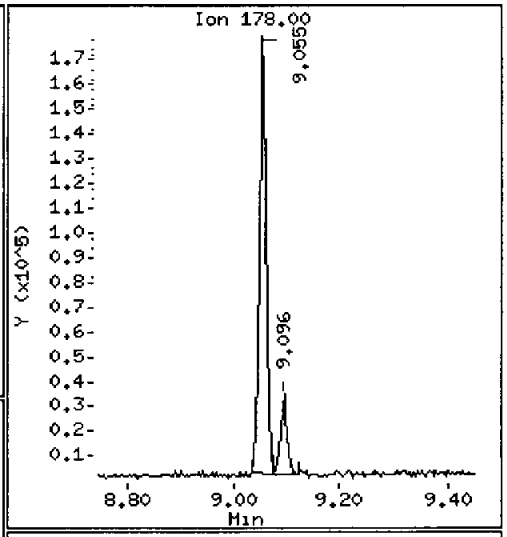
Column phase: ZB-35

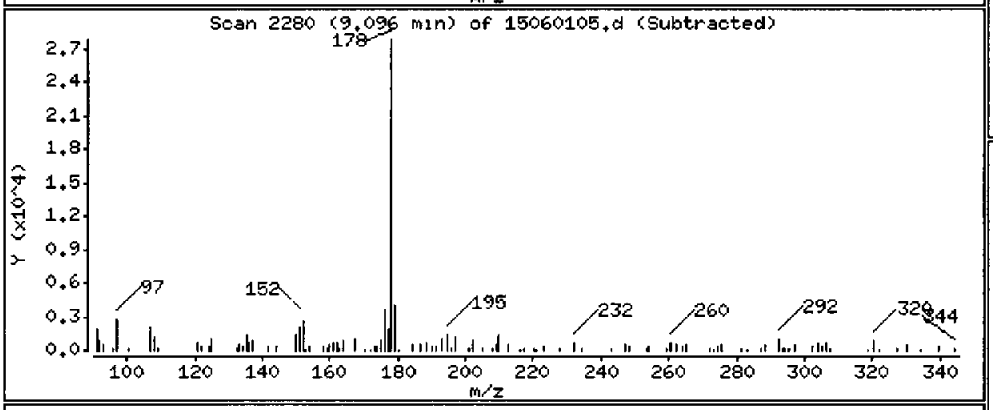
Column diameter: 0.25

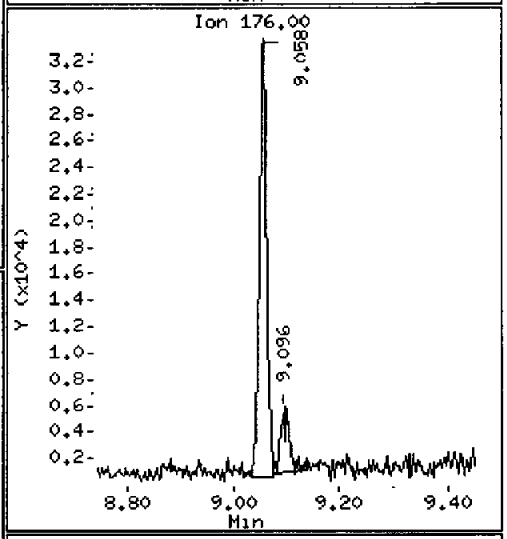
31 Anthracene

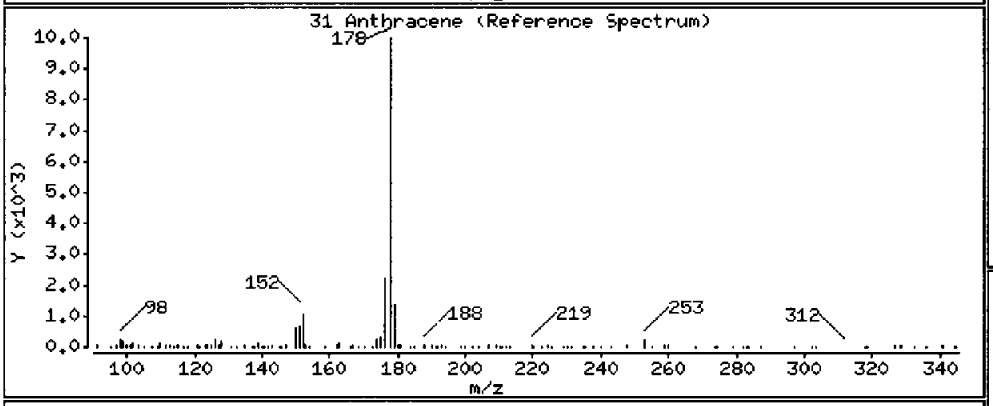
Concentration: 7.753 ug/kg

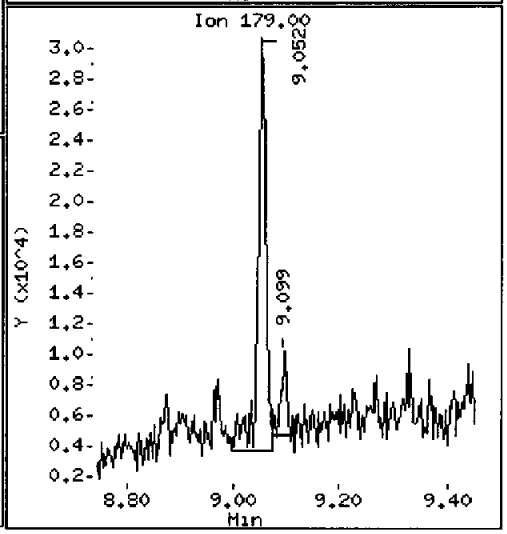


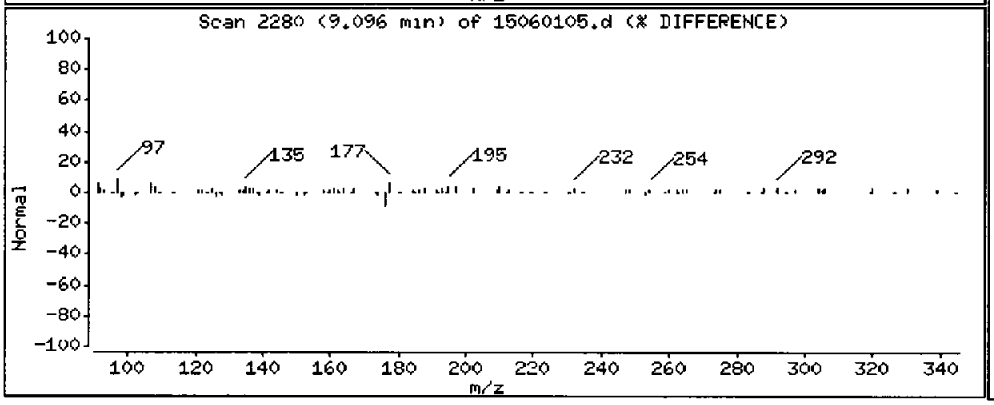












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

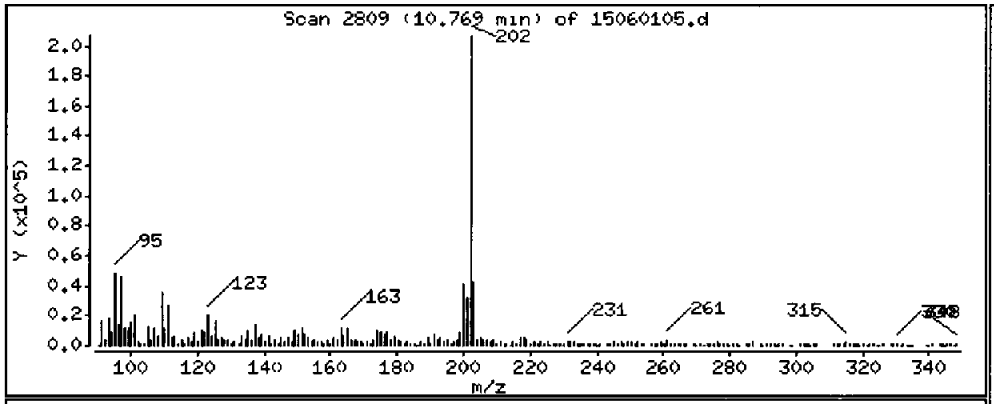
Operator: JZ

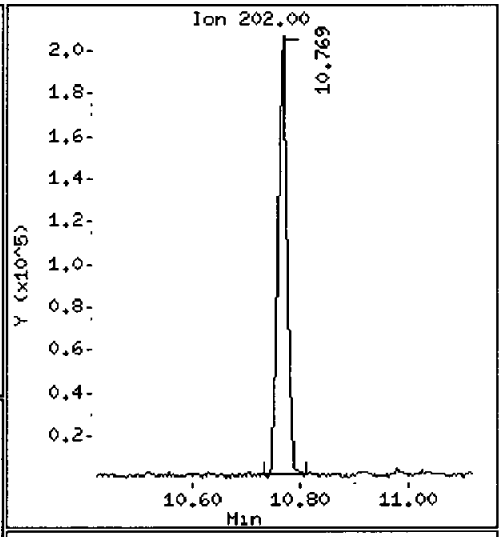
Column phase: ZB-35

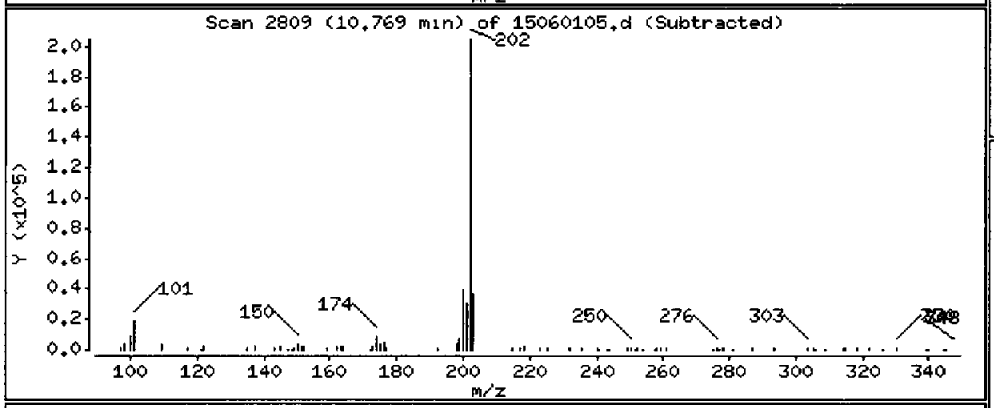
Column diameter: 0.25

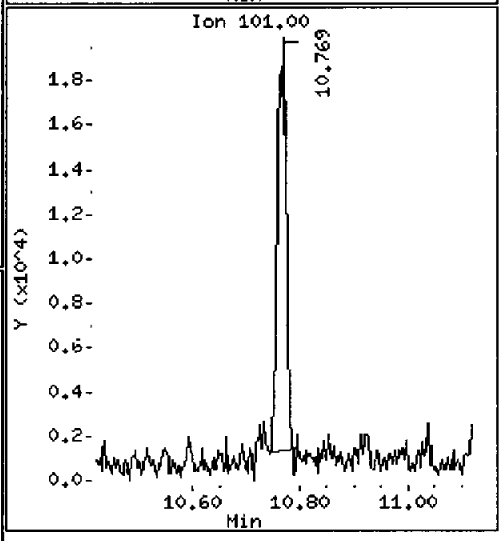
36 Fluoranthene

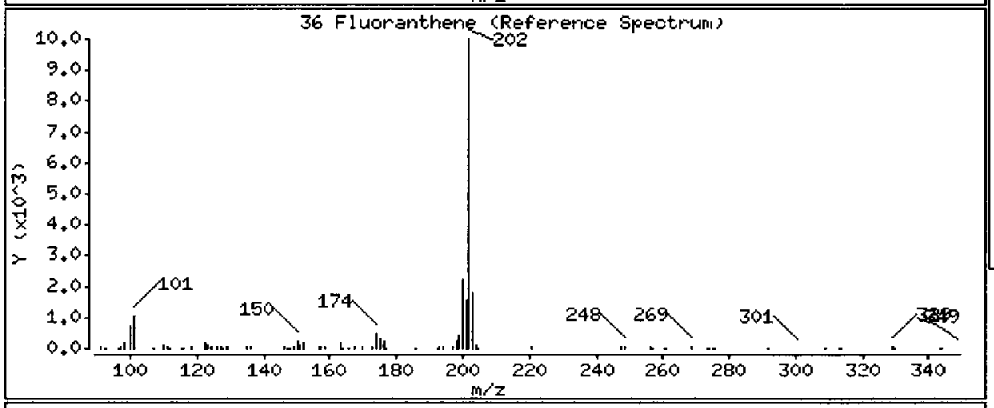
Concentration: 46.80 ug/kg

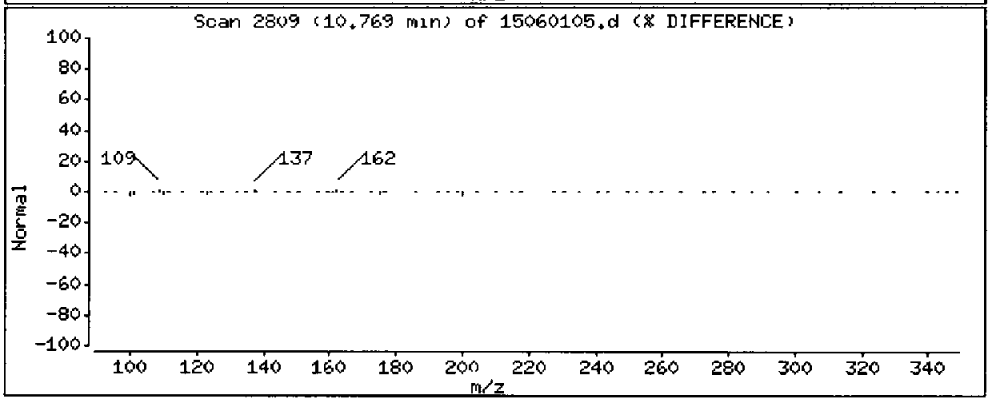












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

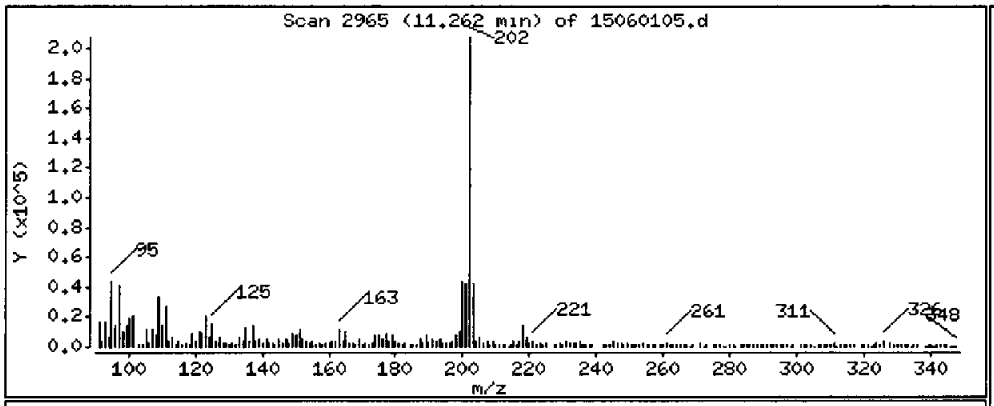
Operator: JZ

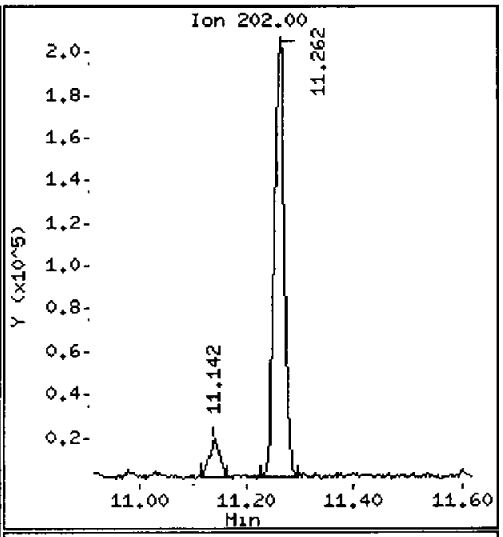
Column phase: ZB-35

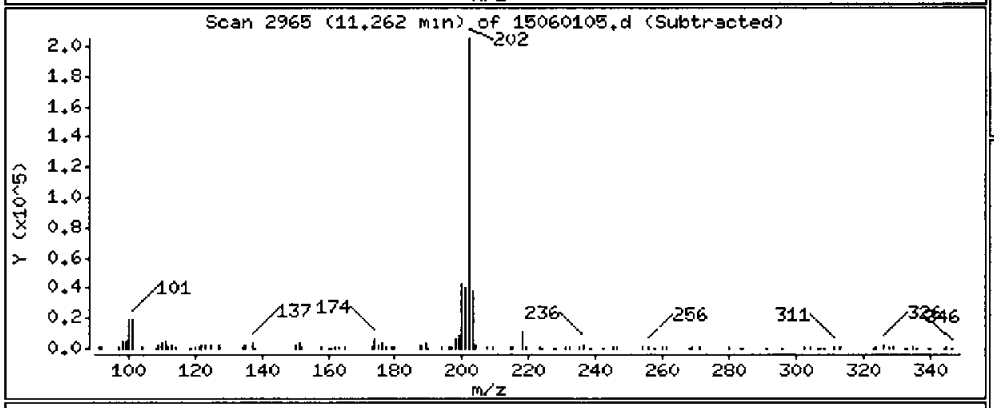
Column diameter: 0.25

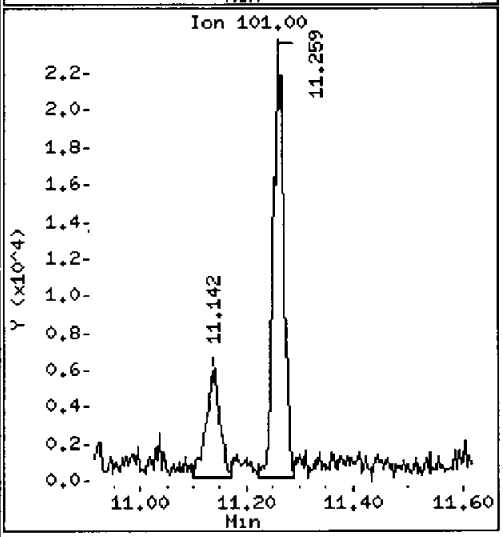
39 Pyrene

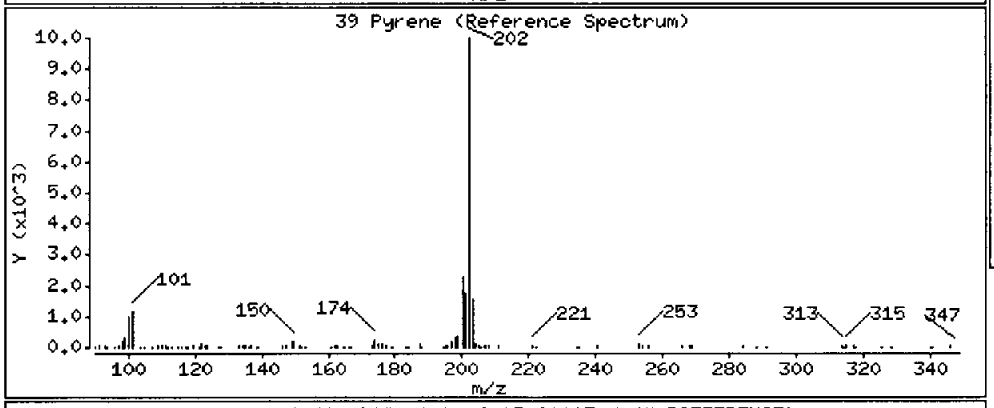
Concentration: 45.80 ug/kg

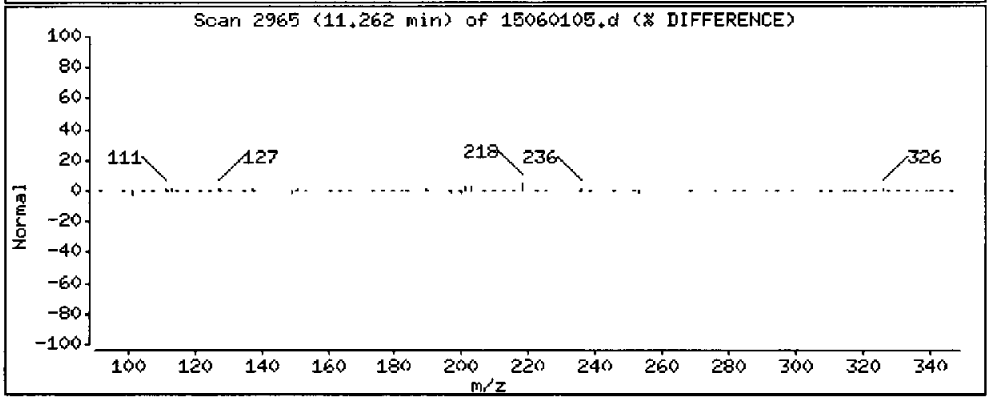












AGC9 0013

Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

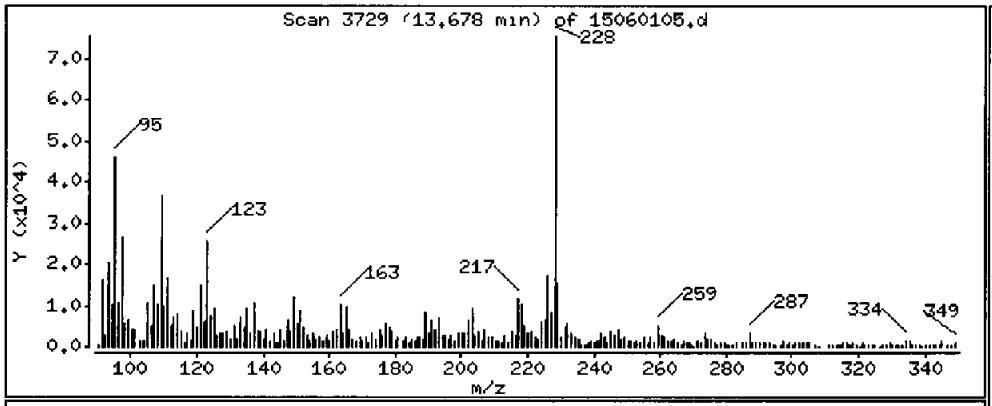
Operator: JZ

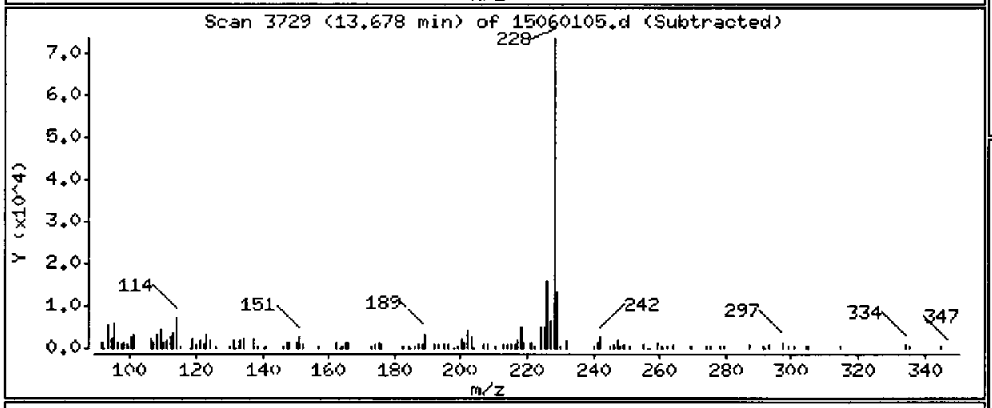
Column phase: ZB-35

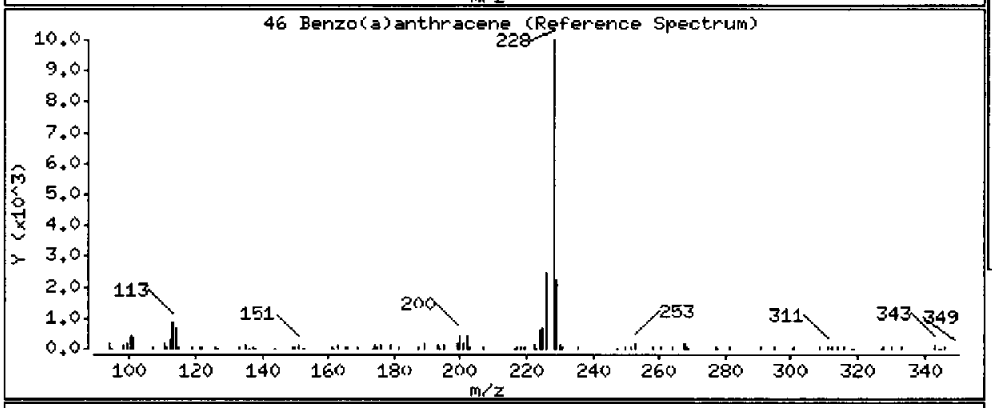
Column diameter: 0.25

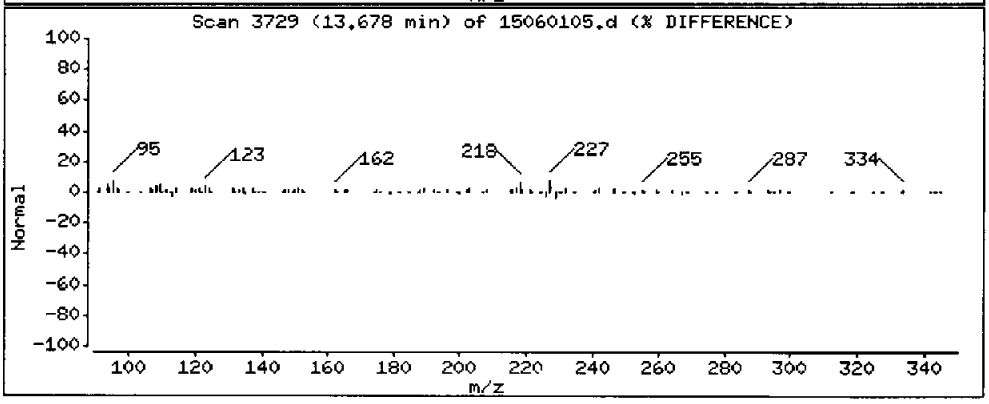
46 Benzo(a)anthracene

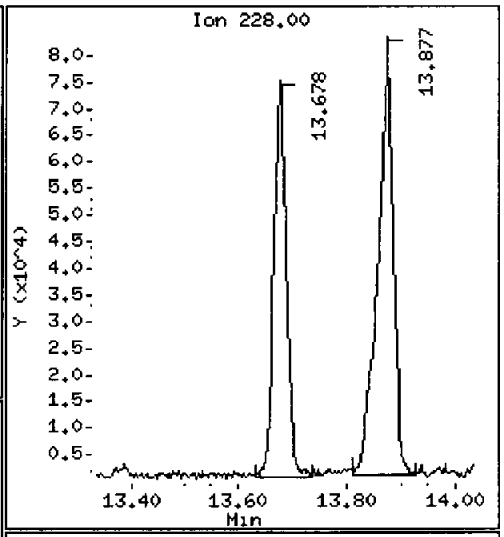
Concentration: 23.64 ug/kg

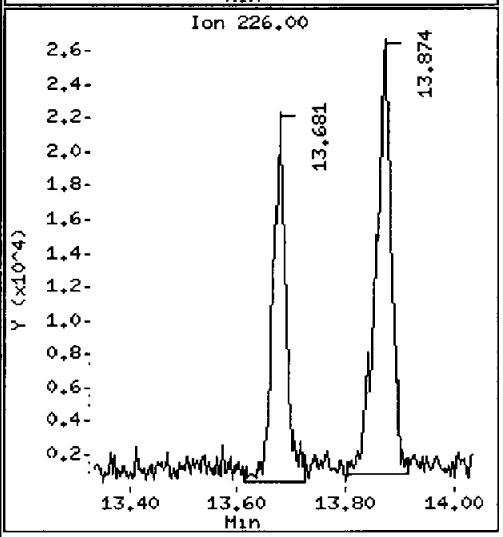












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

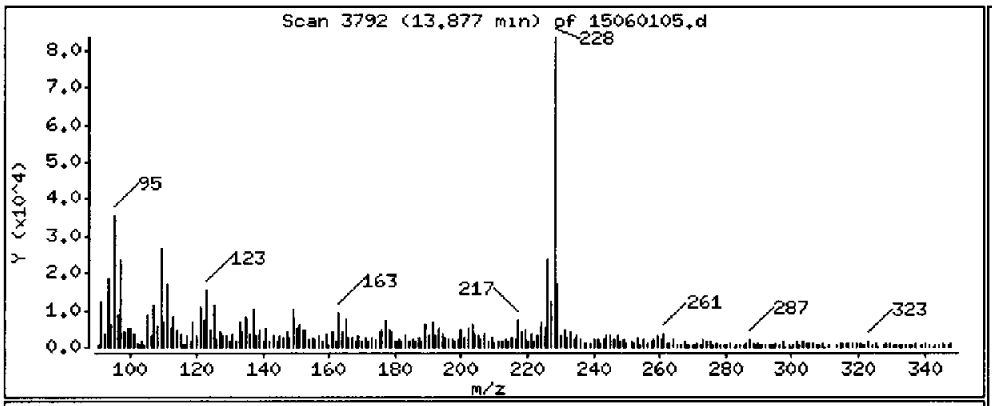
Operator: JZ

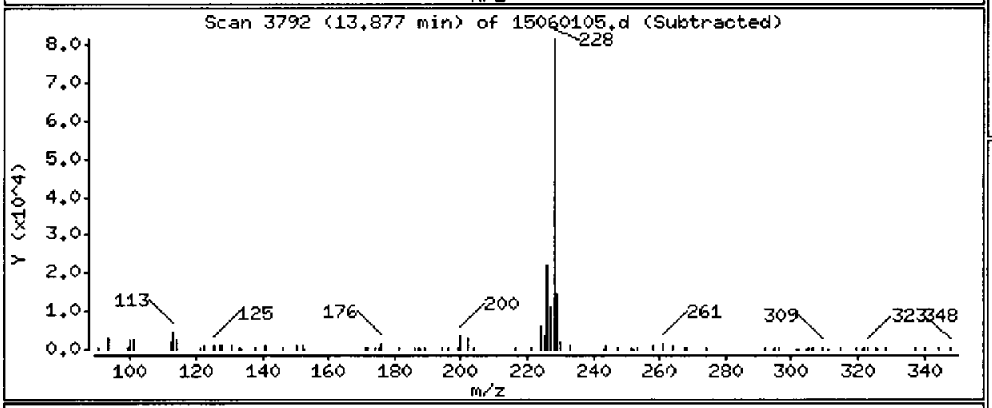
Column phase: ZB-35

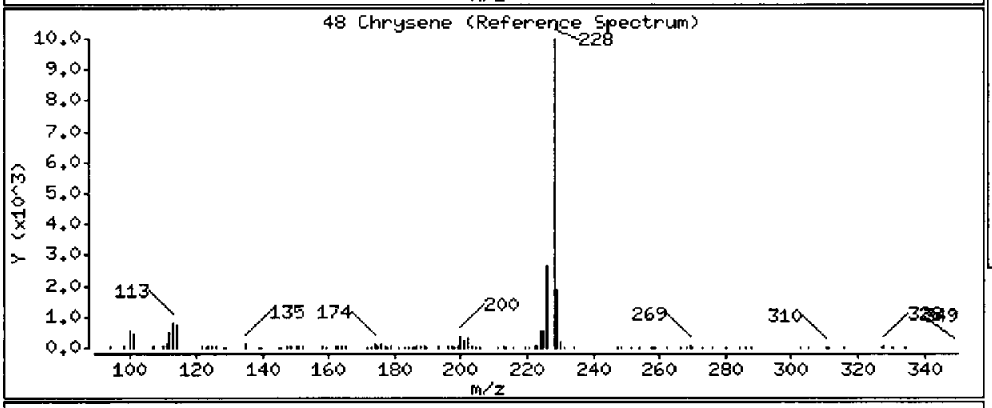
Column diameter: 0.25

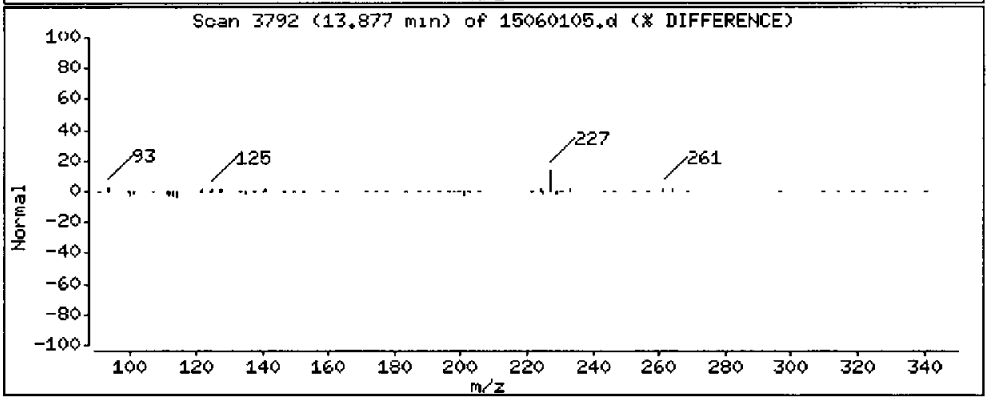
48 Chrysene

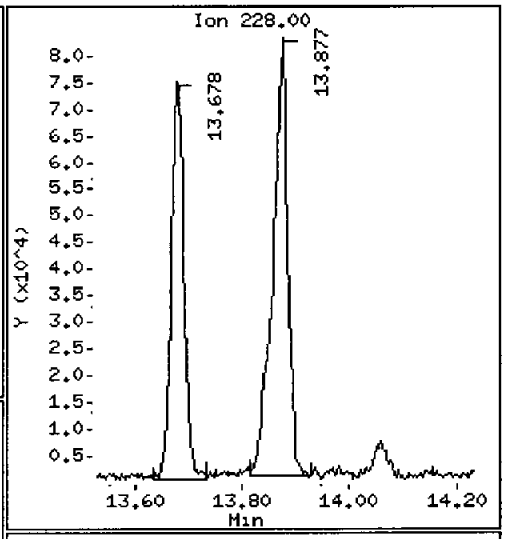
Concentration: 30.30 ug/kg

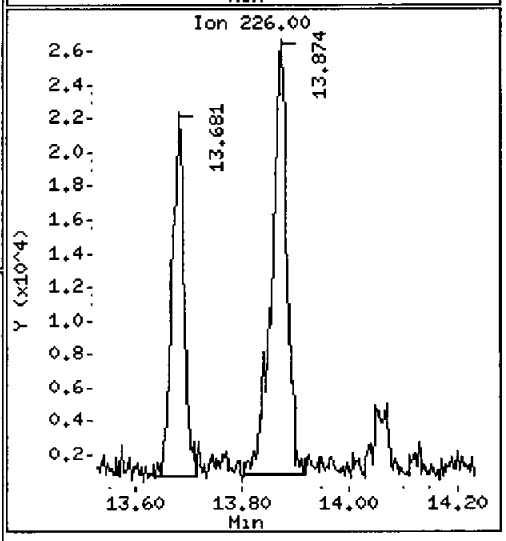












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

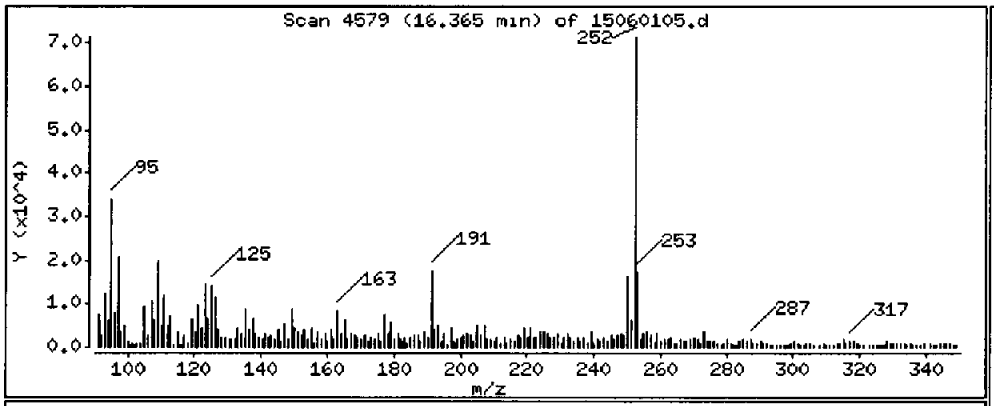
Operator: JZ

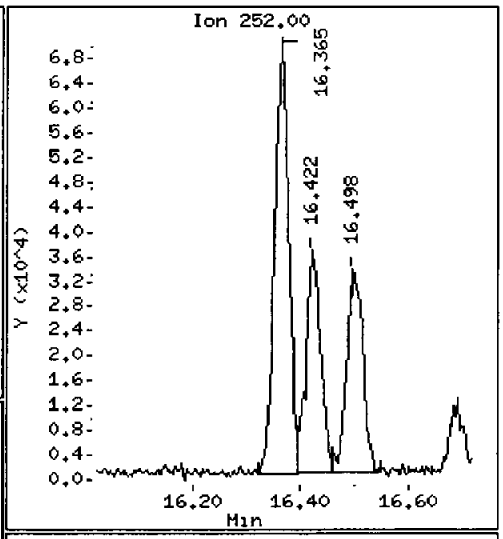
Column phase: ZB-35

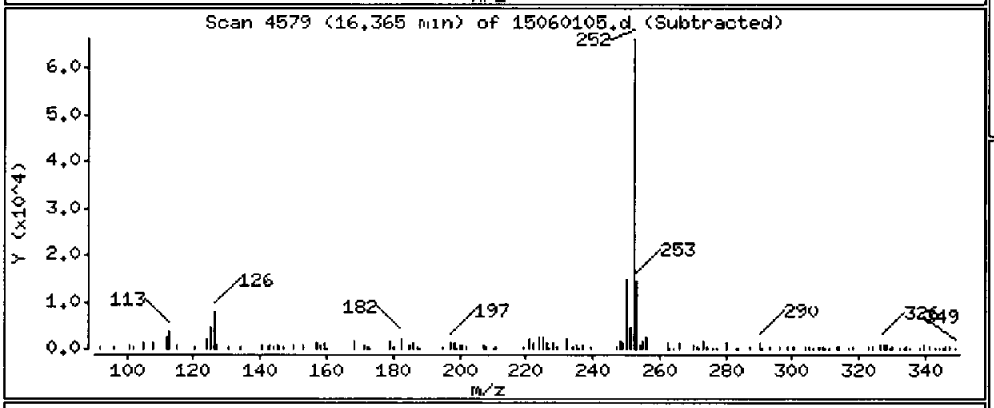
Column diameter: 0.25

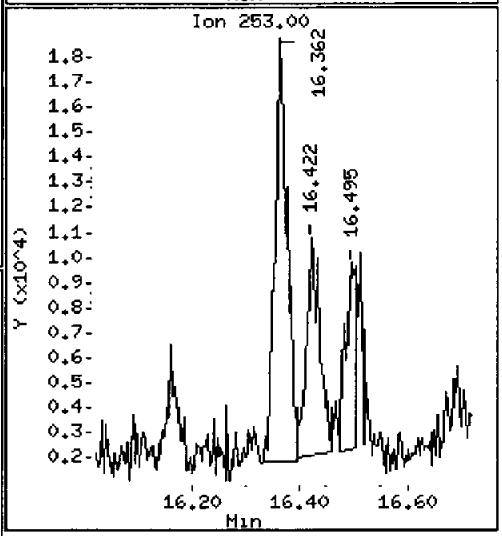
51 Benzo(b)fluoranthene

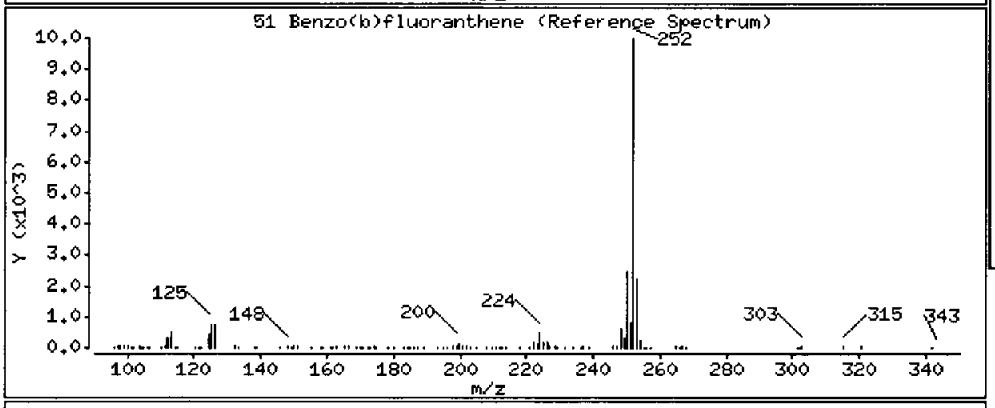
Concentration: 23.31 ug/kg

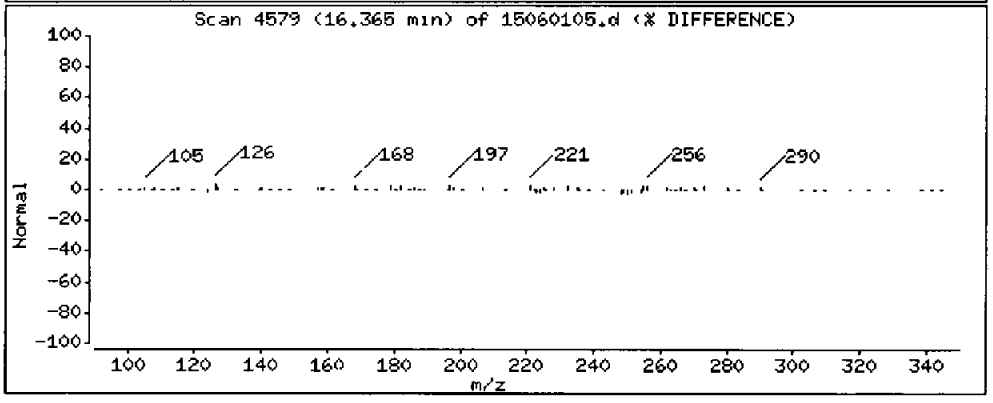












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

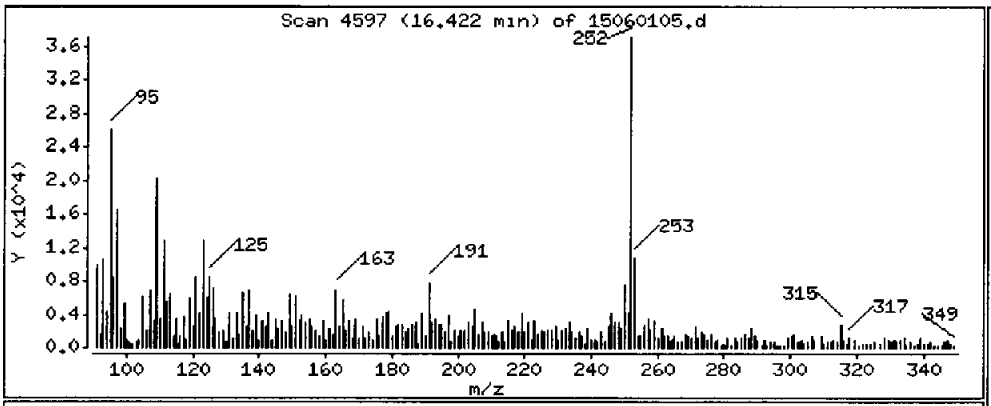
Operator: JZ

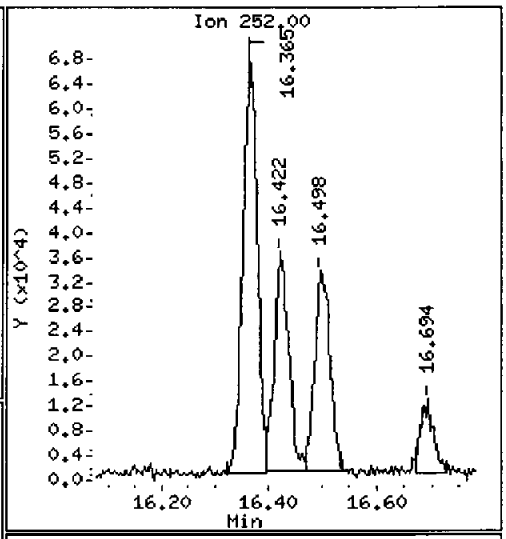
Column phase: ZB-35

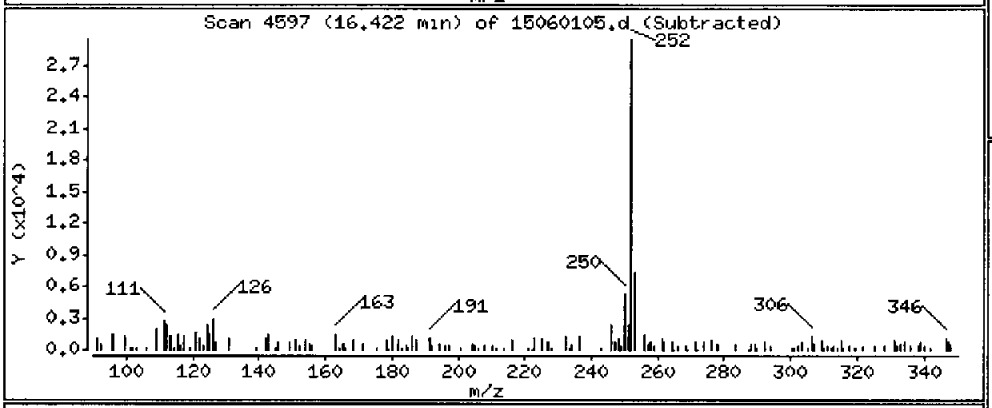
Column diameter: 0.25

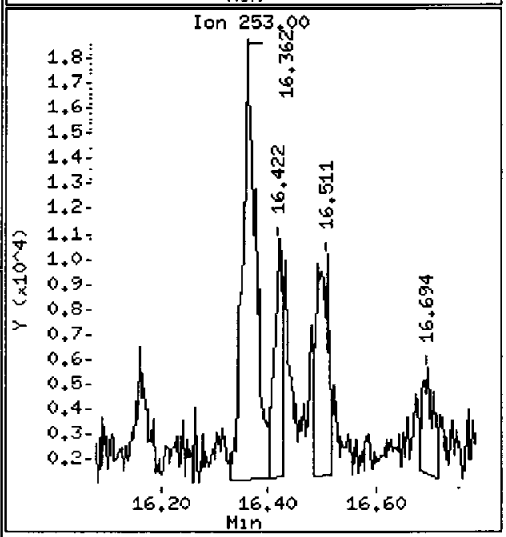
52 Benzo(k)fluoranthene

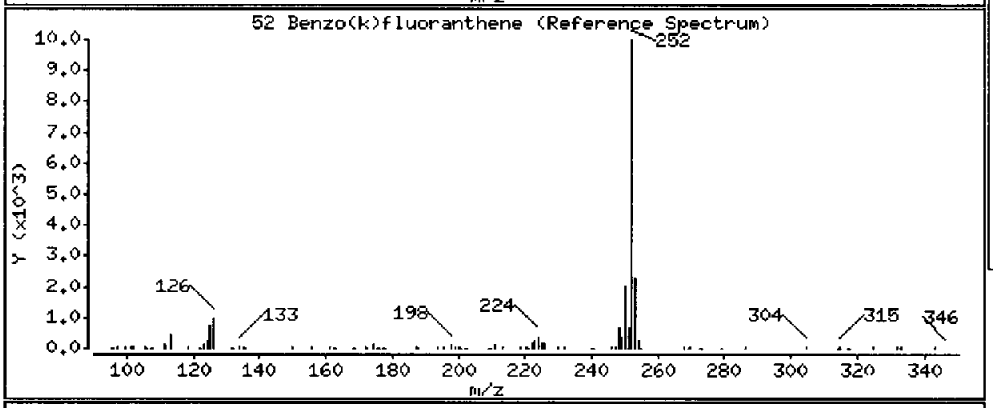
Concentration: 12.03 ug/kg

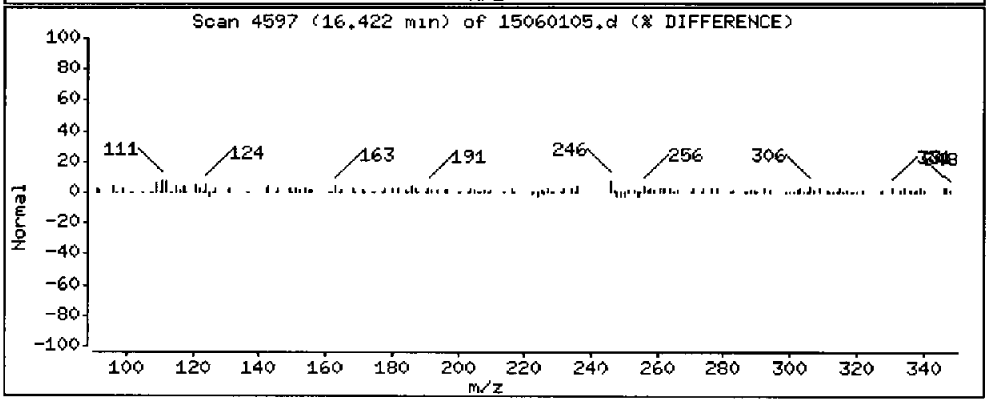












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

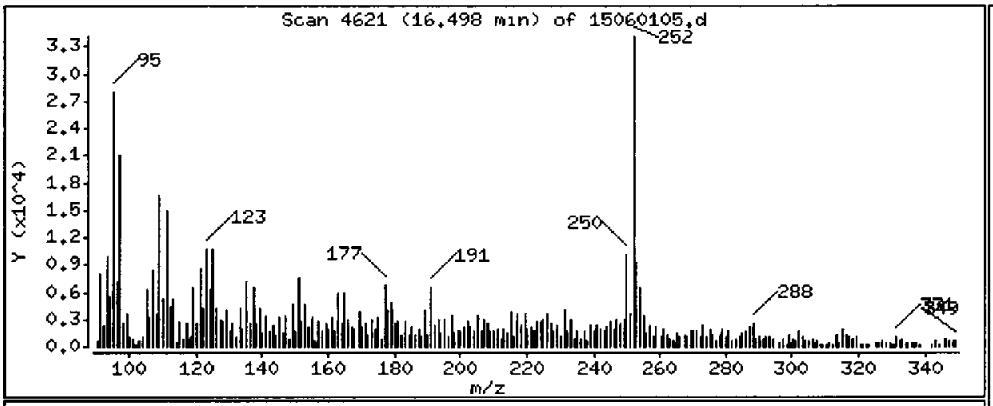
Operator: JZ

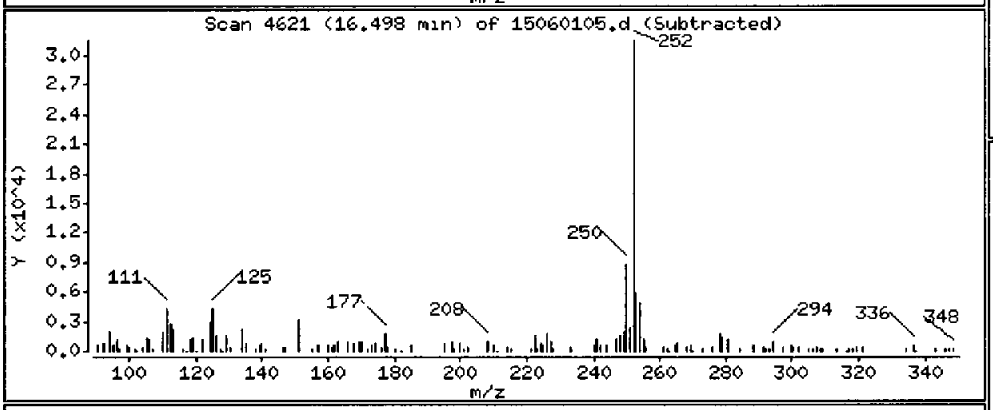
Column phase: ZB-35

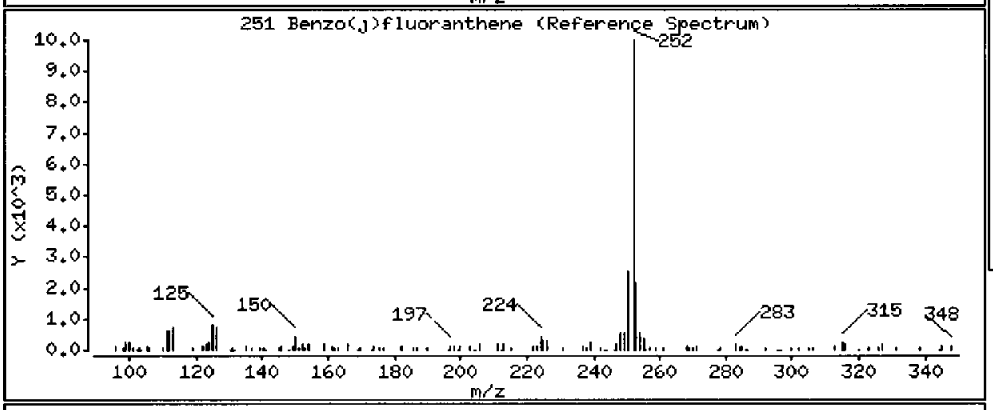
Column diameter: 0.25

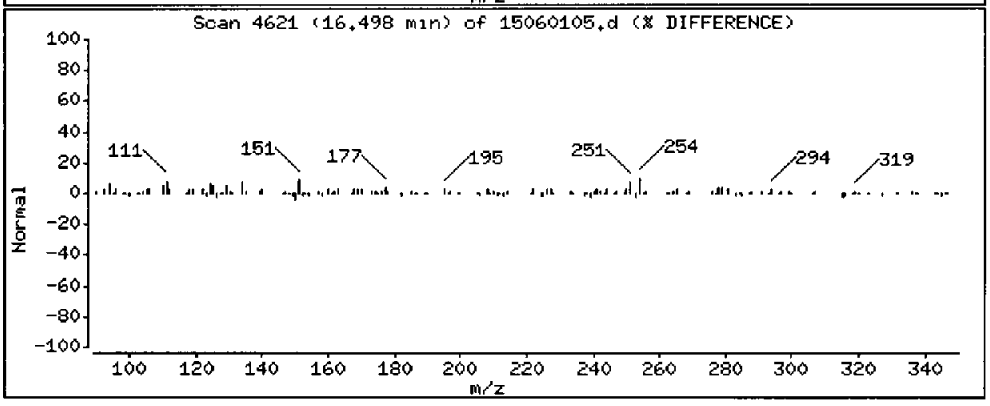
251 Benzo(j)fluoranthene

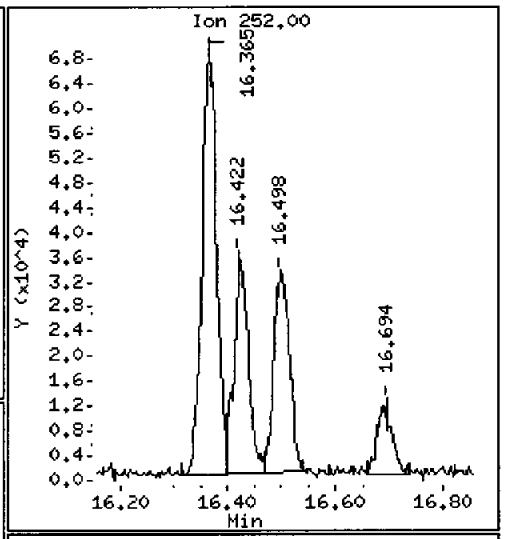
Concentration: 12.16 ug/kg

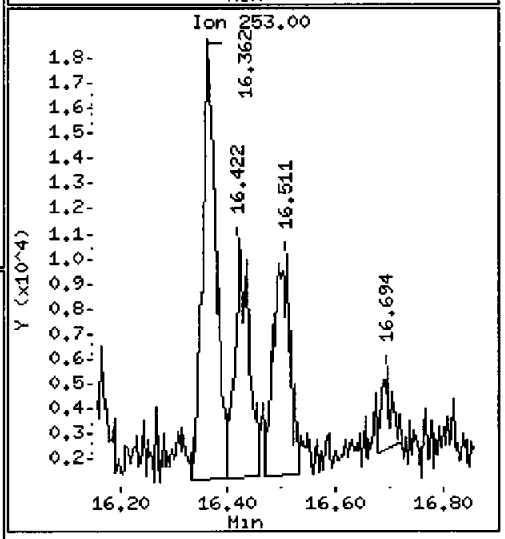












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

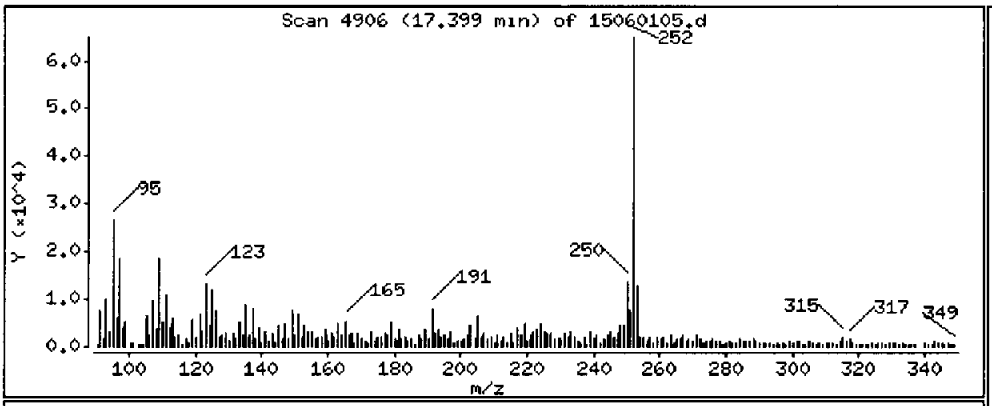
Operator: JZ

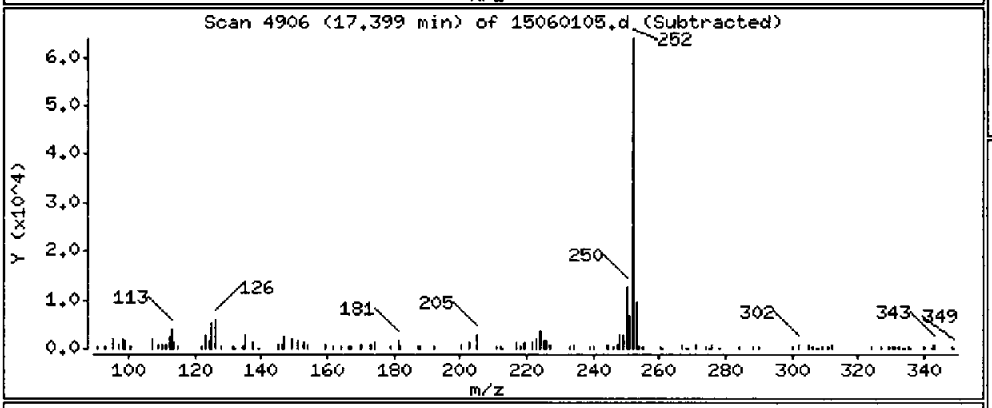
Column phase: ZB-35

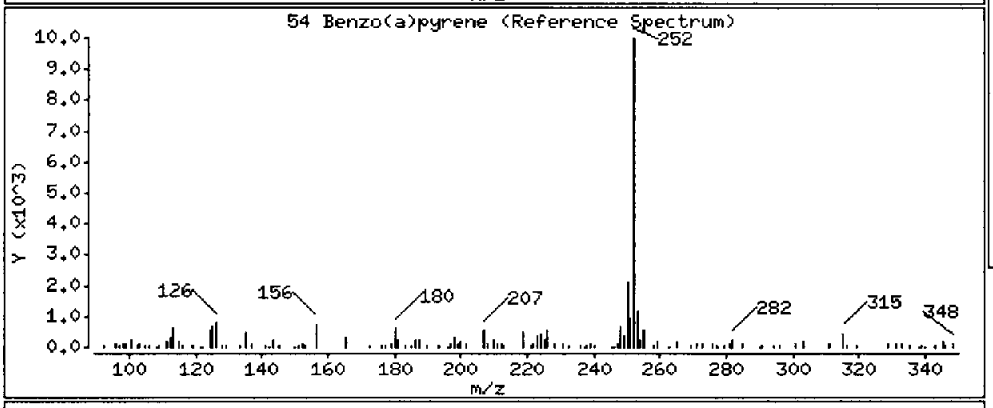
Column diameter: 0.25

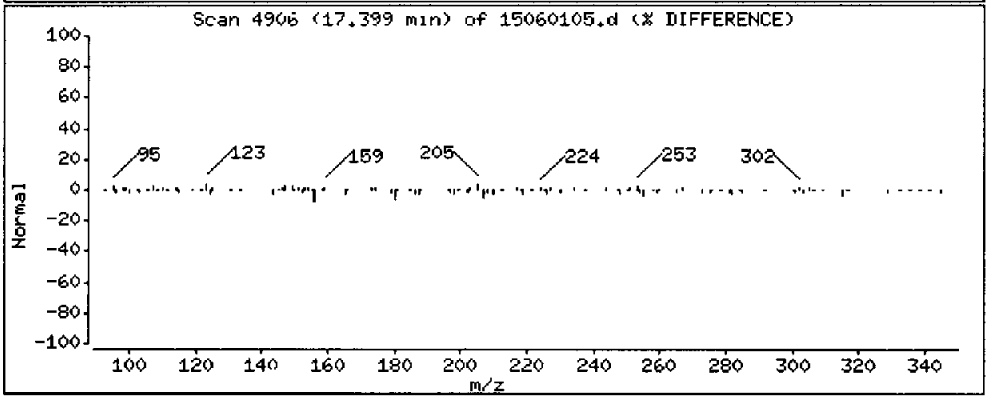
54 Benzo(a)pyrene

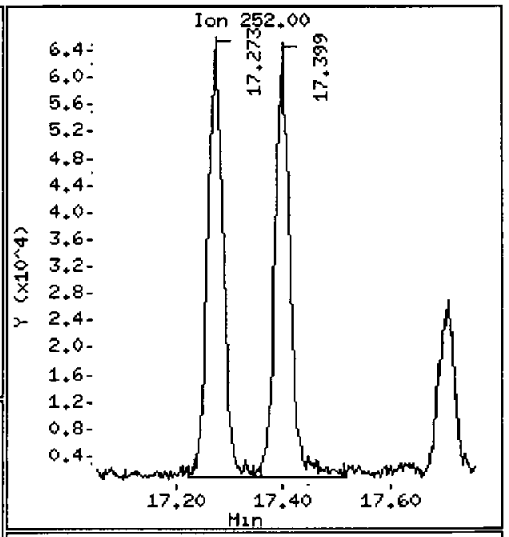
Concentration: 25.67 ug/kg

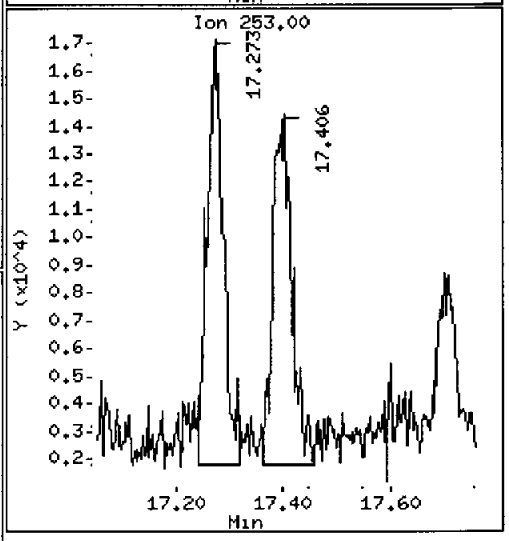












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

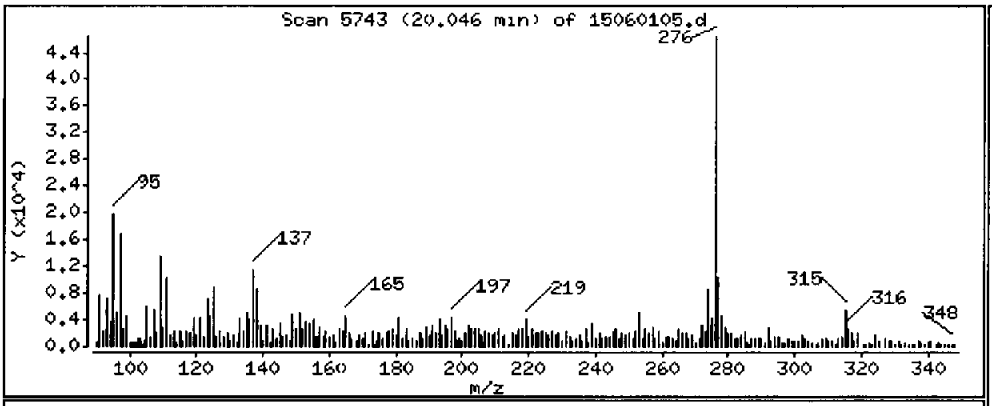
Operator: JZ

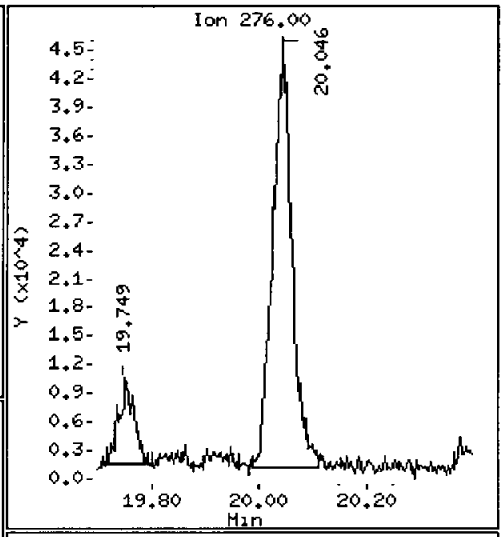
Column phase: ZB-35

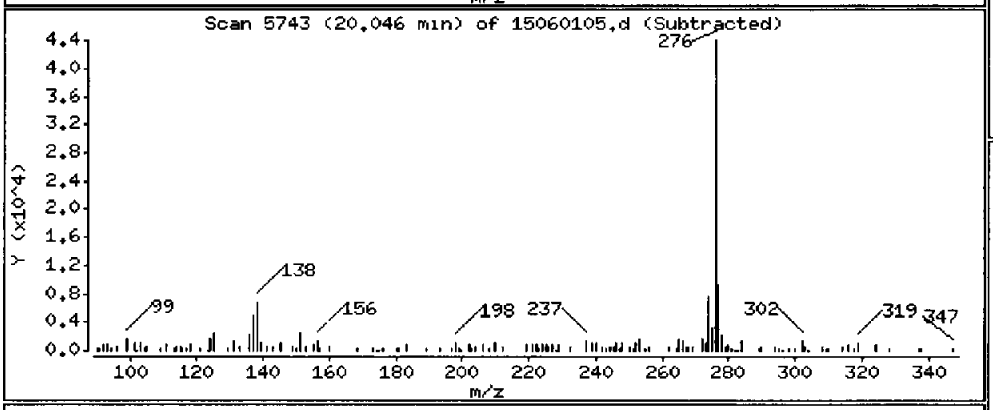
Column diameter: 0.25

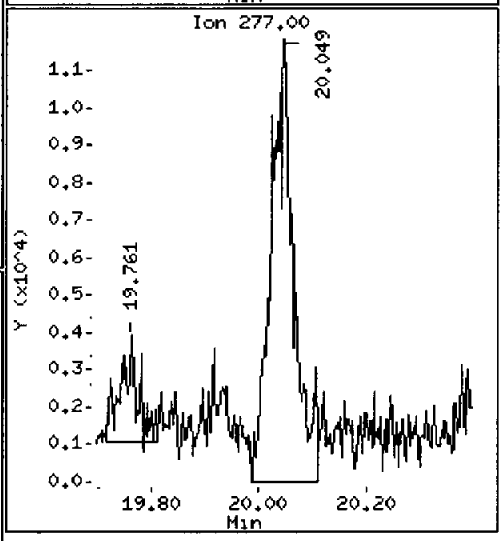
63 Indeno(1,2,3-cd)pyrene

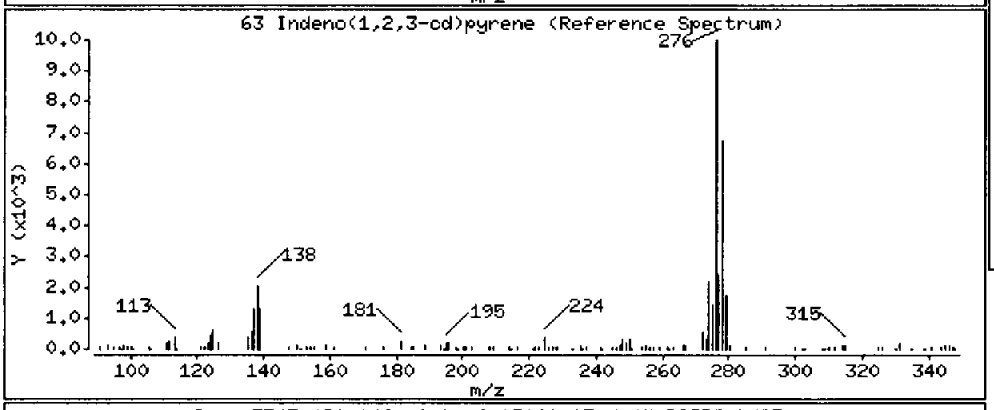
Concentration: 18.73 ug/kg

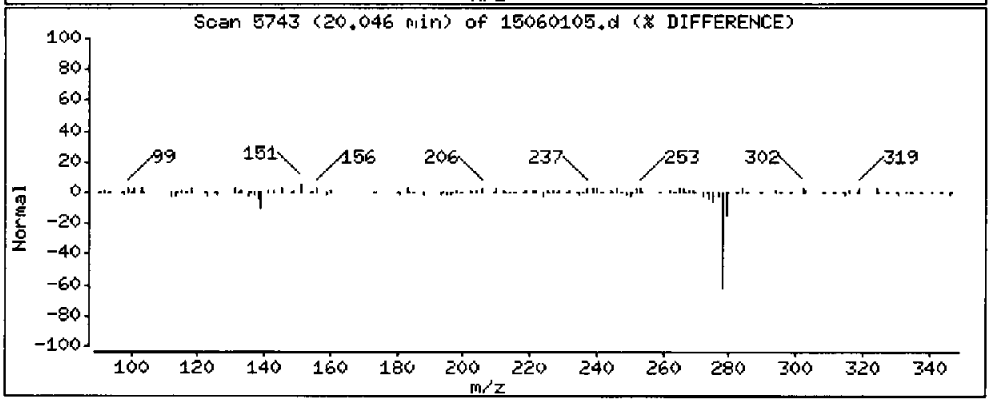












Data File: /chem3/nt8.1/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.1

Sample Info: AGC9A

Volume Injected (uL): 1.0

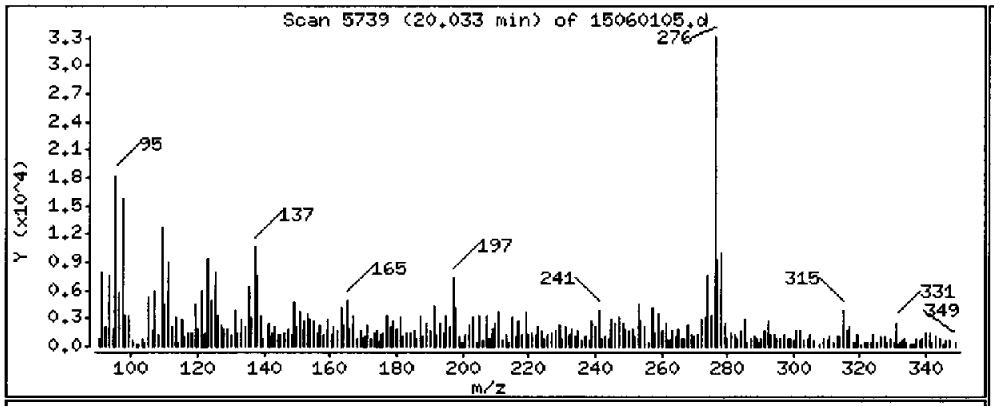
Operator: JZ

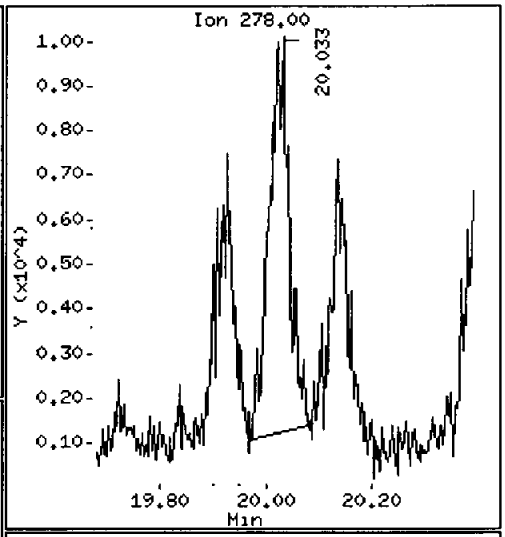
Column phase: ZB-35

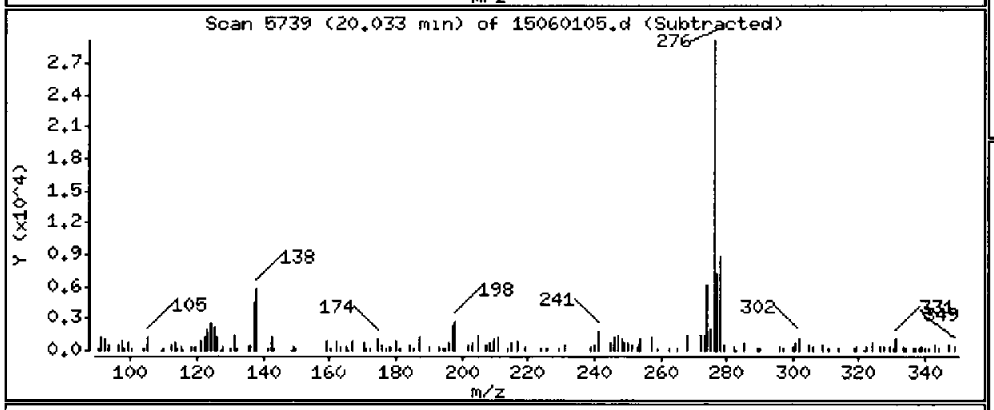
Column diameter: 0.25

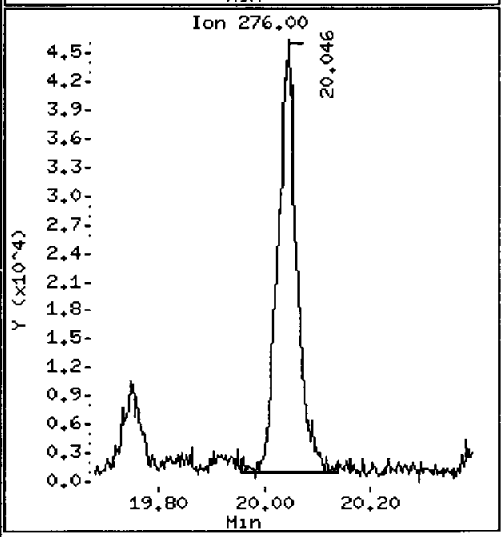
62 Dibenzo(a,h)anthracene

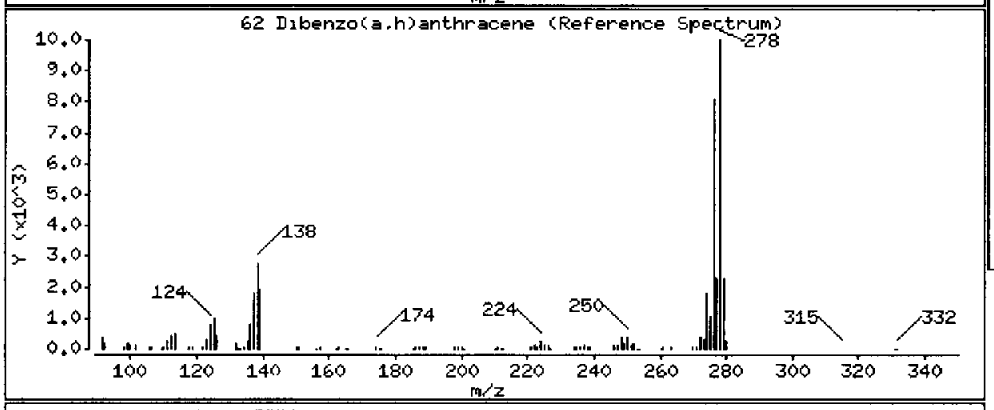
Concentration: 4.812 ug/kg

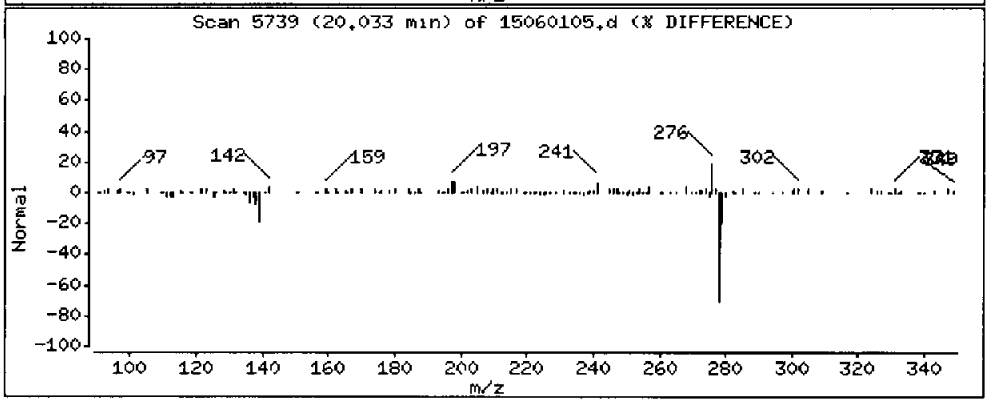












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

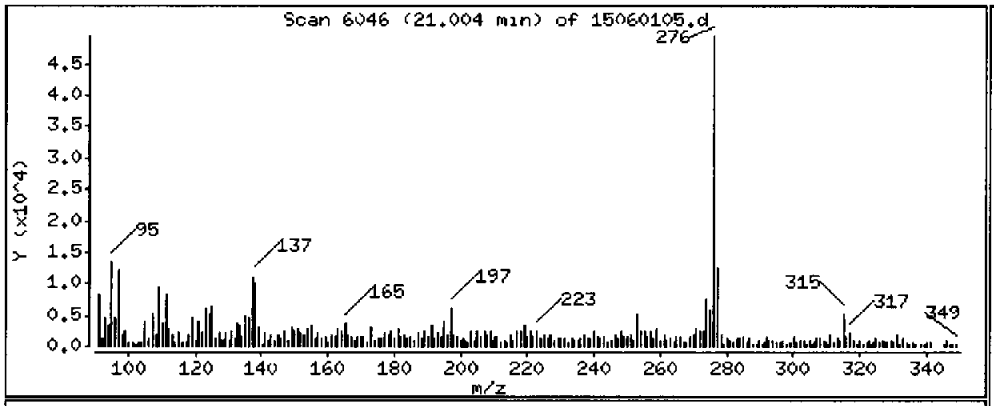
Operator: JZ

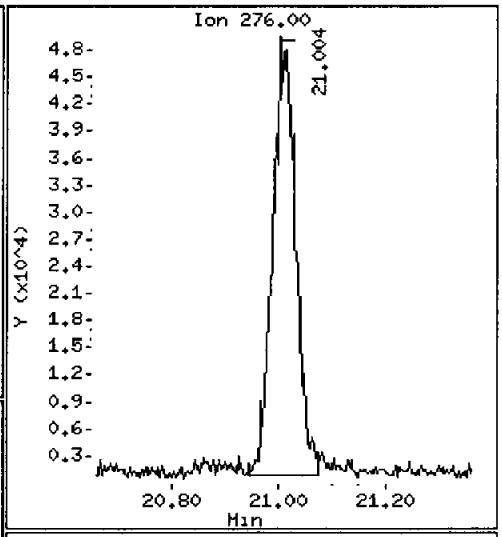
Column phase: ZB-35

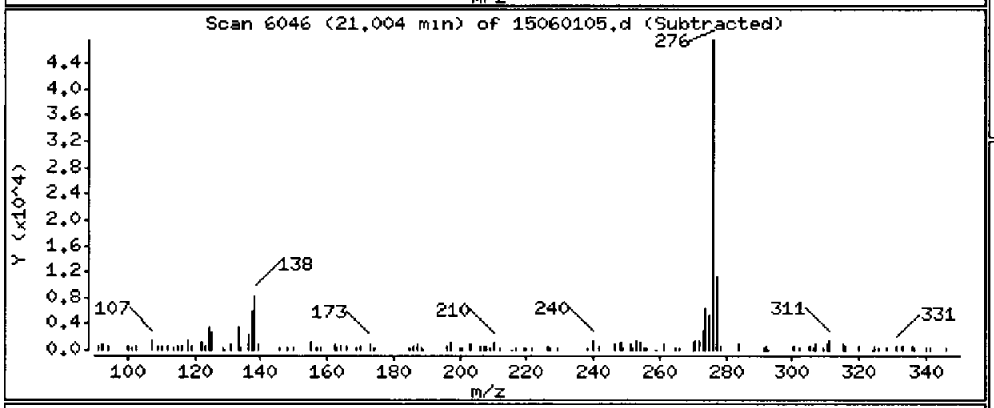
Column diameter: 0.25

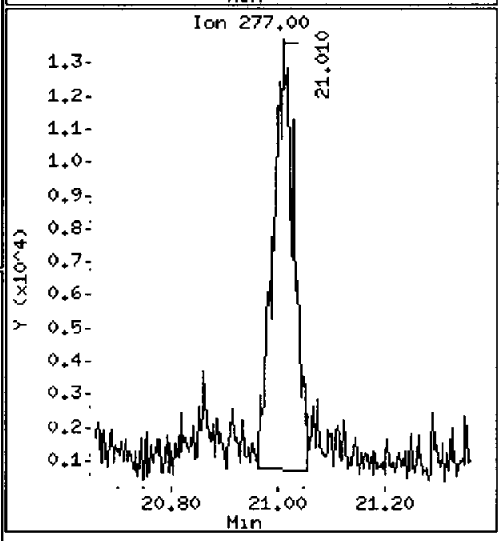
61 Benzo(g,h,i)perylene

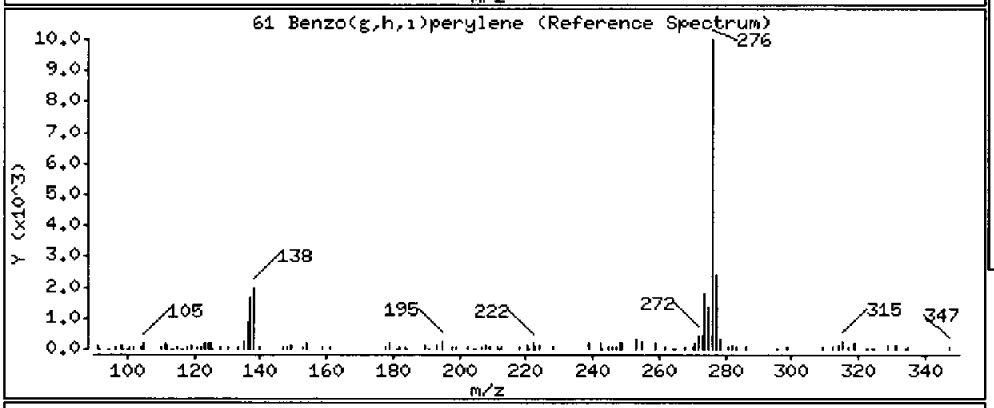
Concentration: 28.04 ug/kg

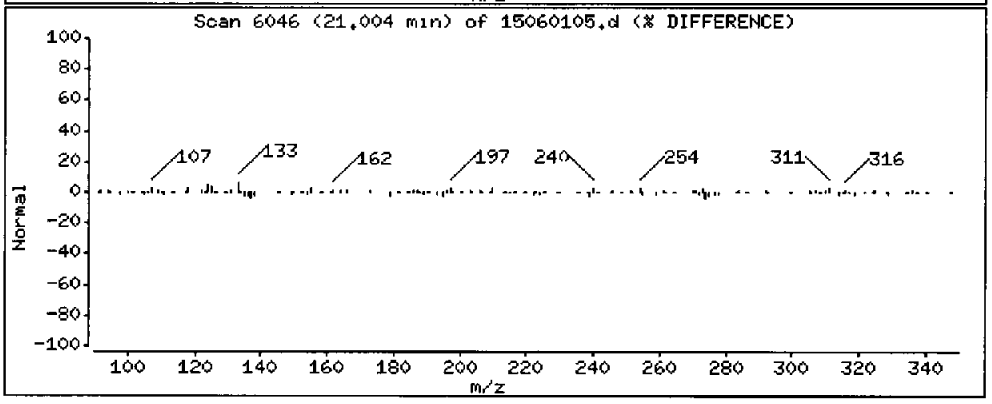












Data File: /chem3/nt8.i/20150601.b/15060105.d

Date : 01-JUN-2015 11:26

Client ID: SDP-01(3.0-4.0)

Instrument: nt8.i

Sample Info: AGC9A

Volume Injected (uL): 1.0

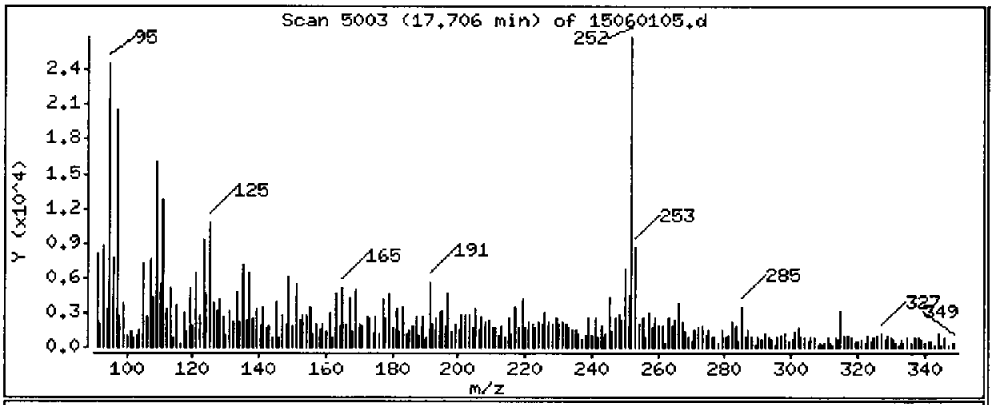
Operator: JZ

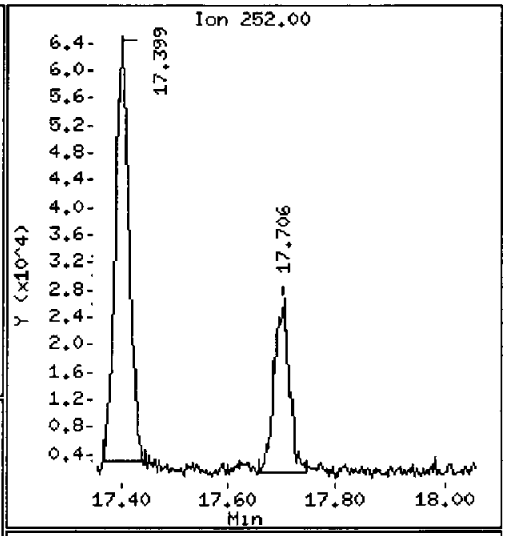
Column phase: ZB-35

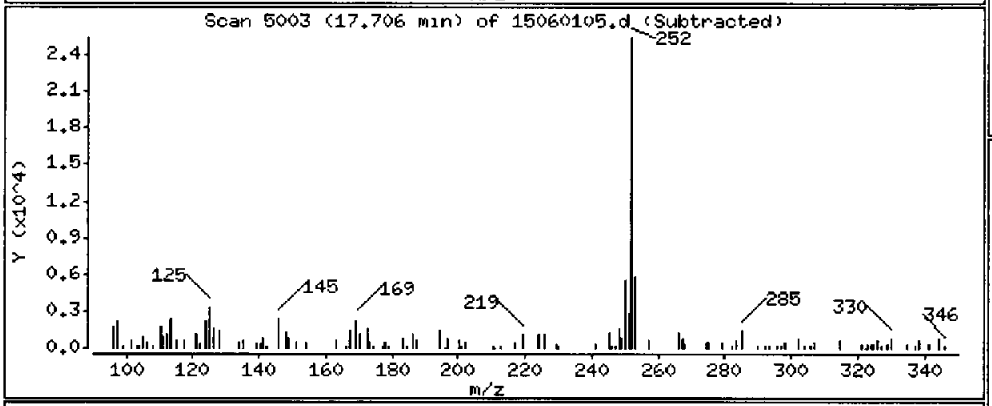
Column diameter: 0.25

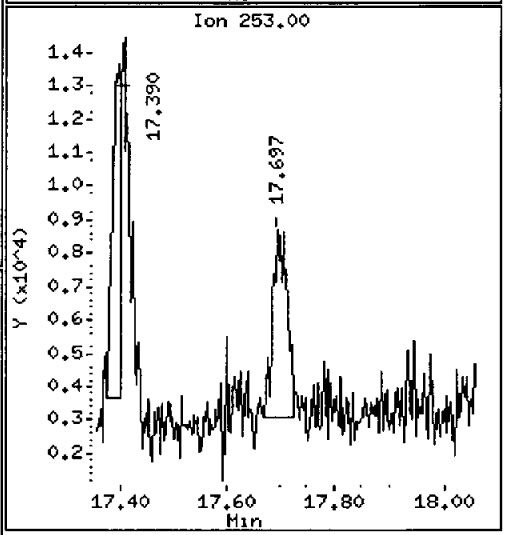
57 Perylene

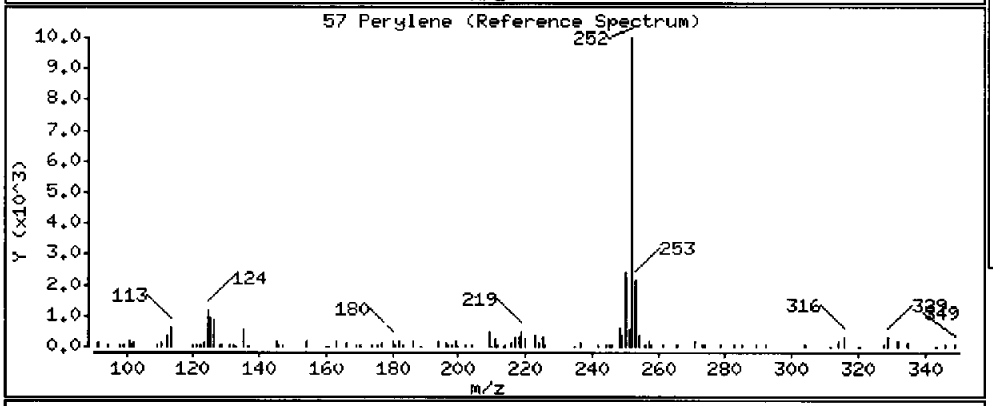
Concentration: 9.741 ug/kg

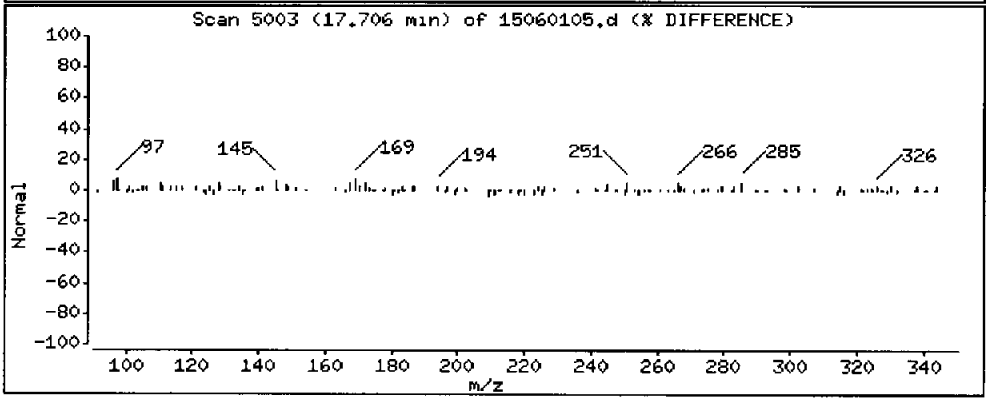












CO-ELUTION SUMMARY FOR FILE - 15060105.d

Lab ID: AGC9A, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060106.d
Lab Smp Id: AGC9B Client Smp ID: SDP-01(8.0-9.0)
Inj Date : 01-JUN-2015 11:51
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9B
Misc Info : 15-9432
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	13.02000	Weight of sample extracted (g)
M	20.40000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.733	4 739	(1.000)	413799	2.00000	
	7 Naphthalene	128	4.761	4.767	(1.006)	83834	0.42056	20.29
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	186899	1.47908	71.36
	14 2-Methylnaphthalene	141	5.511	5.510	(1.164)	39405	0.33152	15.99
	15 1-methylnaphthalene	141	5.703	5.703	(1.205)	23228	0.20109	9.702
	21 Acenaphthylene	152	6.892	6.892	(0.985)	11744	0.06073	2 930
*	22 Acenaphthene-d10	164	7.000	7 000	(1 000)	264789	2.00000	
	23 Acenaphthene	153	7.050	7.050	(1 007)	12116	0.09416	4.543
	11 Dibenzofuran	168	7.199	7.202	(1.028)	20829	0.11705	5.647
	25 Fluorene	166	7 673	7.673	(1.096)	13514	0.09404	4.537
*	28 Phenanthrene-d10	188	9.020	9.020	(1.000)	470638	2.00000	
	30 Phenanthrene	178	9.055	9.055	(1.004)	537396	2.39496	115.5
	31 Anthracene	178	9.096	9.096	(1.008)	94980	0.47017	22.68
	36 Fluoranthene	202	10.769	10.769	(1.194)	380200	1.44871	69.89
$	253 Fluoranthene-d10	212	10.731	10.734	(1.190)	446638	1.92931	93.08

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.262	11 265	(0.816)	517994	1.84663	89.09
	46 Benzo(a)anthracene	228	13.678	13.684	(0.991)	191908	0.76032	36.68
*	47 Chrysene-d12	240	13 801	13.807	(1.000)	503191	2.00000	
	48 Chrysene	228	13.874	13.880	(1.005)	292081	1.15413	55.68
	51 Benzo(b)fluoranthene	252	16.369	16.369	(0.929)	96565	0.34968	16.87
	52 Benzo(k)fluoranthene	252	16.426	16.429	(0.932)	47040	0.17048	8.225
	251 Benzo(j)fluoranthene	252	16.502	16.505	(0.936)	51398	0.19090	9.210
	54 Benzo(a)pyrene	252	17.396	17.402	(0 987)	100213	0.40700	19.64
*	56 Perylene-d12	264	17.627	17.633	(1.000)	525851	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.037	20.046	(1.137)	54816	0.18535	8.942
$	60 Dibenzo(a,h)anthracene-d14	292	19.929	19.929	(1.131)	267880	1.33761	64.53
	62 Dibenzo(a,h)anthracene	278	20.027	20.033	(1.136)	17686	0.07342	3.542
	61 Benzo(g,h,i)perylene	276	21 011	21 010	(1.192)	55688	0.21407	10.33
	57 Perylene	252	17.703	17 706	(1.004)	26349	0.10309	4.973

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060106.d
Lab Smp Id: AGC9B
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9432

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-01(8.0-9.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	413799	20.61
22 Acenaphthene-d10	230598	115299	461196	264789	14.83
28 Phenanthrene-d10	373928	186964	747856	470638	25.86
47 Chrysene-d12	381262	190631	762524	503191	31.98
56 Perylene-d12	380825	190412	761650	525851	38.08

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.00
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.80	-0.04
56 Perylene-d12	17.63	17.13	18.13	17.63	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

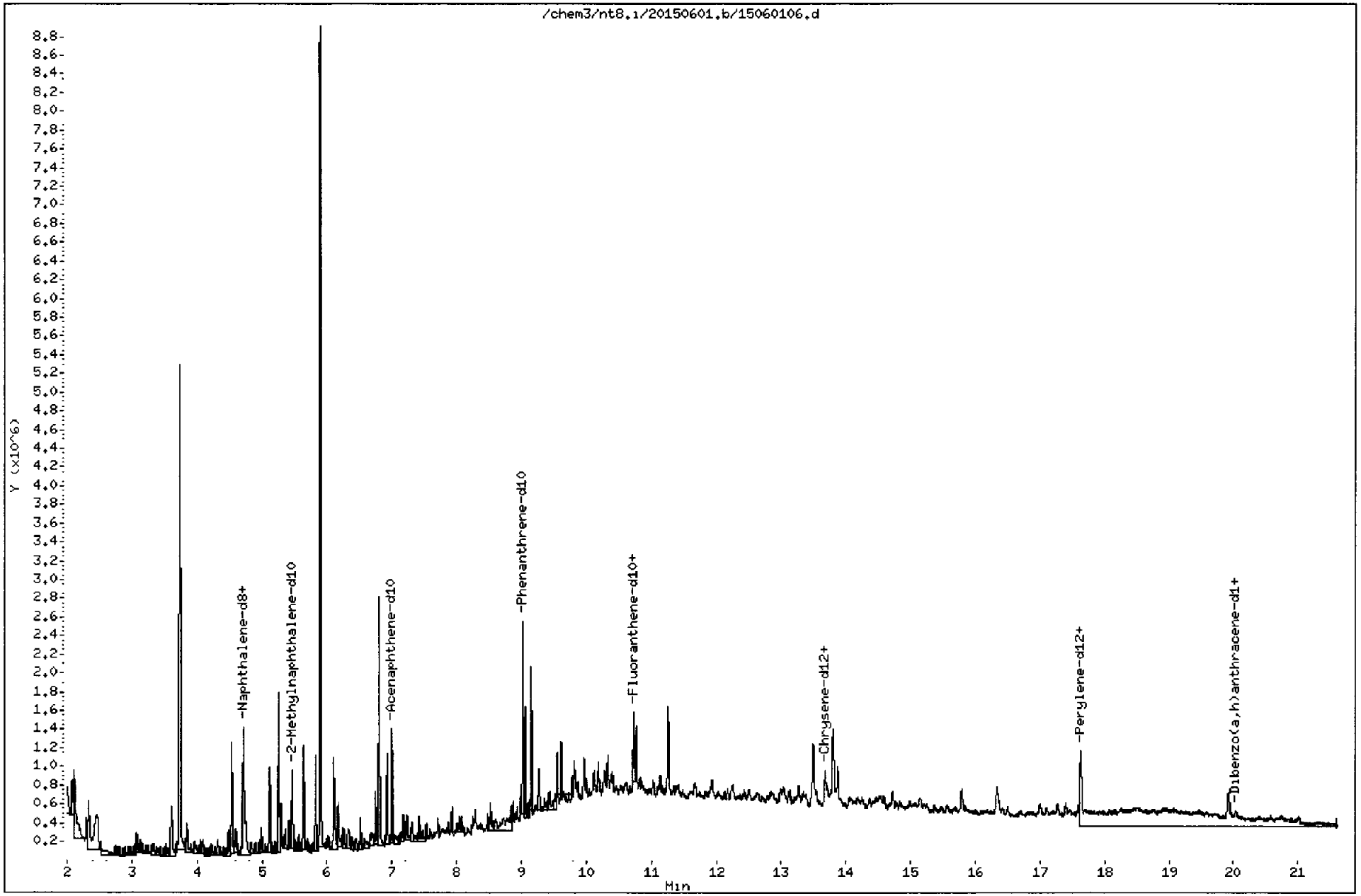
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9B
Client Smp ID: SDP-01(8.0-9.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9432

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	144.7	71.36	49.30	32-120
$ 253 Fluoranthene-d10	144.7	93.08	64.31	36-134
$ 60 Dibenzo(a,h)anthra	144.7	64.53	44.59	21-133

Data File: /chem3/nt8.1/20150601.b/15060106.d
Date : 01-JUN-2015 11:51
Client ID: SDP-01(8.0-9.0)
Sample Info: AGC9B
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

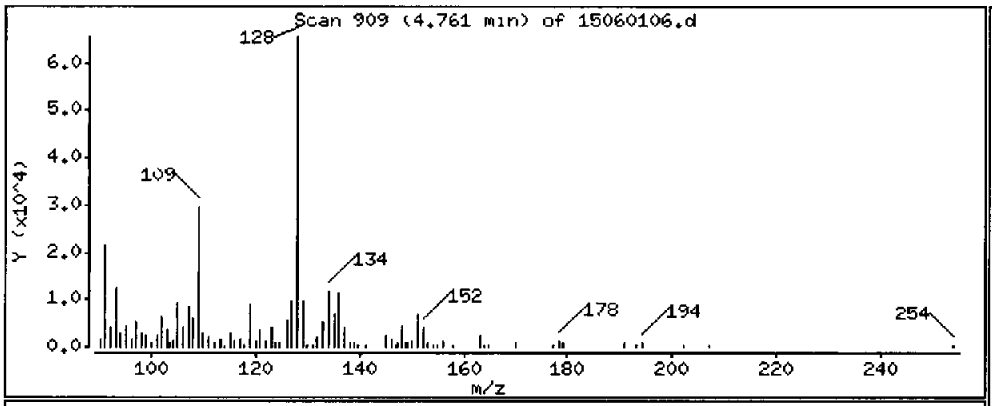
Operator: JZ

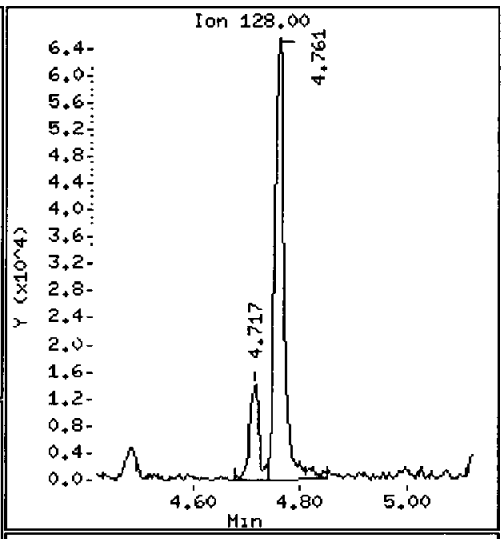
Column phase: ZB-35

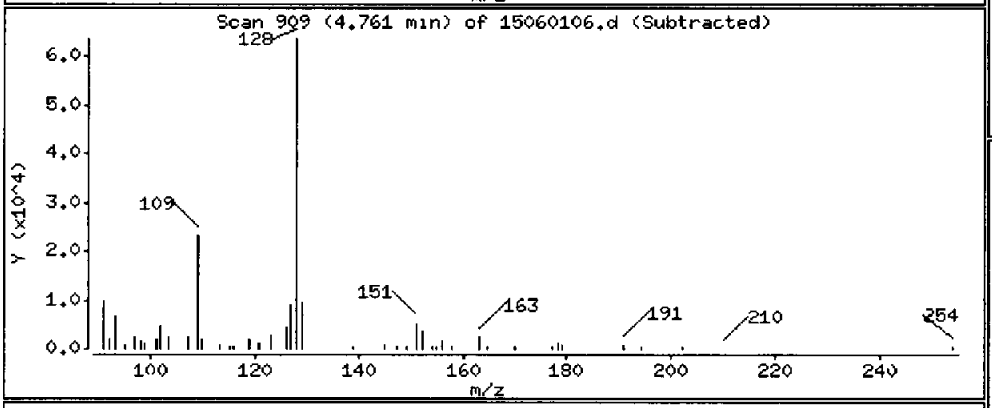
Column diameter: 0.25

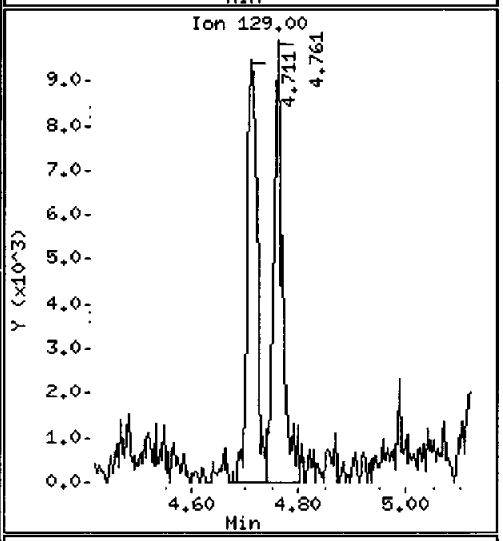
7 Naphthalene

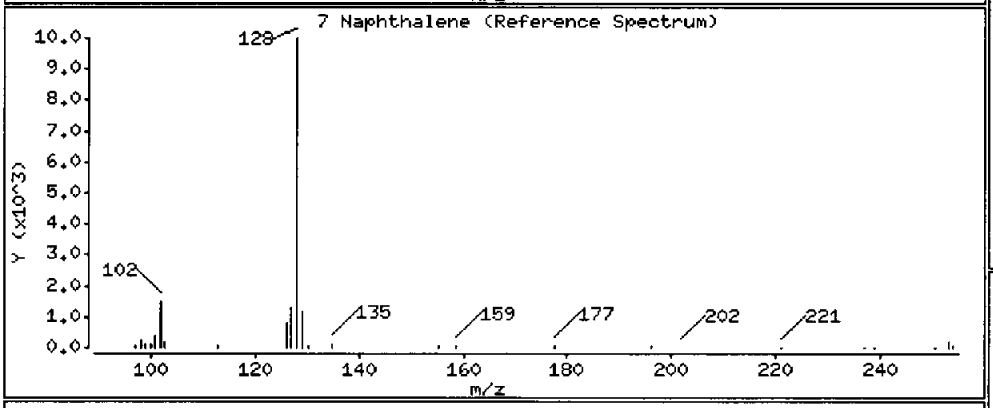
Concentration: 20.29 ug/kg

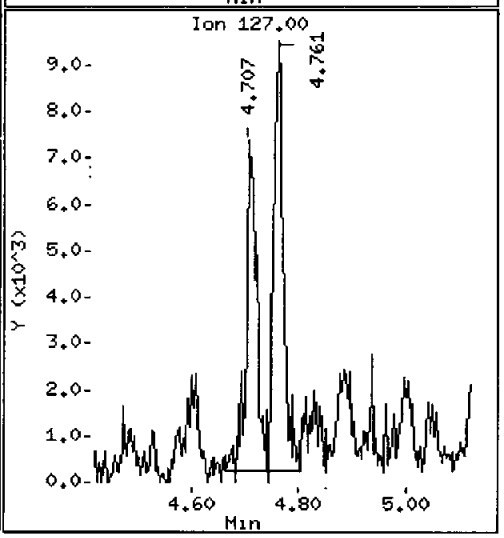


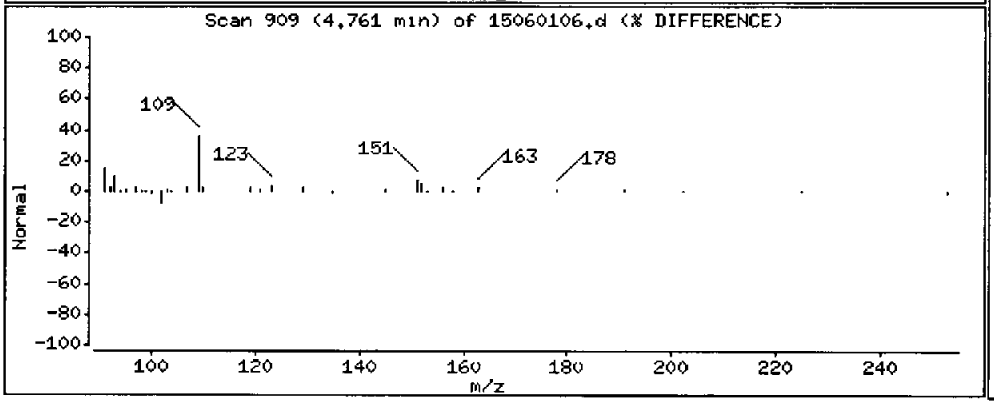












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

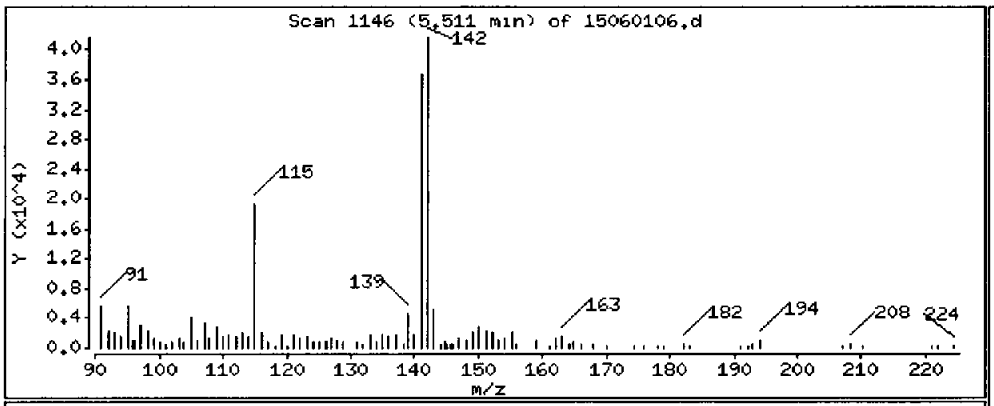
Operator: JZ

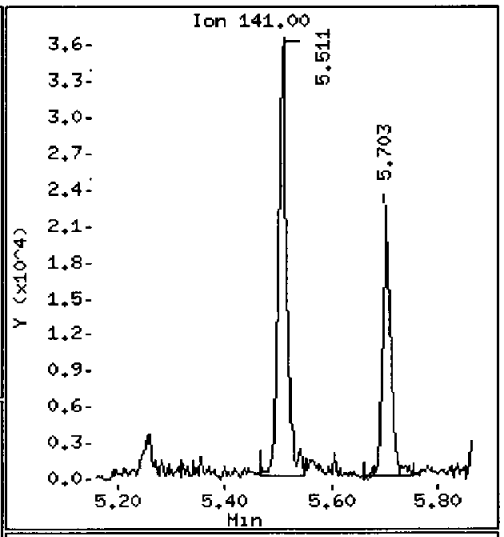
Column phase: ZB-35

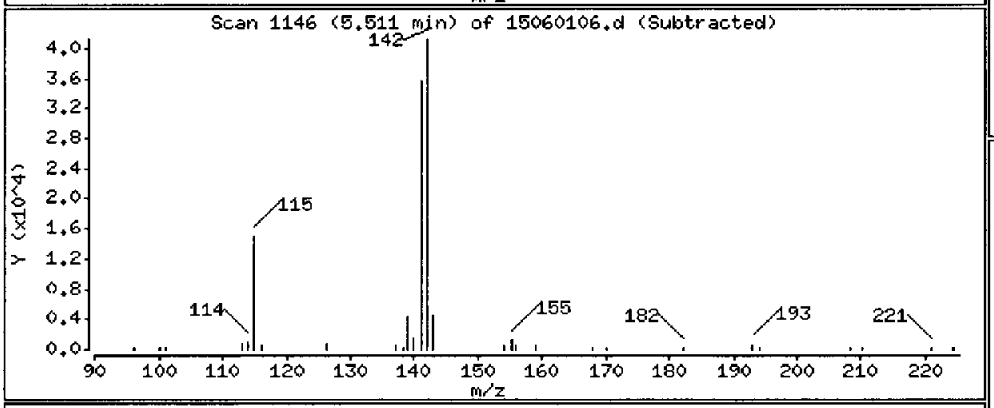
Column diameter: 0.25

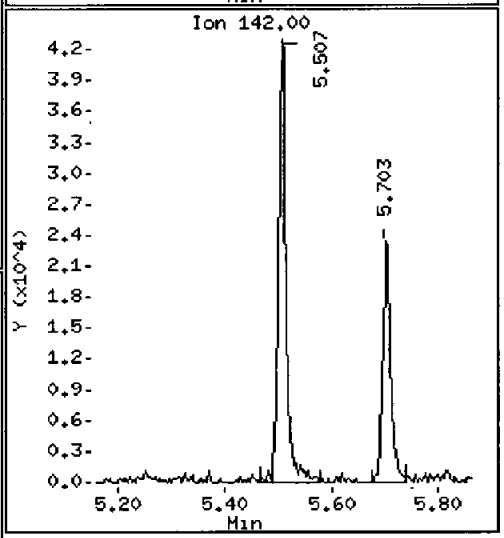
14 2-Methylnaphthalene

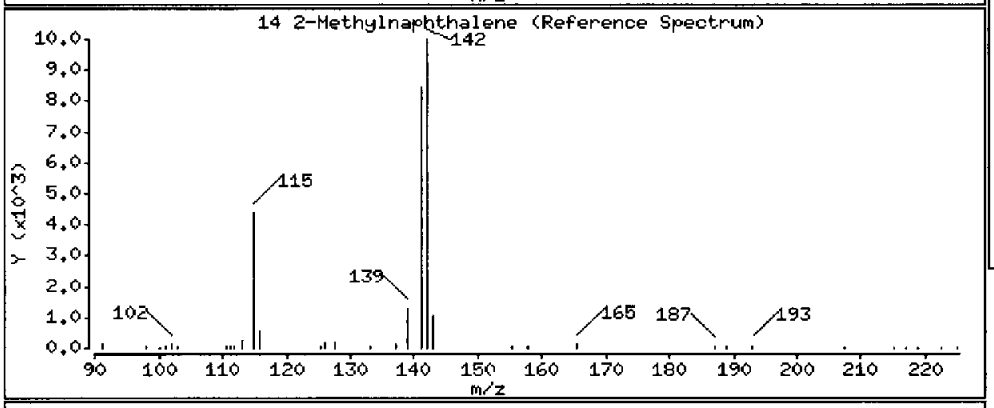
Concentration: 15.99 ug/kg

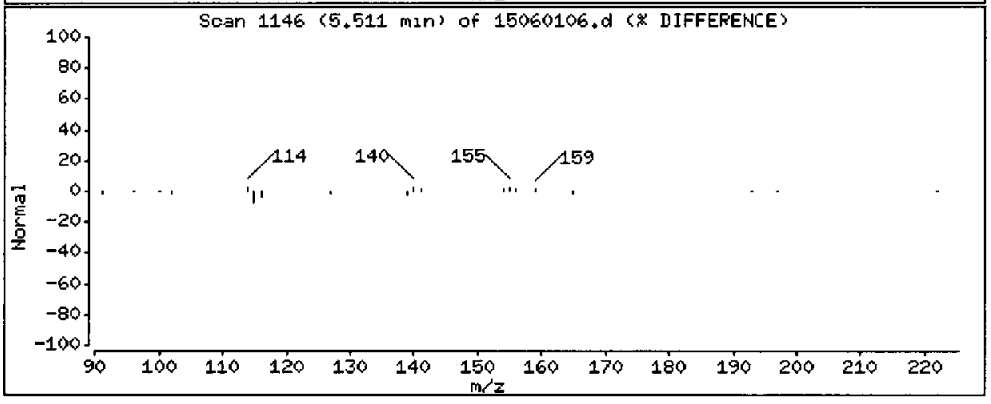












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

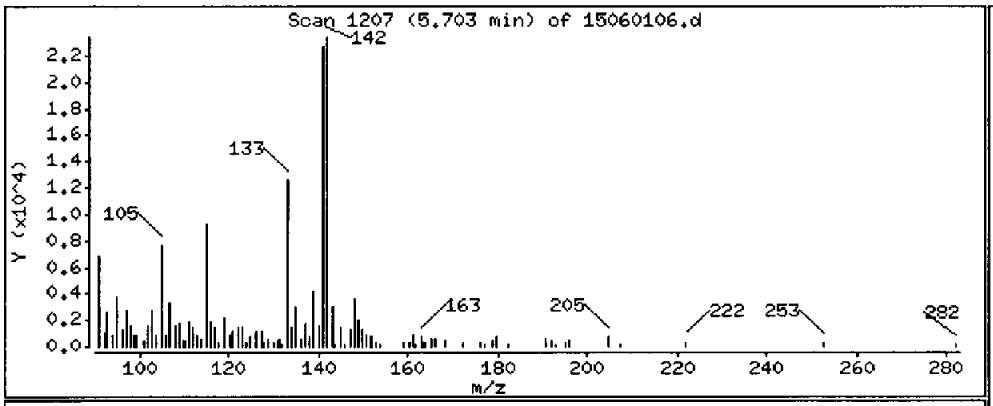
Operator: JZ

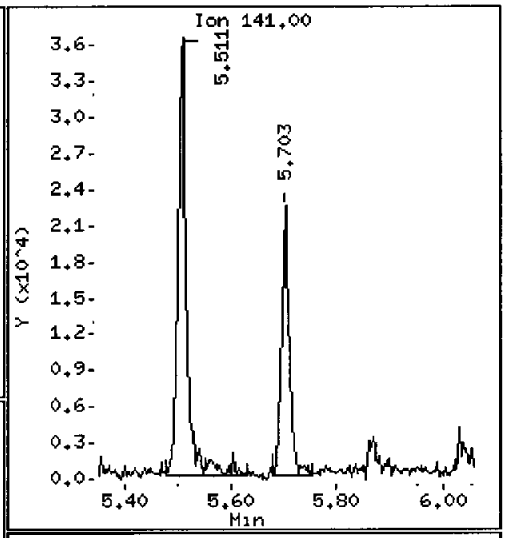
Column phase: ZB-35

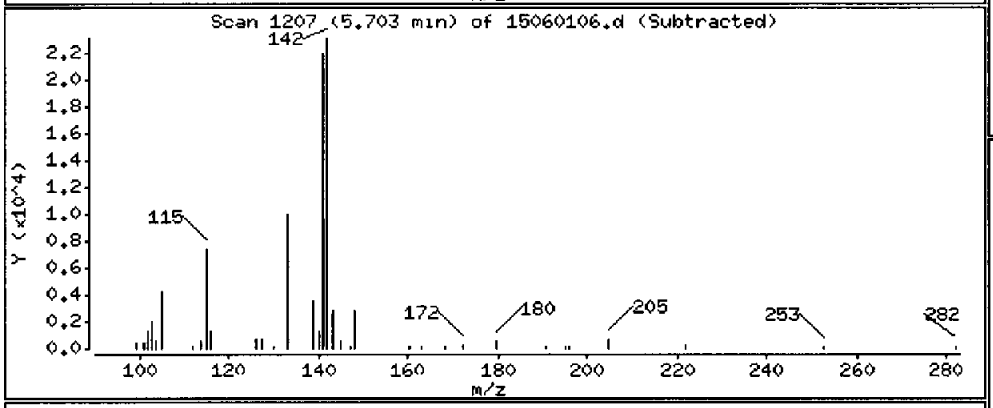
Column diameter: 0.25

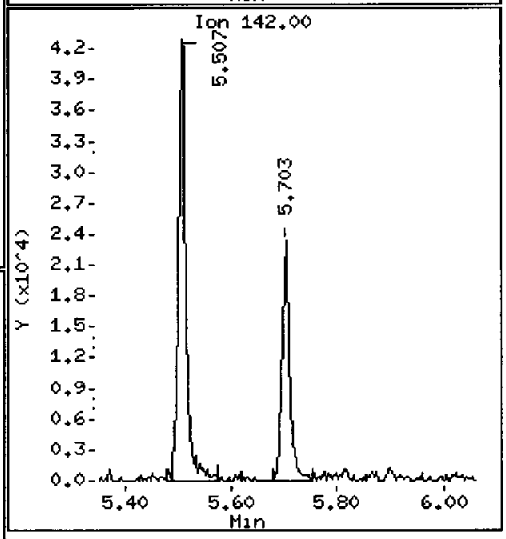
15 1-methylnaphthalene

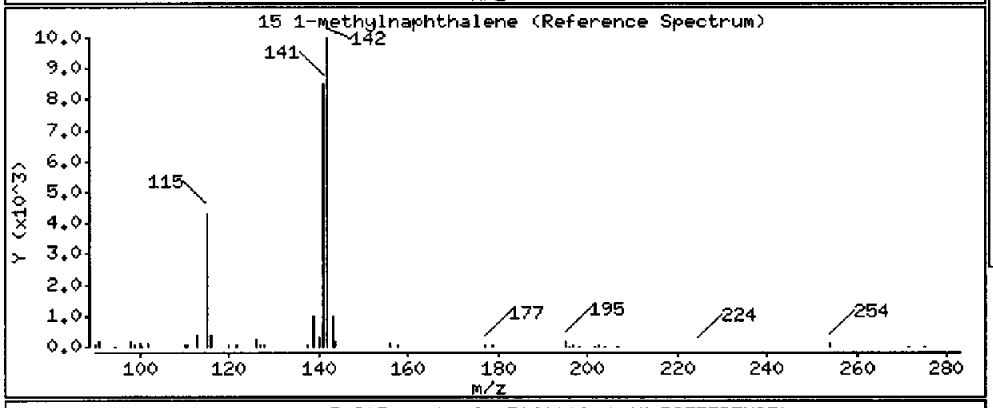
Concentration: 9.702 ug/kg

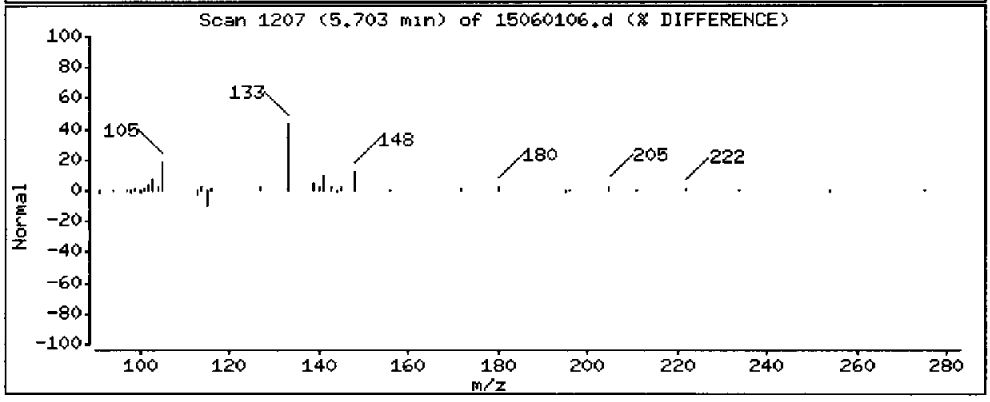












Data File: /chem3/nt8.i/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.i

Sample Info: AGC9B

Volume Injected (uL): 1.0

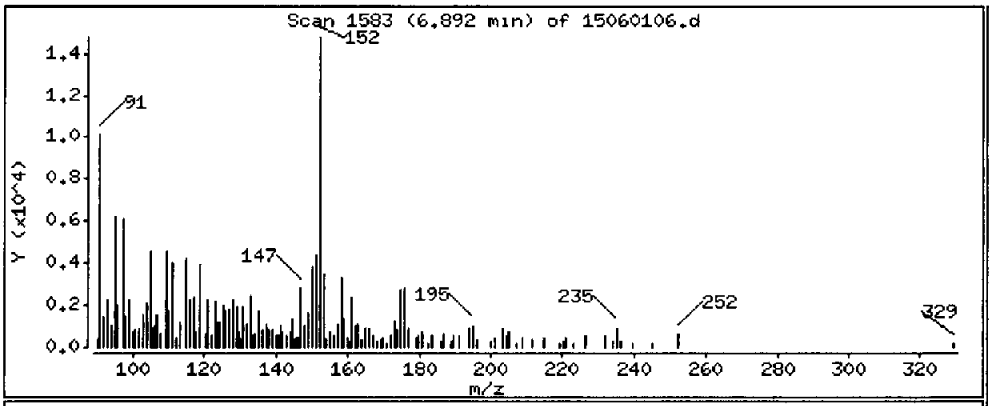
Operator: JZ

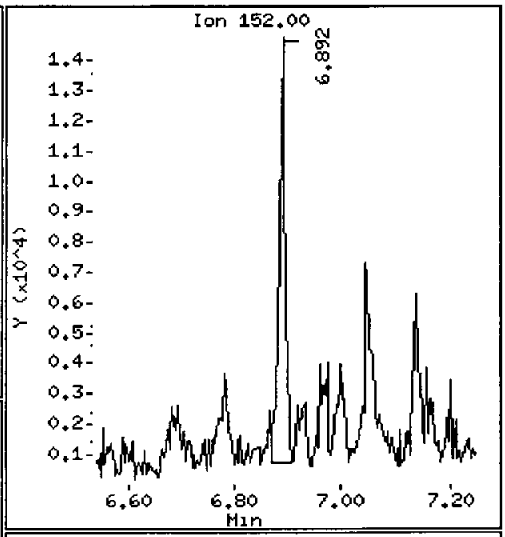
Column phase: ZB-35

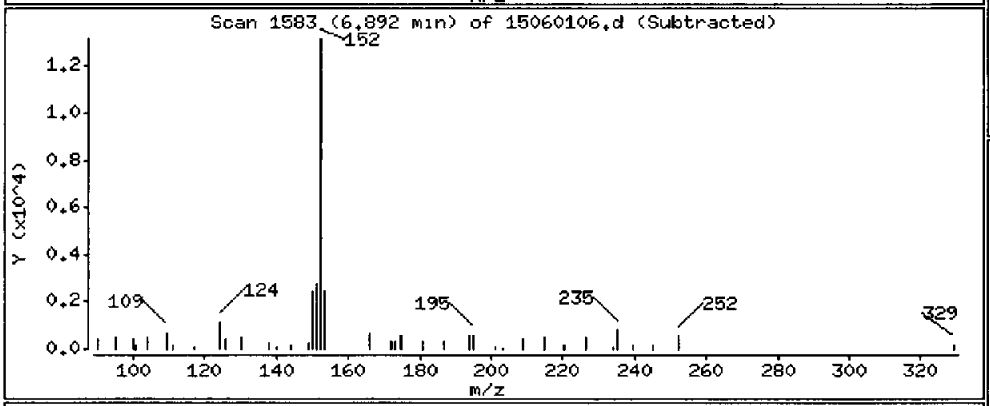
Column diameter: 0.25

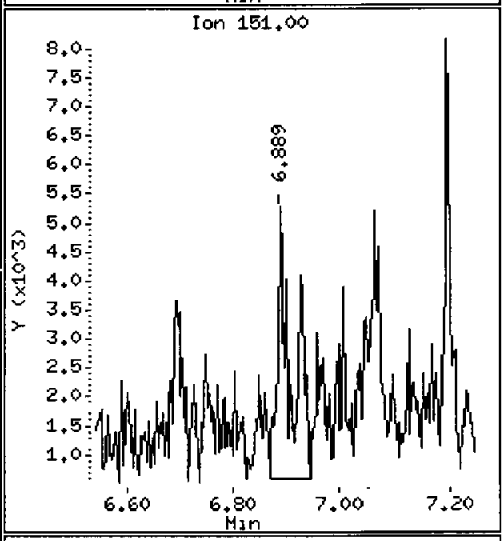
21 Acenaphthylene

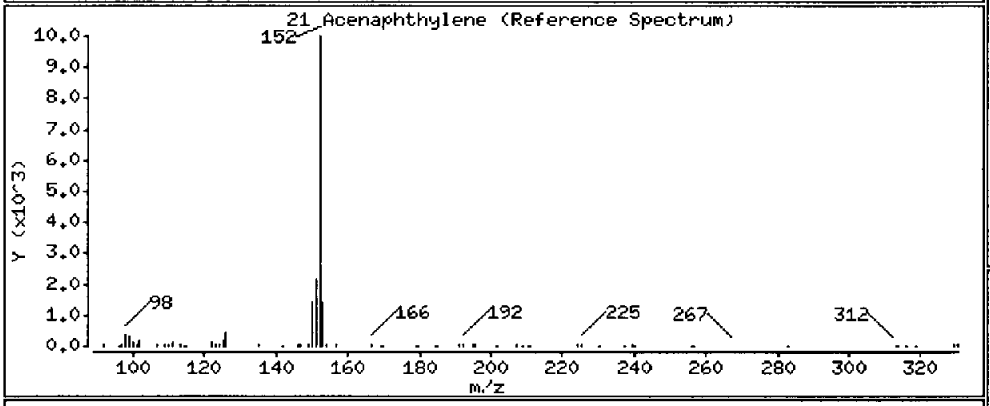
Concentration: 2.930 ug/kg

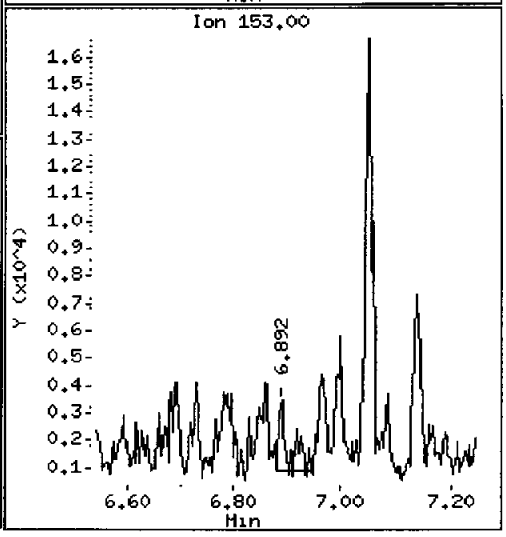


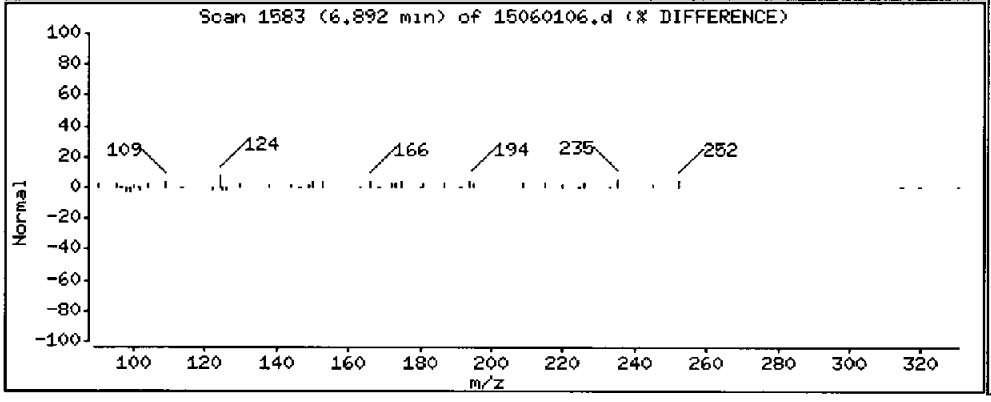












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

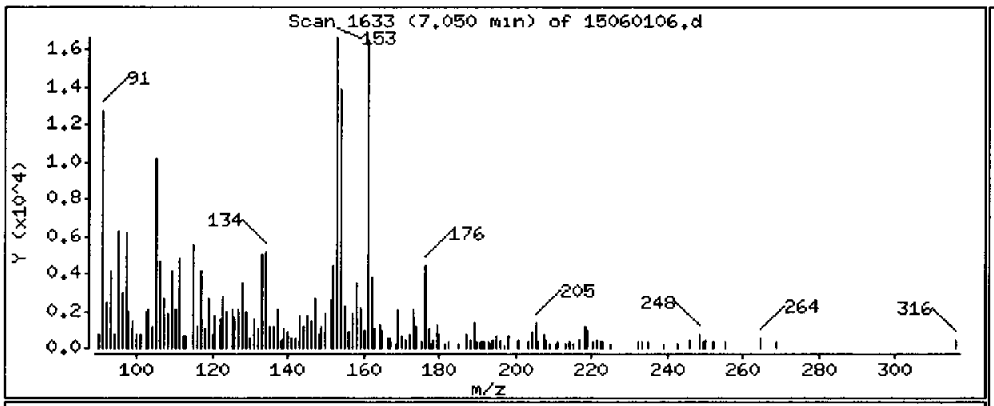
Operator: JZ

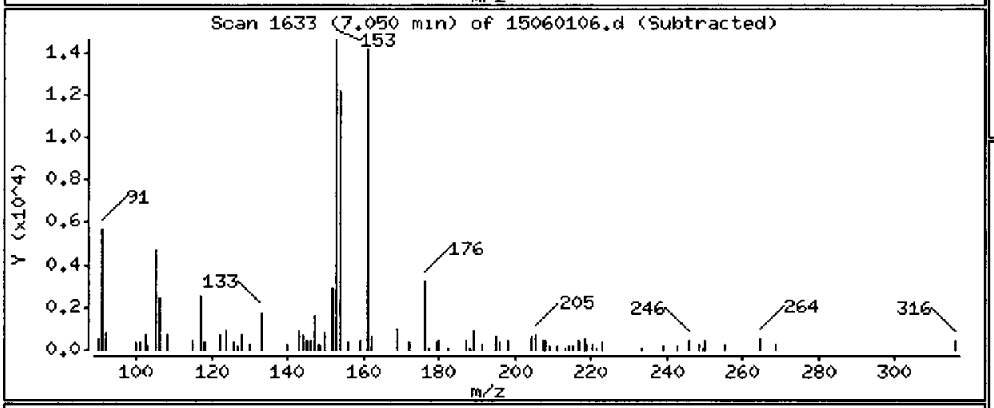
Column phase: ZB-35

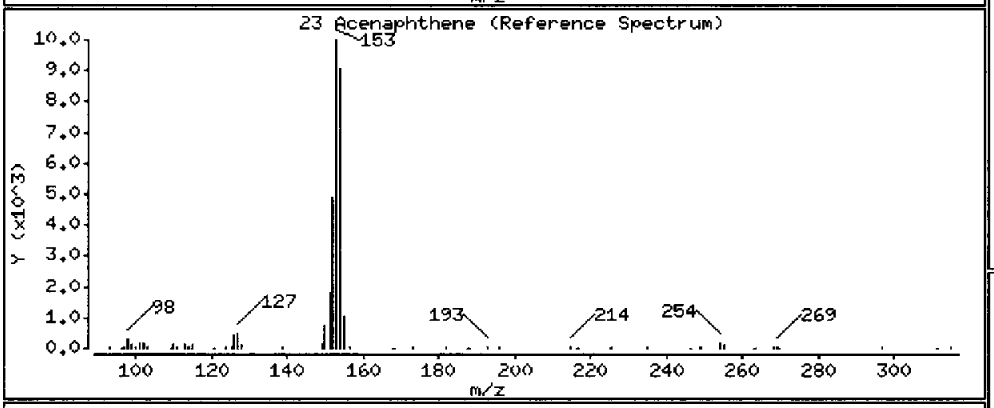
Column diameter: 0.25

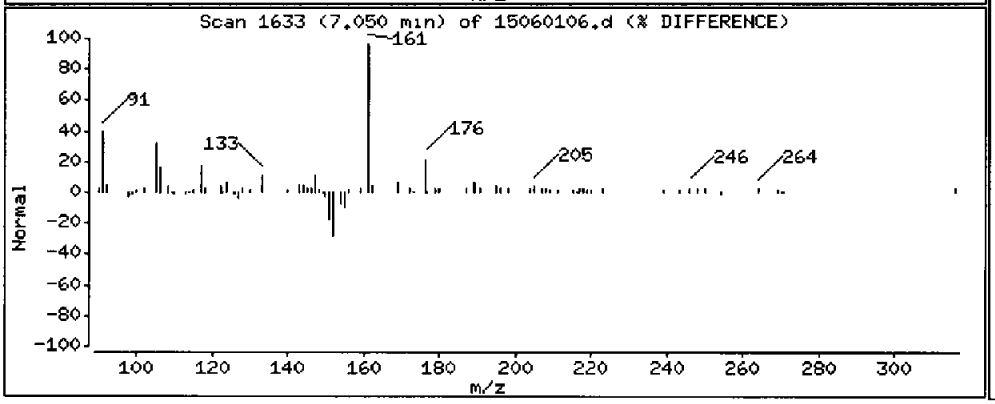
23 Acenaphthene

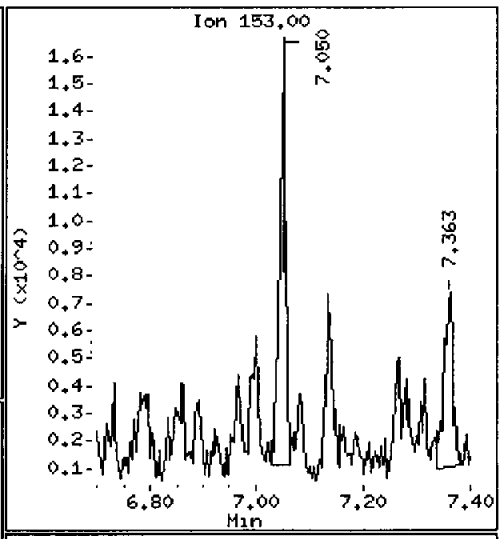
Concentration: 4.543 ug/kg

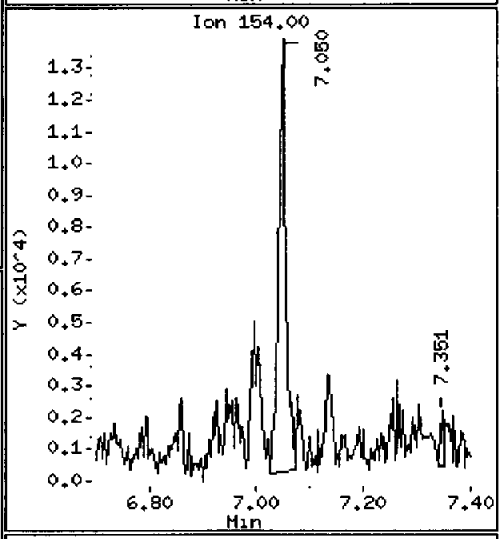


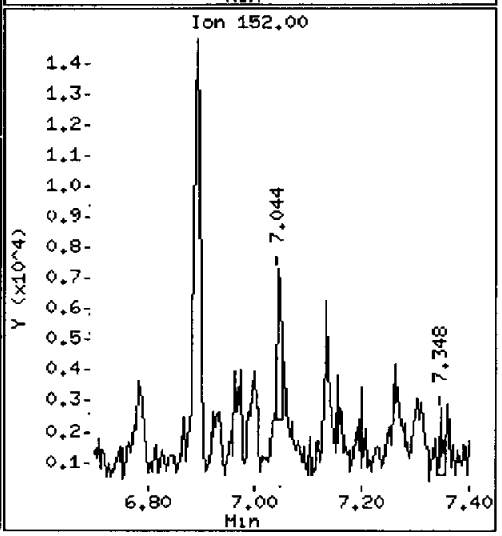












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

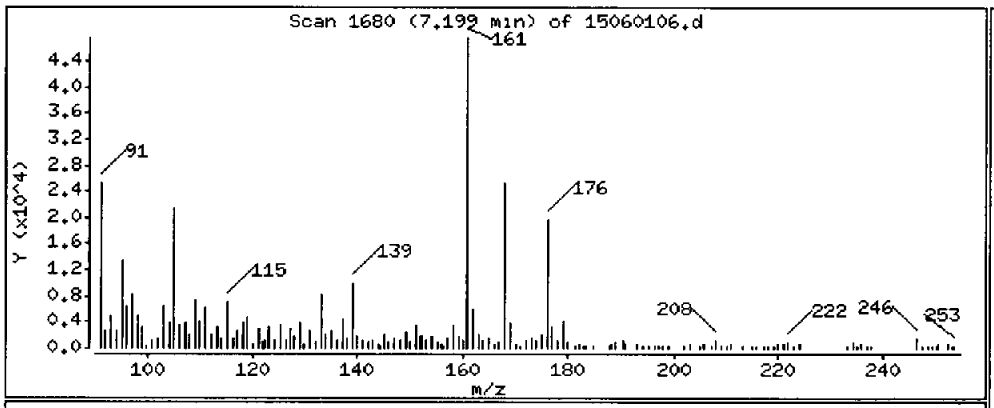
Operator: JZ

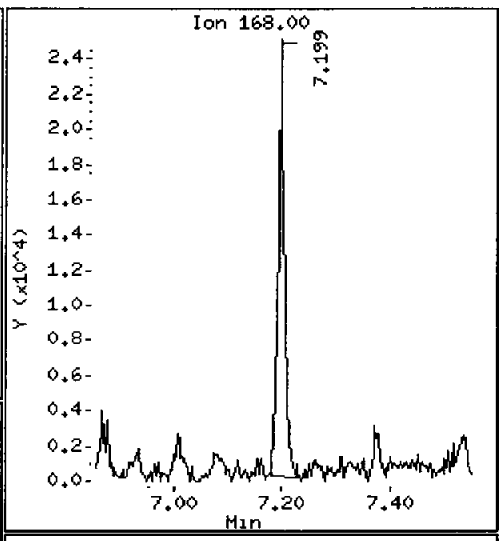
Column phase: ZB-35

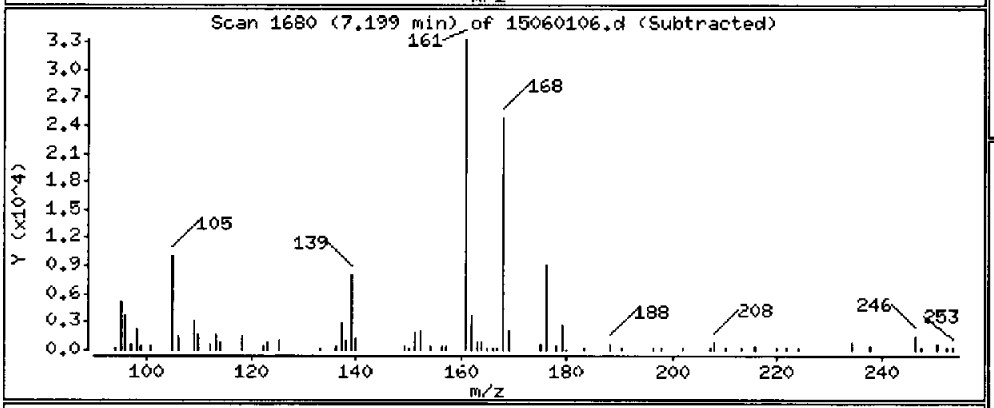
Column diameter: 0.25

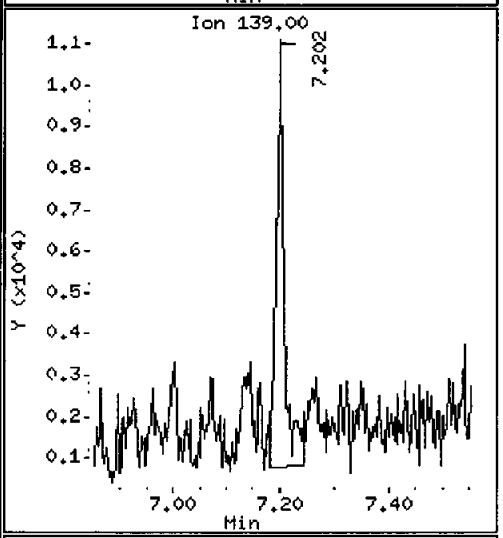
11 Dibenzofuran

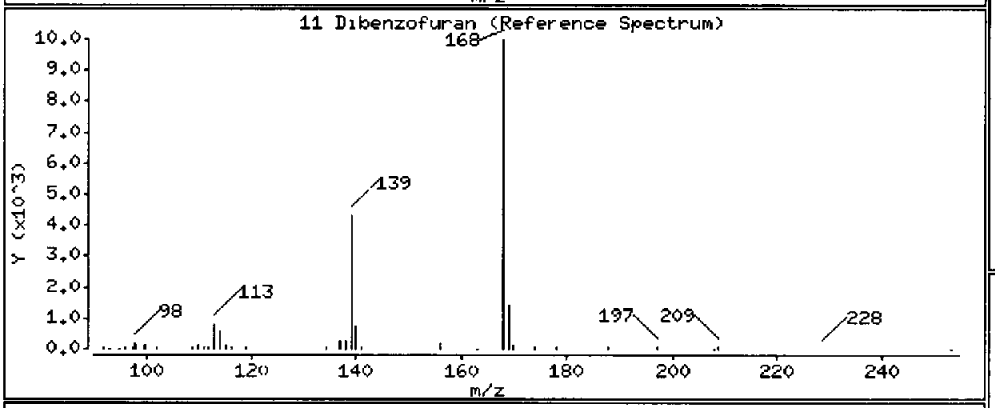
Concentration: 5.647 ug/kg

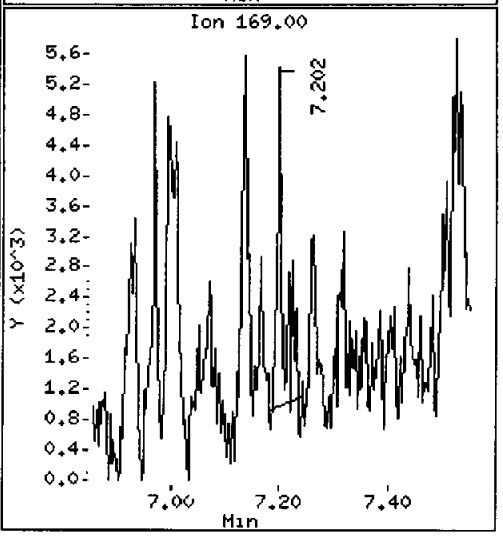


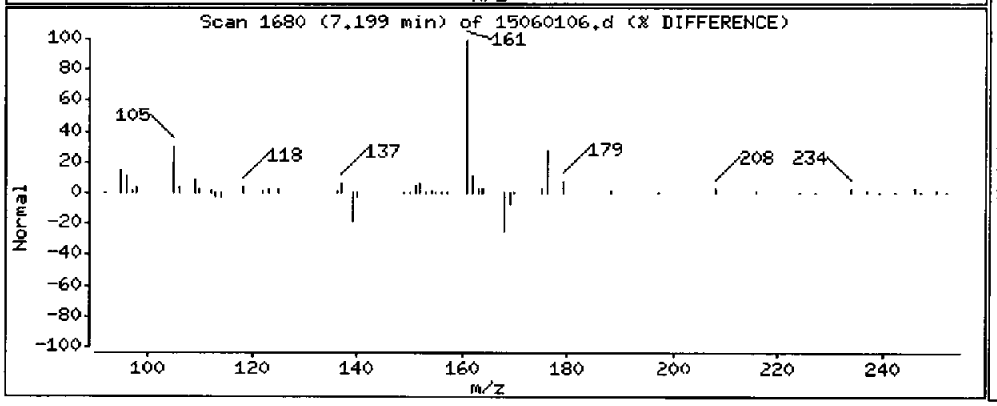












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

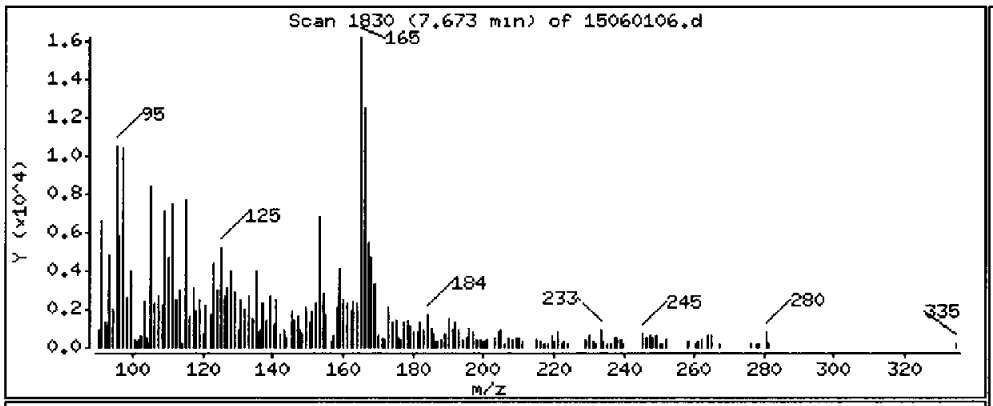
Operator: JZ

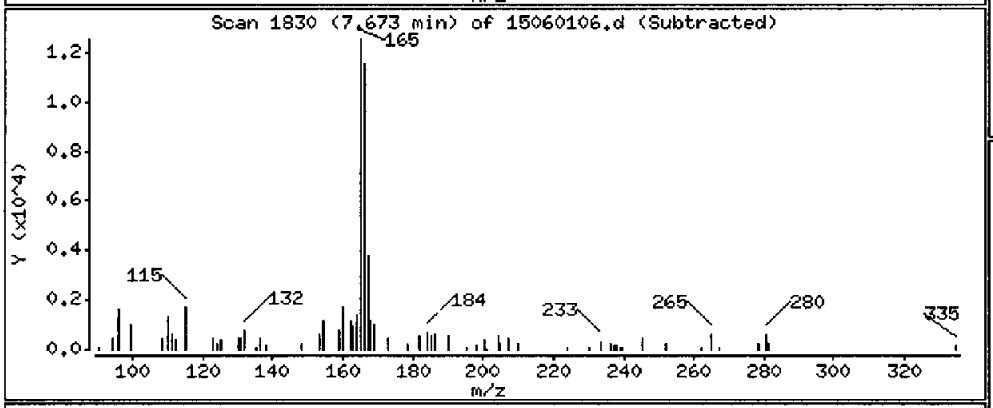
Column phase: ZB-35

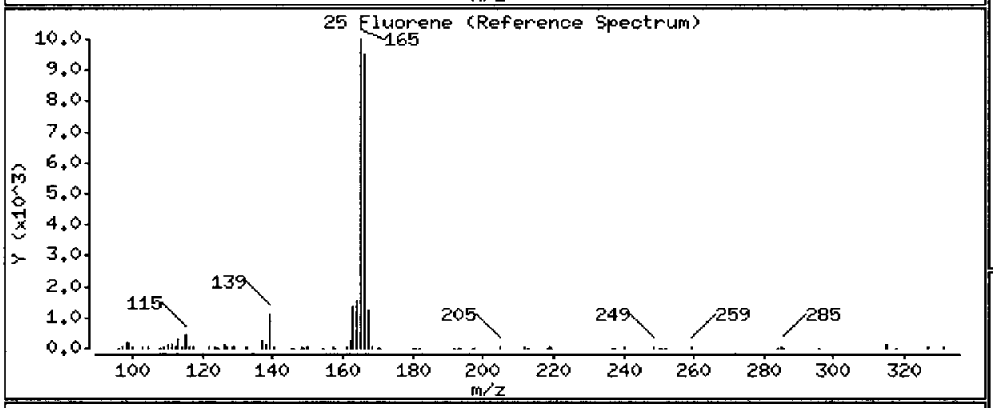
Column diameter: 0.25

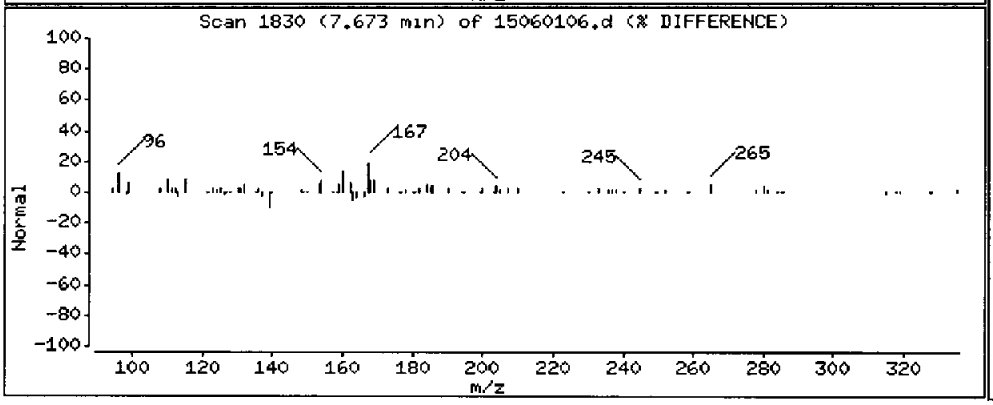
25 Fluorene

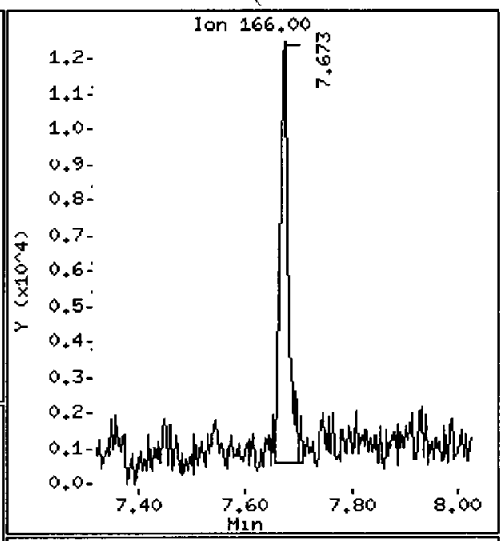
Concentration: 4.537 ug/kg

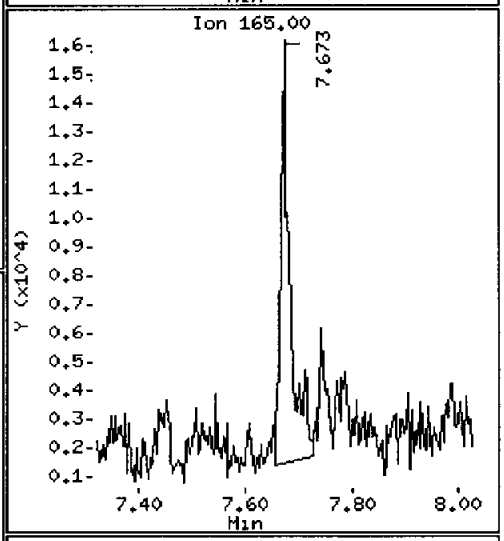


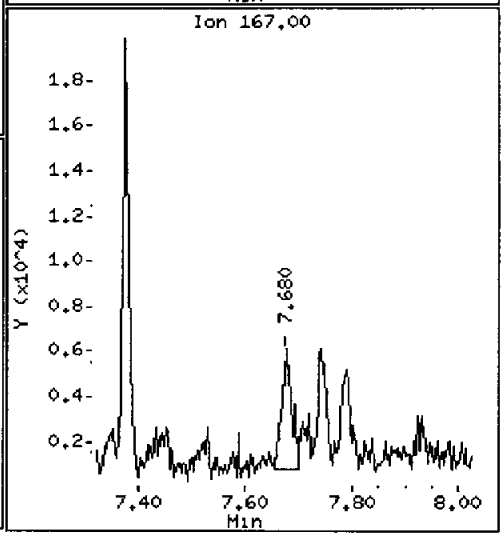












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

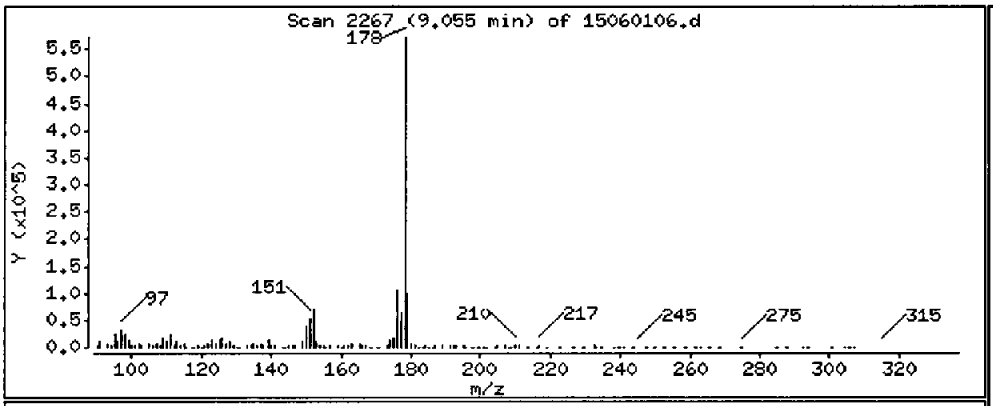
Operator: JZ

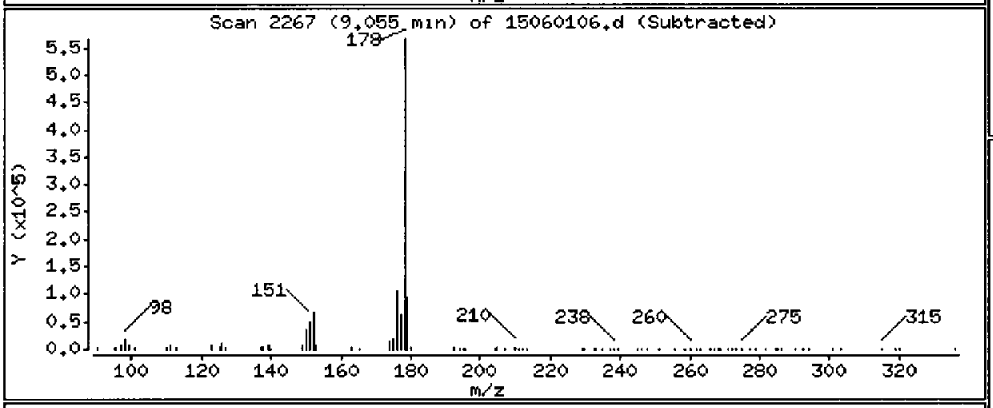
Column phase: ZB-35

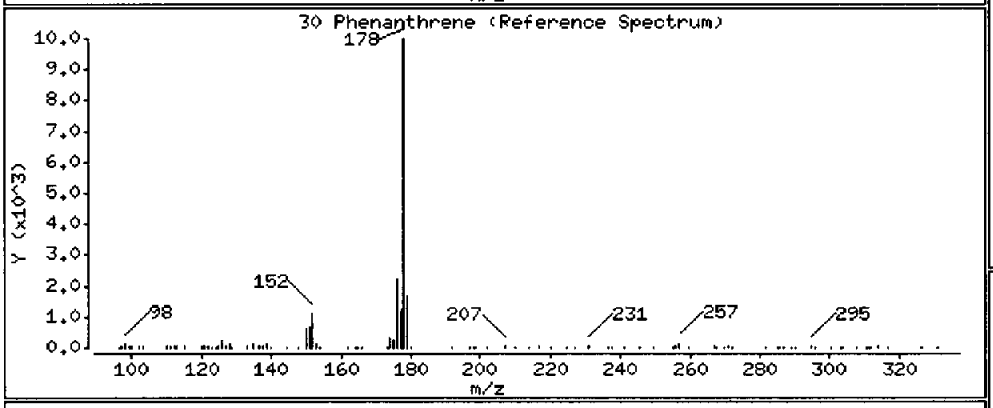
Column diameter: 0.25

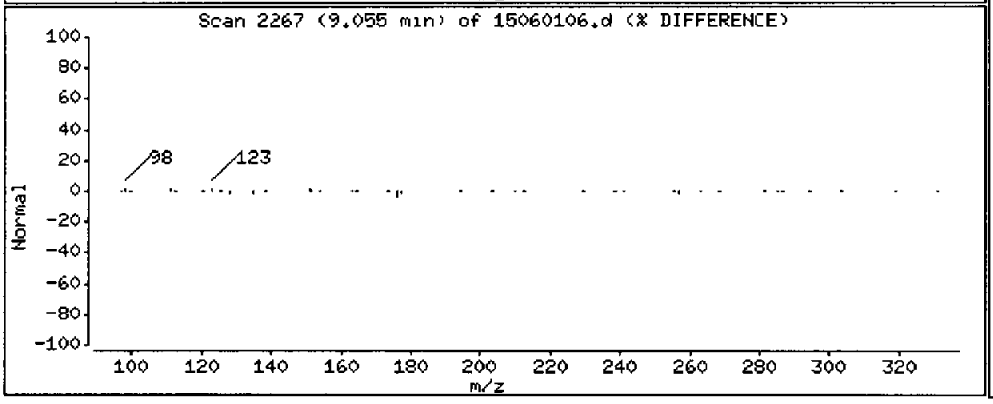
30 Phenanthrene

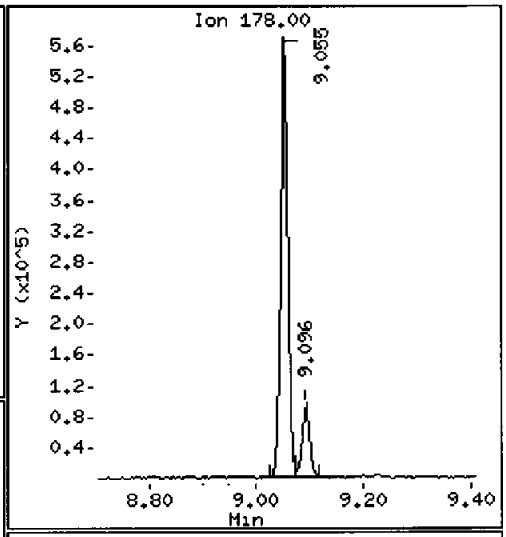
Concentration: 115.5 ug/kg

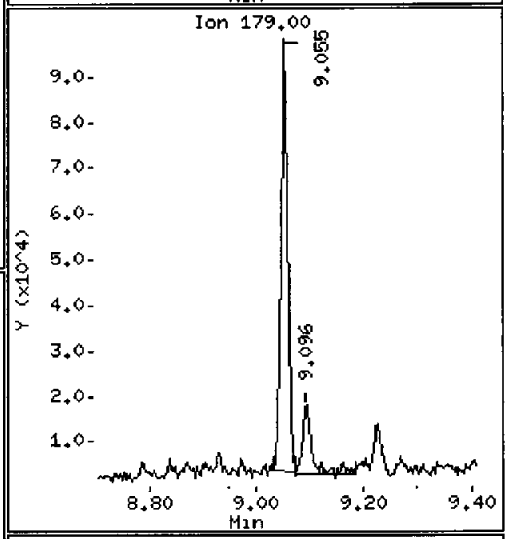


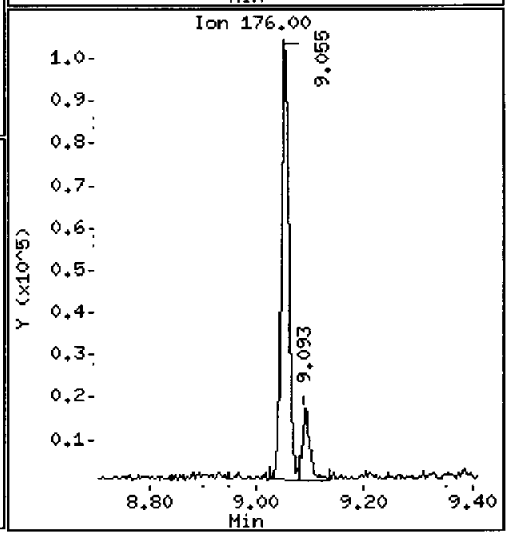












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

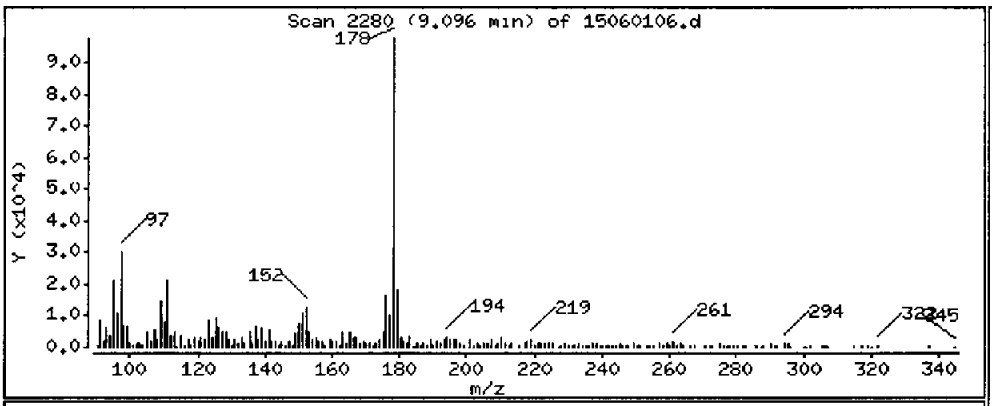
Operator: JZ

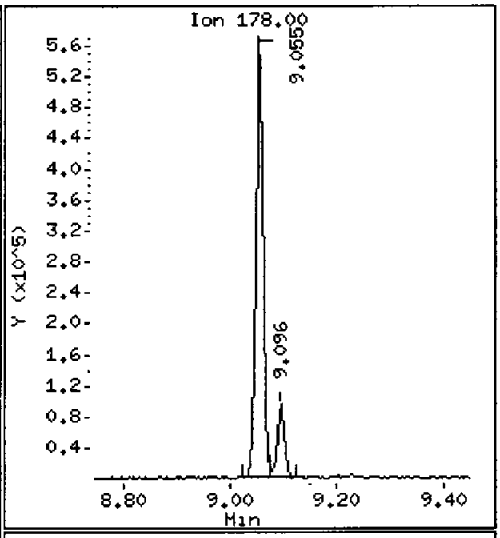
Column phase: ZB-35

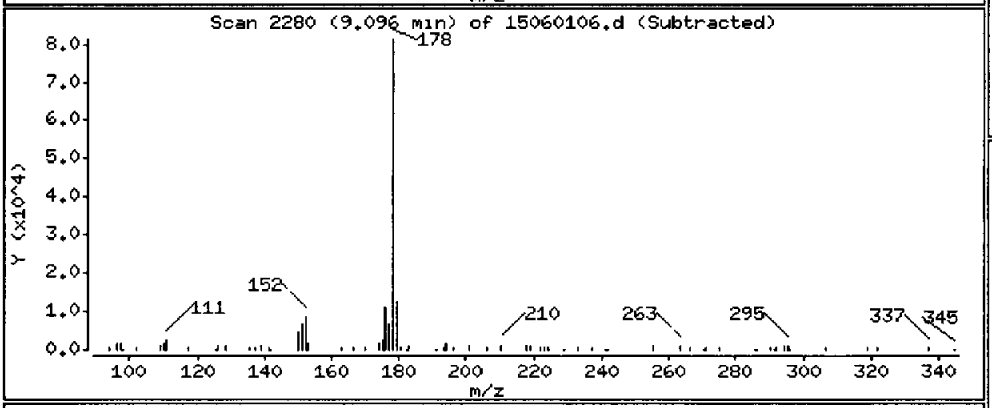
Column diameter: 0.25

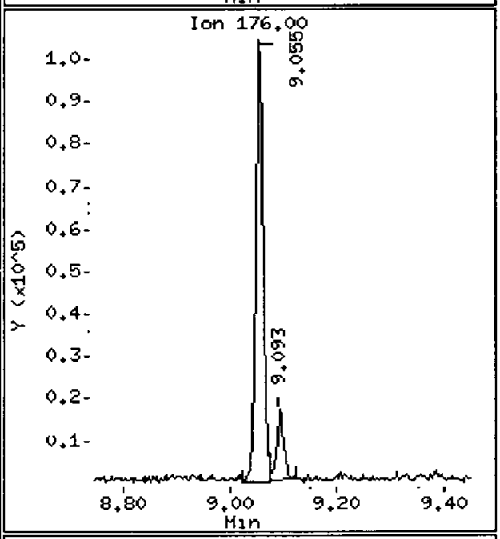
31 Anthracene

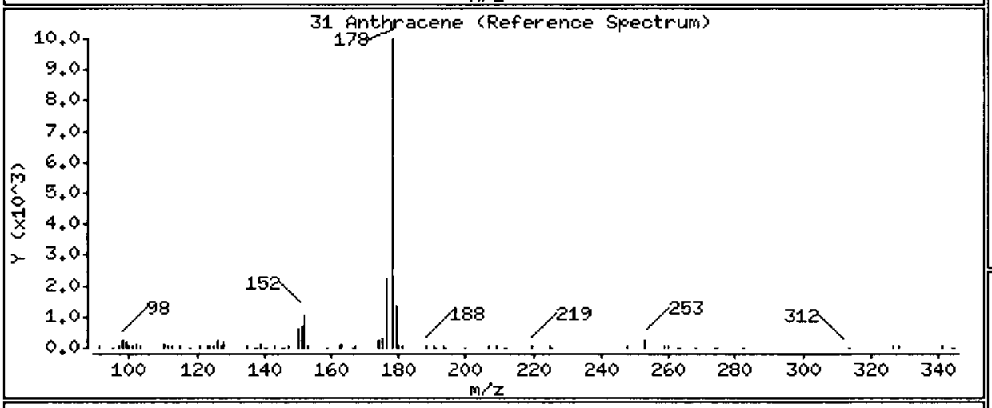
Concentration: 22.68 ug/kg

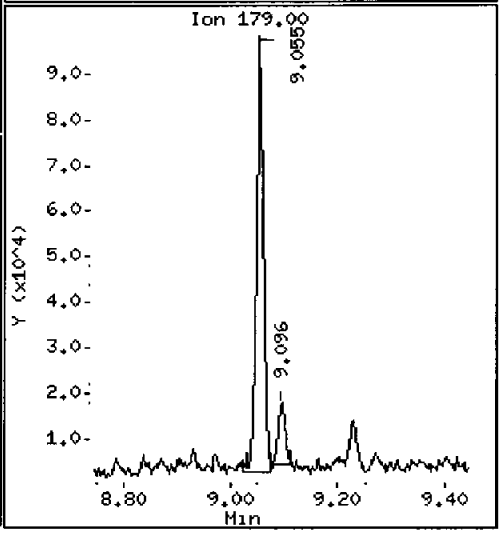


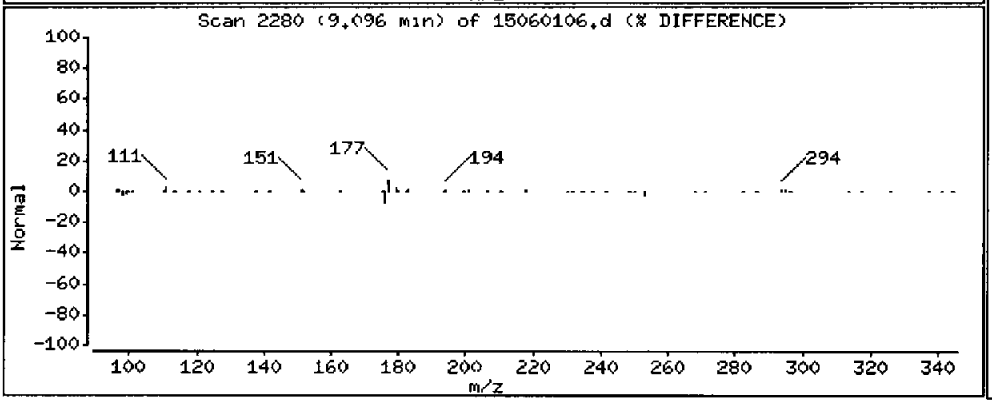












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

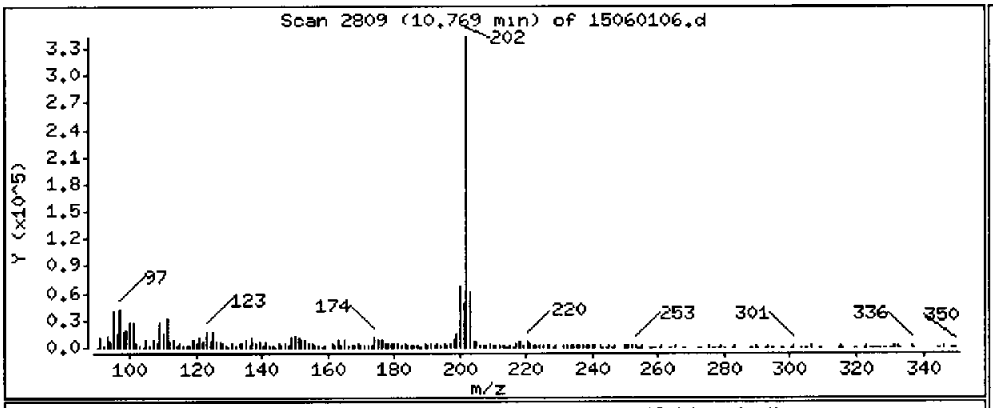
Operator: JZ

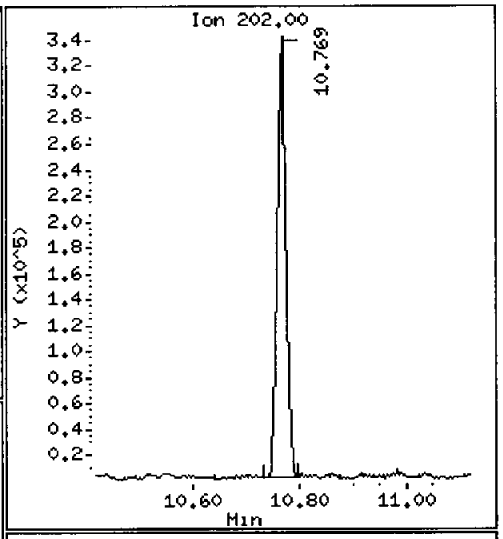
Column phase: ZB-35

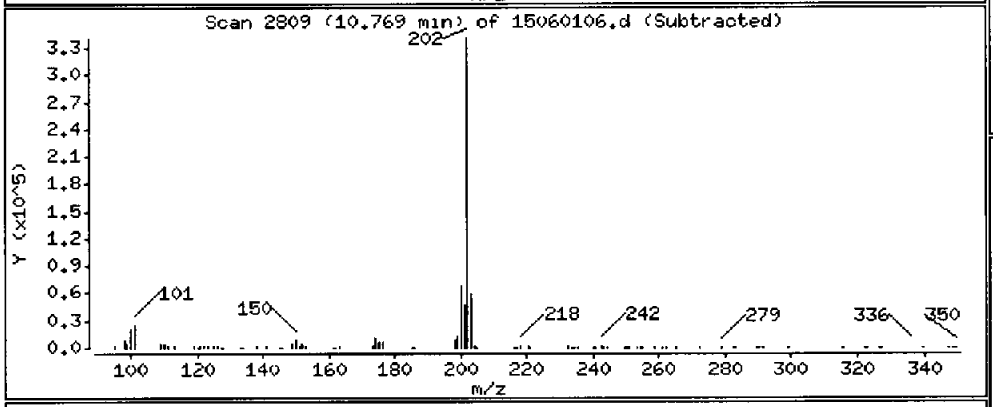
Column diameter: 0.25

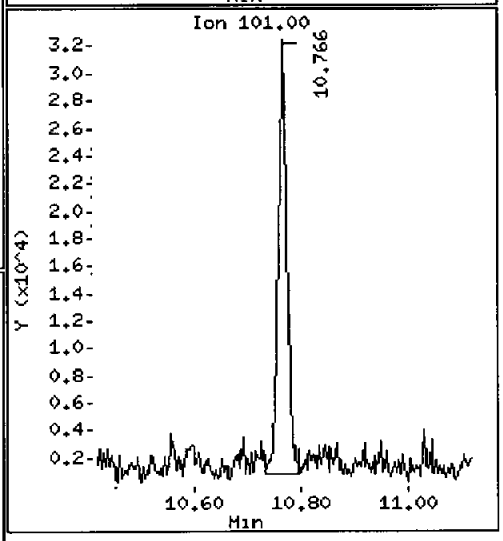
36 Fluoranthene

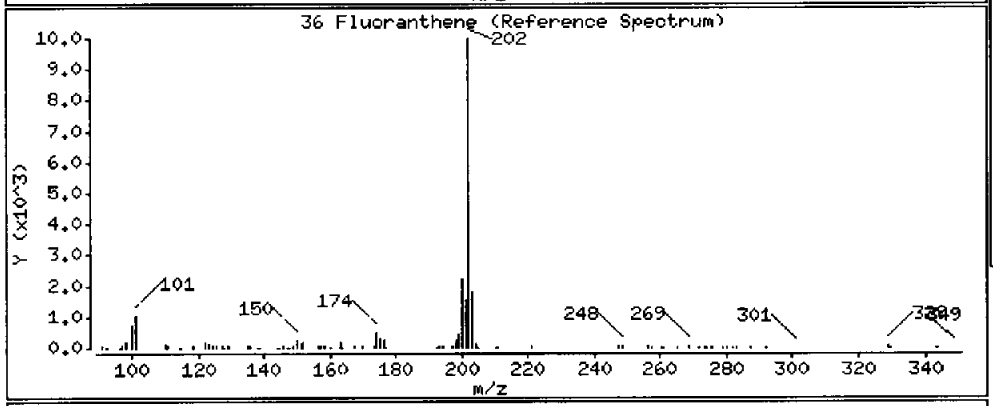
Concentration: 69.89 ug/kg

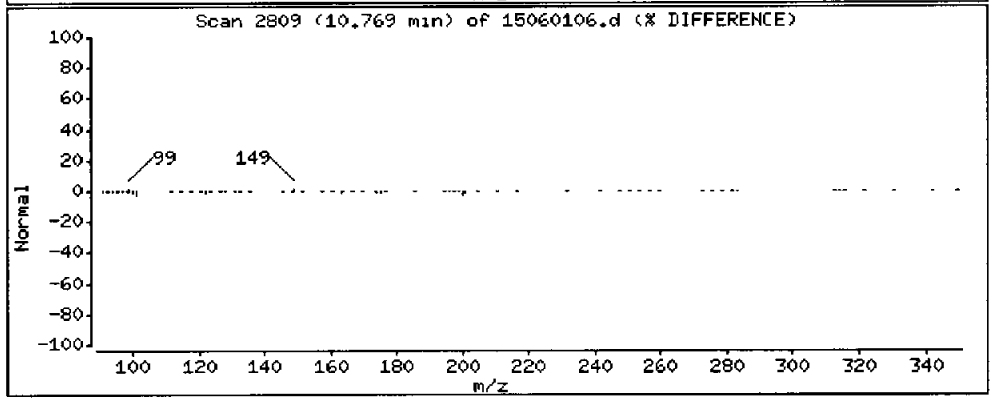












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

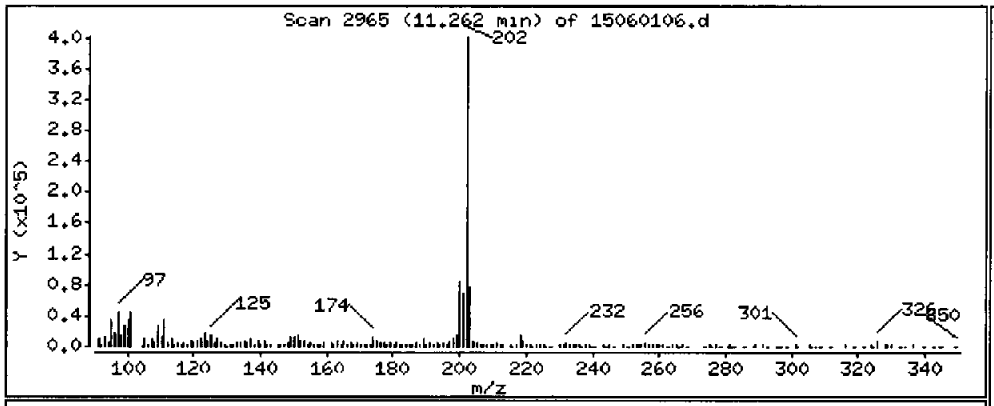
Operator: JZ

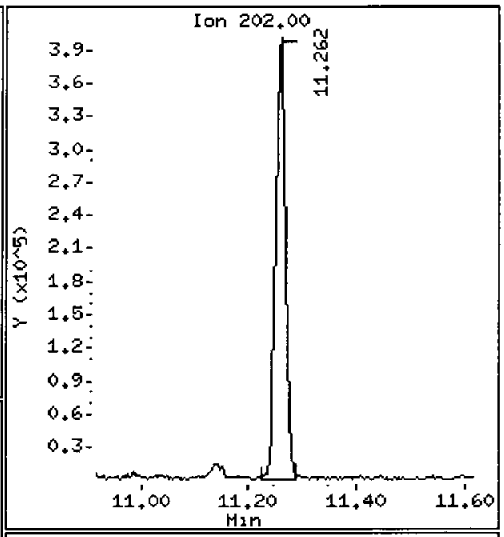
Column phase: ZB-35

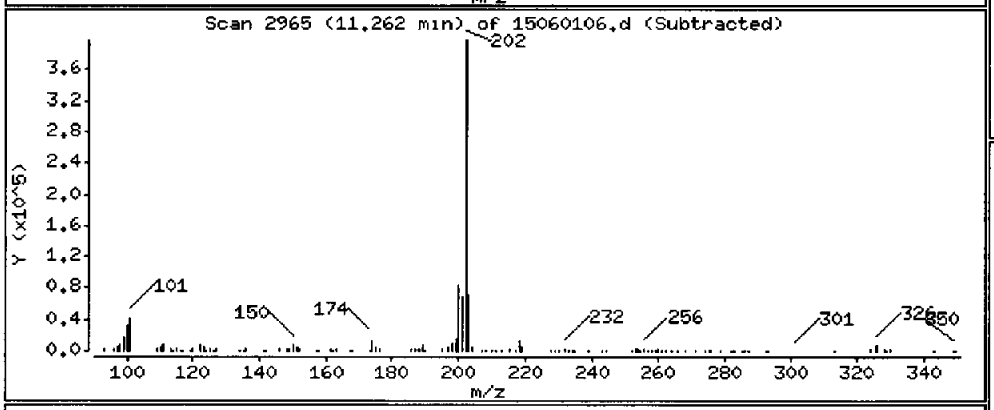
Column diameter: 0.25

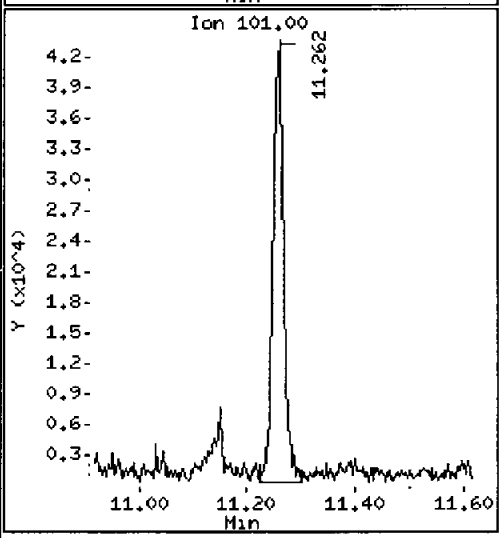
39 Pyrene

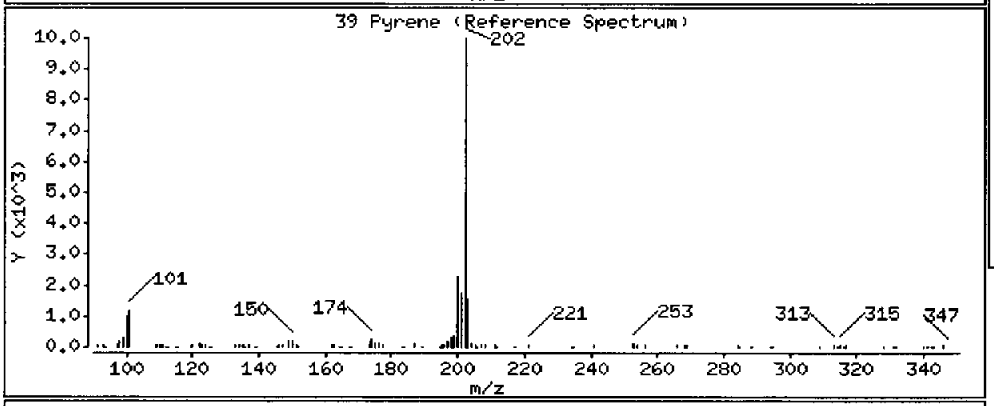
Concentration: 89.09 ug/kg

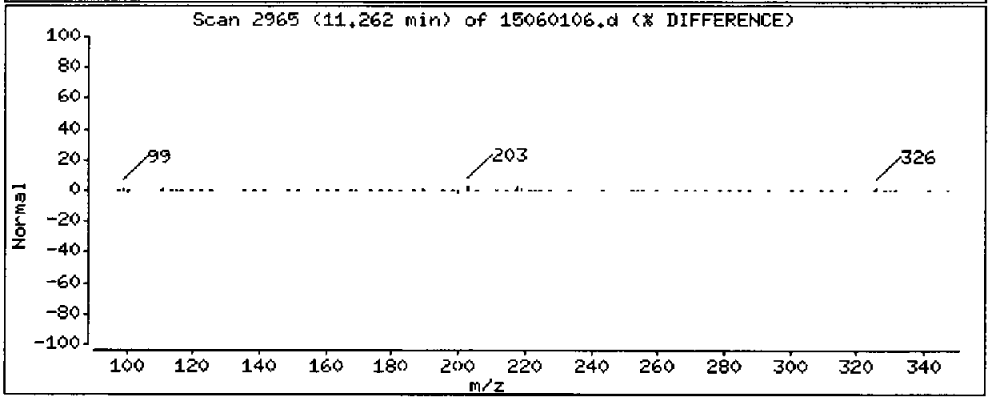












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

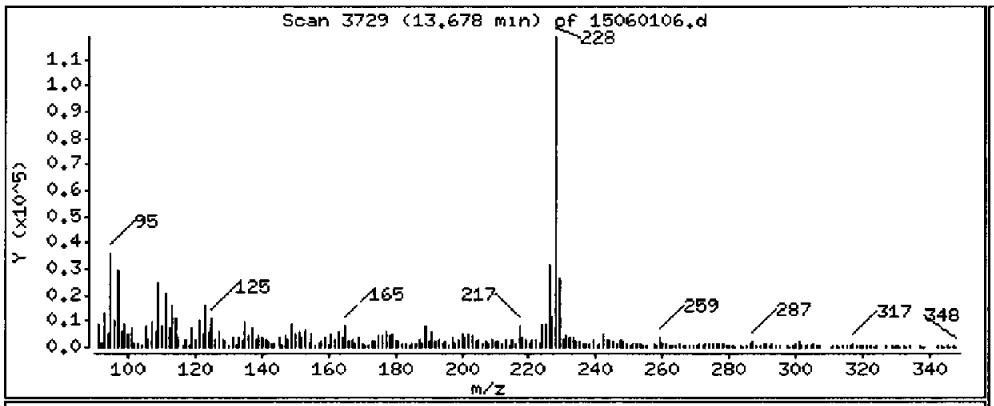
Operator: JZ

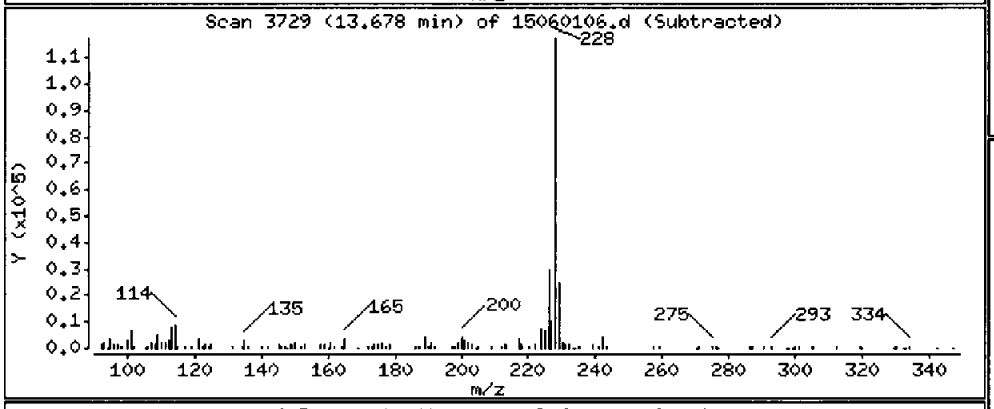
Column phase: ZB-35

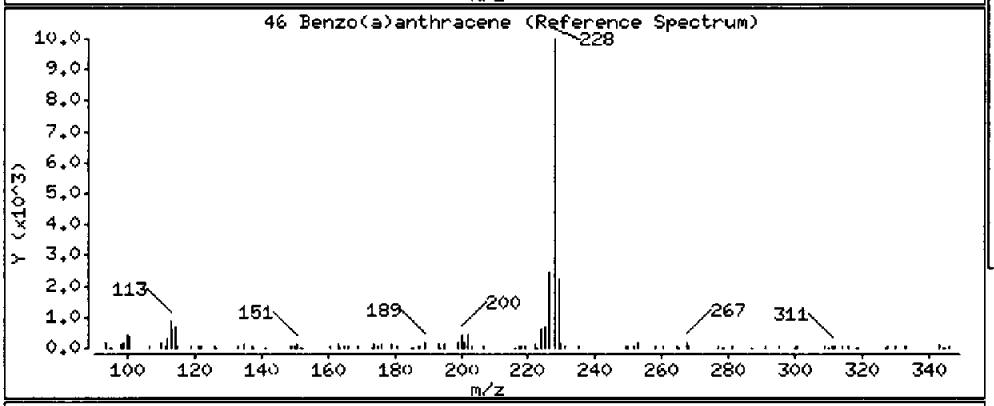
Column diameter: 0.25

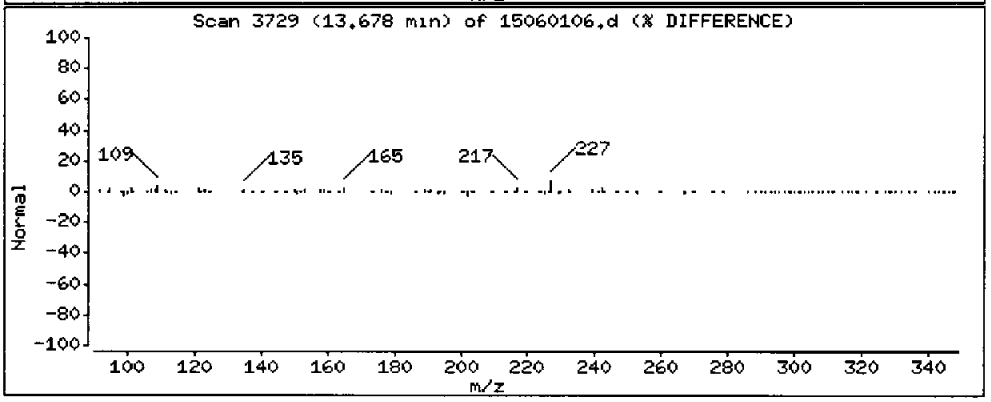
46 Benzo(a)anthracene

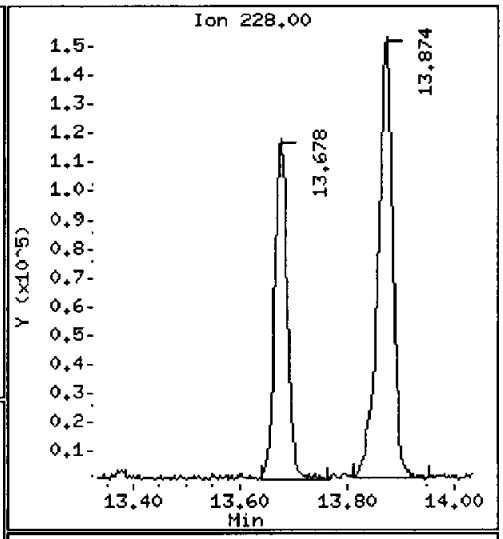
Concentration: 36.68 ug/kg

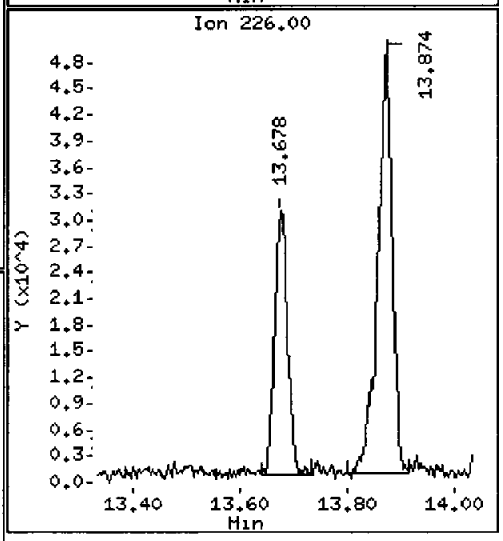












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

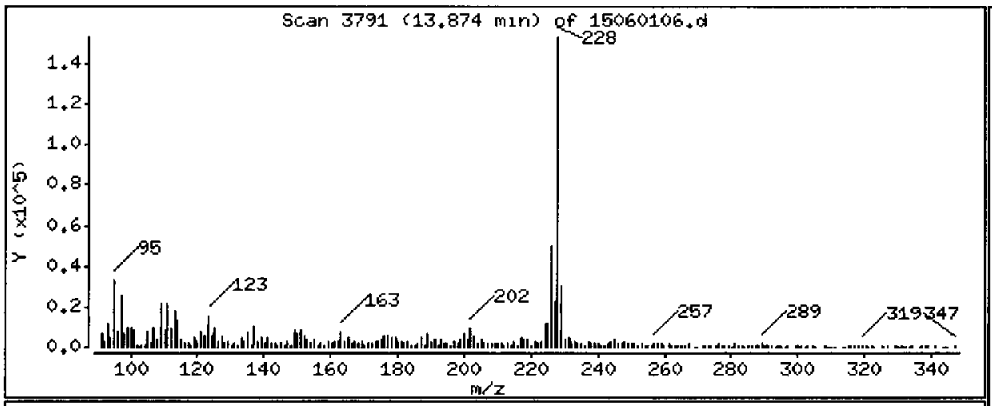
Operator: JZ

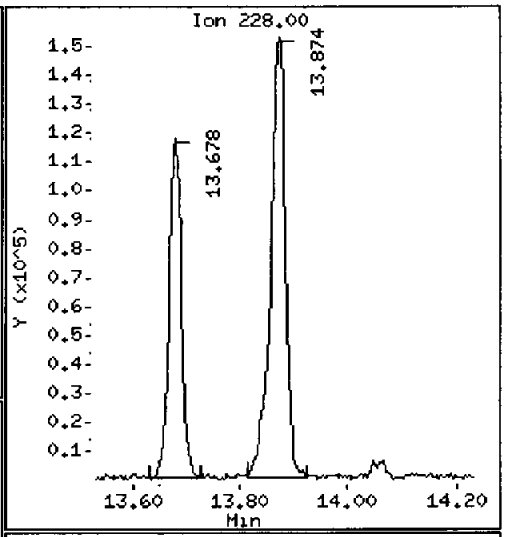
Column phase: ZB-35

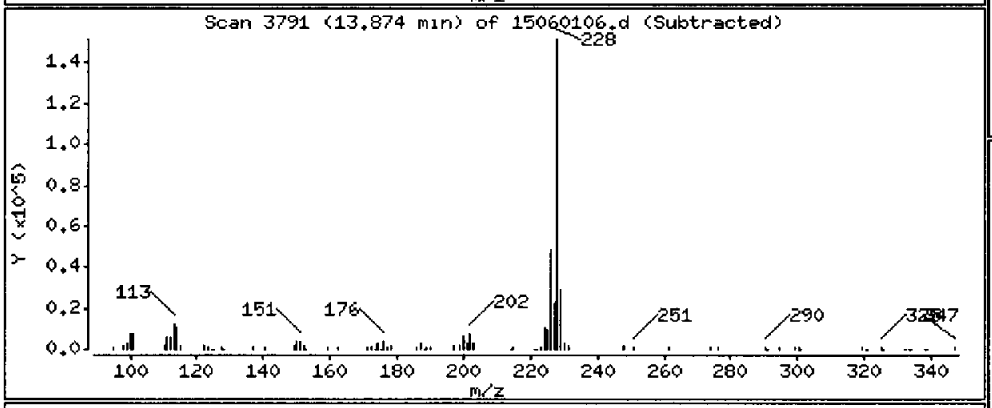
Column diameter: 0.25

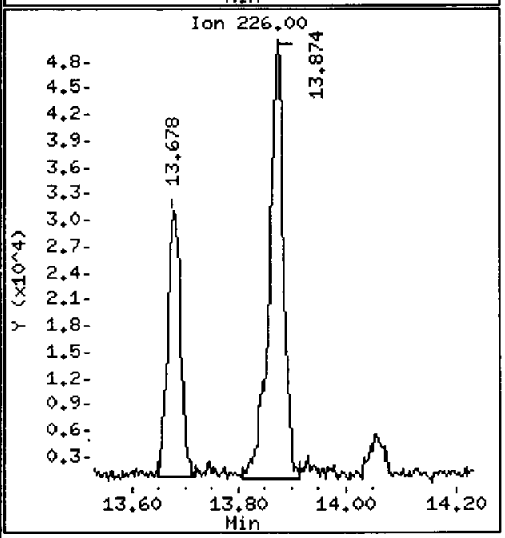
48 Chrysene

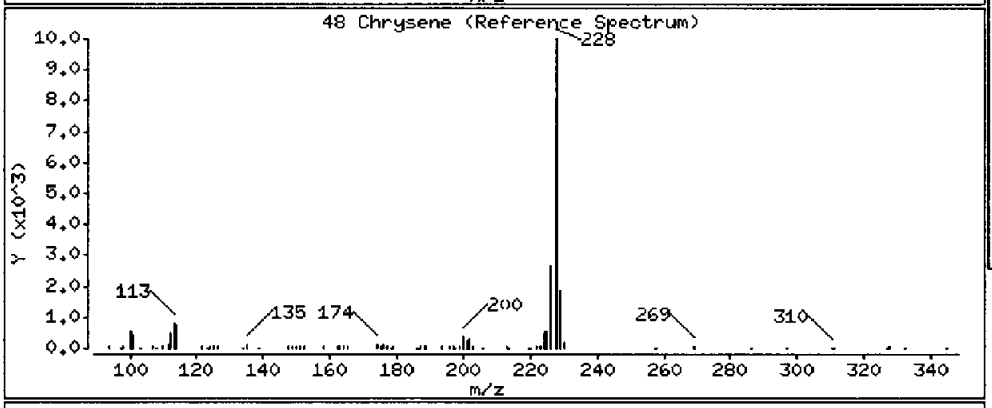
Concentration: 55.68 ug/kg

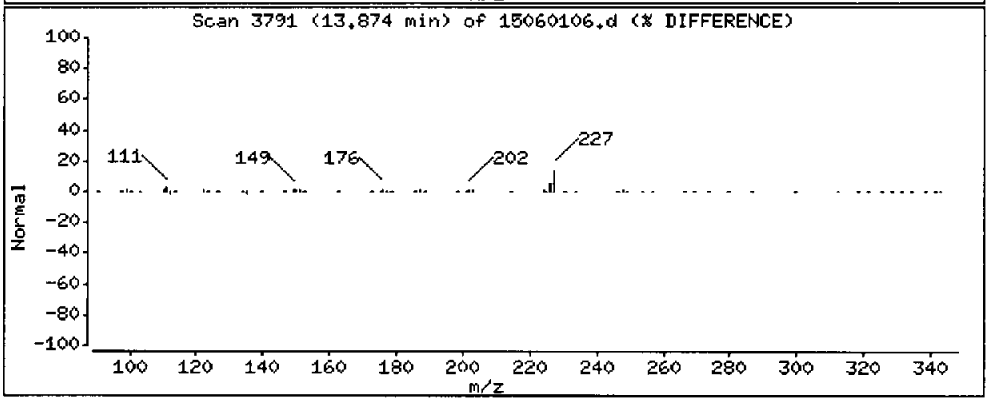












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

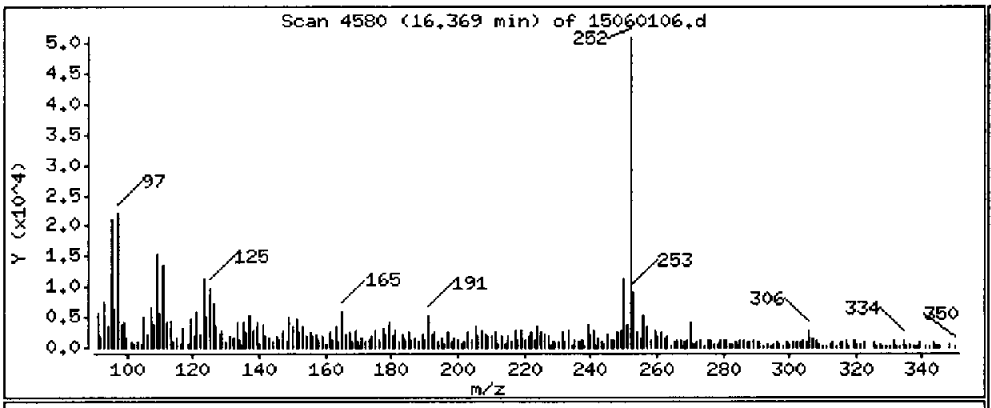
Operator: JZ

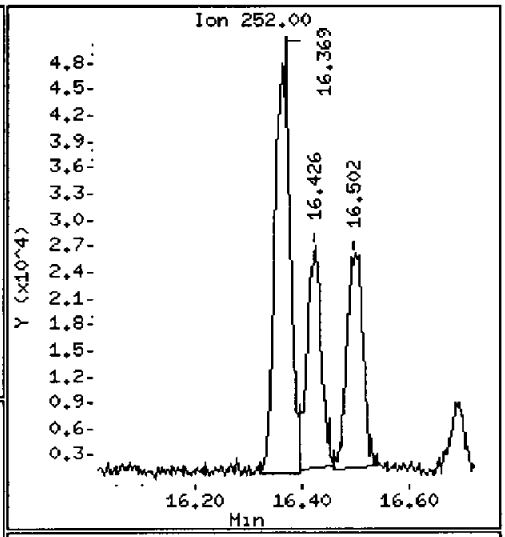
Column phase: ZB-35

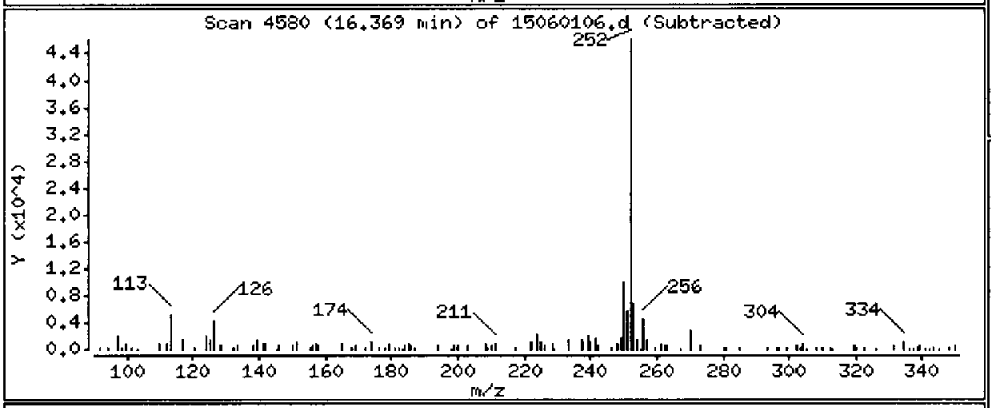
Column diameter: 0.25

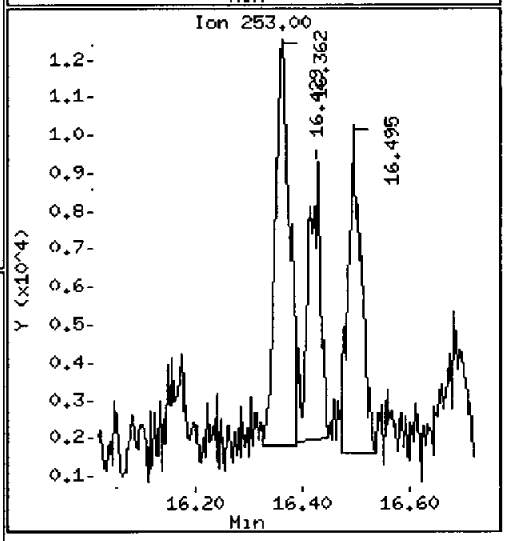
51 Benzo(b)fluoranthene

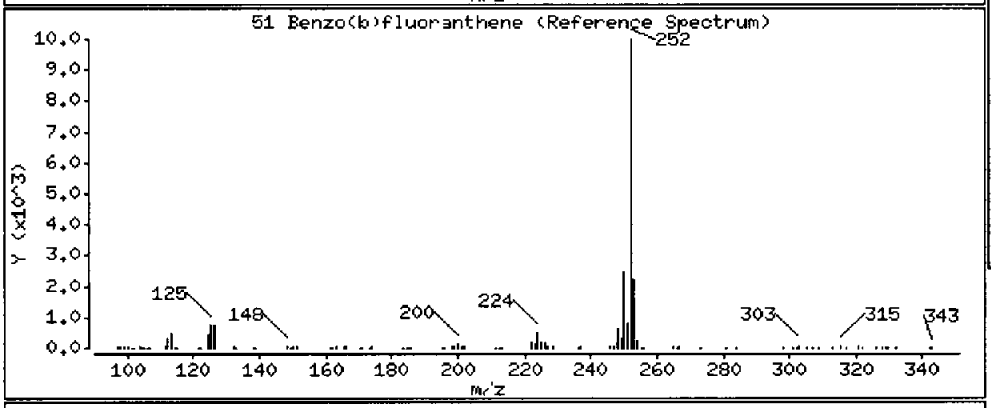
Concentration: 16.87 ug/kg

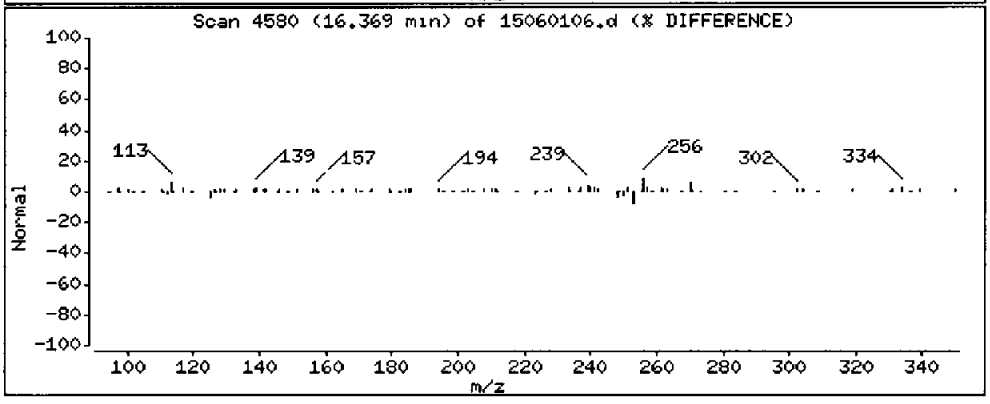












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

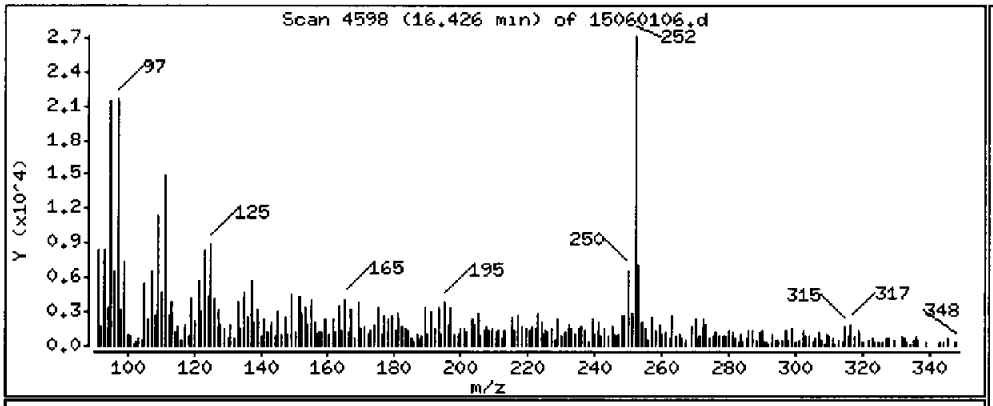
Operator: JZ

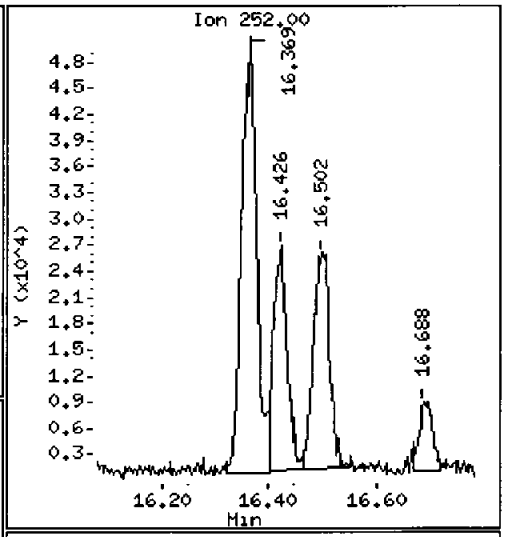
Column phase: ZB-35

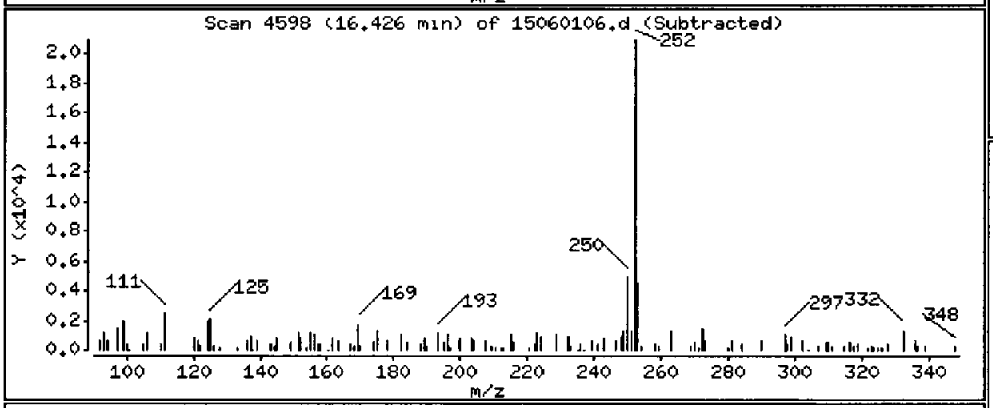
Column diameter: 0.25

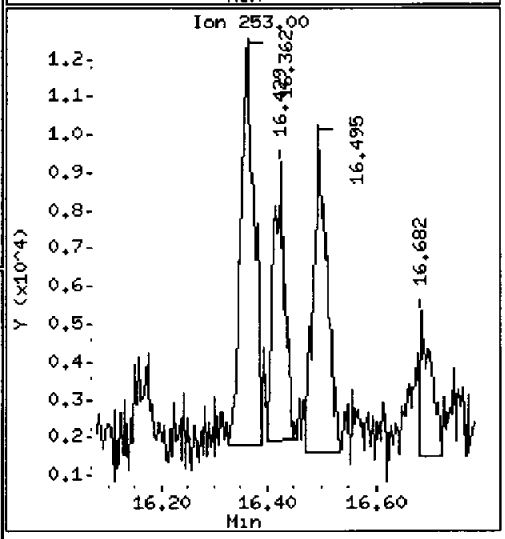
52 Benzo(k)fluoranthene

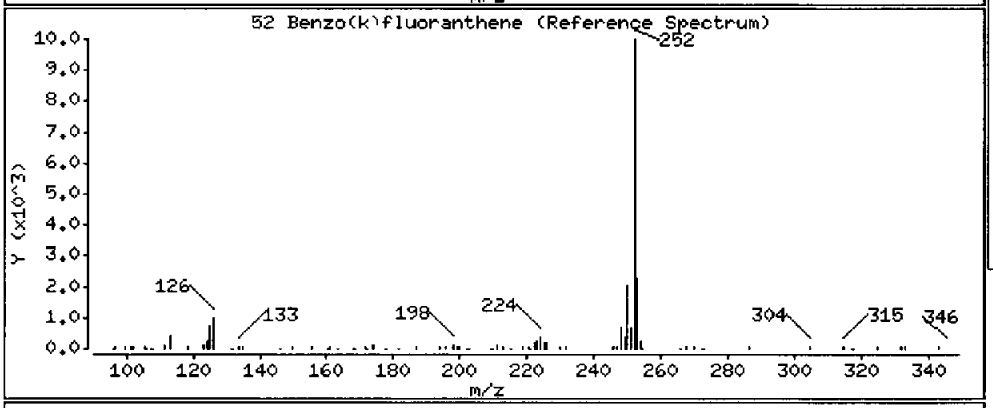
Concentration: 8.225 ug/kg

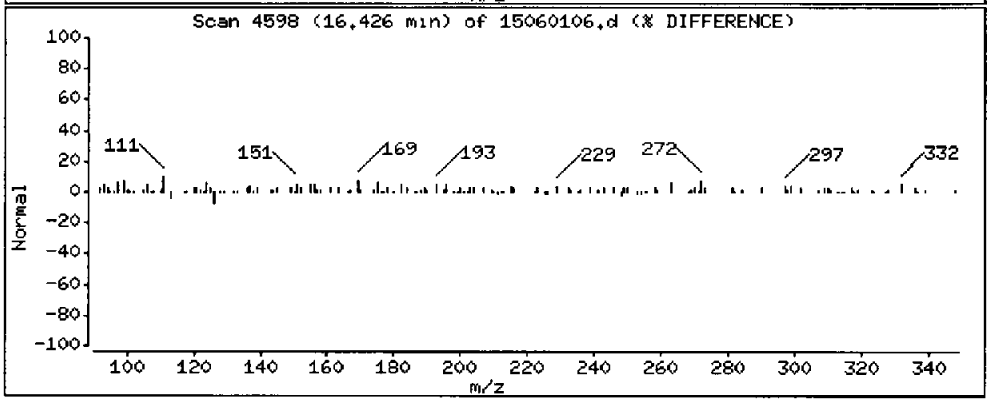












Data File: /chem3/nt8.i/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.i

Sample Info: AGC9B

Volume Injected (uL): 1.0

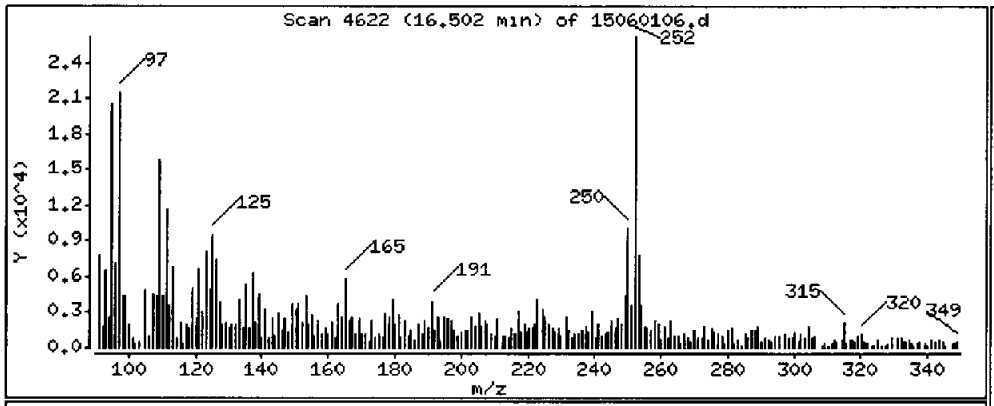
Operator: JZ

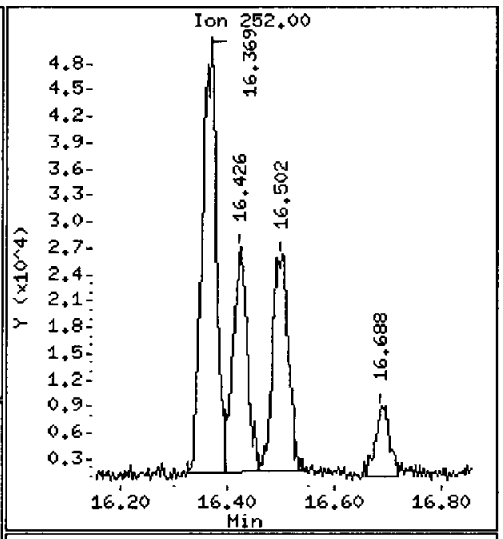
Column phase: ZB-35

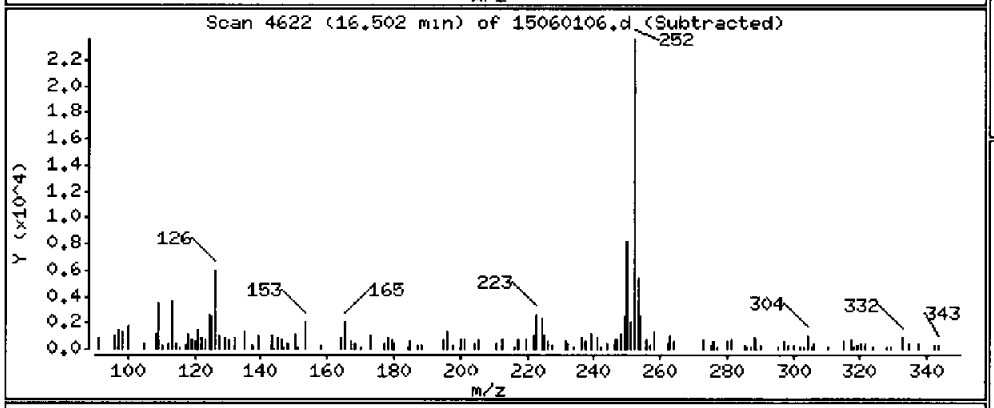
Column diameter: 0.25

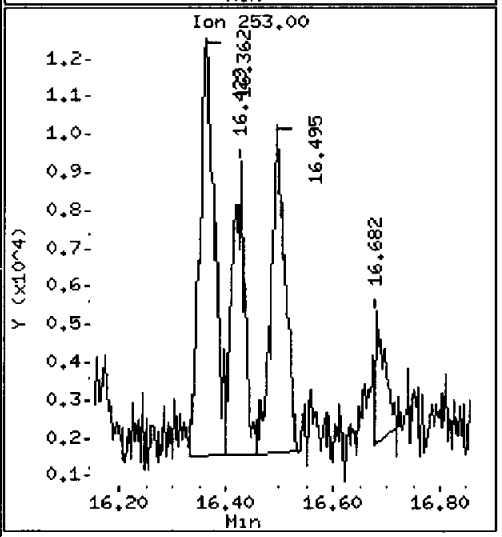
251 Benzo(j)fluoranthene

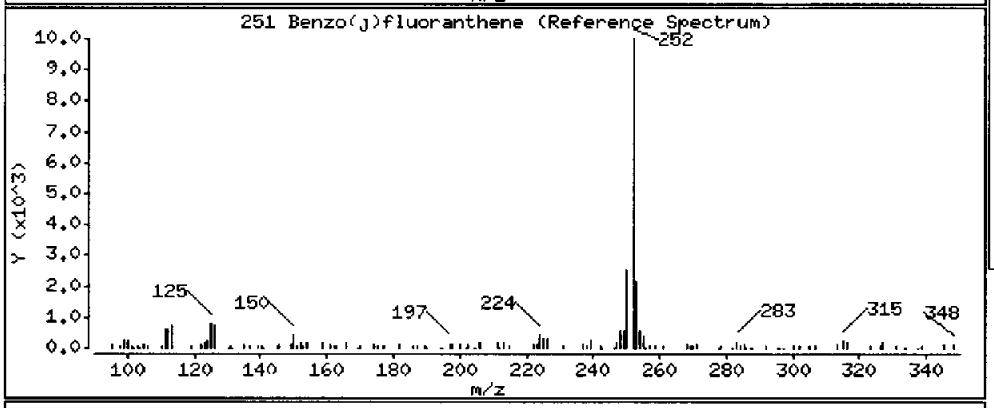
Concentration: 9.210 ug/kg

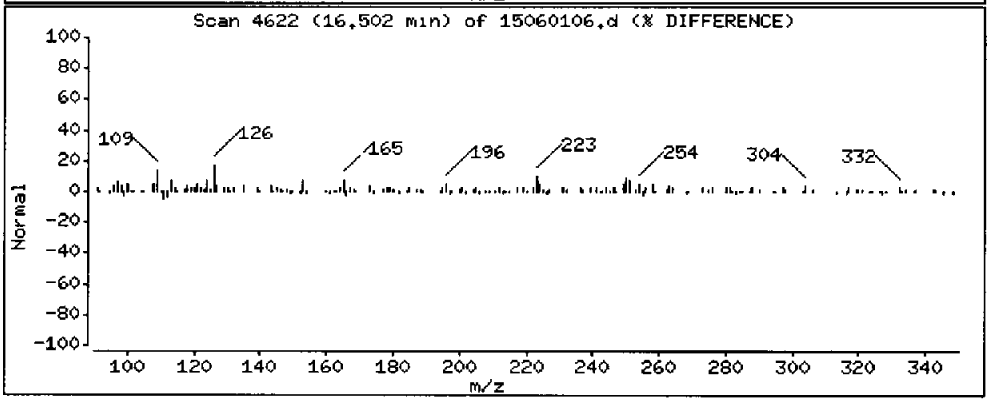












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

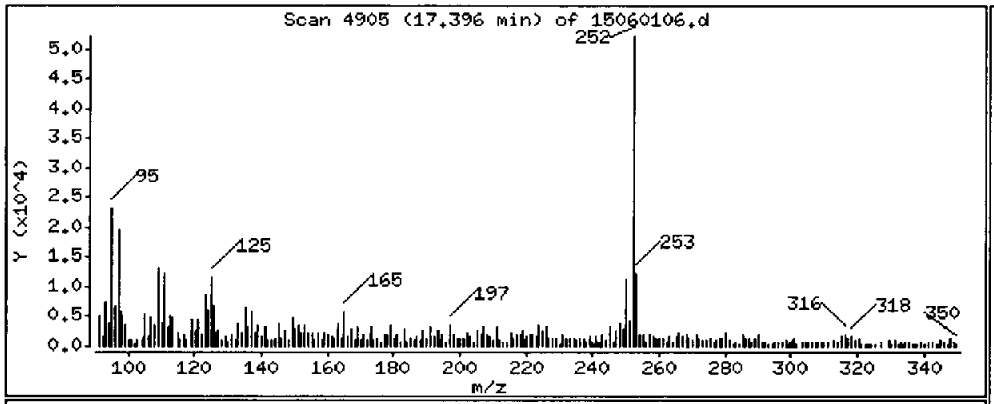
Operator: JZ

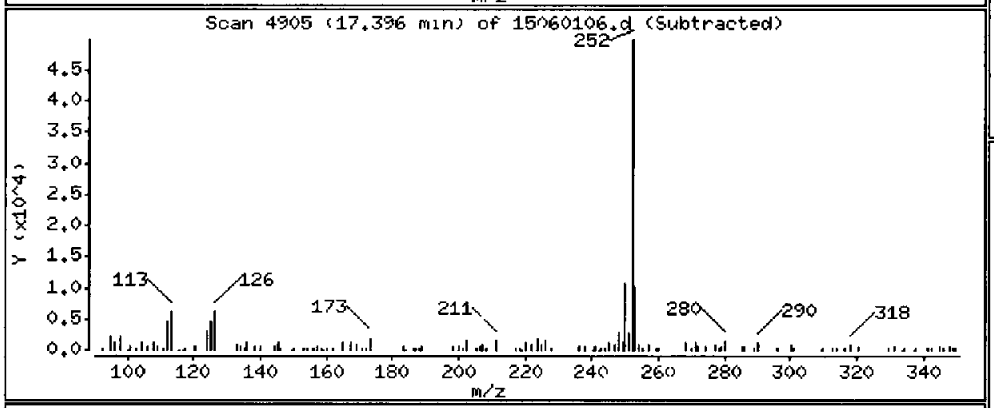
Column phase: ZB-35

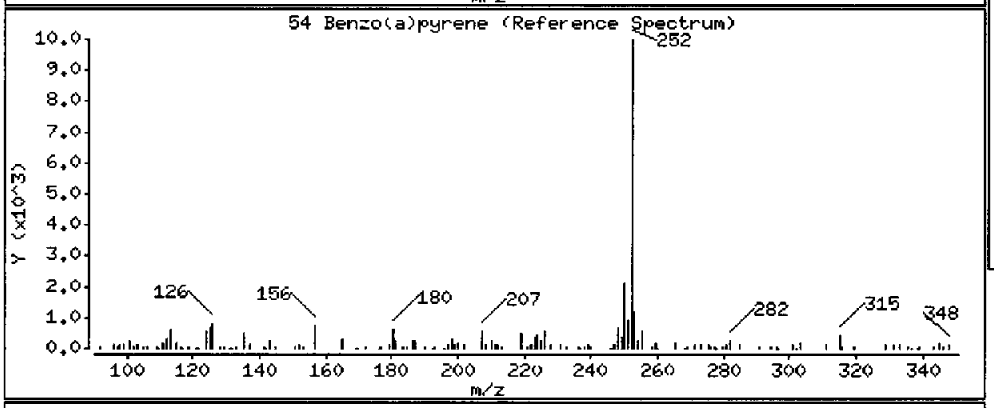
Column diameter: 0.25

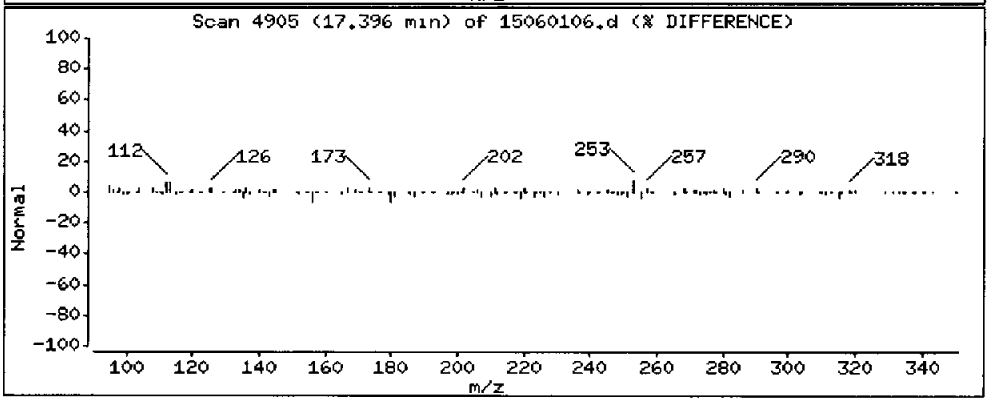
54 Benzo(a)pyrene

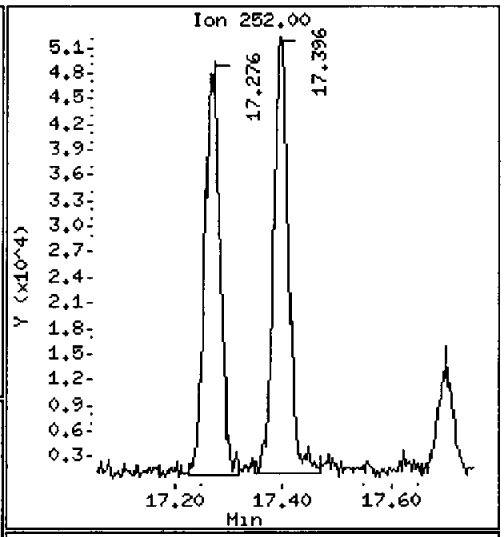
Concentration: 19.64 ug/kg

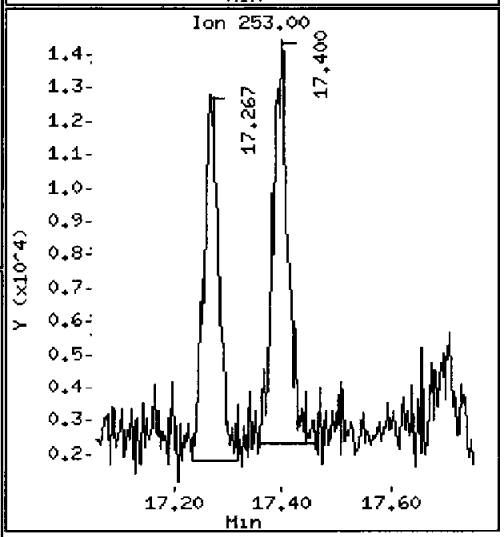












Data File: /chem3/nt8.i/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.i

Sample Info: AGC9B

Volume Injected (uL): 1.0

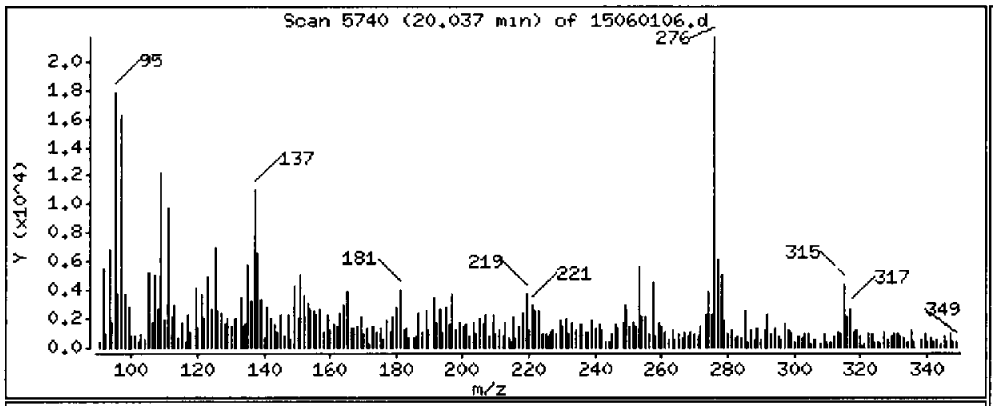
Operator: JZ

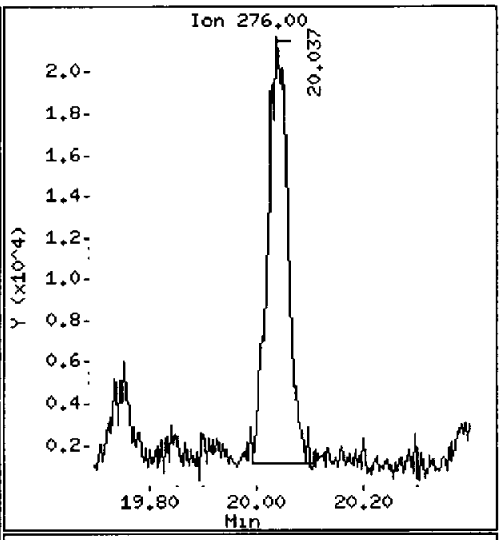
Column phase: ZB-35

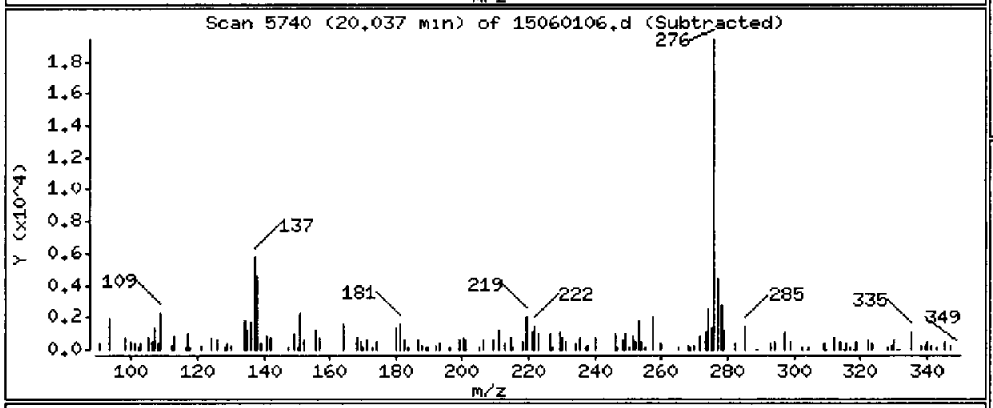
Column diameter: 0.25

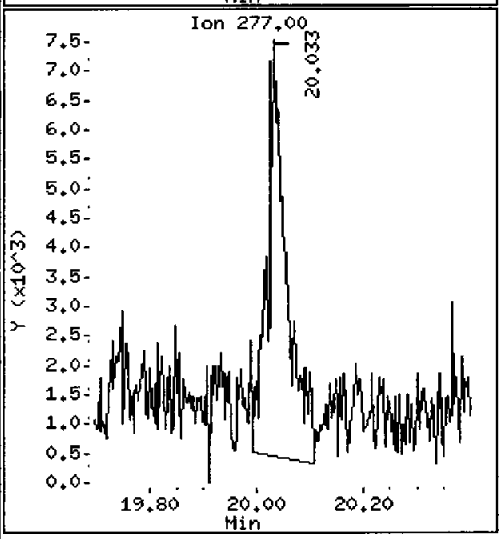
63 Indeno(1,2,3-cd)pyrene

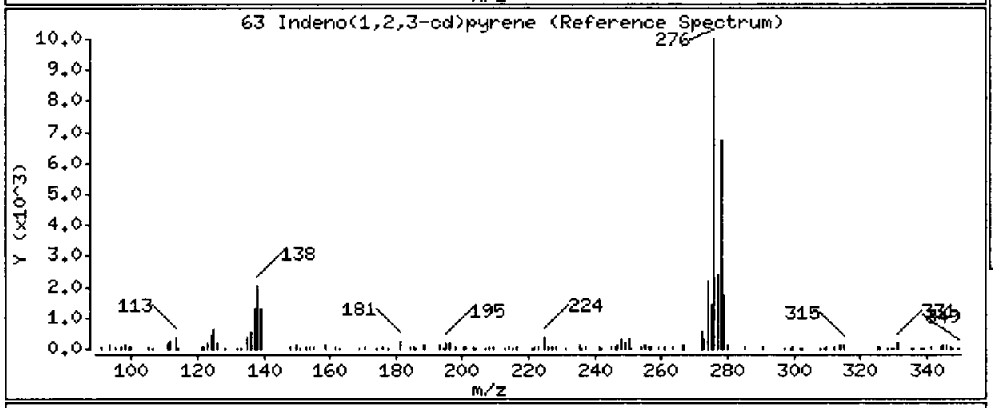
Concentration: 8.942 ug/kg

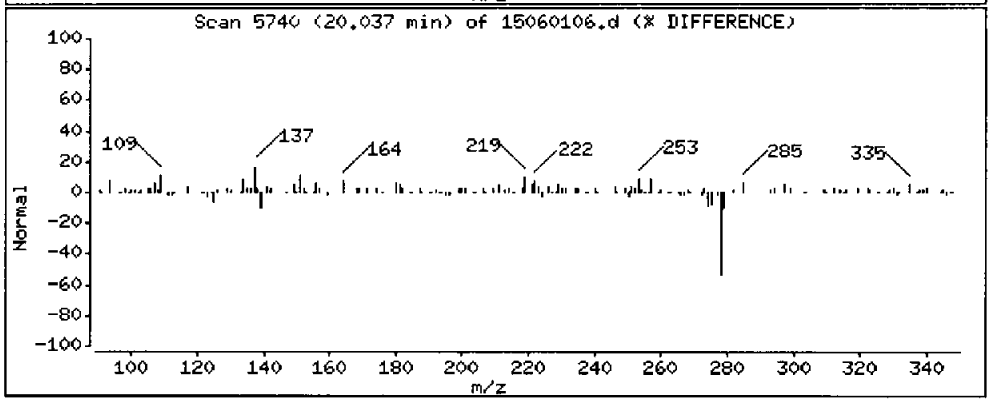












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

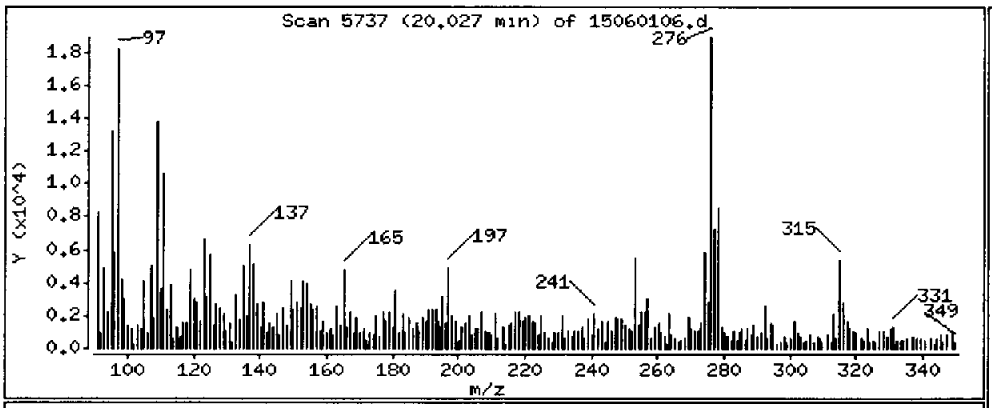
Operator: JZ

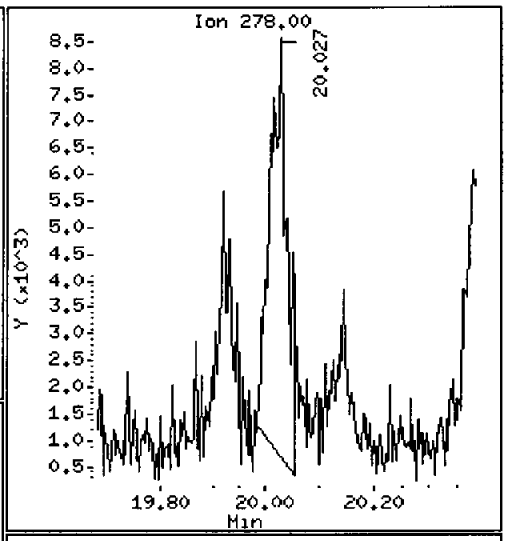
Column phase: ZB-35

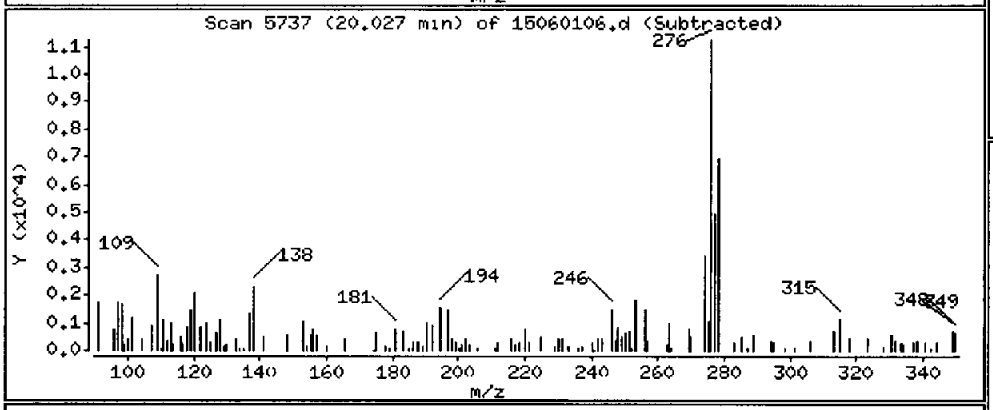
Column diameter: 0.25

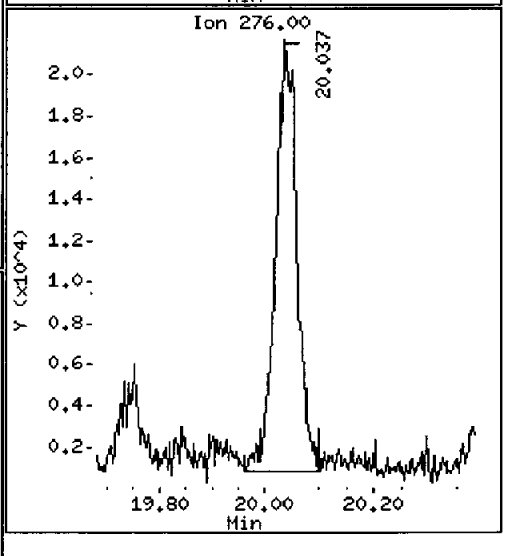
62 Dibenzo(a,h)anthracene

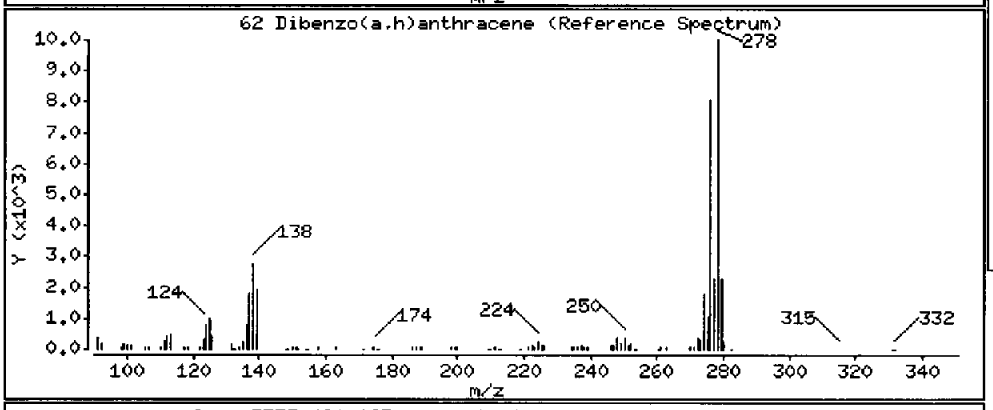
Concentration: 3.542 ug/kg

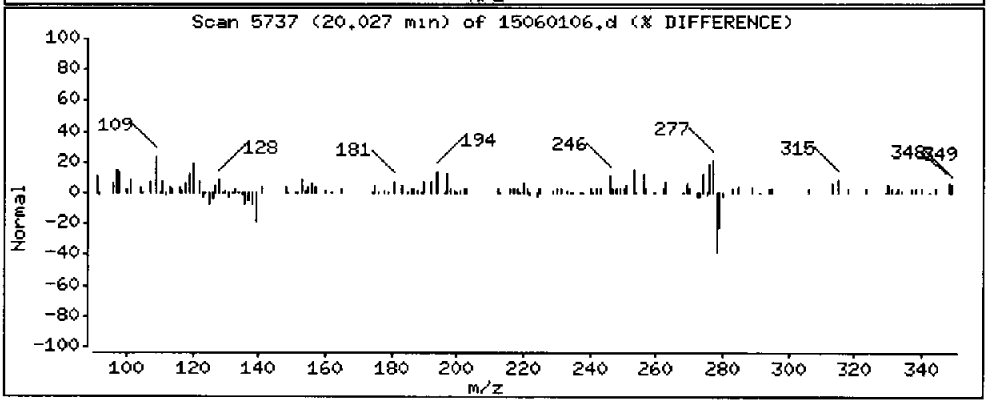












Data File: /chem3/nt8.i/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.i

Sample Info: AGC9B

Volume Injected (uL): 1.0

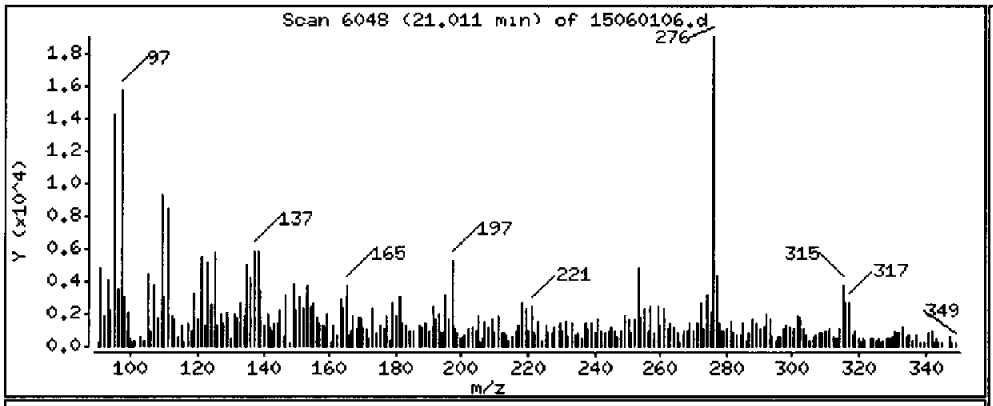
Operator: JZ

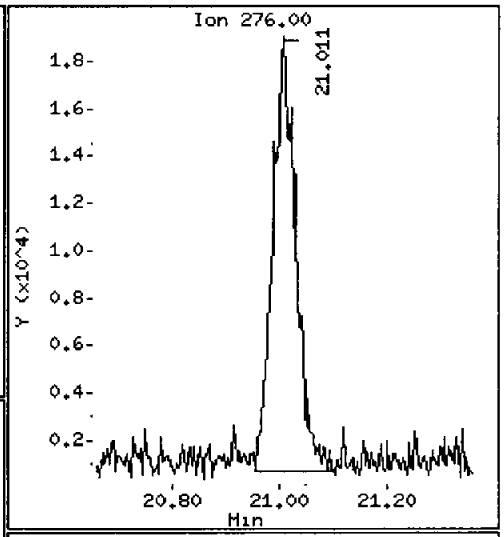
Column phase: ZB-35

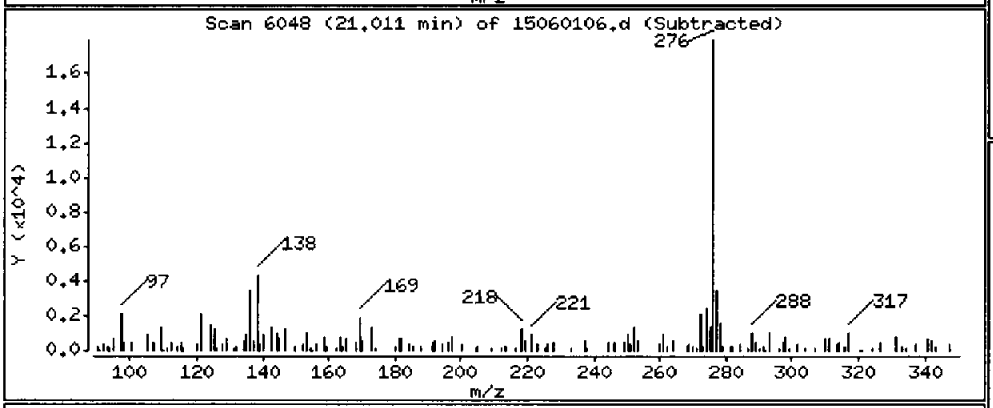
Column diameter: 0.25

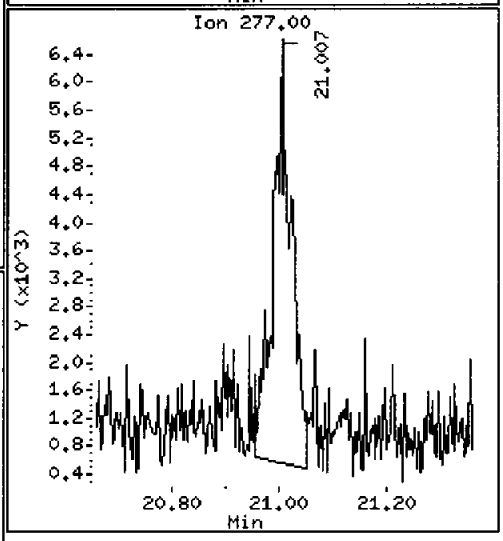
61 Benzo(g,h,i)perylene

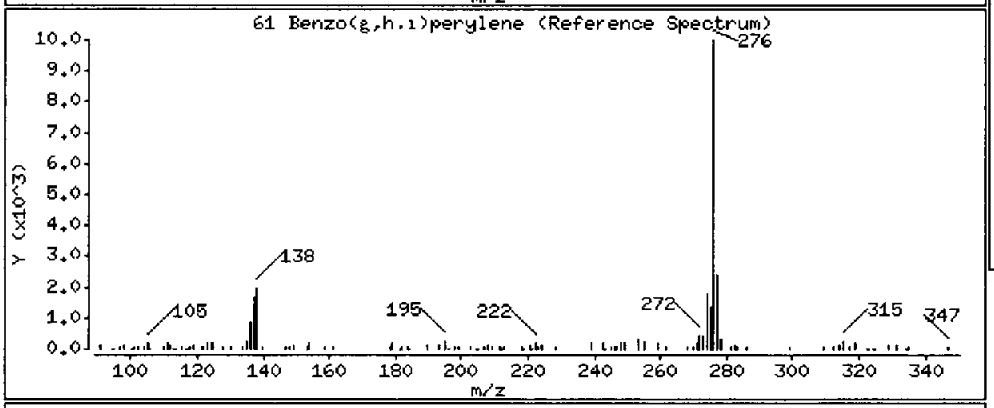
Concentration: 10.33 ug/kg

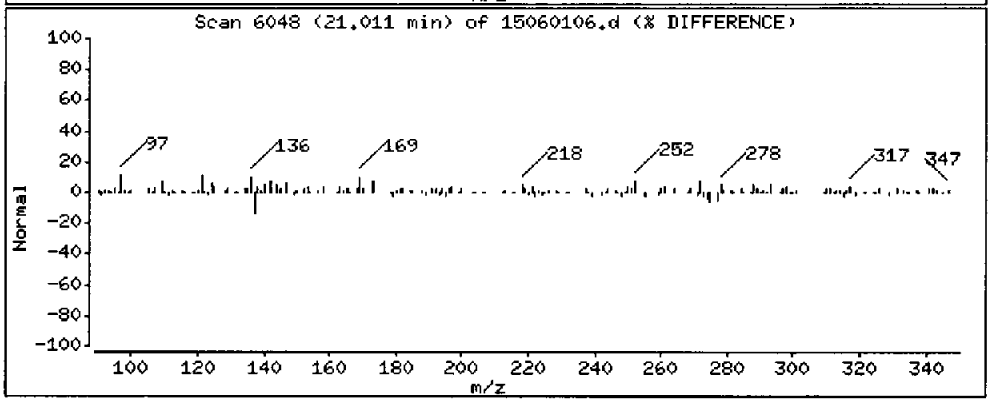












Data File: /chem3/nt8.1/20150601.b/15060106.d

Date : 01-JUN-2015 11:51

Client ID: SDP-01(8.0-9.0)

Instrument: nt8.1

Sample Info: AGC9B

Volume Injected (uL): 1.0

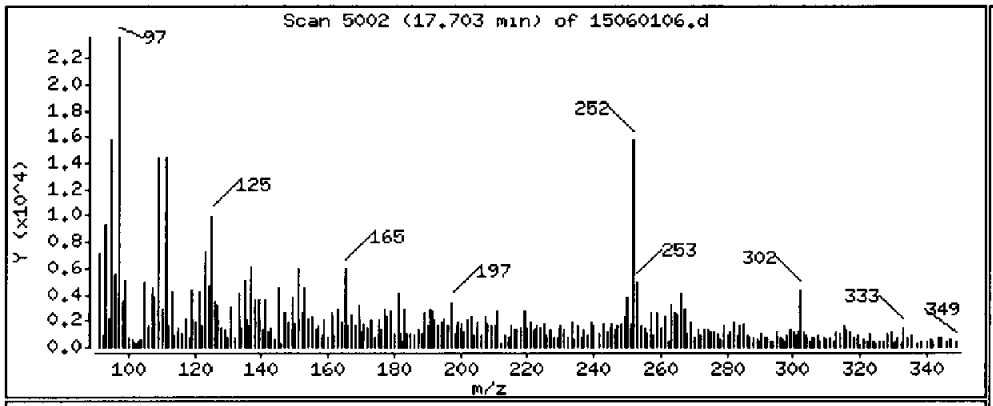
Operator: JZ

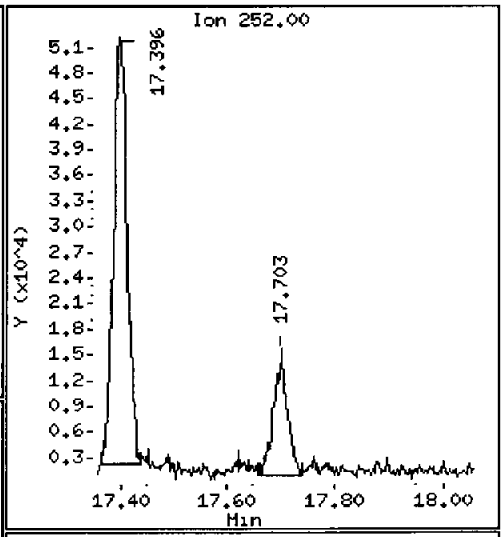
Column phase: ZB-35

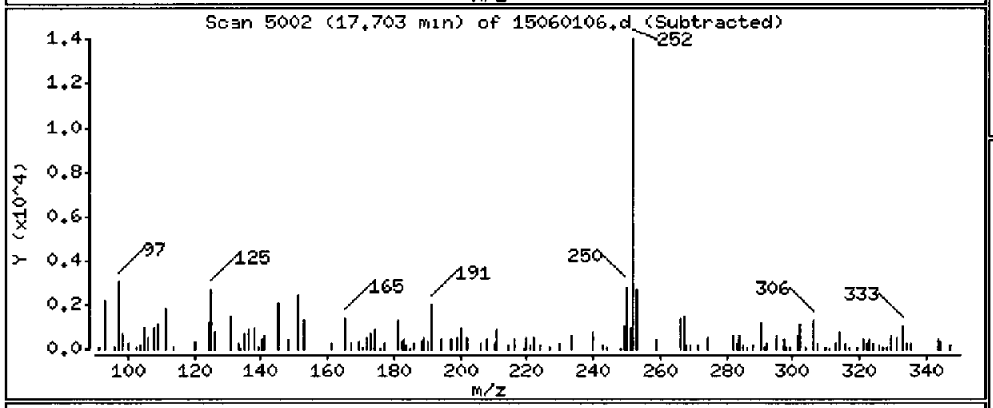
Column diameter: 0.25

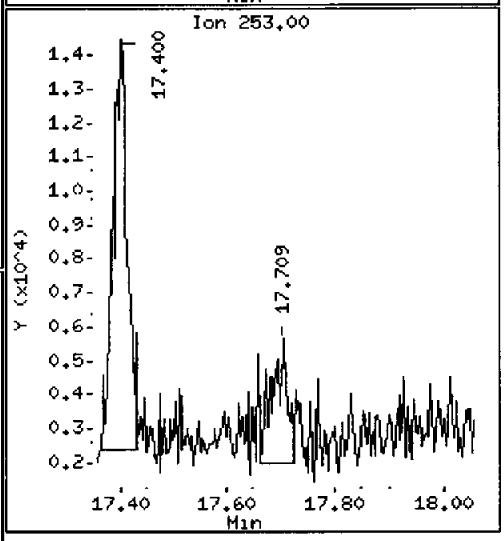
57 Perylene

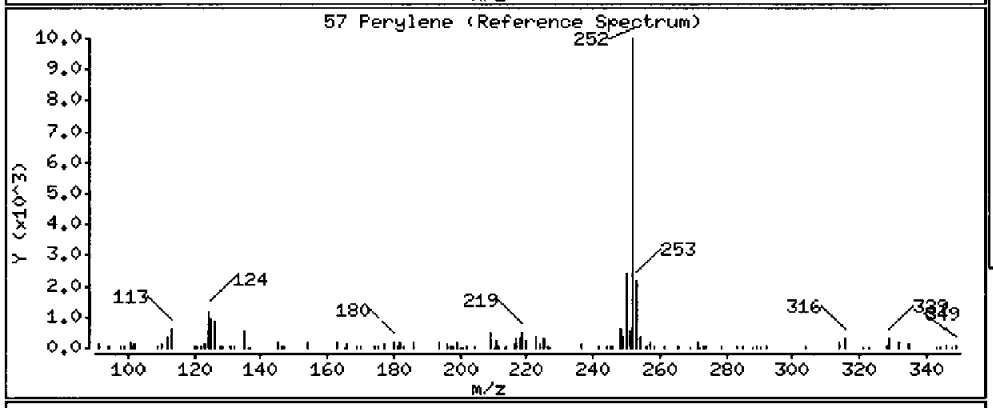
Concentration: 4.973 ug/kg

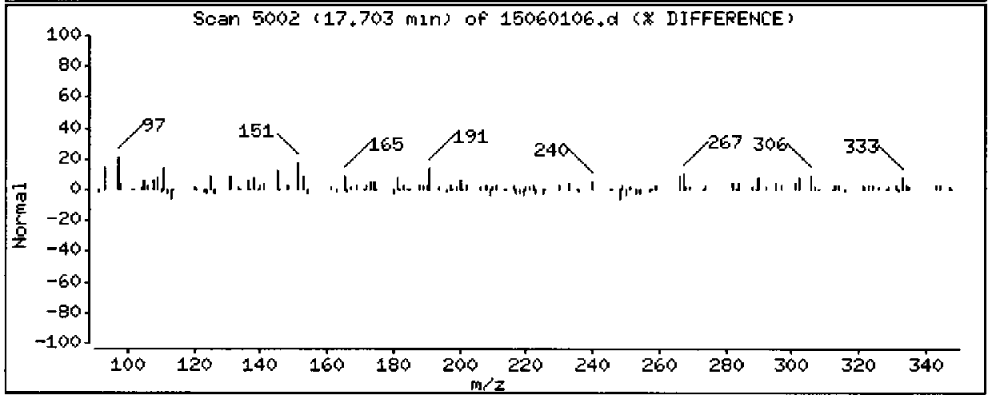












CO-ELUTION SUMMARY FOR FILE - 15060106.d

Lab ID: AGC9B, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060108.d
Lab Smp Id: AGC9D Client Smp ID: SDP-02(18.5-19.5)
Inj Date : 01-JUN-2015 12:43
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9D
Misc Info : 15-9434
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	16.18000	Weight of sample extracted (g)
M	34.50000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.733	4.739	(1.000)	423651	2.00000	
7 Naphthalene	128	4 761	4.767	(1.006)	431057	2.11216	99 65
$ 12 2-Methylnaphthalene-d10	152	5 463	5.463	(1.154)	192776	1.49012	70.30
14 2-Methylnaphthalene	141	5.510	5.510	(1 164)	147582	1 21277	57.22
15 1-methylnaphthalene	141	5 706	5.703	(1.206)	97727	0.82638	38.99
21 Acenaphthylene	152	6.892	6.892	(0.984)	49210	0.25374	11.97
* 22 Acenaphthene-d10	164	7.003	7.000	(1.000)	265558	2.00000	
23 Acenaphthene	153	7.050	7.050	(1.007)	111553	0.86446	40.78
11 Dibenzofuran	168	7 202	7.202	(1.028)	99685	0.55856	26.35
25 Fluorene	166	7 676	7.673	(1.096)	87424	0.60656	28.62
* 28 Phenanthrene-d10	188	9 027	9.020	(1.000)	469497	2.00000	
30 Phenanthrene	178	9.061	9.055	(1.004)	423532	1.89210	89.27
31 Anthracene	178	9.102	9.096	(1.008)	112349	0.55750	26.30
36 Fluoranthene	202	10.775	10.769	(1.194)	354701	1.35483	63.92
$ 253 Fluoranthene-d10	212	10.737	10.734	(1.190)	438817	1.90014	89.65

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.268	11.265	(0.816)	385575	1.25559	59.24
	46 Benzo(a)anthracene	228	13.687	13.684	(0.991)	113911	0.41224	19.45
*	47 Chrysene-d12	240	13.814	13.807	(1.000)	550871	2.00000	
	48 Chrysene	228	13.883	13.880	(1.005)	155125	0 55991	26.42
	51 Benzo(b)fluoranthene	252	16.381	16.369	(0.928)	104601	0 33732	15.91
	52 Benzo(k)fluoranthene	252	16.445	16.429	(0.932)	48970	0 15805	7.457
	251 Benzo(j)fluoranthene	252	16.514	16.505	(0.936)	54293	0.17958	8.472
	54 Benzo(a)pyrene	252	17.418	17.402	(0.987)	80223	0.29015	13.69(M)
*	56 Perylene-d12	264	17.649	17.633	(1.000)	590491	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.071	20.046	(1.137)	79698	0.23999	11.32
$	60 Dibenzo(a,h)anthracene-d14	292	19.954	19.929	(1.131)	433452	1.92744	90.93
	62 Dibenzo(a,h)anthracene	278	20.065	20.033	(1.137)	29289	0.10829	5.109(M)
	61 Benzo(g,h,i)perylene	276	21.048	21.010	(1.193)	106510	0.36461	17.20
	57 Perylene	252	17.738	17.706	(1.005)	3835141	13.3617	630.4 EMPC)

QC Flag Legend

M - Compound response manually integrated.

06/01/15

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060108.d
Lab Smp Id: AGC9D
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9434

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-02(18.5-19.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	423651	23.48
22 Acenaphthene-d10	230598	115299	461196	265558	15.16
28 Phenanthrene-d10	373928	186964	747856	469497	25.56
47 Chrysene-d12	381262	190631	762524	550871	44.49
56 Perylene-d12	380825	190412	761650	590491	55.06

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.05
56 Perylene-d12	17.63	17.13	18.13	17.65	0.09

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

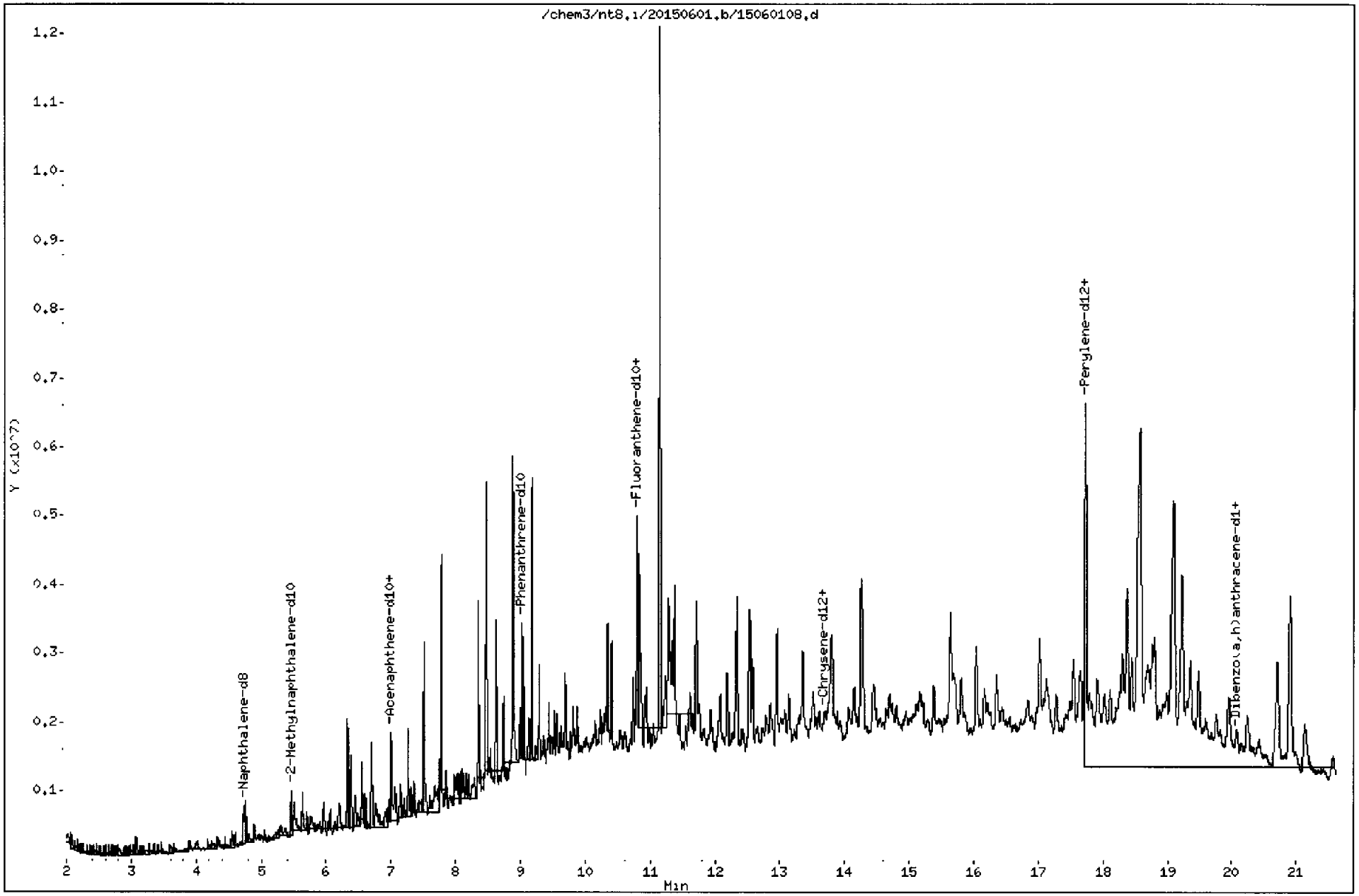
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9D
Client Smp ID: SDP-02(18.5-19.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9434

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	141.5	70.30	49.67	32-120
$ 253 Fluoranthene-d10	141.5	89.65	63.34	36-134
$ 60 Dibenzo(a,h)anthra	141.5	90.93	64.25	21-133

Data File: /chem3/nt8.1/20150601.b/15060108.d
Date : 01-JUN-2015 12:43
Client ID: SDP-02(18.5-19.5)
Sample Info: AGC9D
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

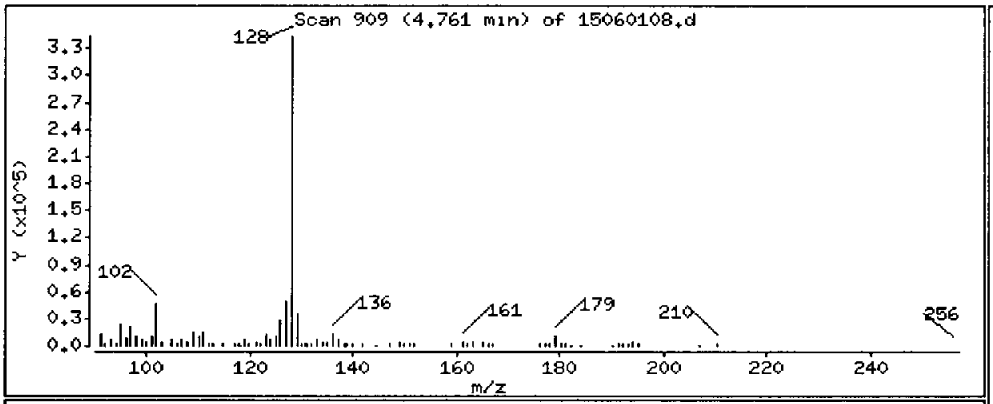
Operator: JZ

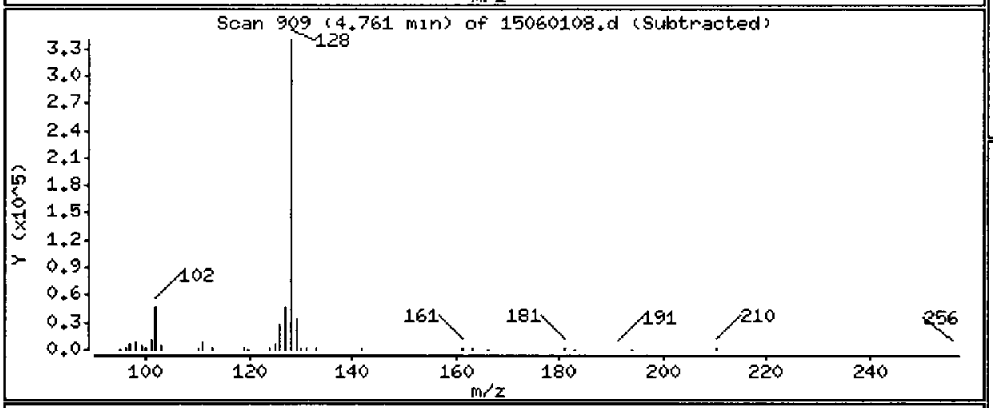
Column phase: ZB-35

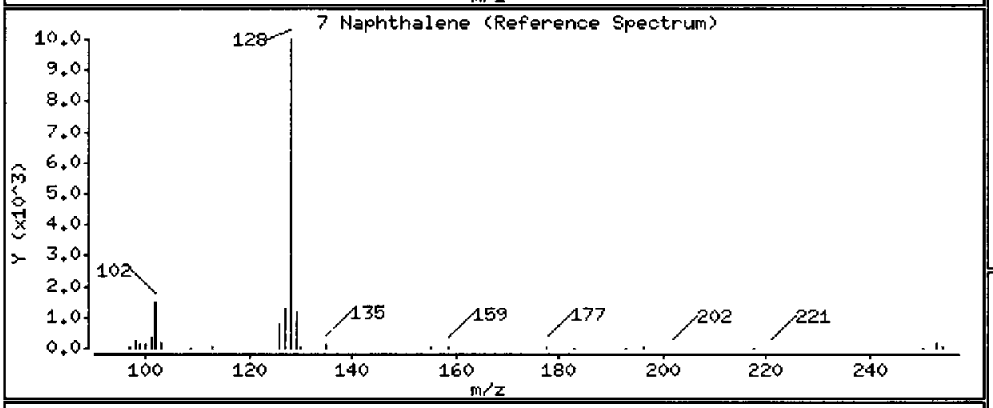
Column diameter: 0.25

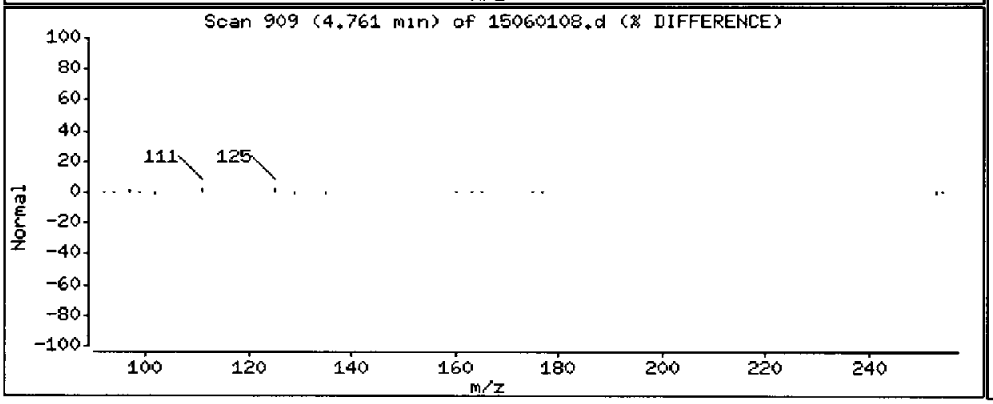
7 Naphthalene

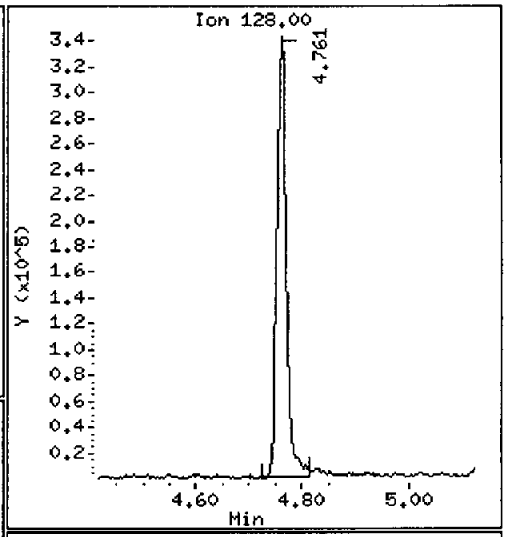
Concentration: 99.65 ug/kg

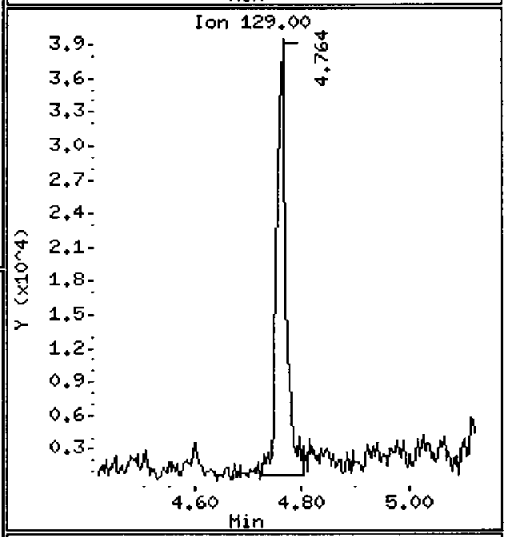


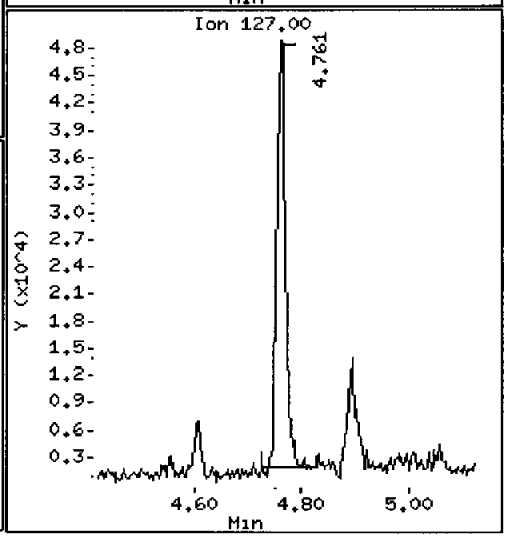












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

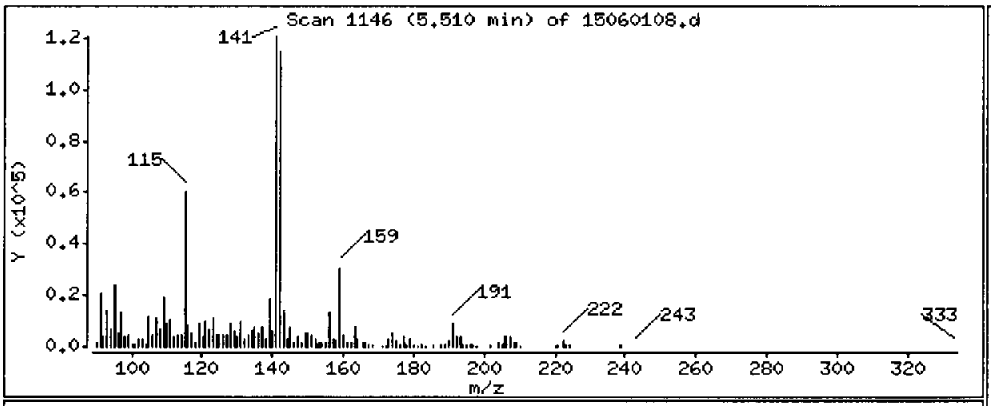
Operator: JZ

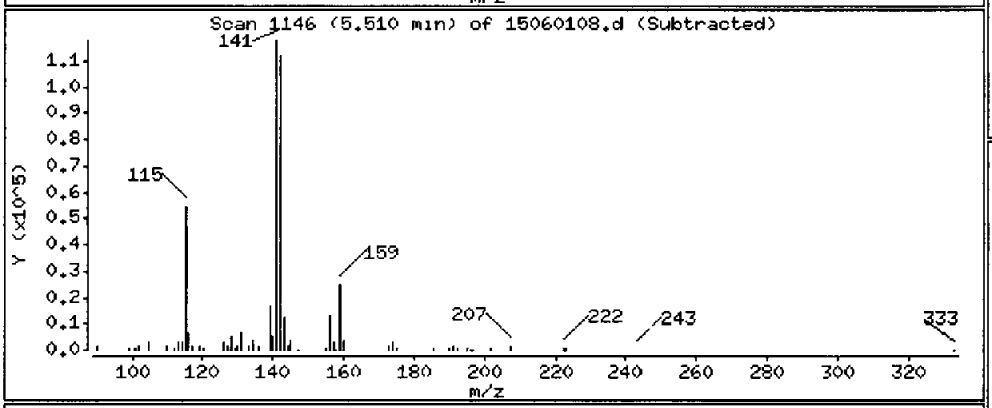
Column phase: ZB-35

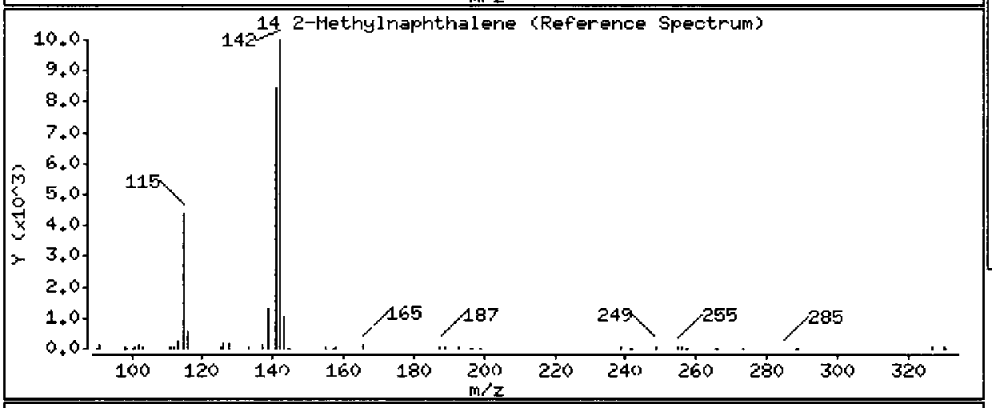
Column diameter: 0.25

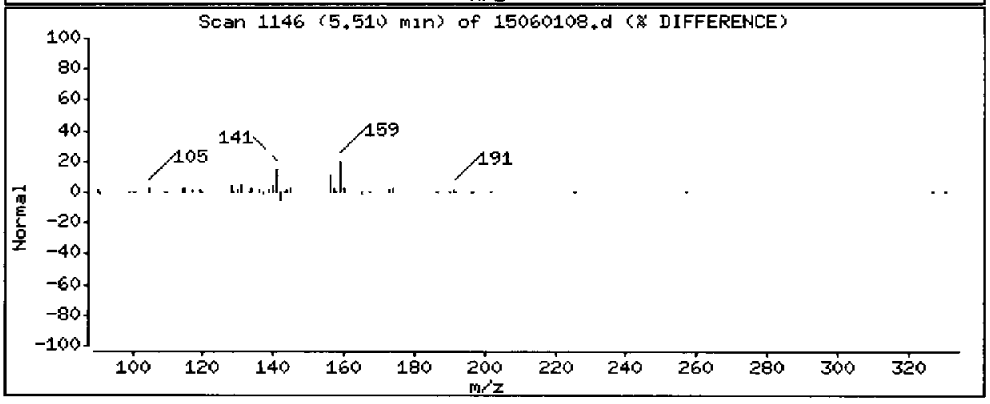
14 2-Methylnaphthalene

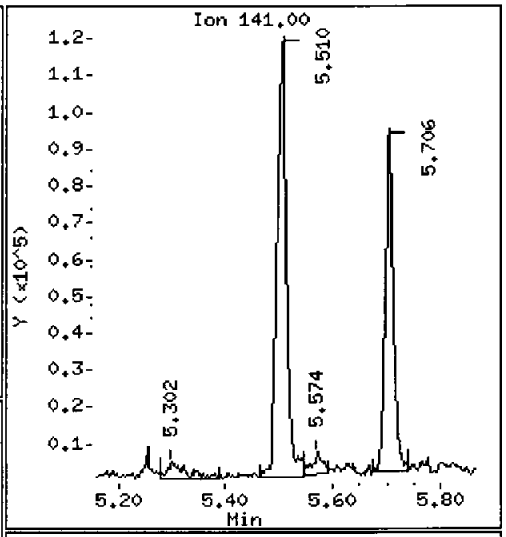
Concentration: 57.22 ug/kg

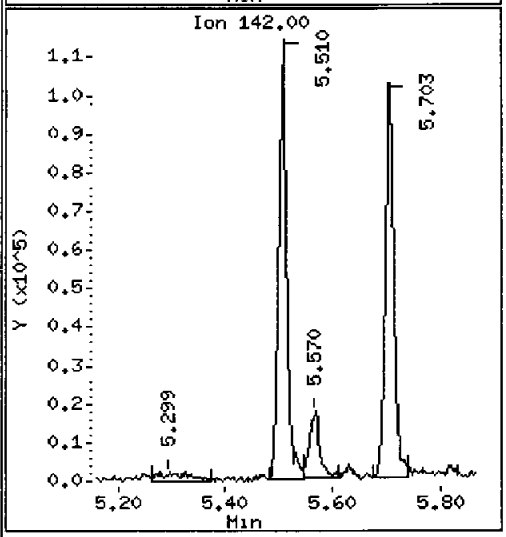












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

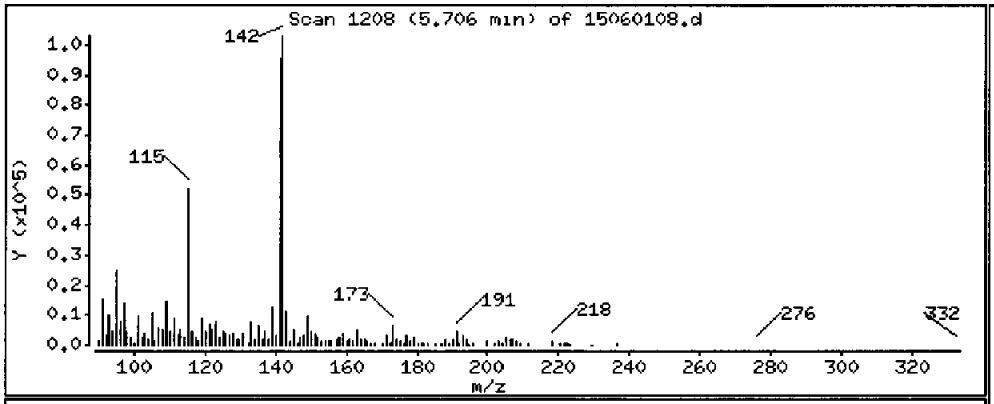
Operator: JZ

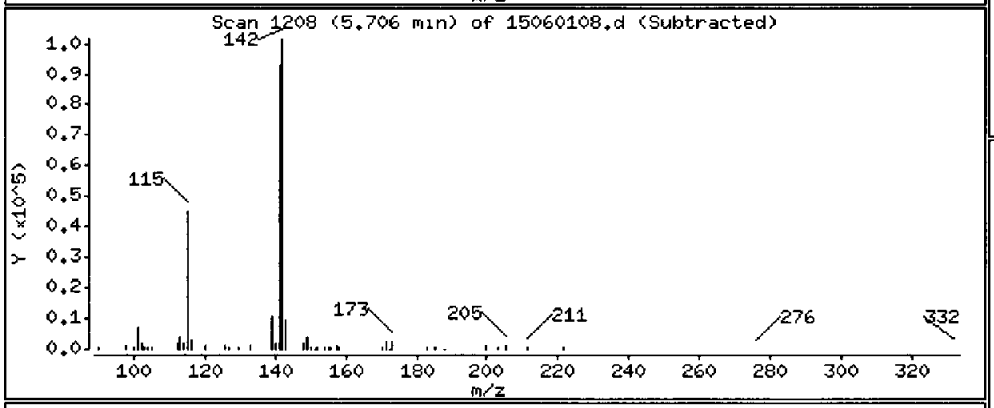
Column phase: ZB-35

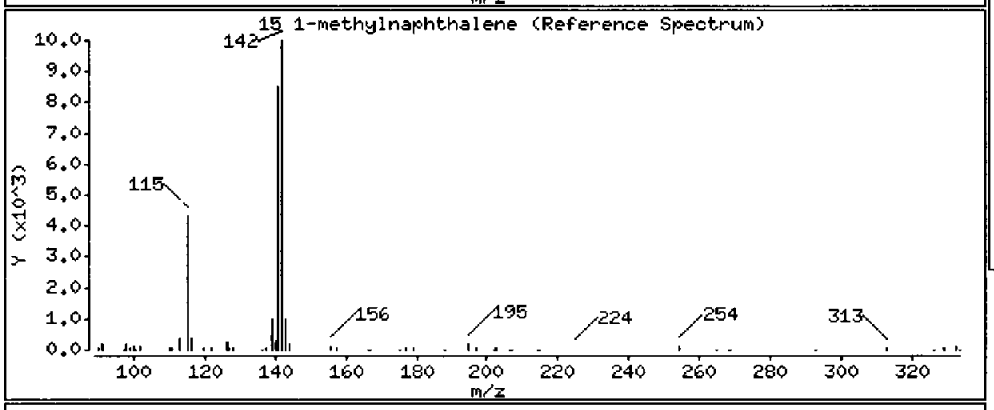
Column diameter: 0.25

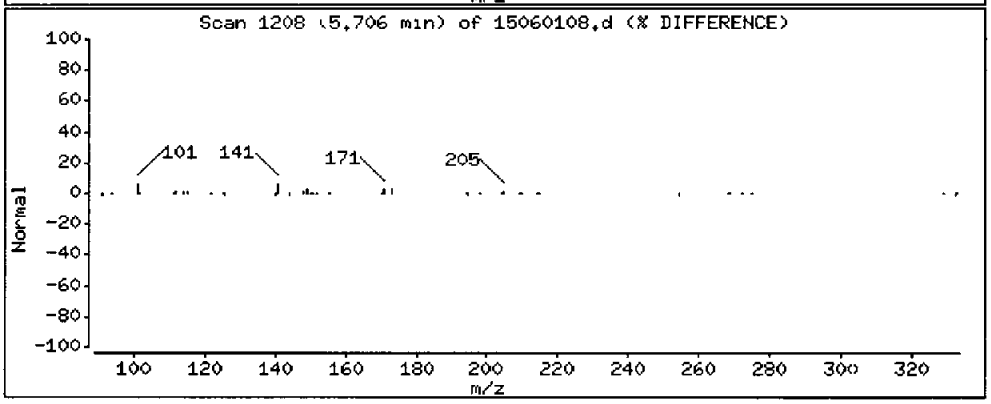
15 1-methylnaphthalene

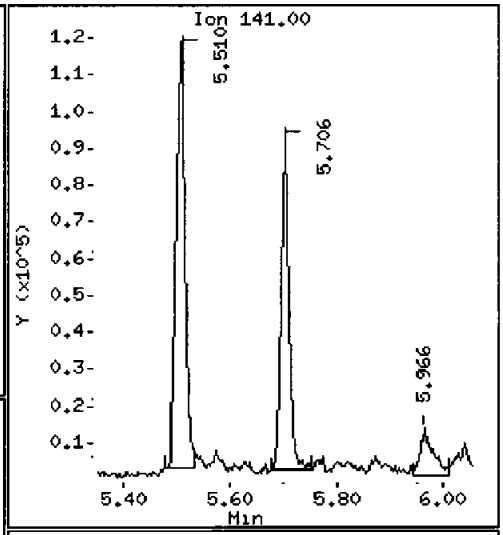
Concentration: 38.99 ug/kg

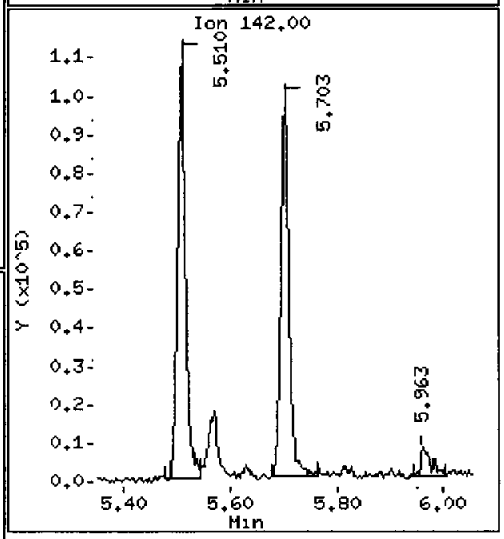












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

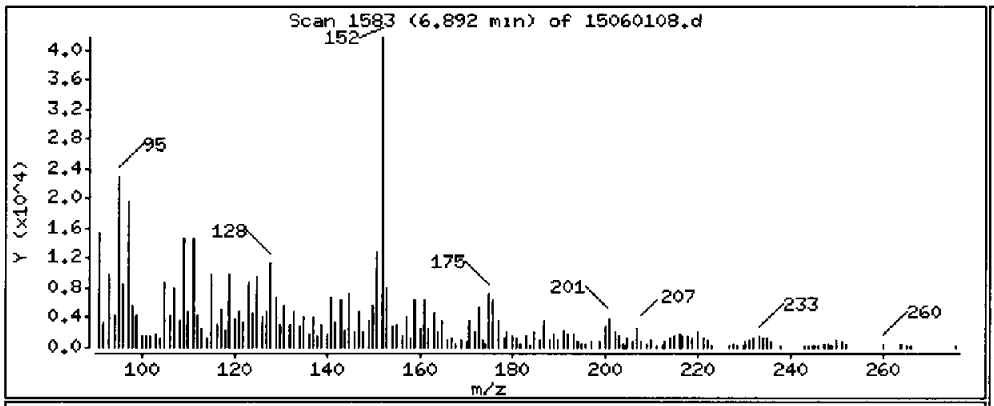
Operator: JZ

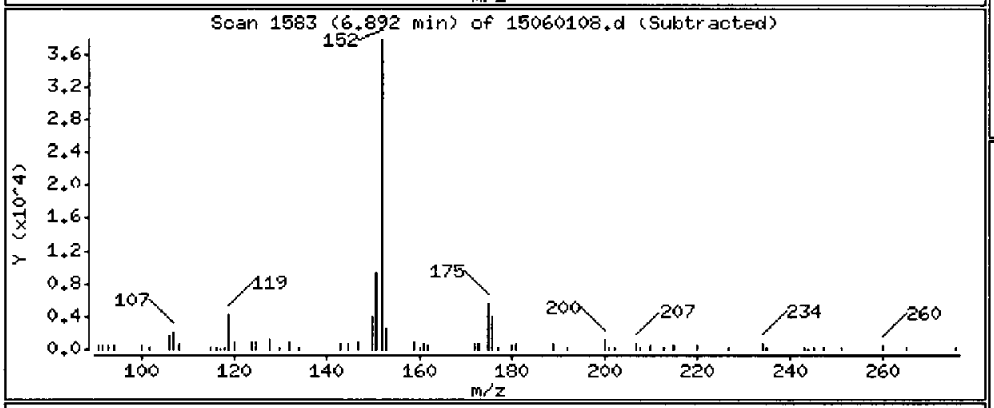
Column phase: ZB-35

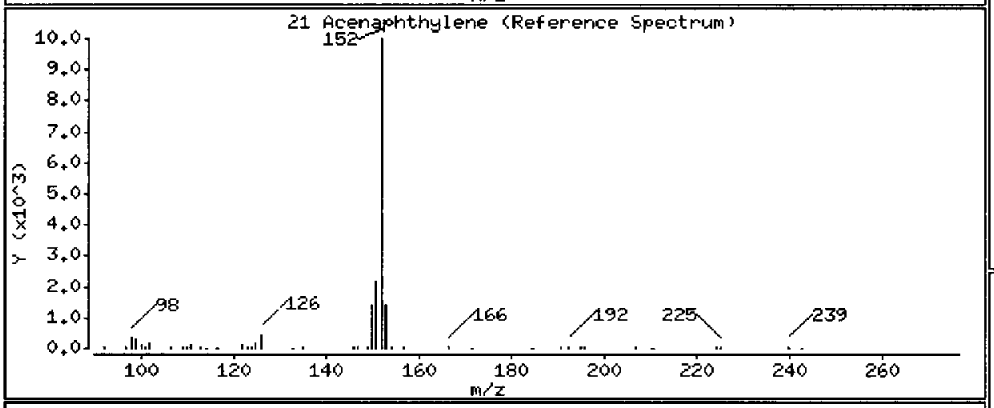
Column diameter: 0.25

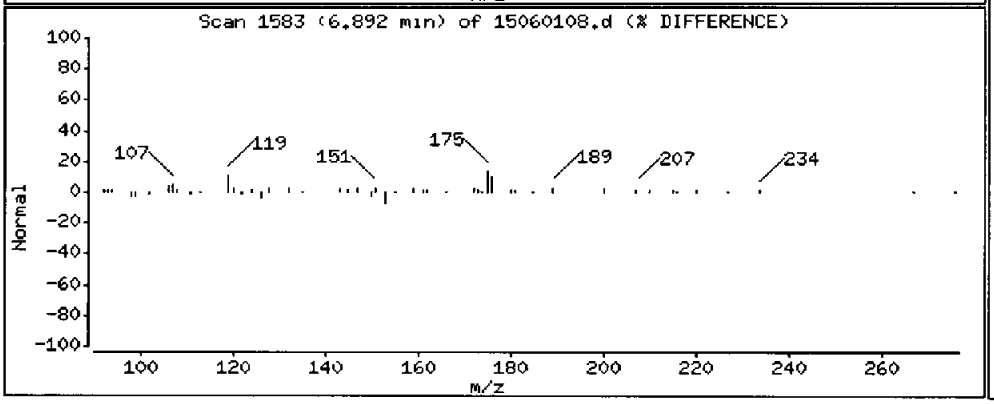
21 Acenaphthylene

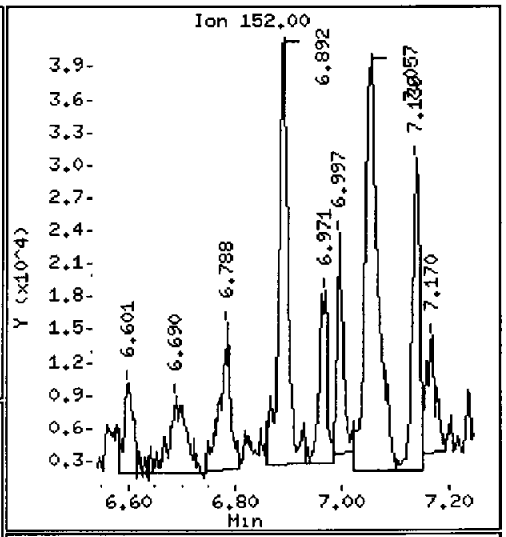
Concentration: 11.97 ug/kg

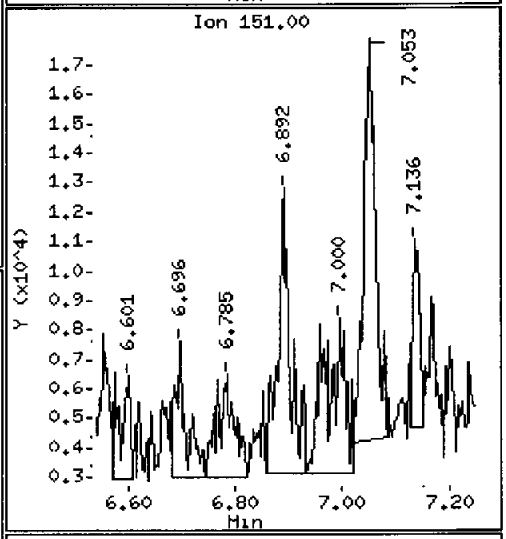


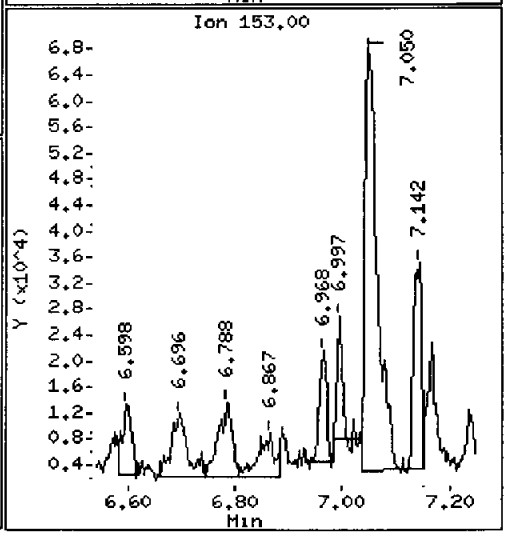












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

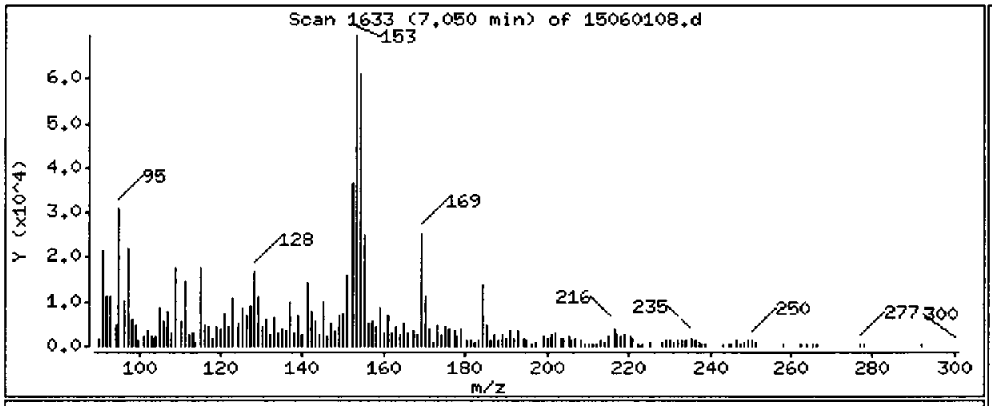
Operator: JZ

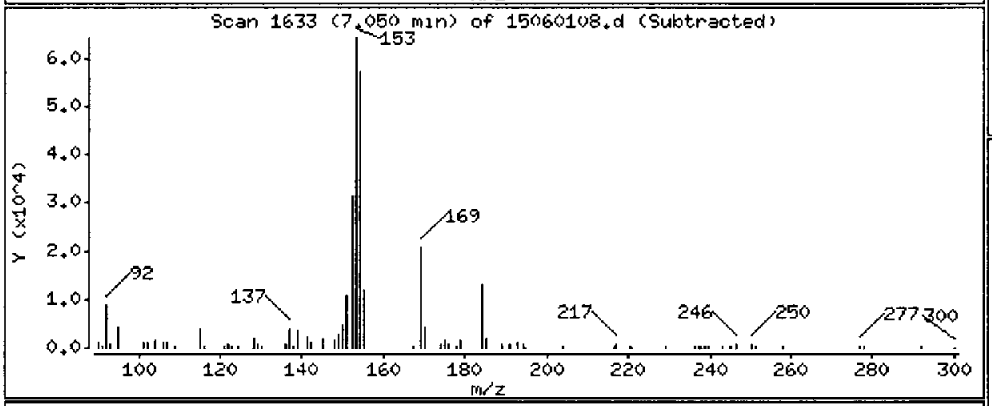
Column phase: ZB-35

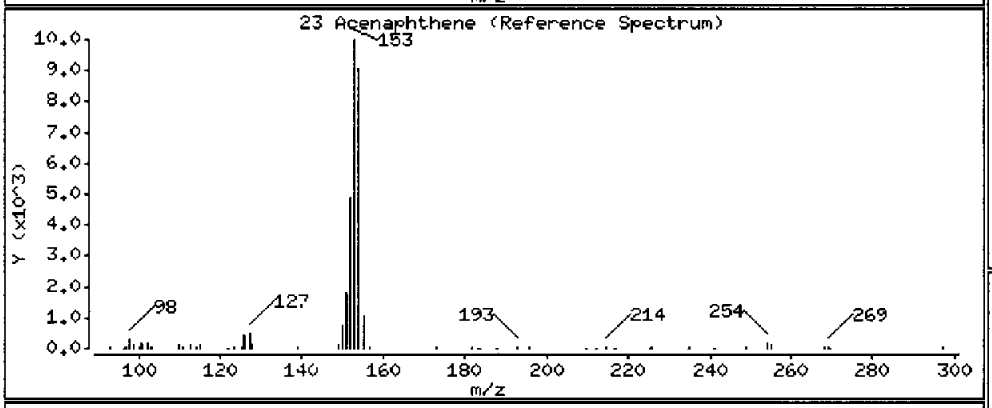
Column diameter: 0.25

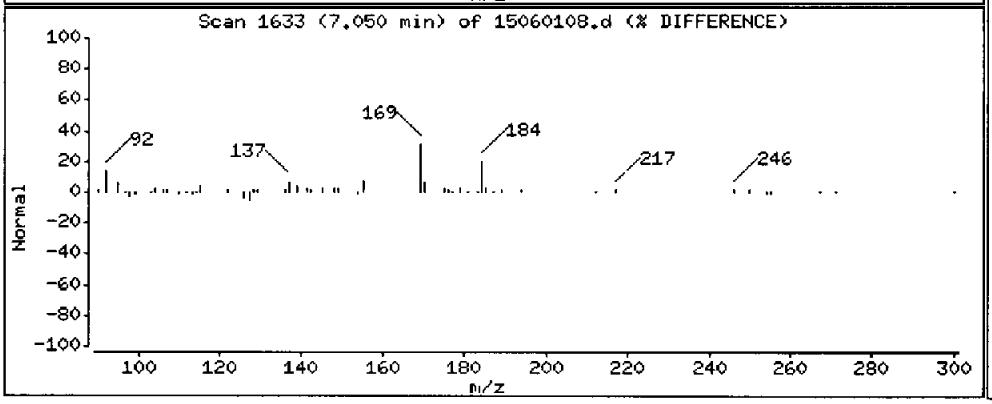
23 Acenaphthene

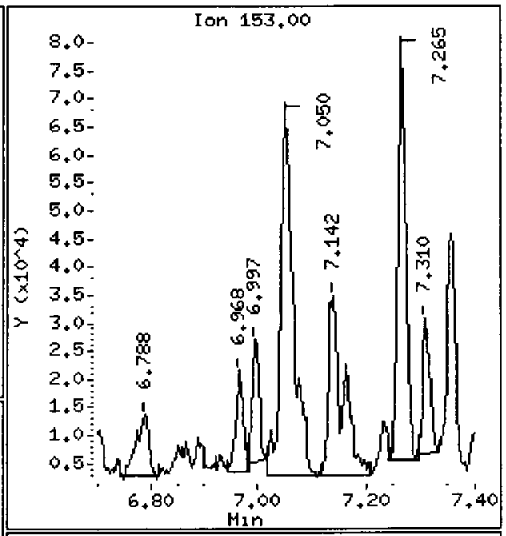
Concentration: 40.78 ug/kg

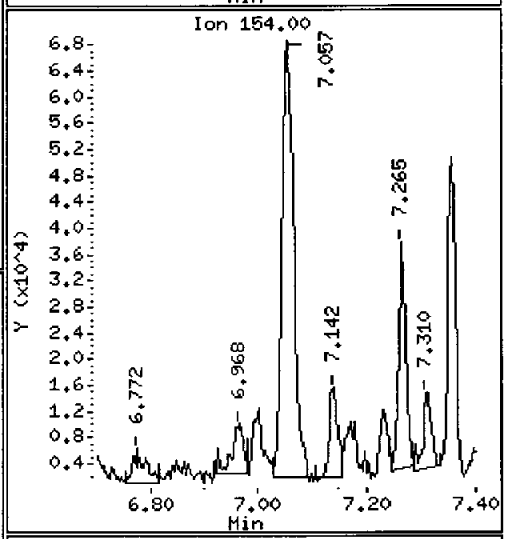


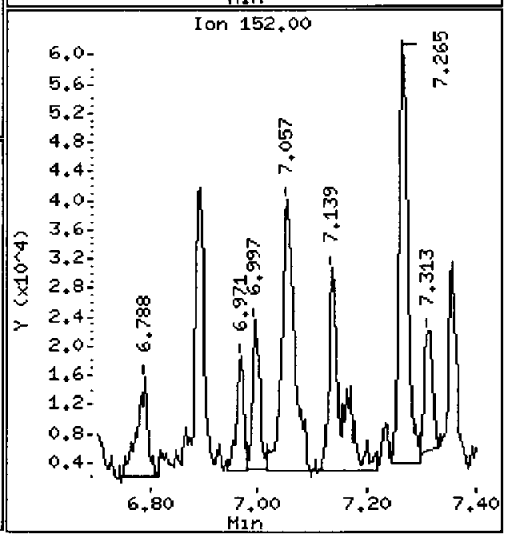












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

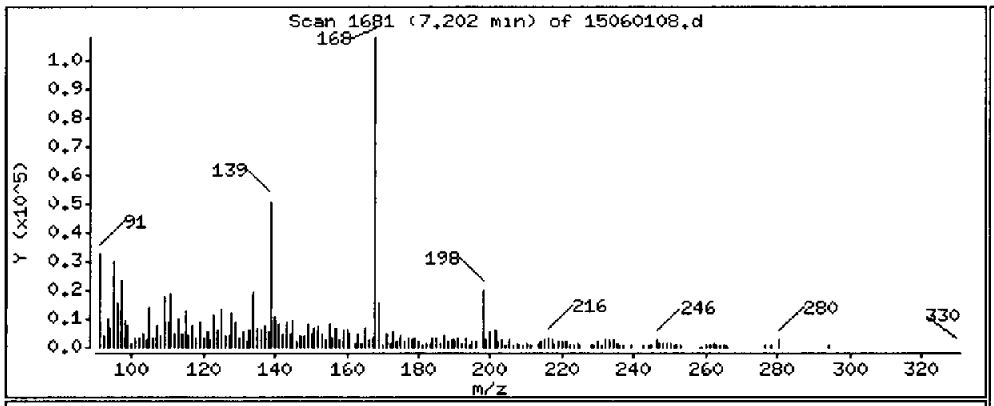
Operator: JZ

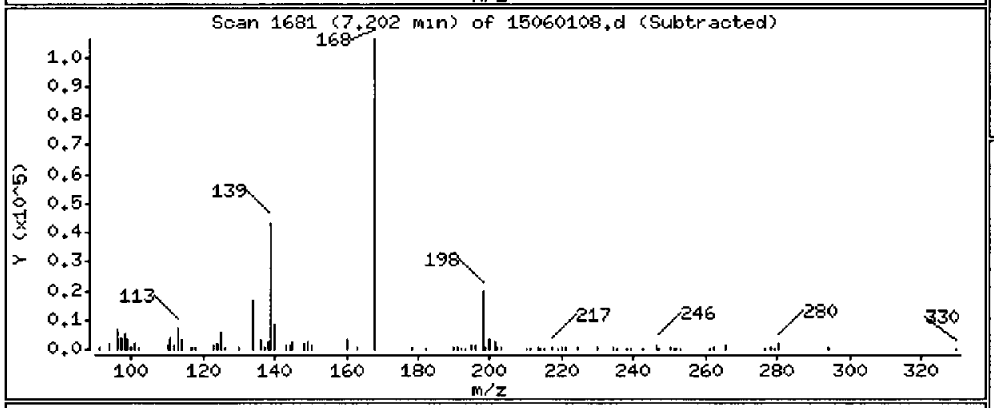
Column phase: ZB-35

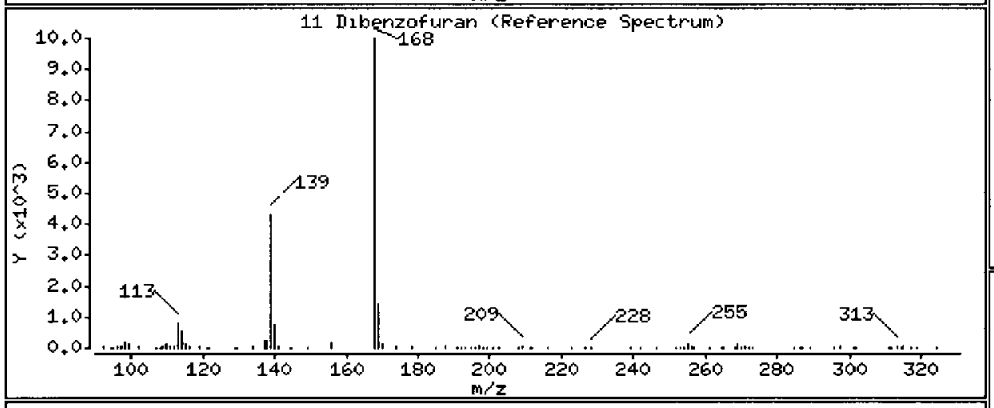
Column diameter: 0.25

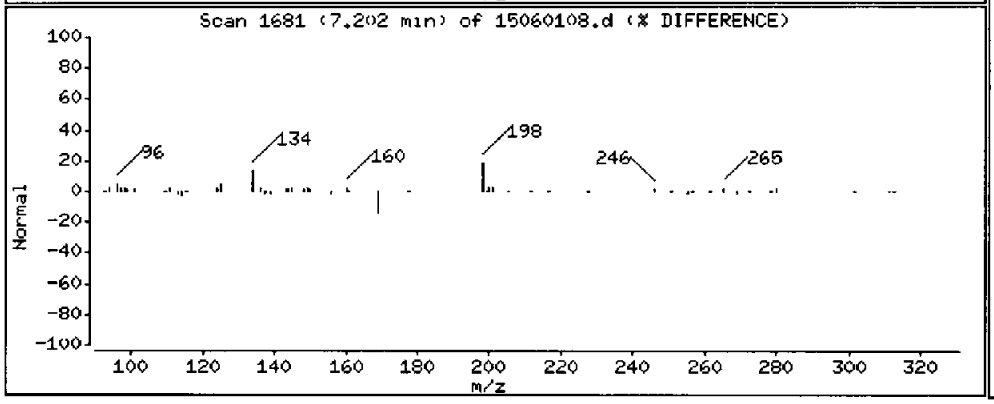
11 Dibenzofuran

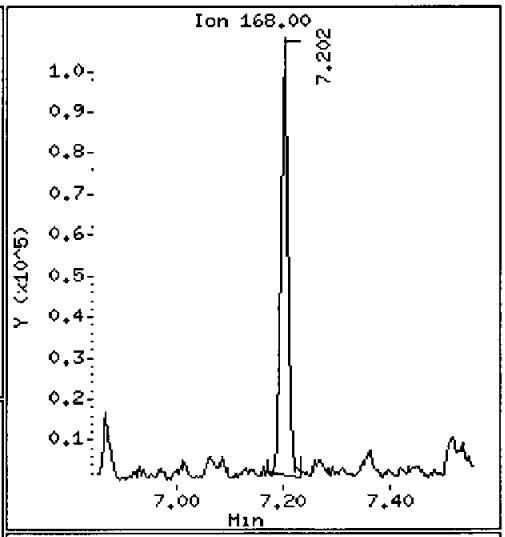
Concentration: 26.35 ug/kg

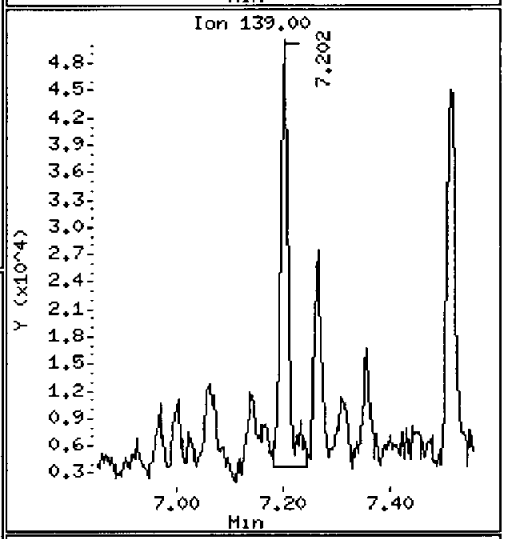


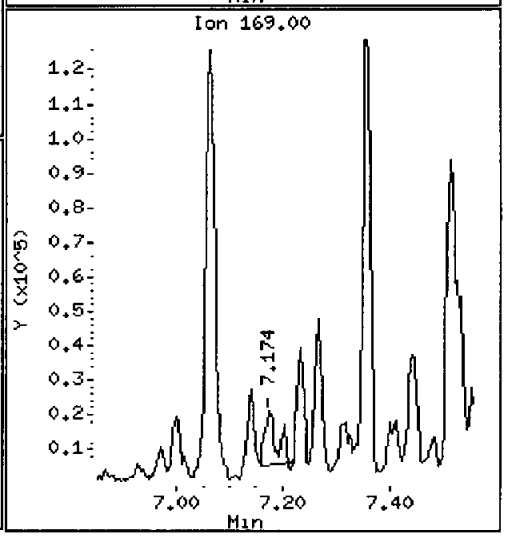












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

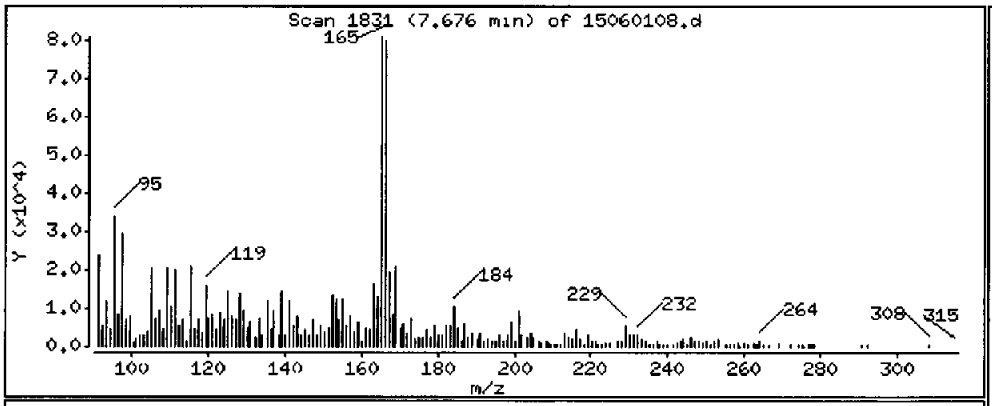
Operator: JZ

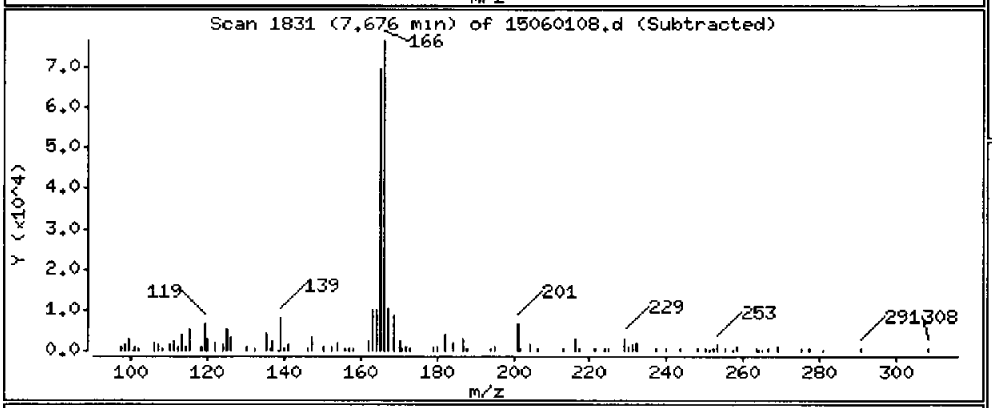
Column phase: ZB-35

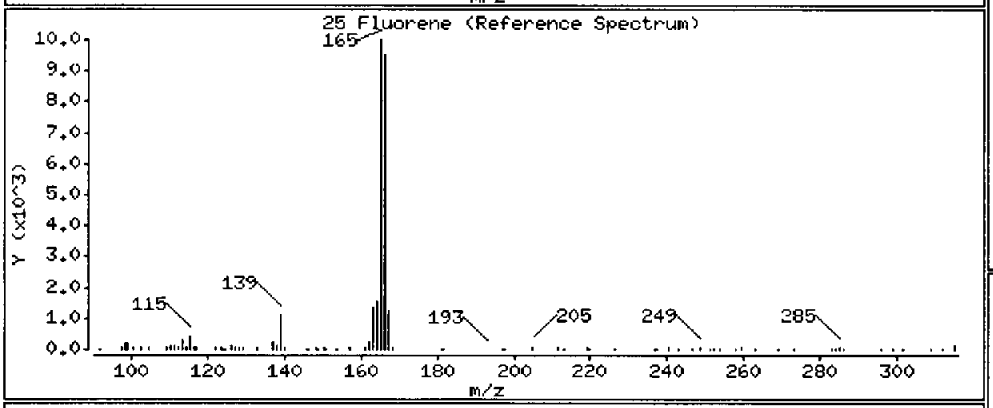
Column diameter: 0.25

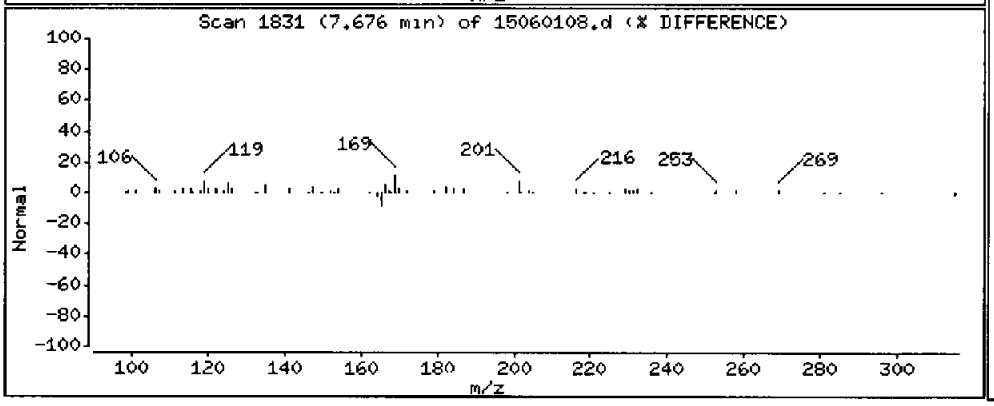
25 Fluorene

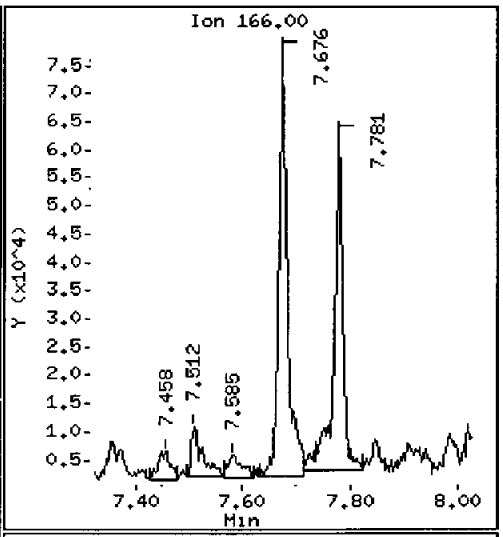
Concentration: 28.62 ug/kg

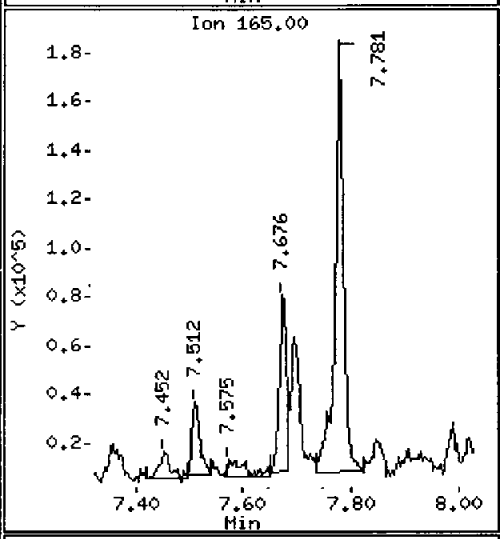


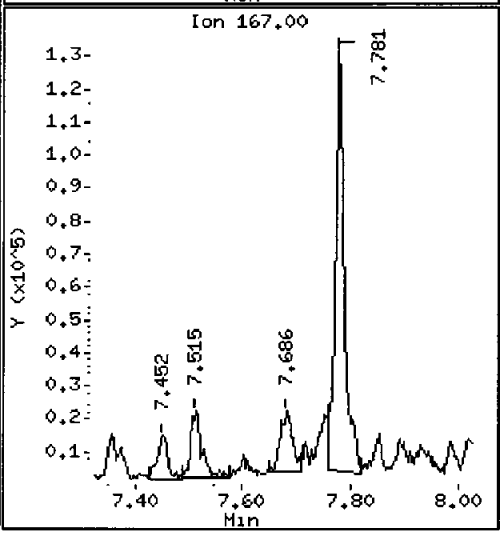












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

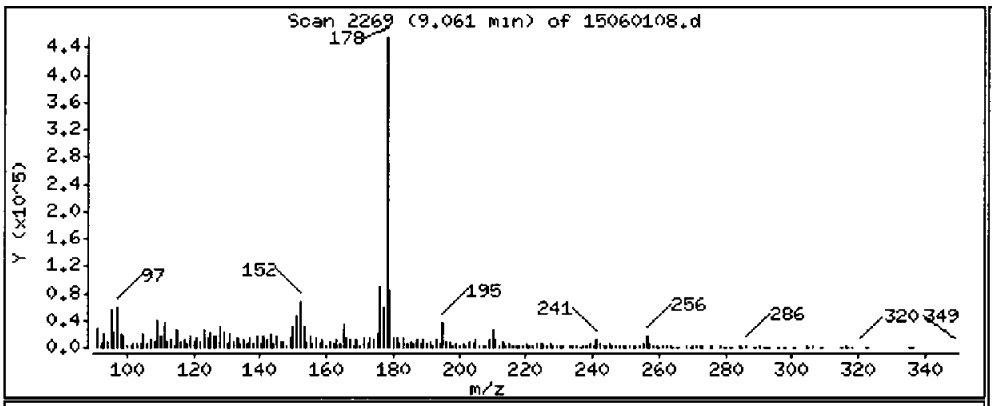
Operator: JZ

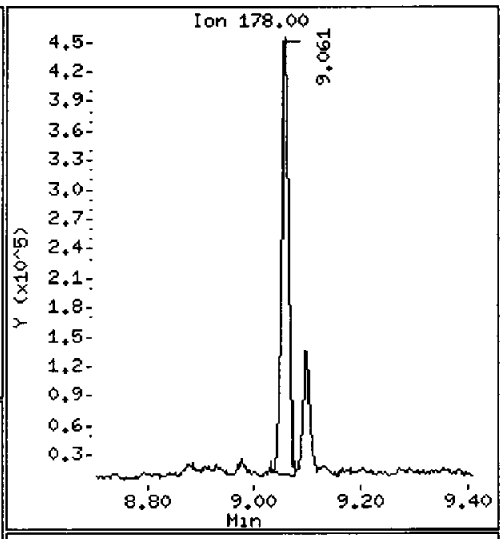
Column phase: ZB-35

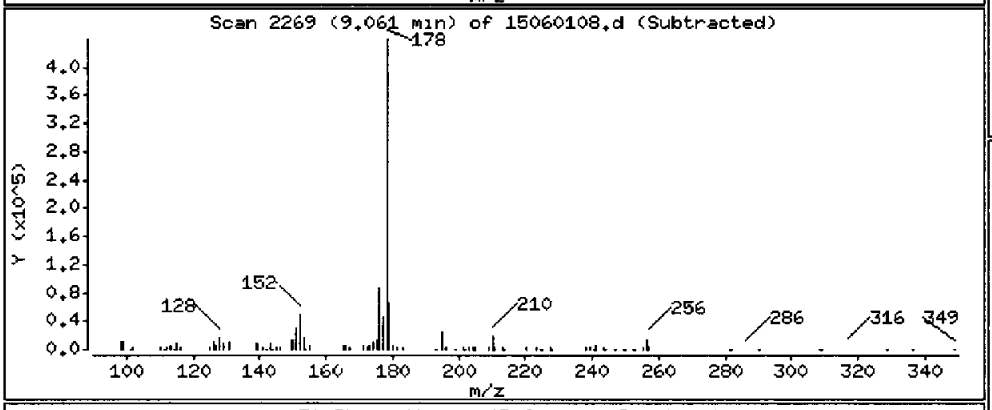
Column diameter: 0.25

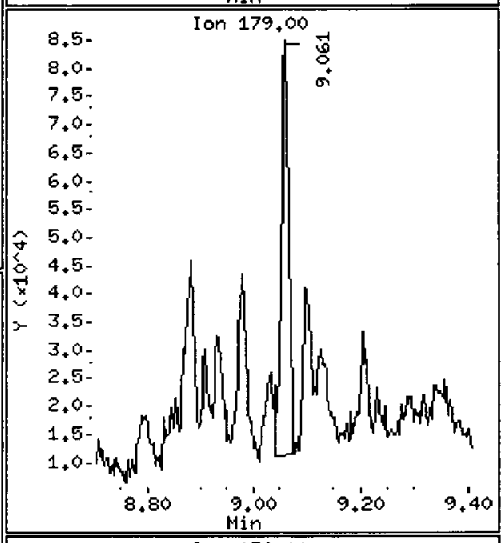
30 Phenanthrene

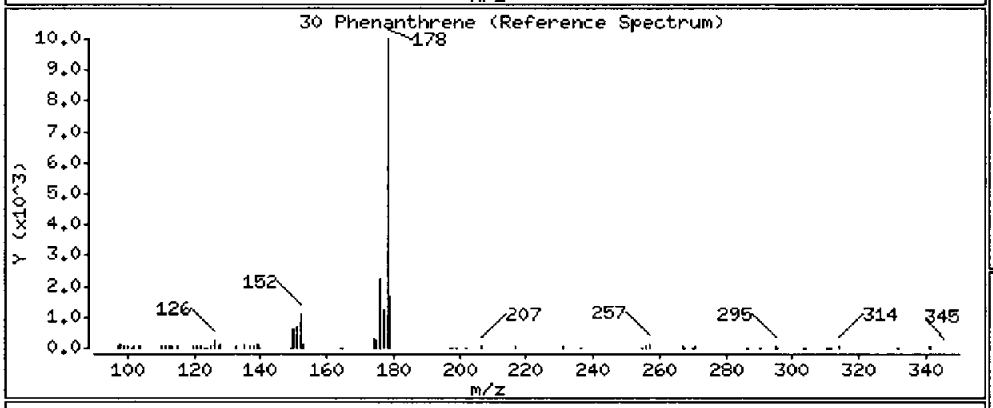
Concentration: 89.27 ug/kg

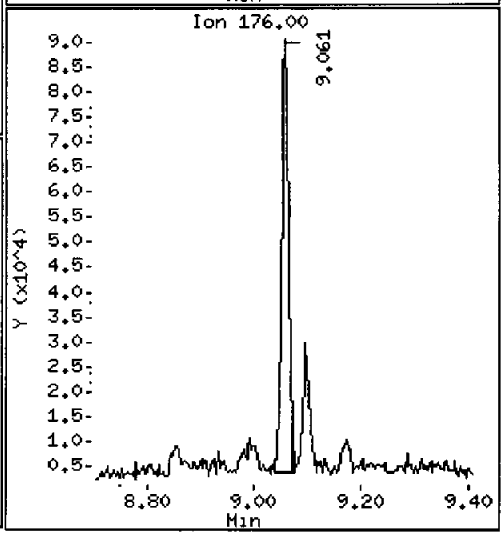


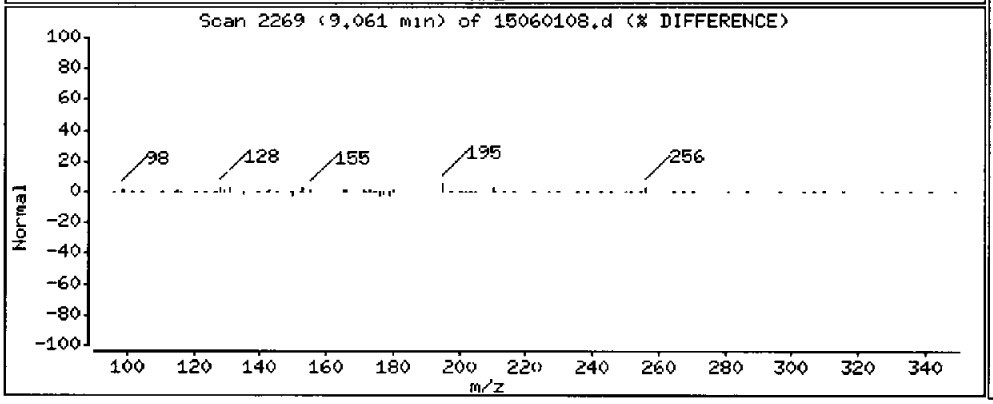












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

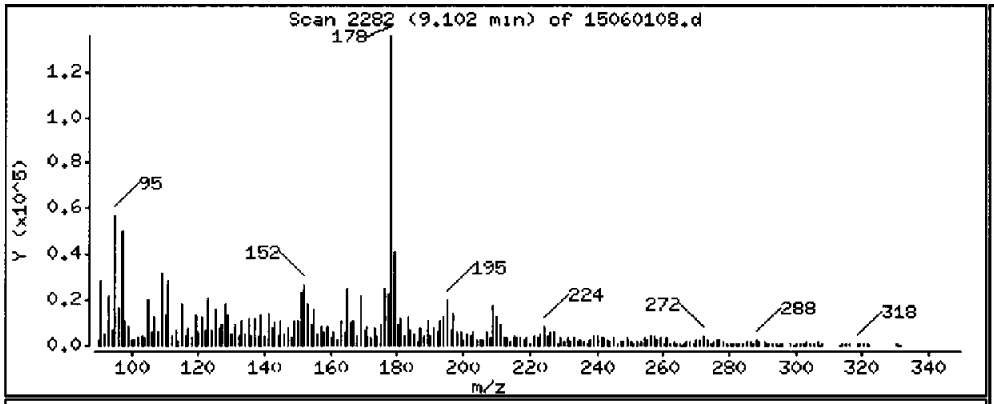
Operator: JZ

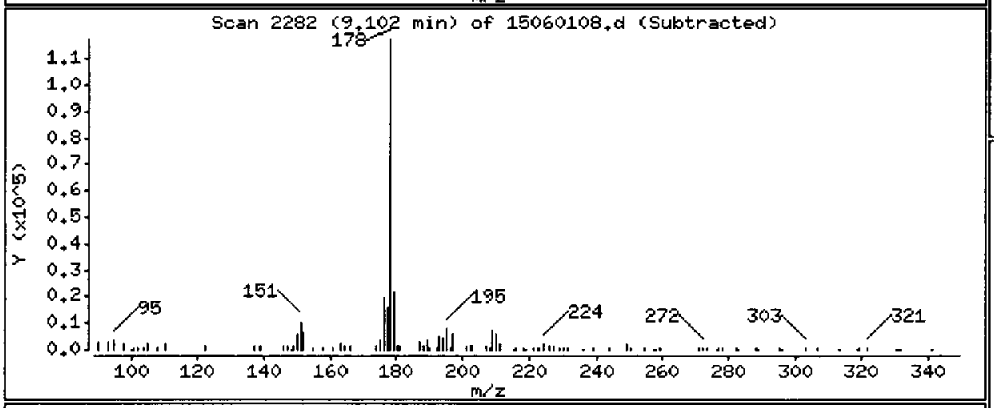
Column phase: ZB-35

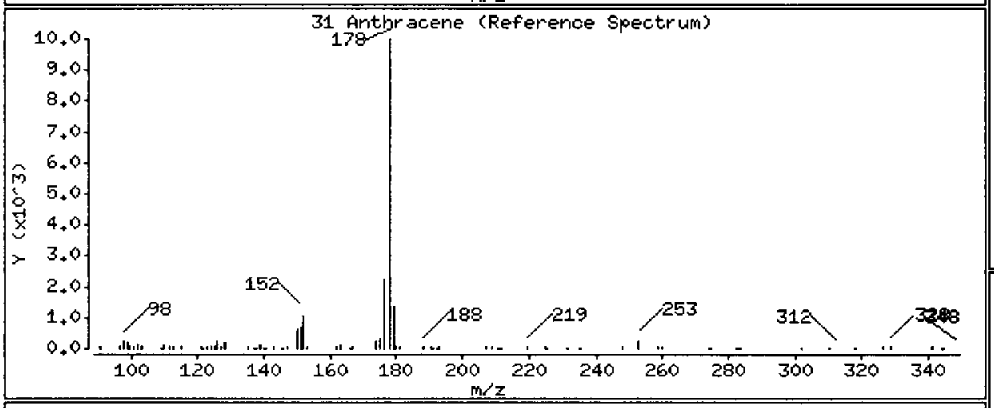
Column diameter: 0.25

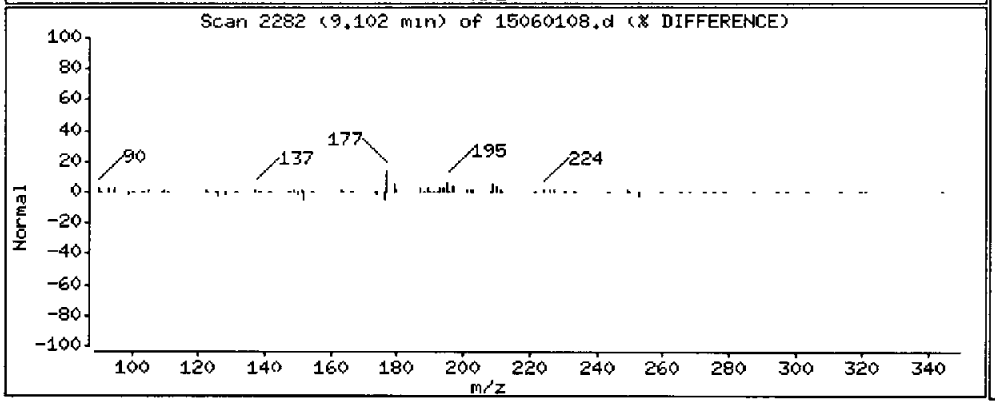
31 Anthracene

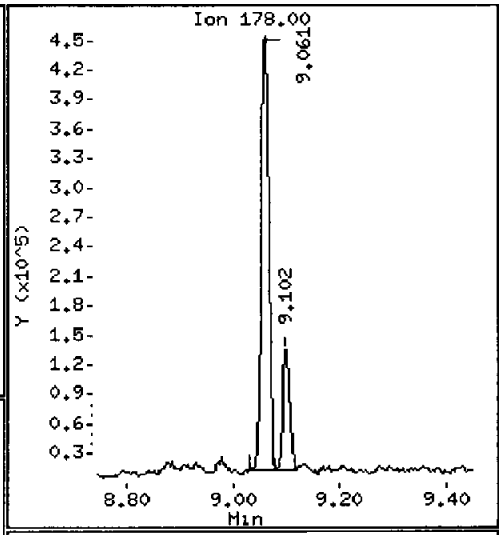
Concentration: 26.30 ug/kg

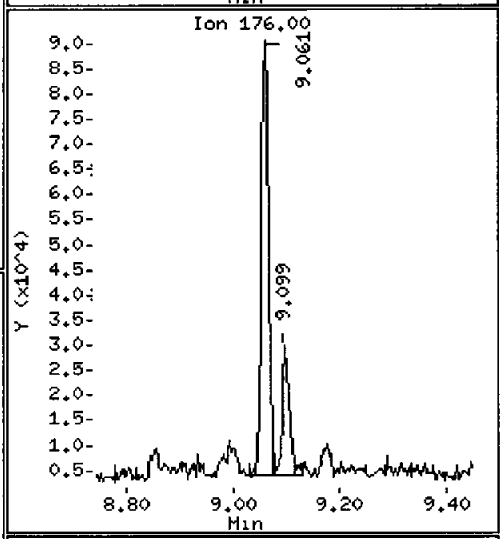


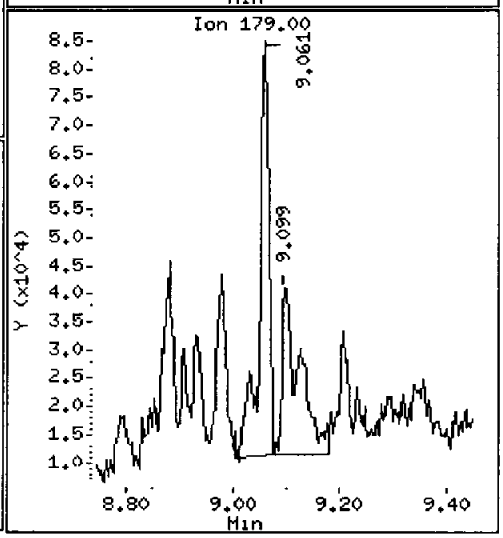












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

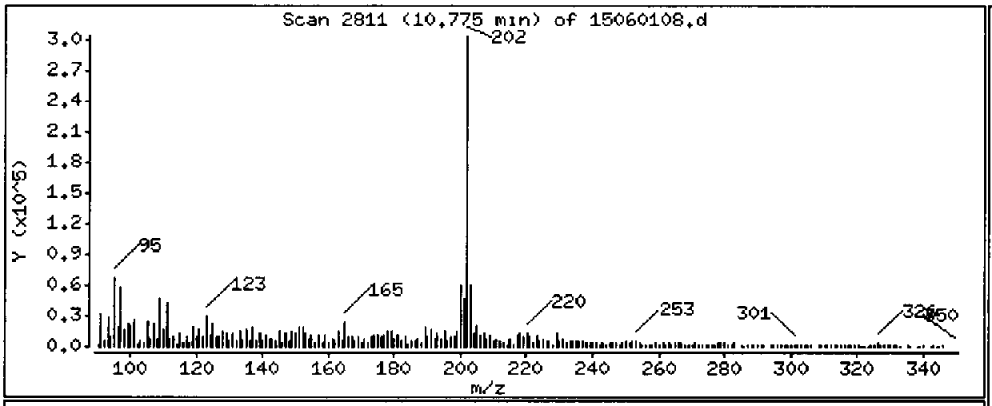
Operator: JZ

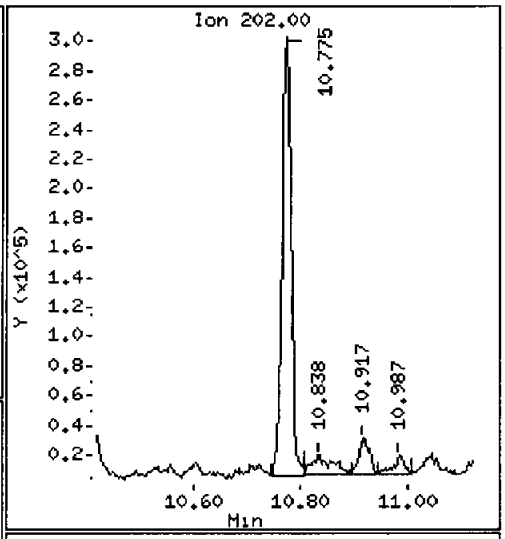
Column phase: ZB-35

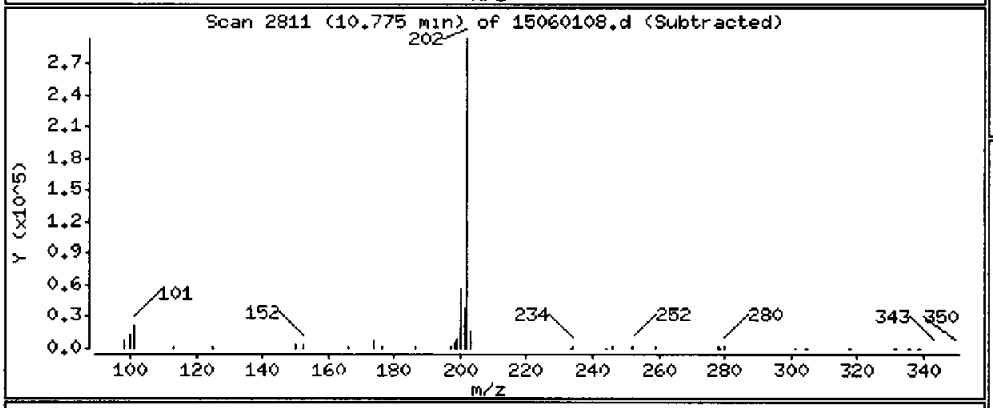
Column diameter: 0.25

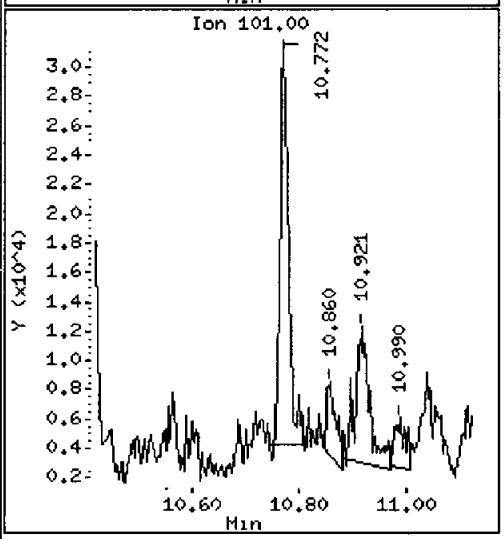
36 Fluoranthene

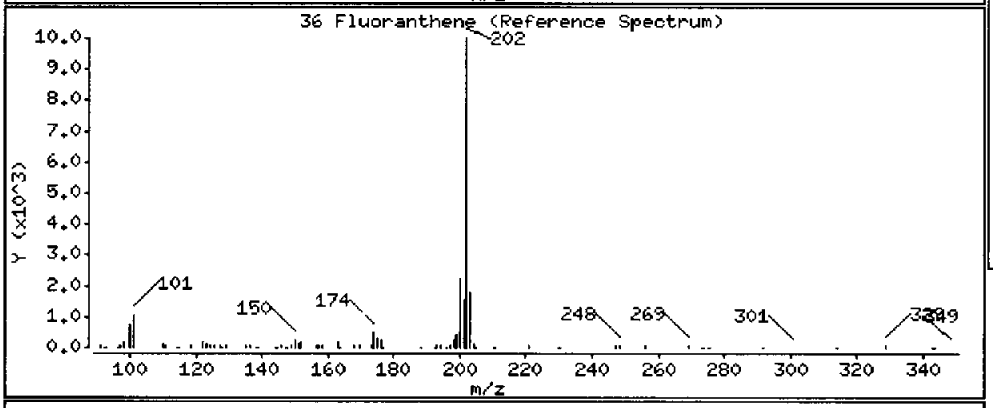
Concentration: 63.92 ug/kg

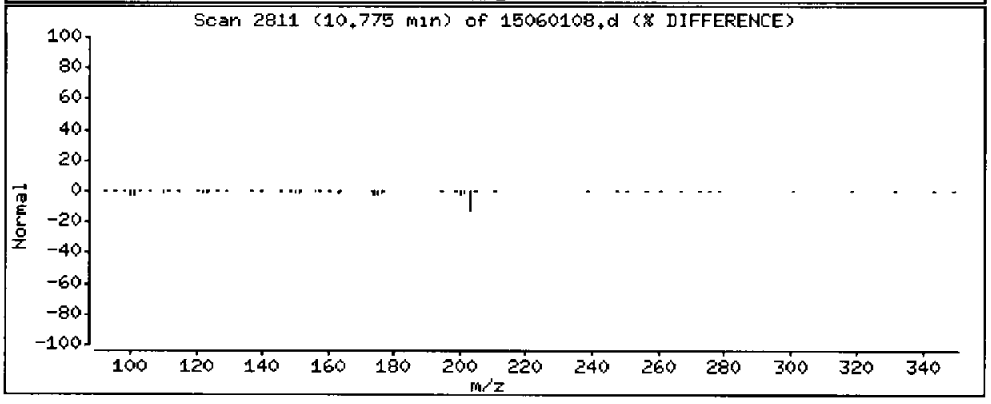












AGC9-0872

Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

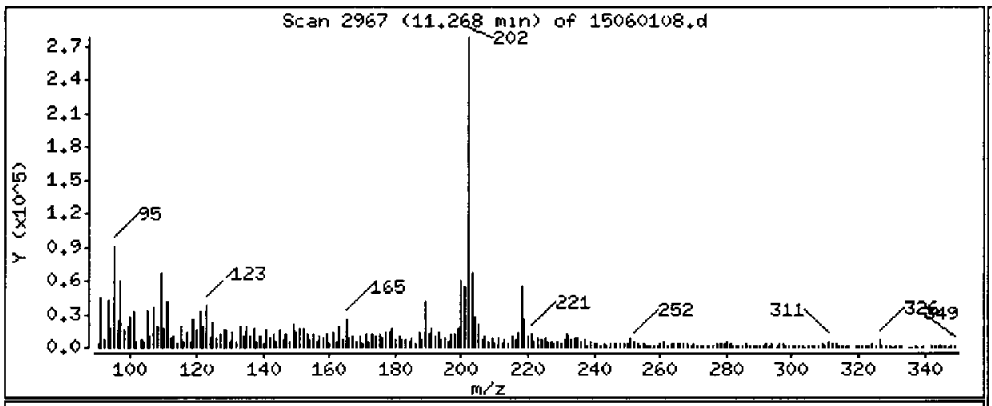
Operator: JZ

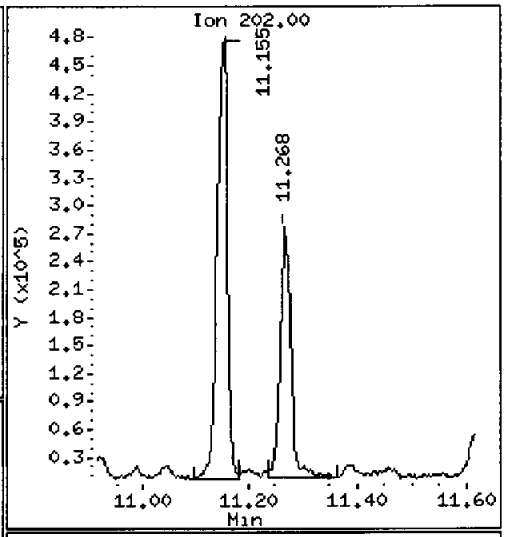
Column phase: ZB-35

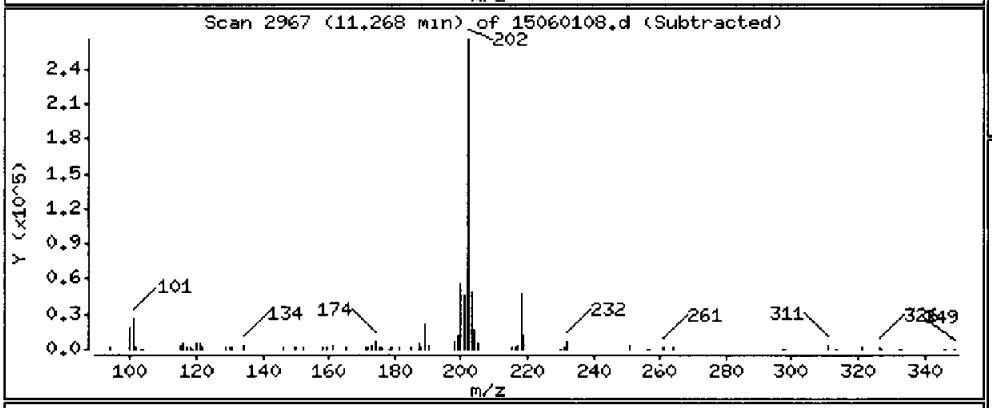
Column diameter: 0.25

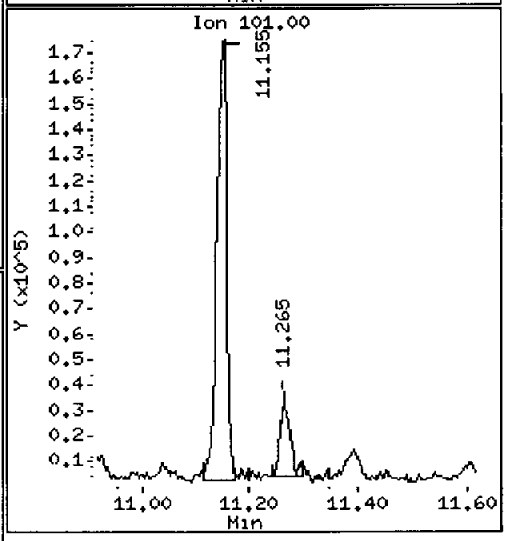
39 Pyrene

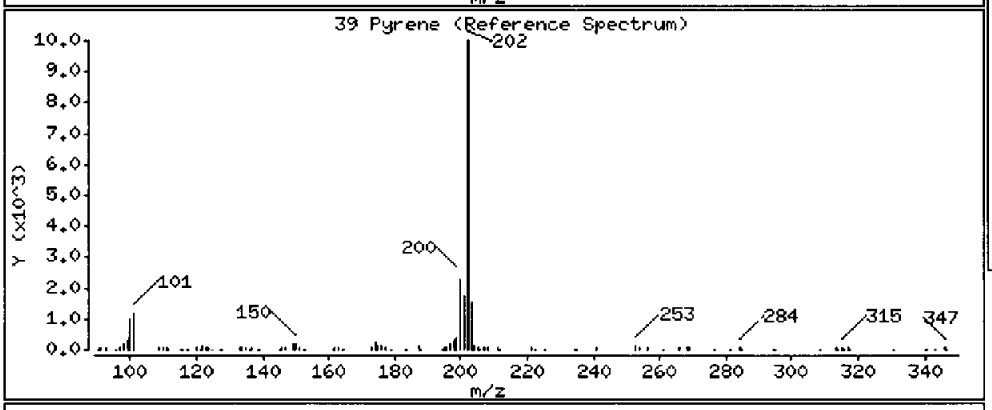
Concentration: 59.24 ug/kg

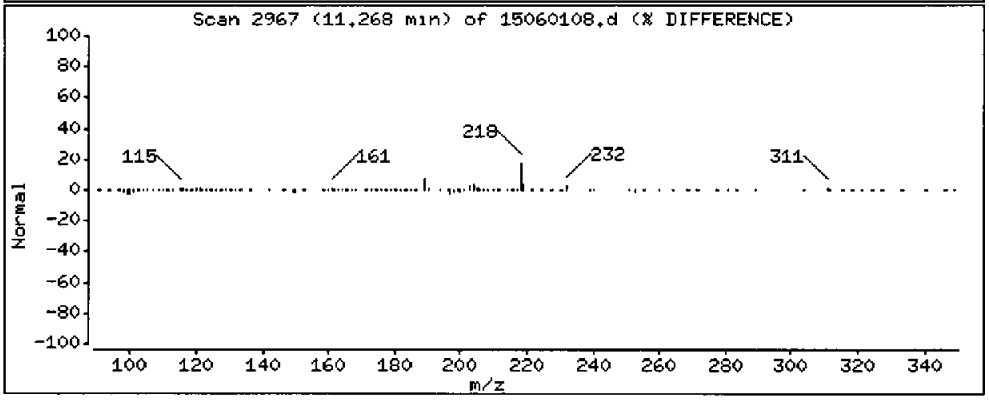






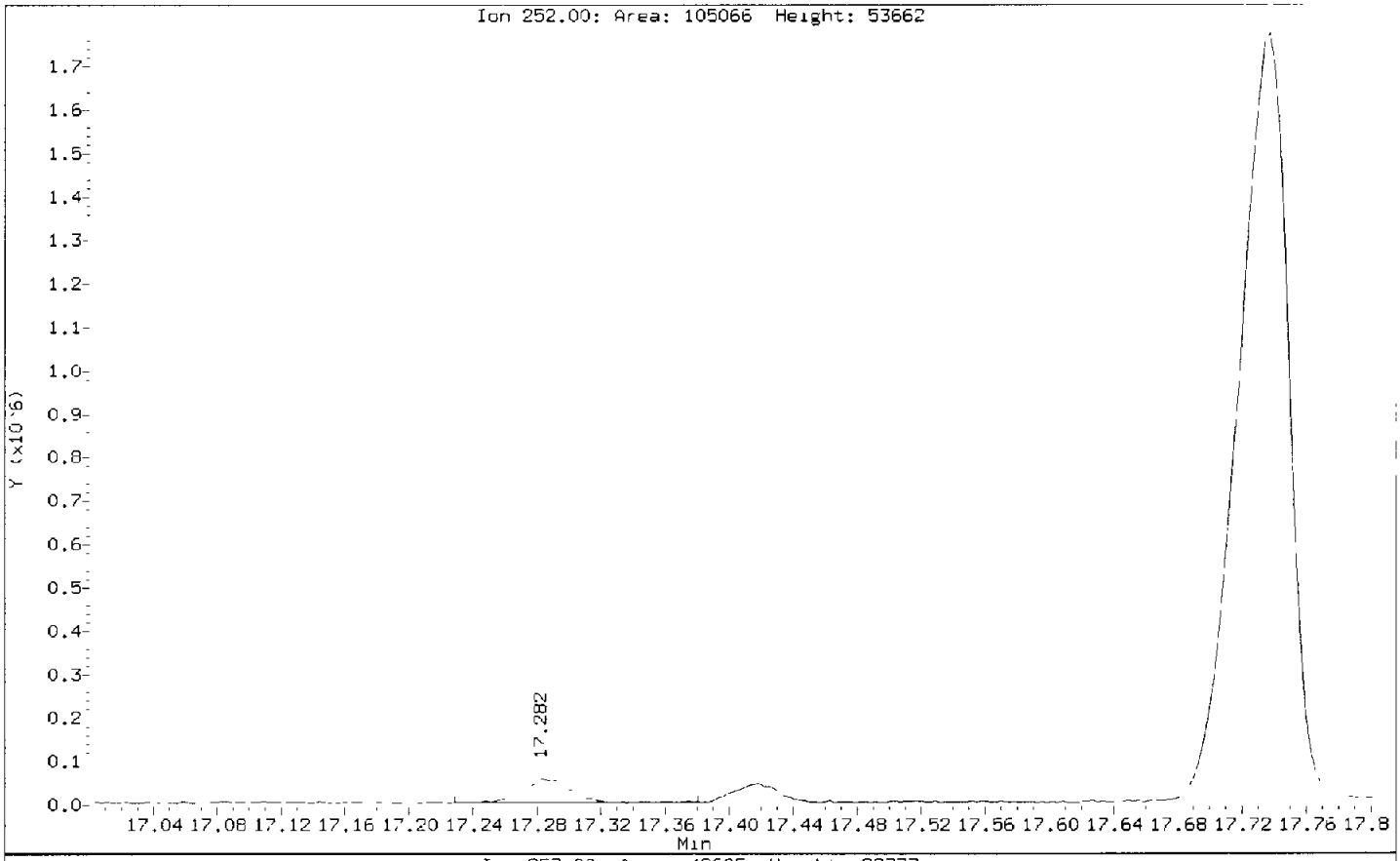


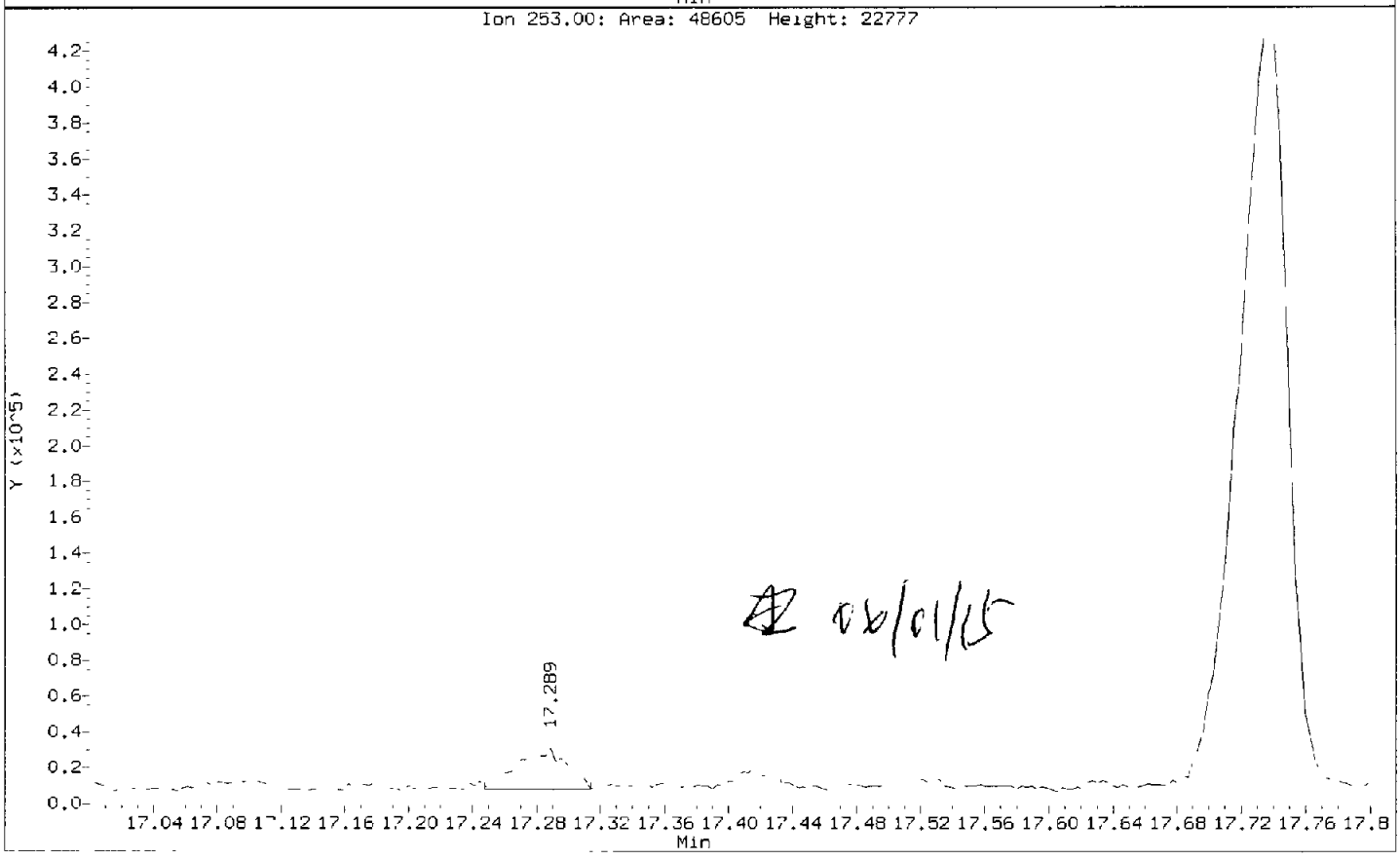




Data File: /chem3/nt8.i/20150601.b/15060108.d
Injection Date: 01-JUN-2015 12:43
Instrument: nt8.i
Client Sample ID: SDP-02(18.5-19.5)

Compound: Benzo(a)pyrene
CAS Number: 50-32-8



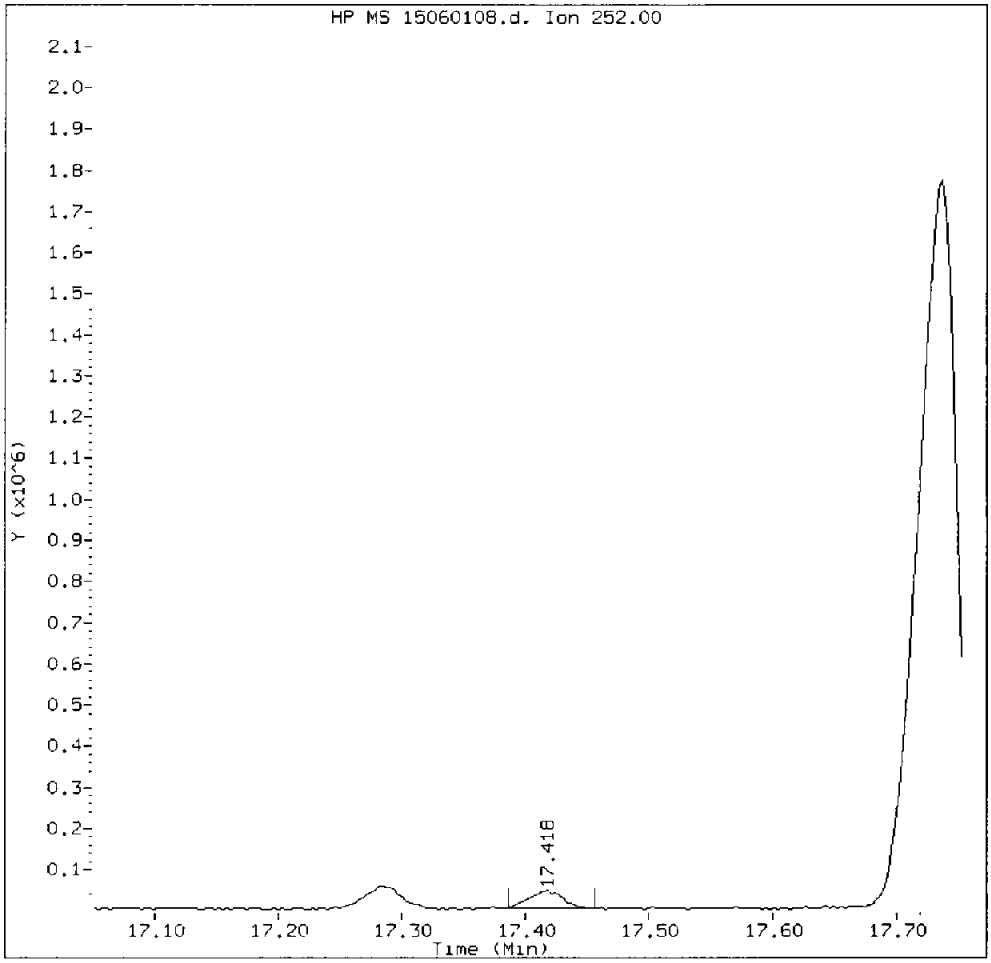


06/01/15

AECOM 60607

AGC9D, /chem3/nt8.i/20150601.b/15060108.d

Benzo(a)pyrene Amount: 0.29 Area: 80223



MANUAL INTEGRATION for Benzo(a)pyrene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 06/01/15

AGC9 : 80375

Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

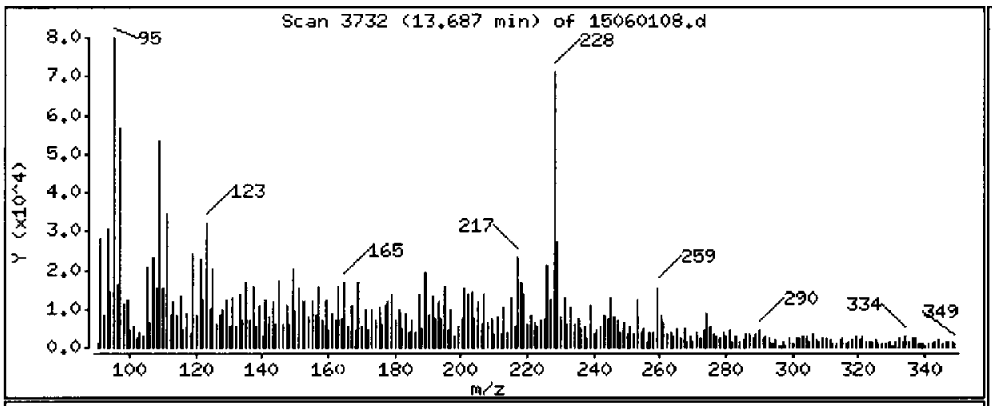
Operator: JZ

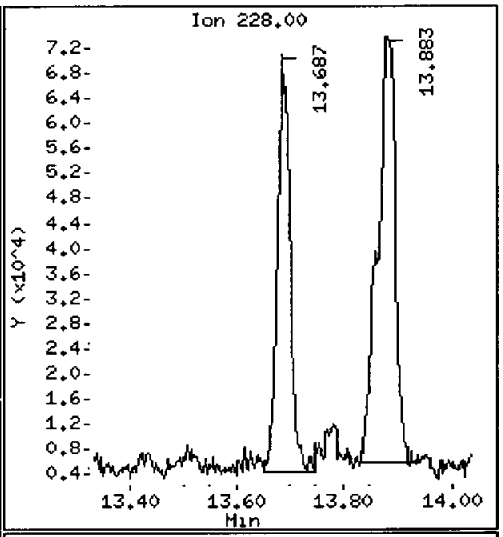
Column phase: ZB-35

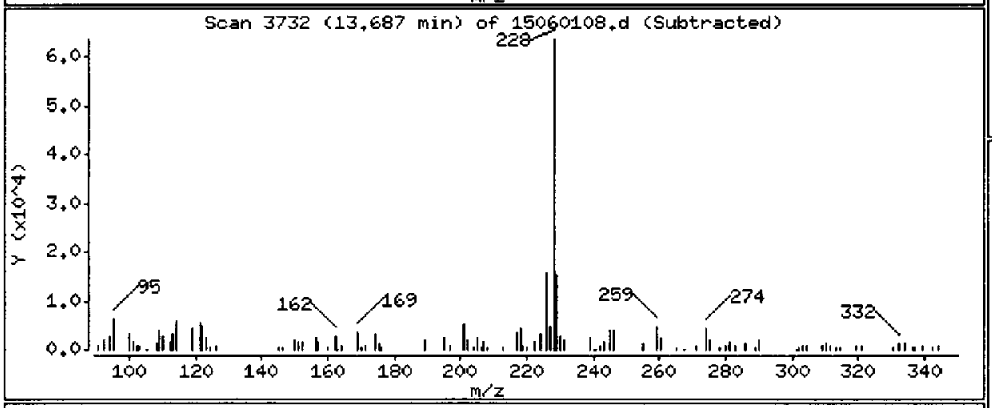
Column diameter: 0.25

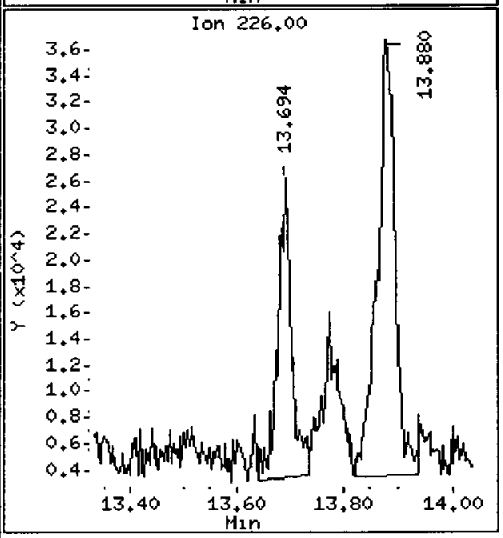
46 Benzo(a)anthracene

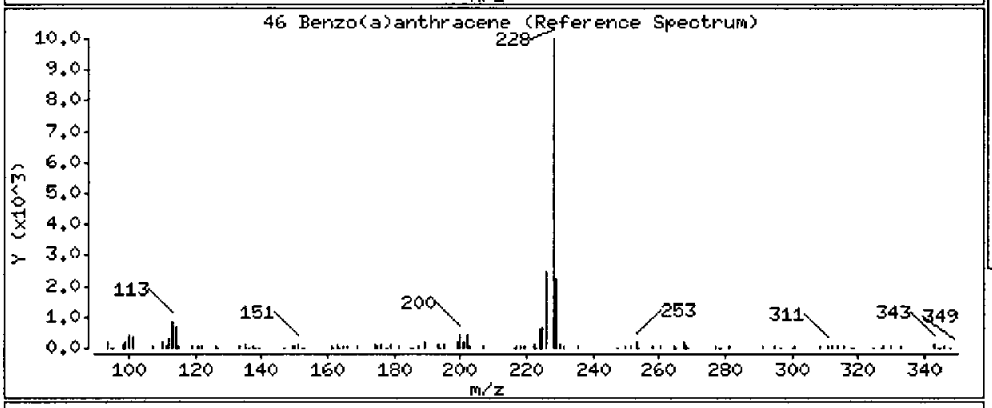
Concentration: 19.45 ug/kg

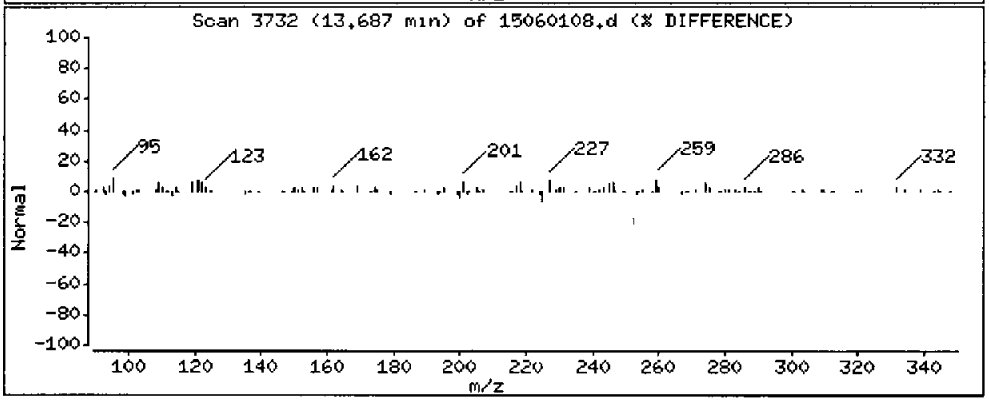












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

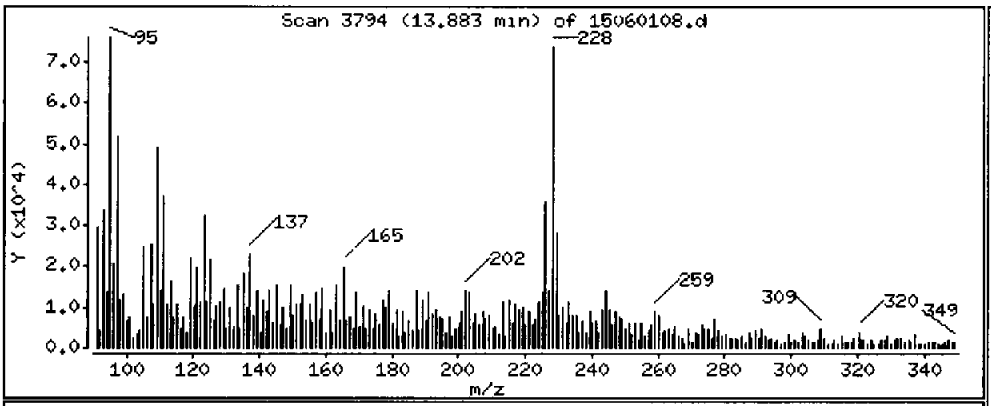
Operator: JZ

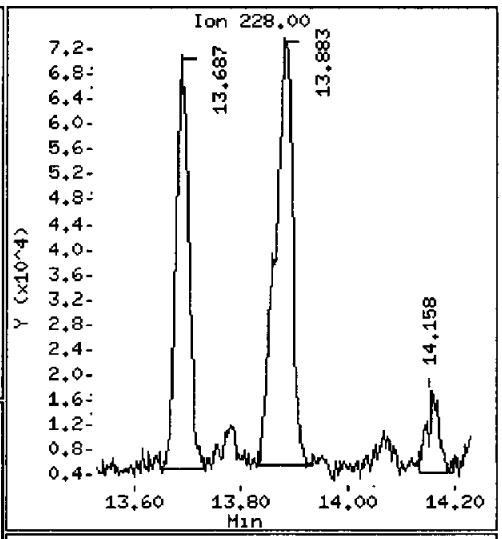
Column phase: ZB-35

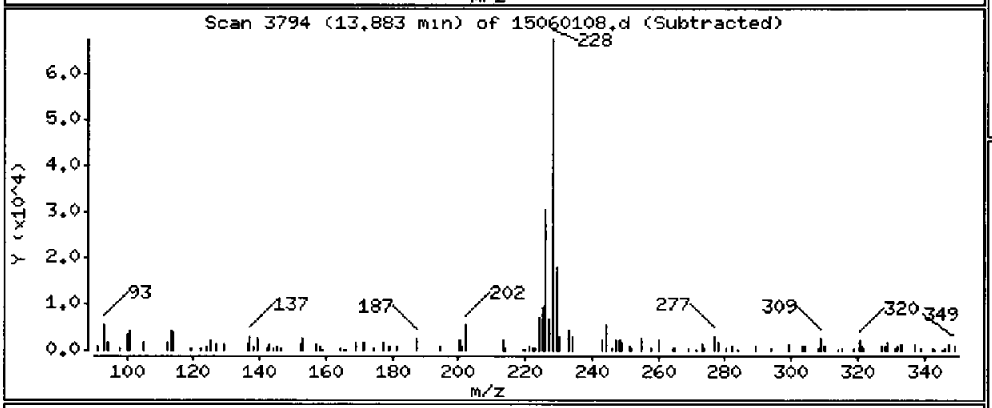
Column diameter: 0.25

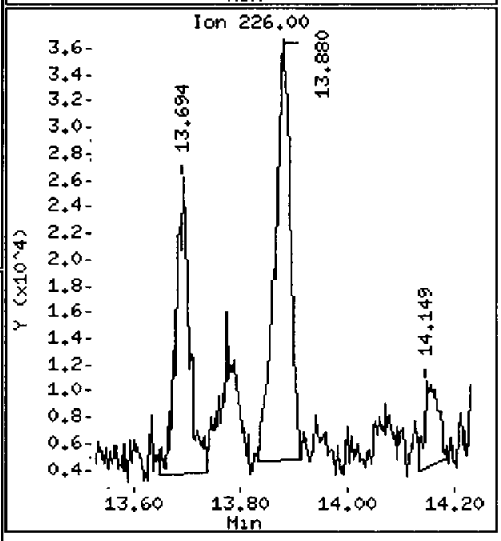
48 Chrysene

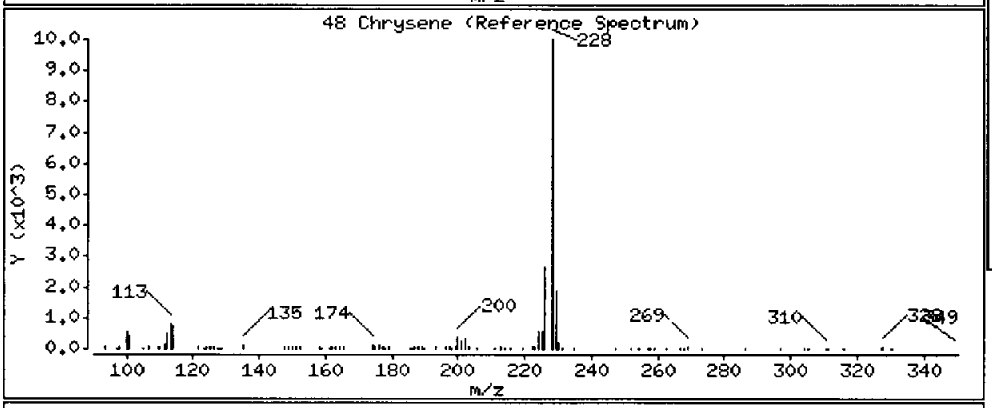
Concentration: 26.42 ug/kg

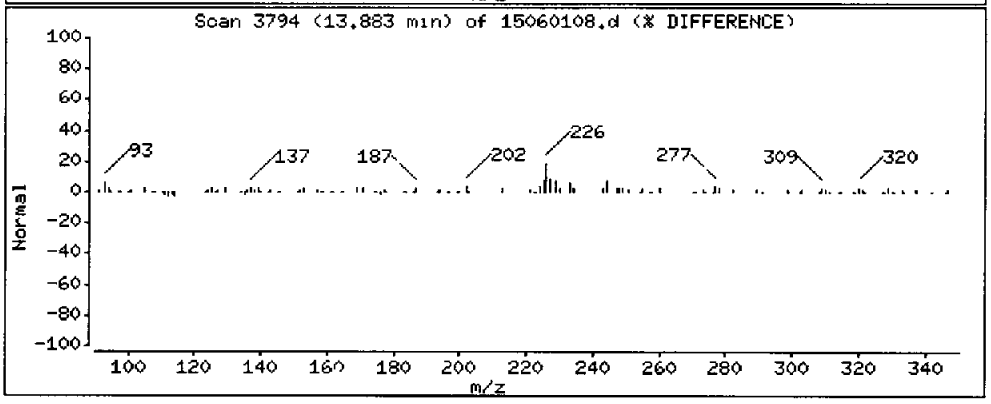












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

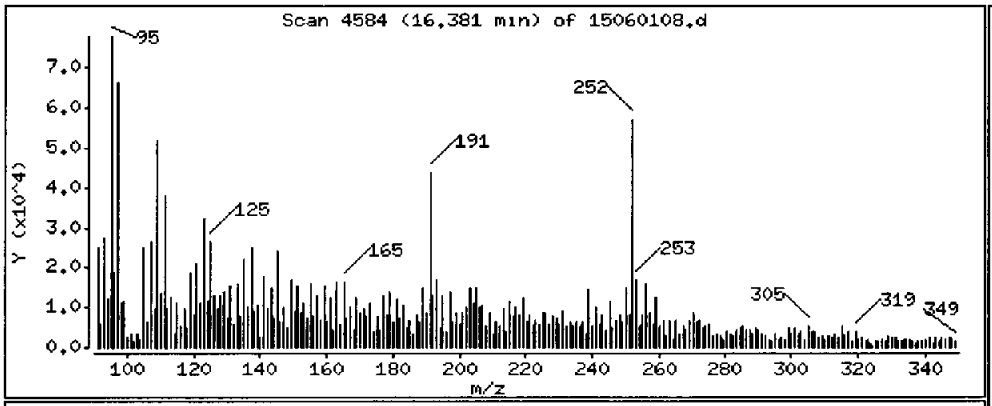
Operator: JZ

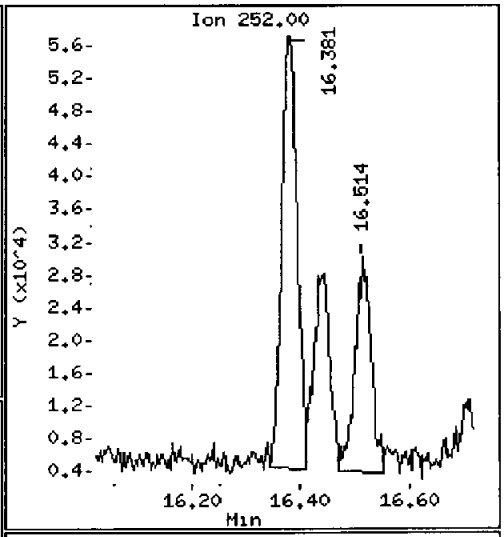
Column phase: ZB-35

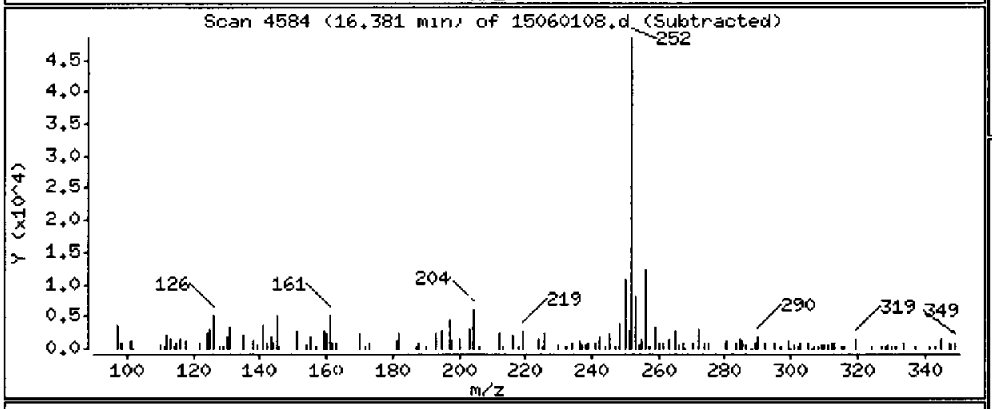
Column diameter: 0.25

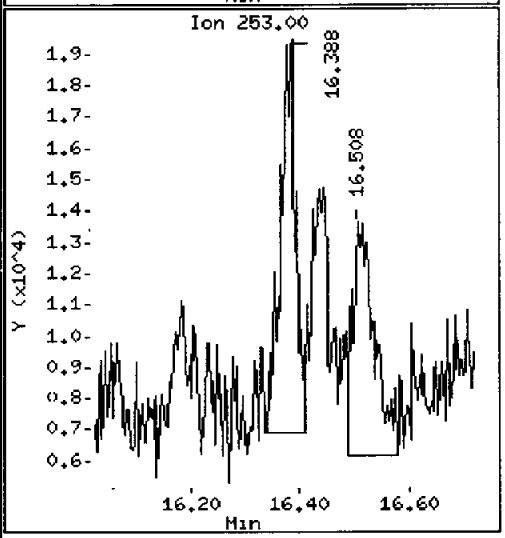
51 Benzo(b)fluoranthene

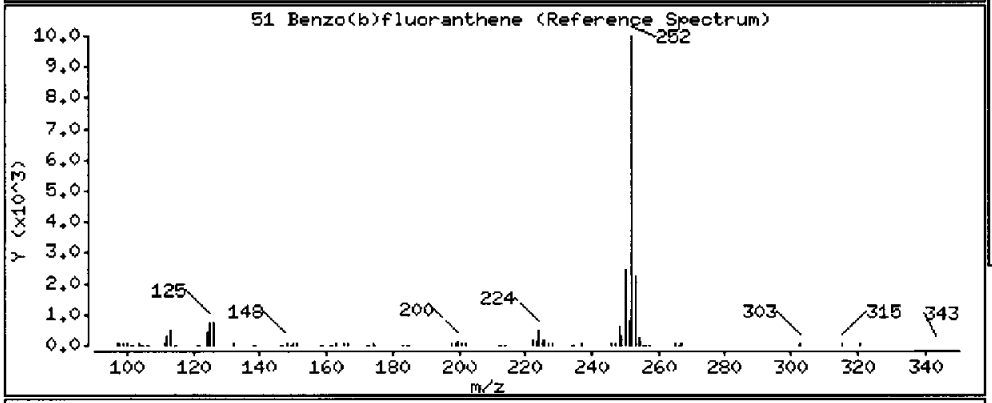
Concentration: 15.91 ug/kg

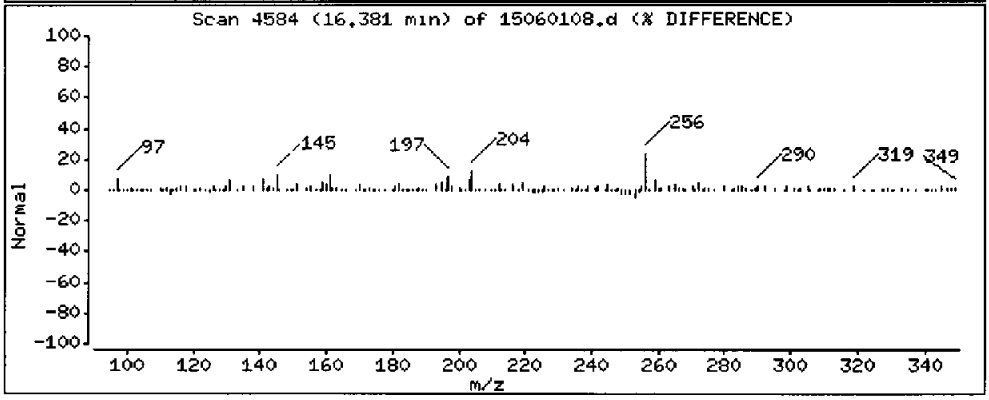












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

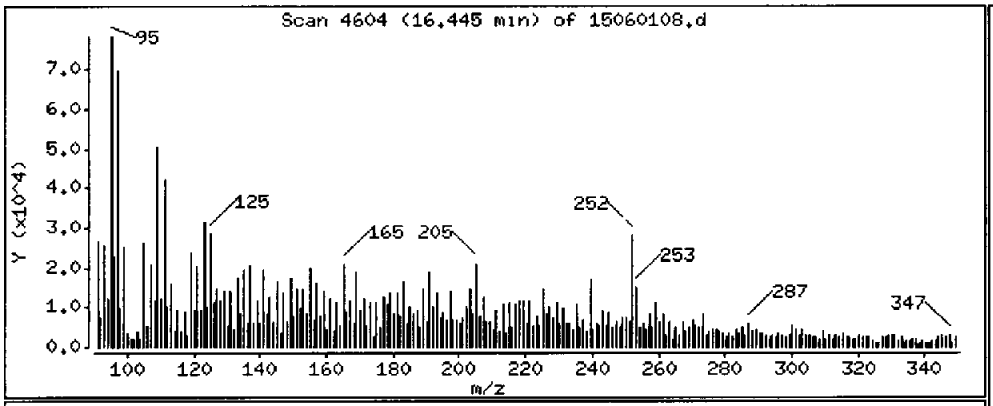
Operator: JZ

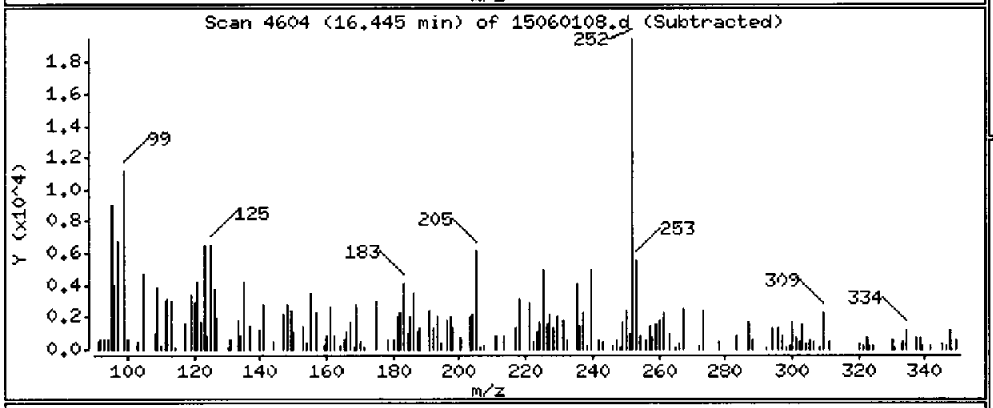
Column phase: ZB-35

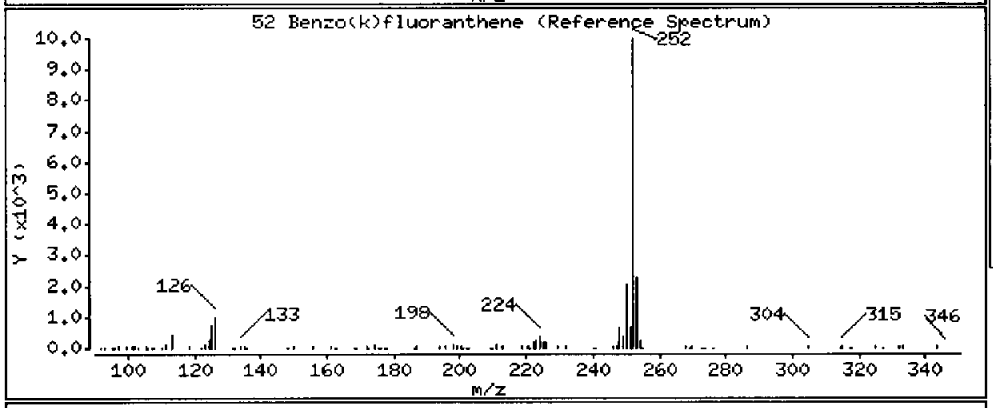
Column diameter: 0.25

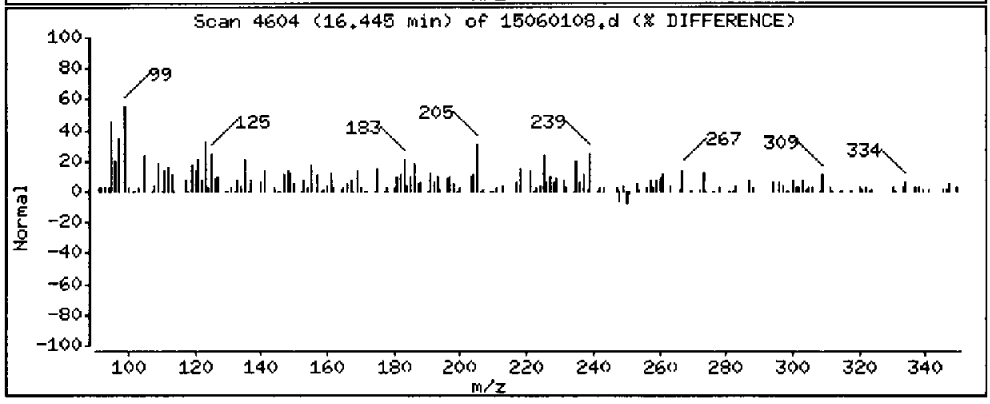
52 Benzo(k)fluoranthene

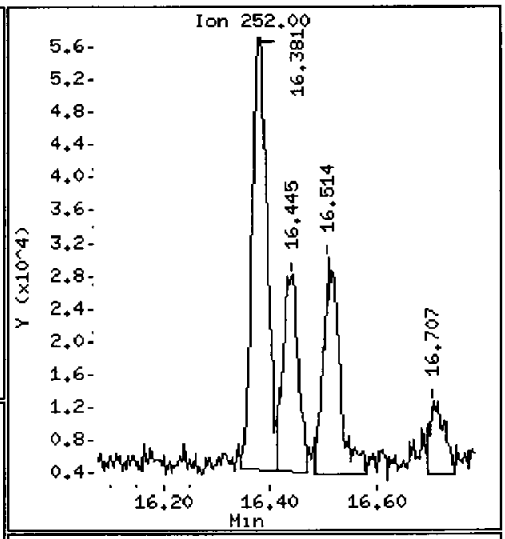
Concentration: 7.457 ug/kg

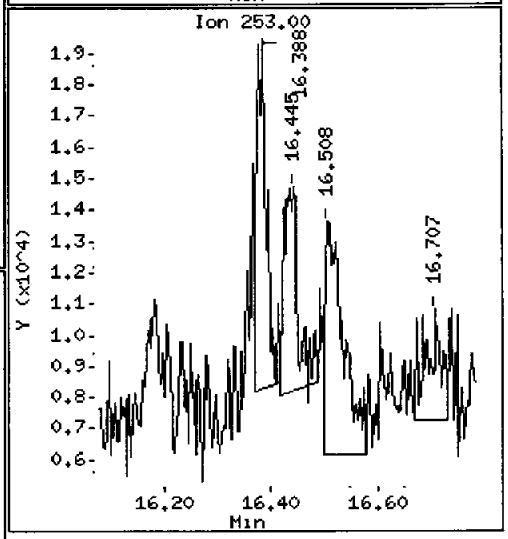












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

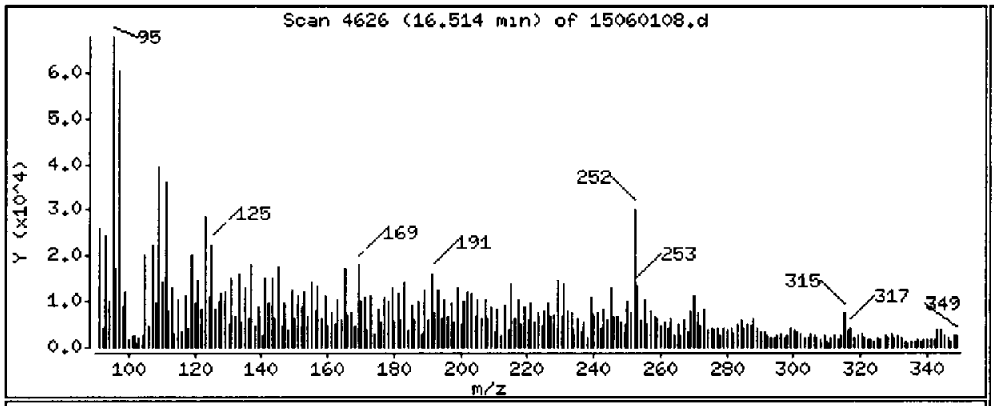
Operator: JZ

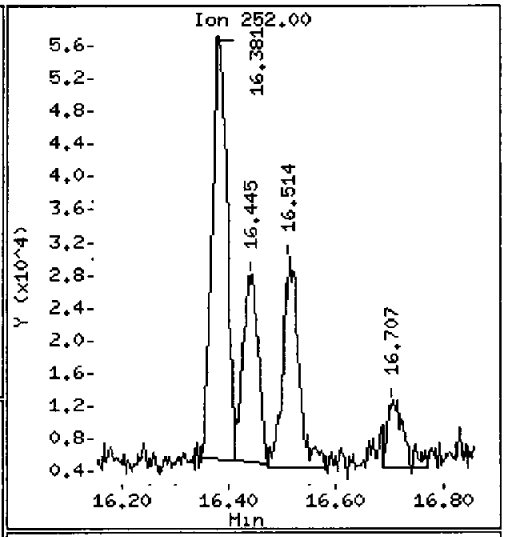
Column phase: ZB-35

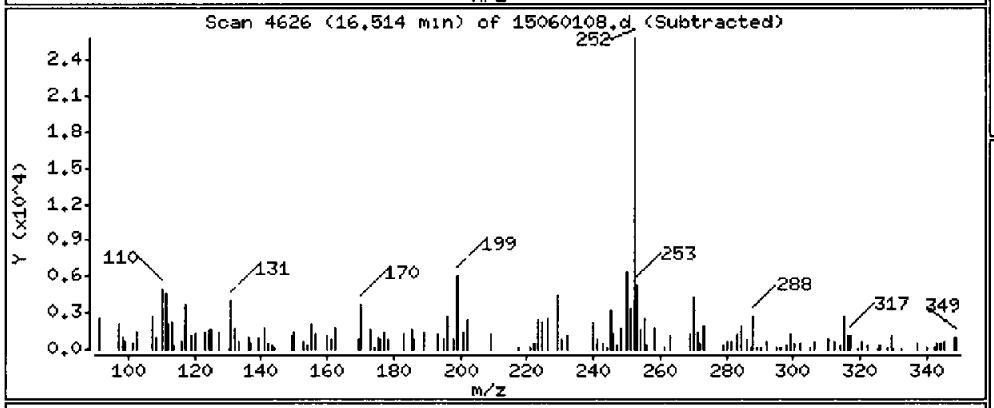
Column diameter: 0.25

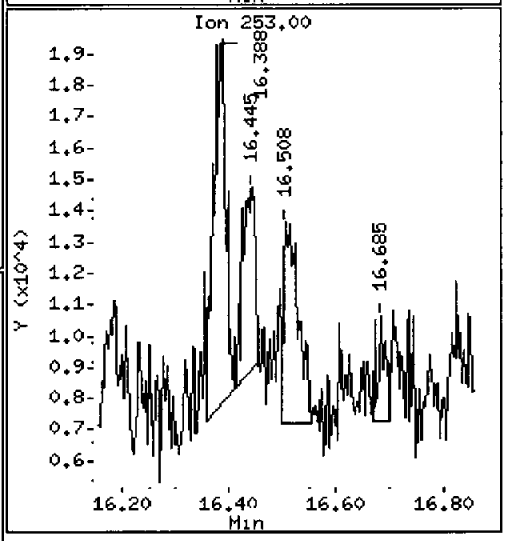
251 Benzo(j)fluoranthene

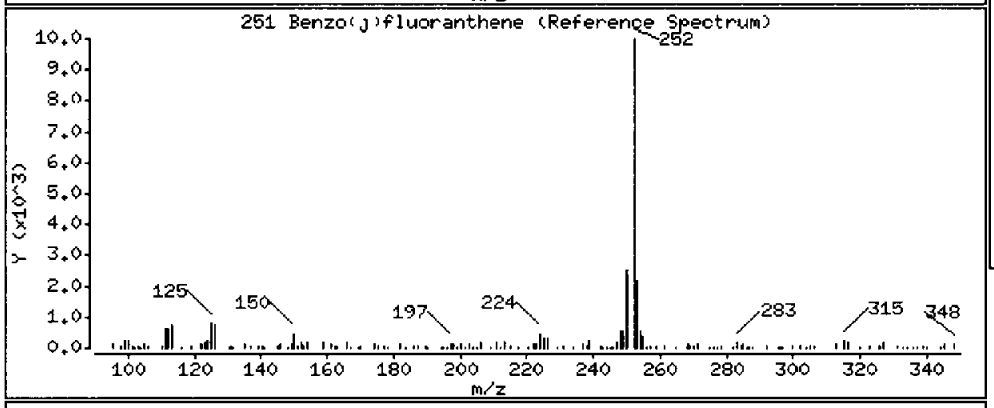
Concentration: 8.472 ug/kg

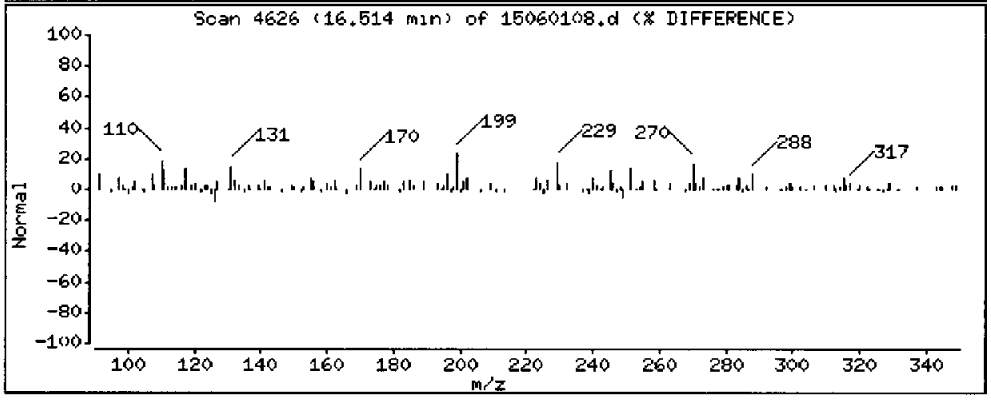












Data File: /chem3/nt8.i/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.i

Sample Info: AGC9D

Volume Injected (uL): 1.0

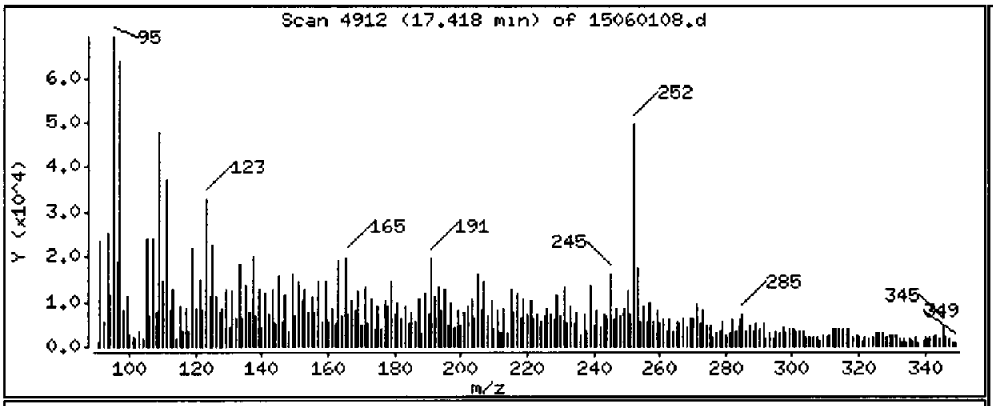
Operator: JZ

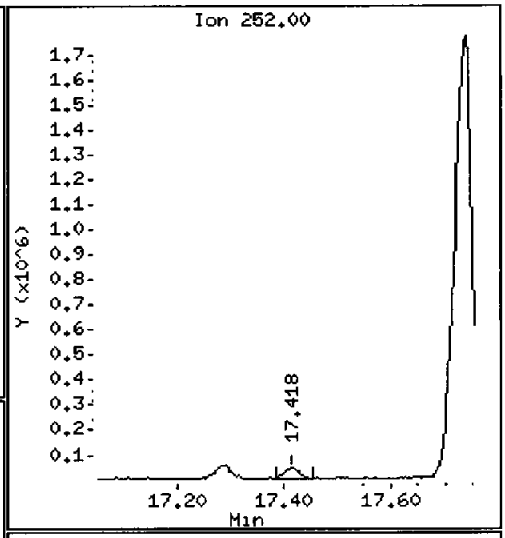
Column phase: ZB-35

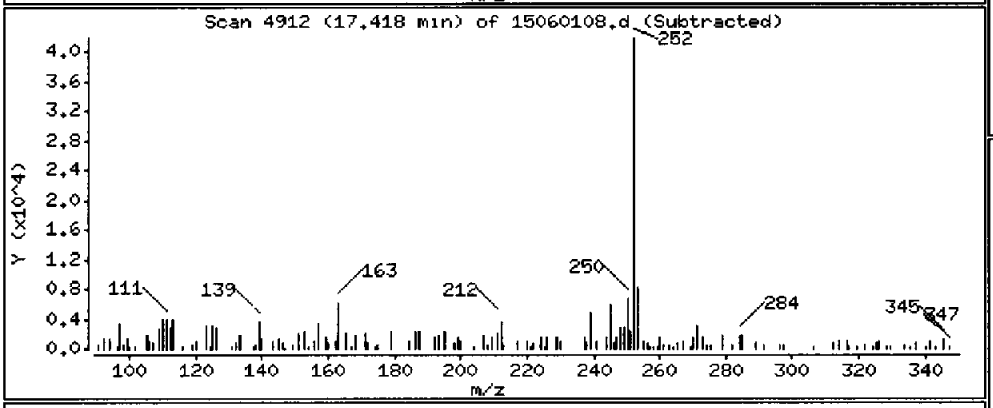
Column diameter: 0.25

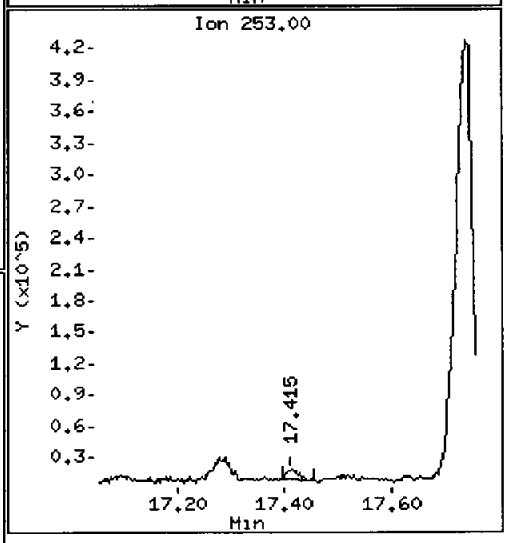
54 Benzo(a)pyrene

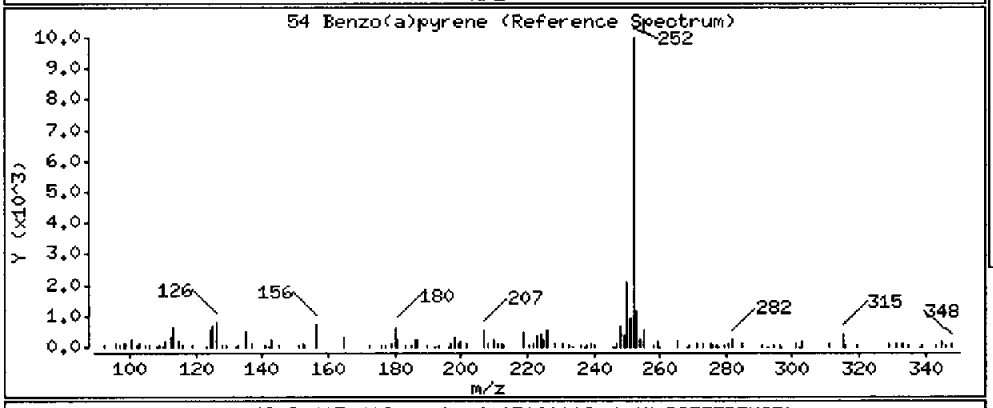
Concentration: 13.69 ug/kg

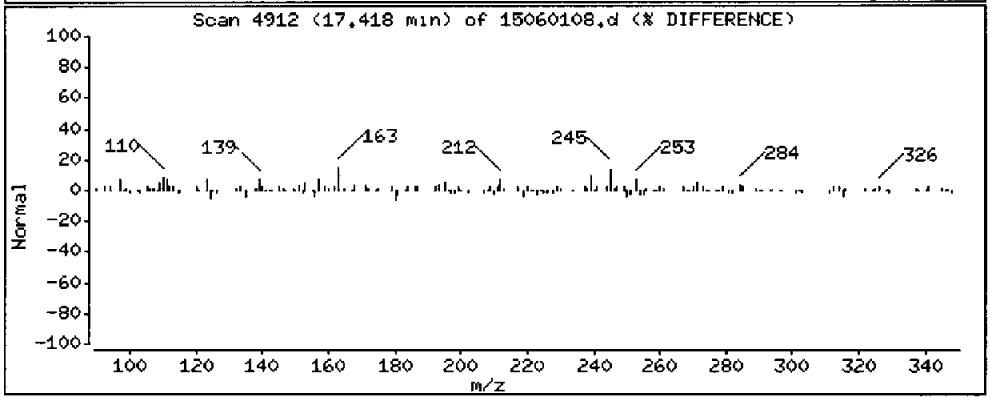












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

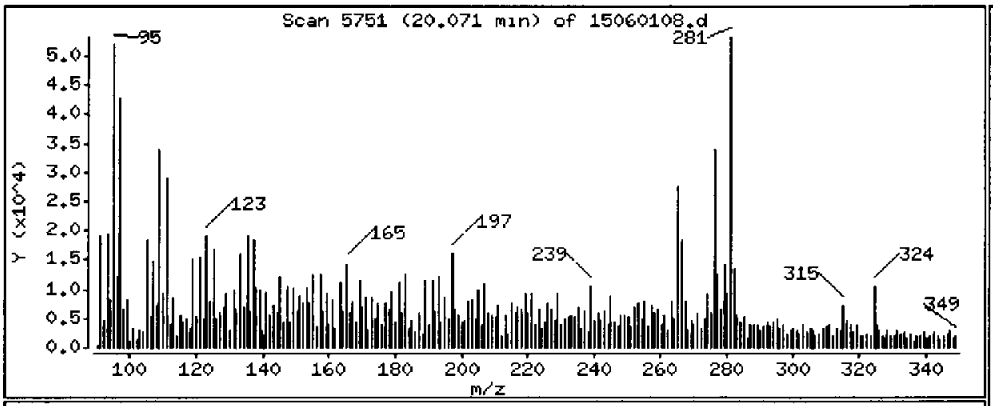
Operator: JZ

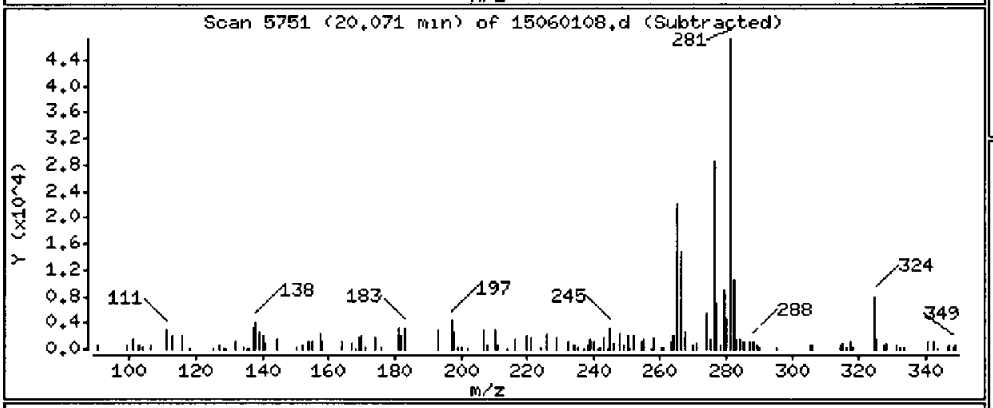
Column phase: ZB-35

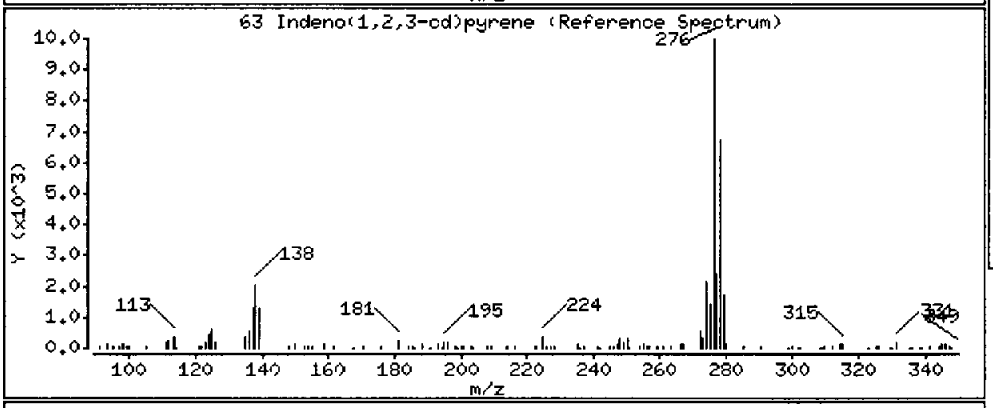
Column diameter: 0.25

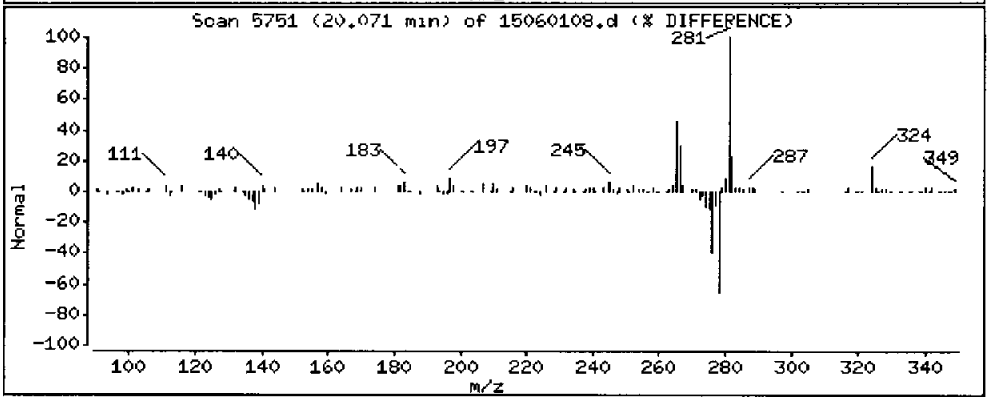
63 Indeno(1,2,3-cd)pyrene

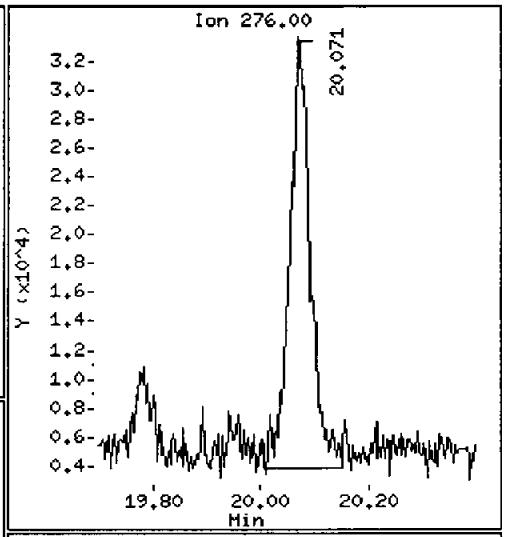
Concentration: 11.32 ug/kg

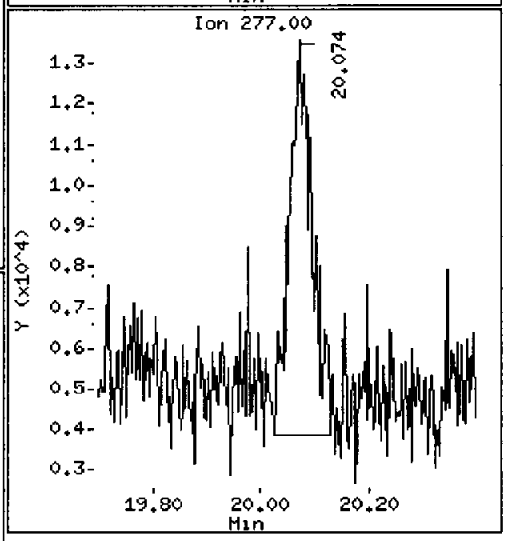






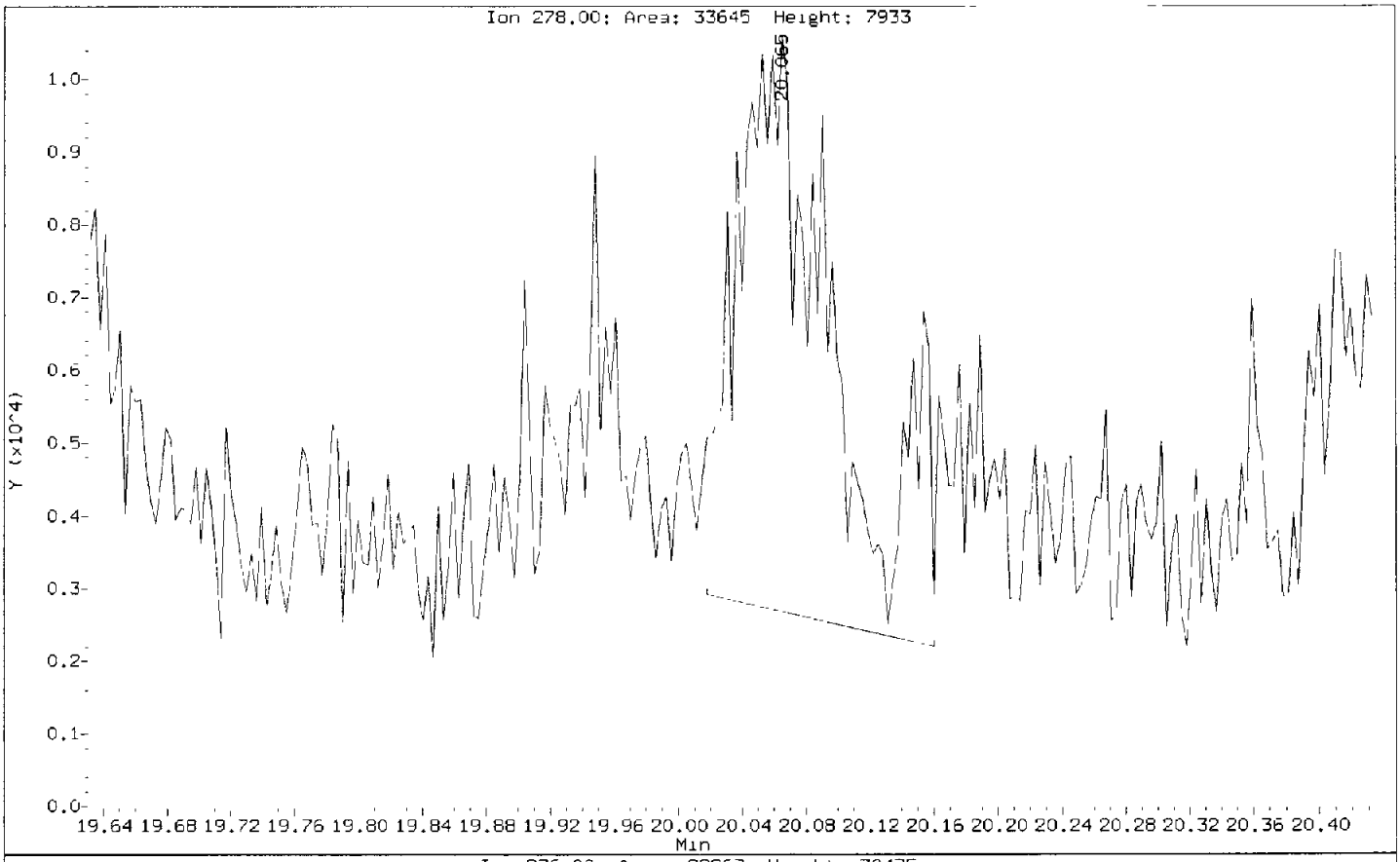


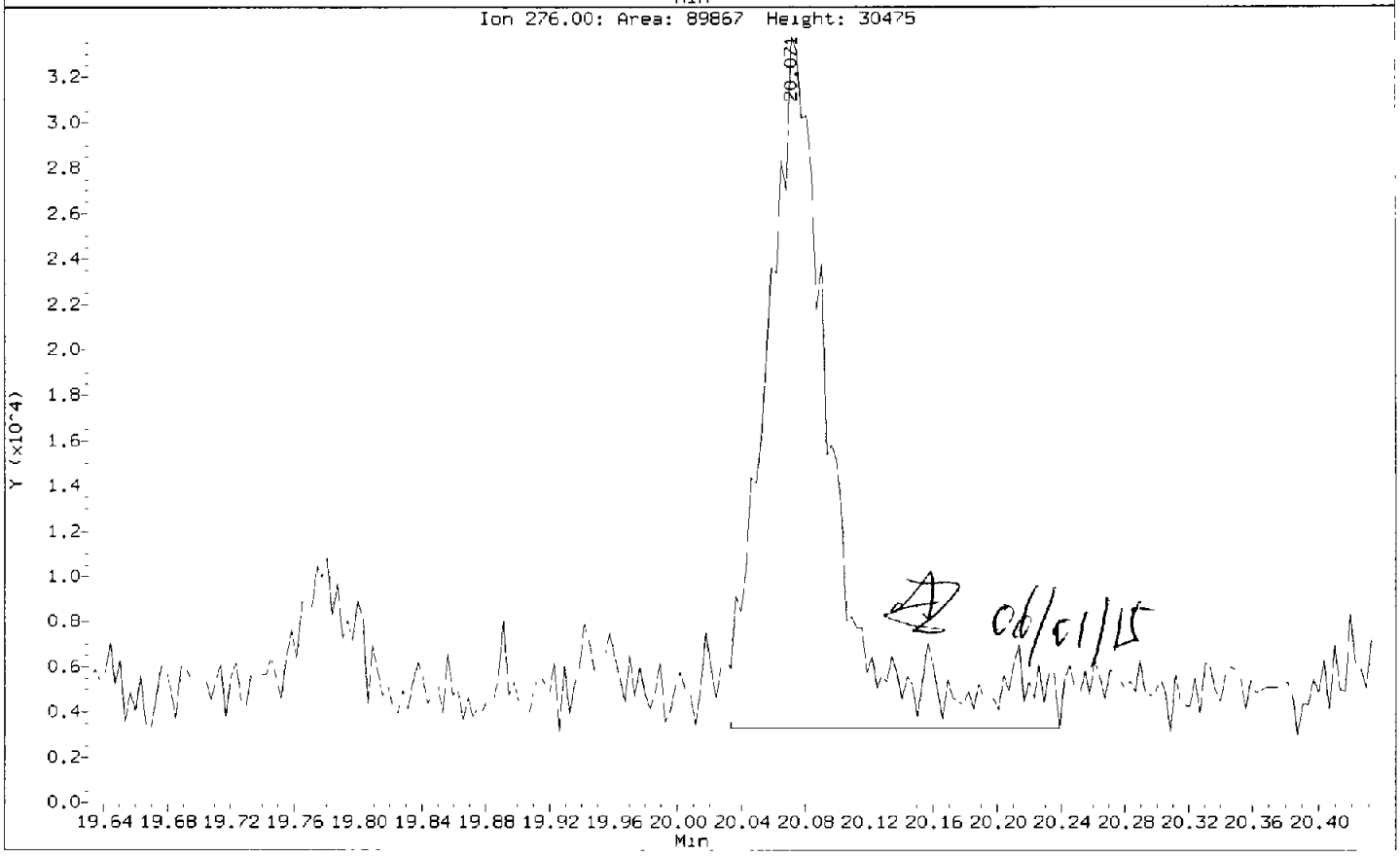




Data File: /chem3/nt8.i/20150601.b/15060108.d
Injection Date: 01-JUN-2015 12:43
Instrument: nt8.i
Client Sample ID: SDP-02(18.5-19.5)

Compound: Dibenzo(a,h)anthracene
CAS Number: 53-70-3

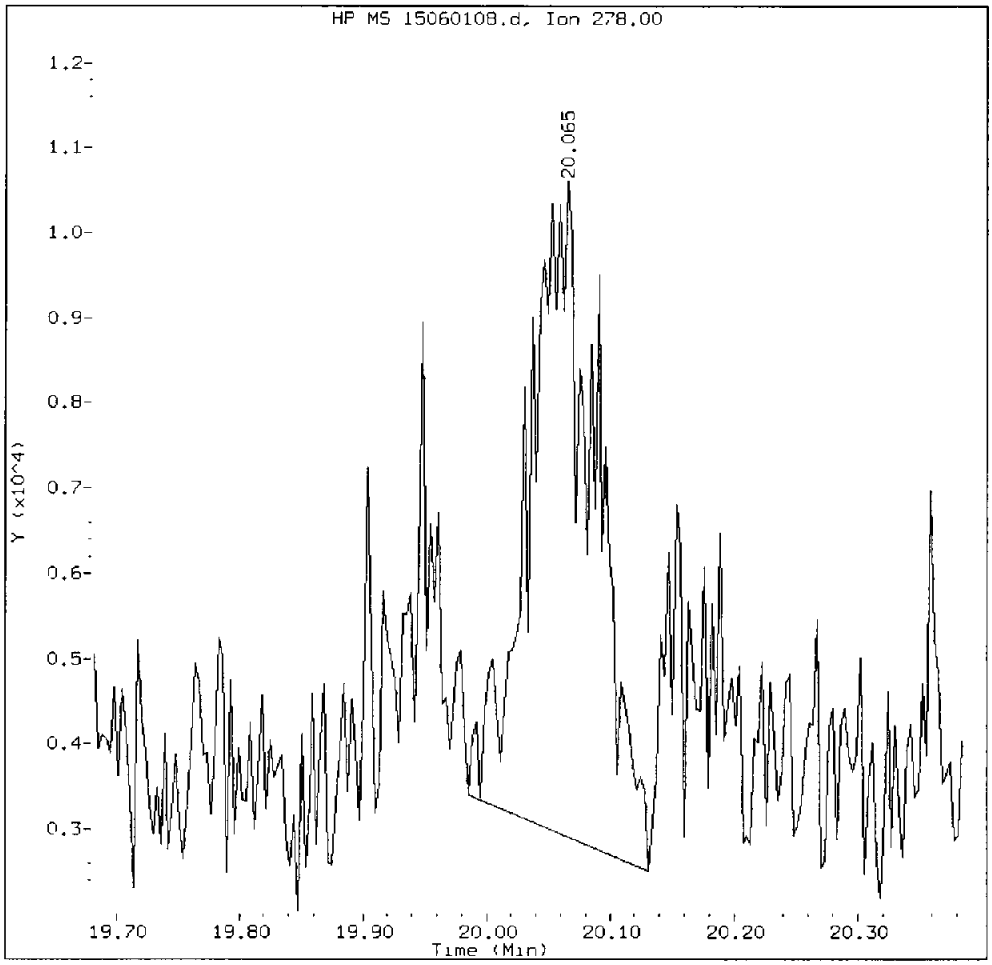




06/01/15

AGC9D, /chem3/nt8.i/20150601.b/15060108.d

Dibenzo(a,h)anthracene Amount: 0.11 Area: 29289



MANUAL INTEGRATION for Dibenzo(a,h)anthracene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 06/04/15

AGC9 · 06BAL

Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

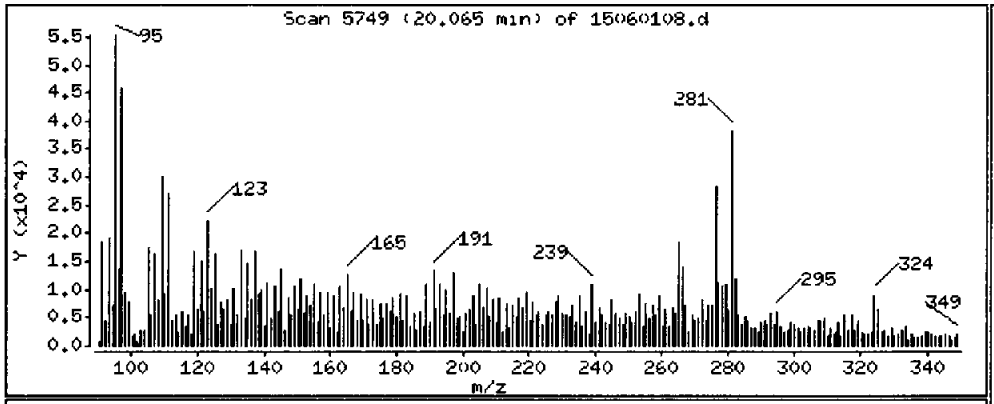
Operator: JZ

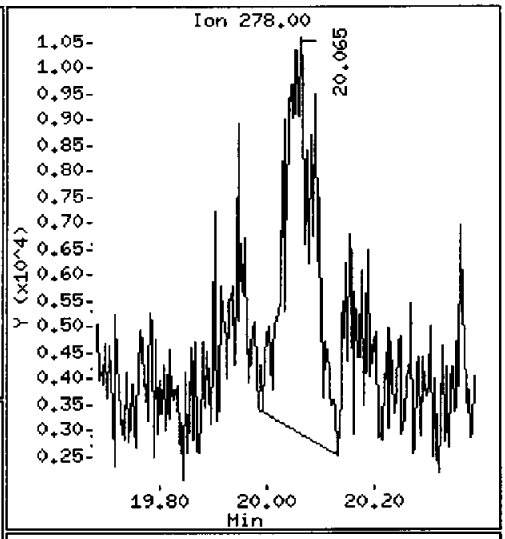
Column phase: ZB-35

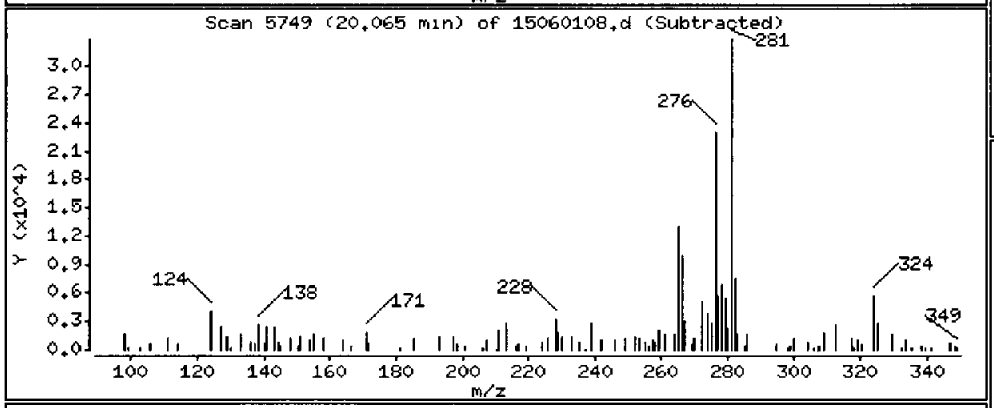
Column diameter: 0.25

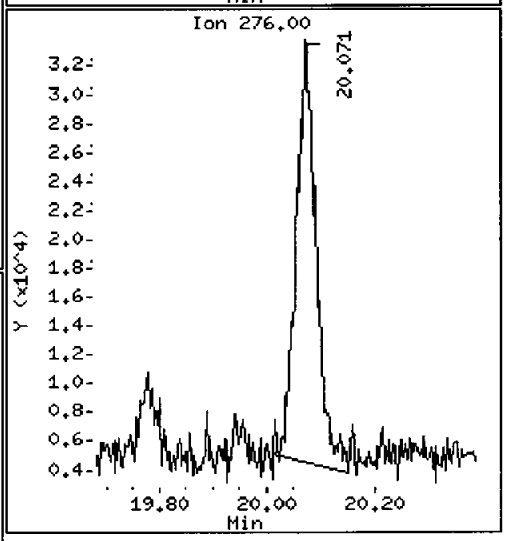
62 Dibenzo(a,h)anthracene

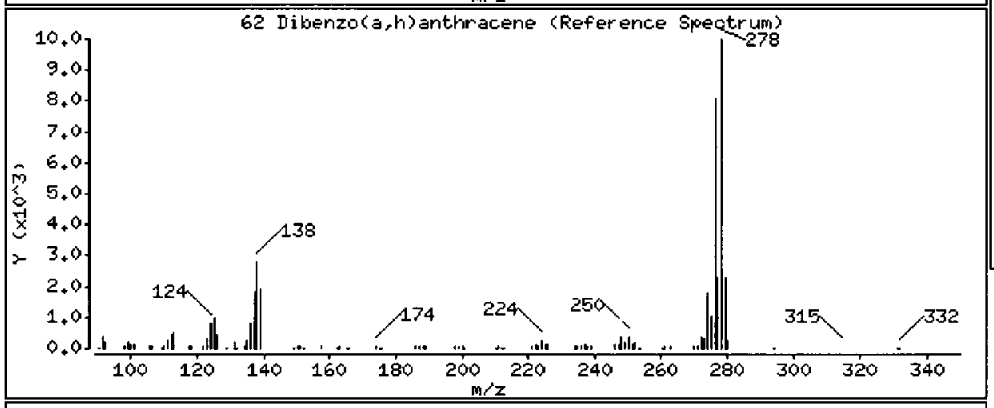
Concentration: 5.109 ug/kg

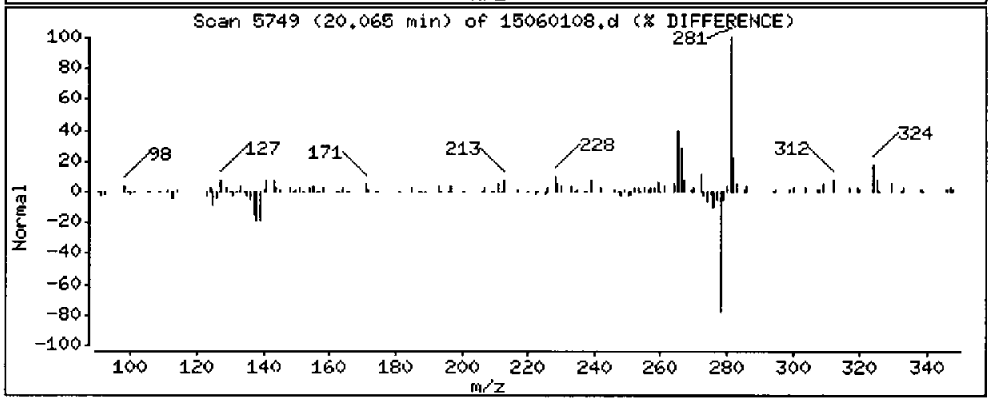












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

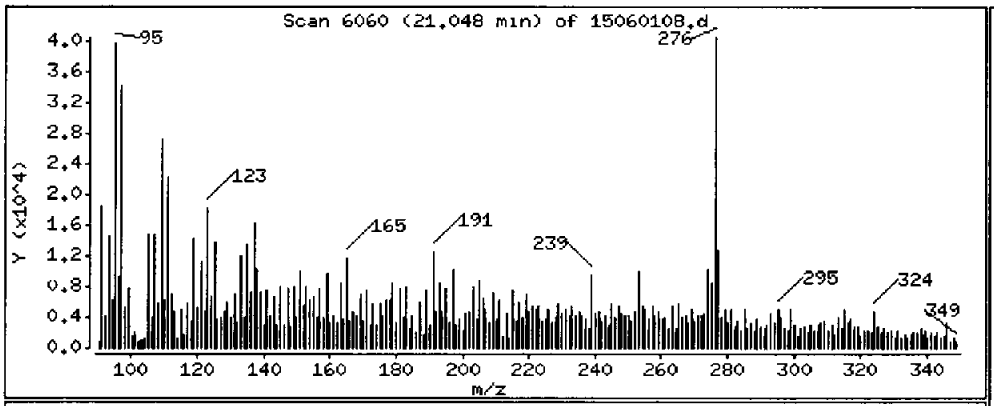
Operator: JZ

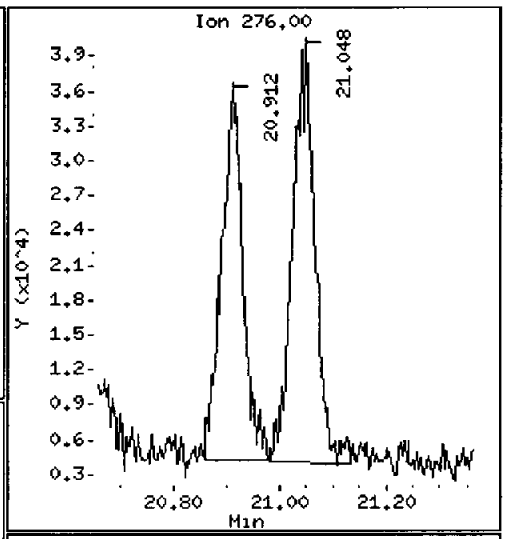
Column phase: ZB-35

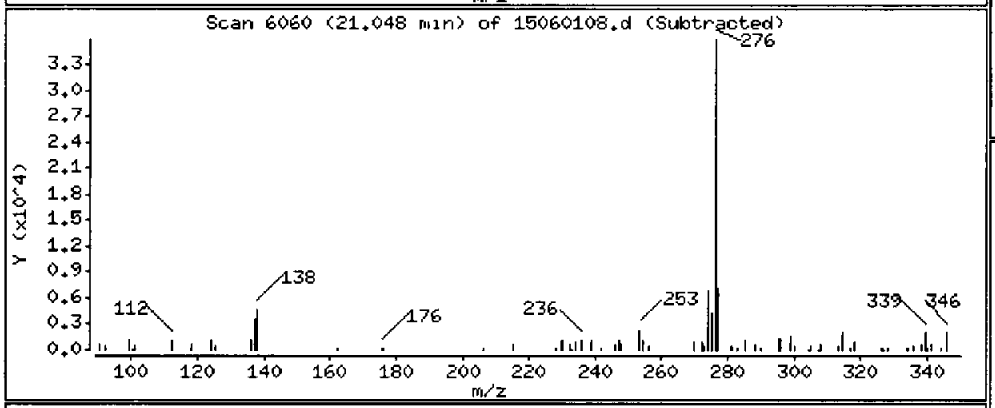
Column diameter: 0.25

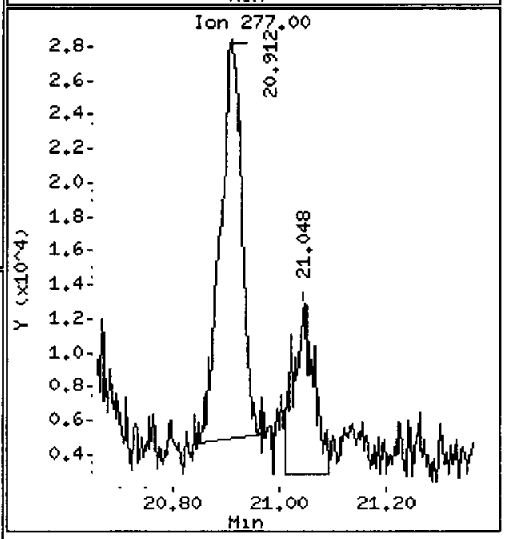
61 Benzo(g,h,i)perylene

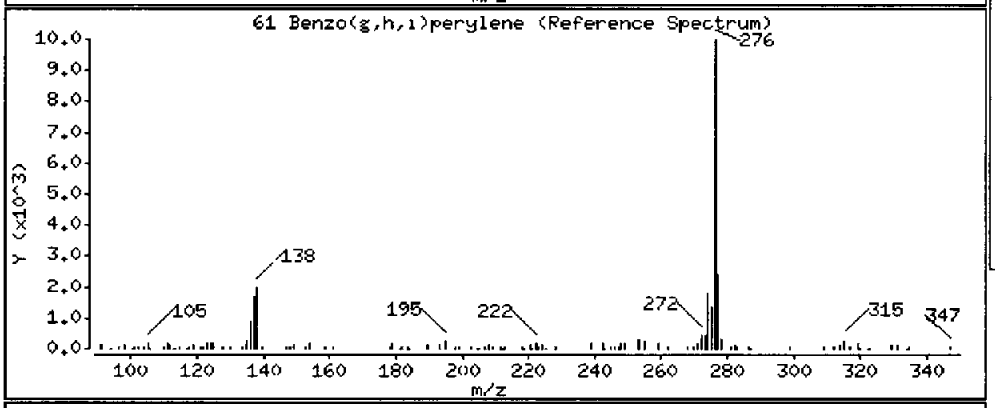
Concentration: 17.20 ug/kg

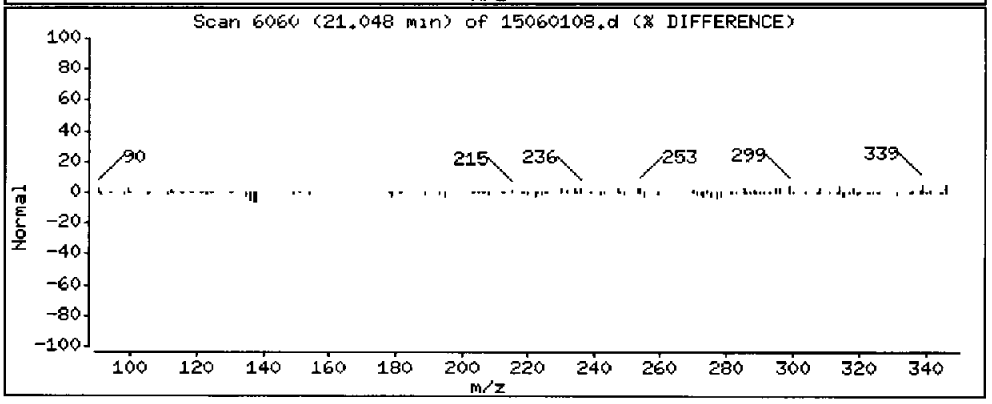












Data File: /chem3/nt8.1/20150601.b/15060108.d

Date : 01-JUN-2015 12:43

Client ID: SDP-02(18.5-19.5)

Instrument: nt8.1

Sample Info: AGC9D

Volume Injected (uL): 1.0

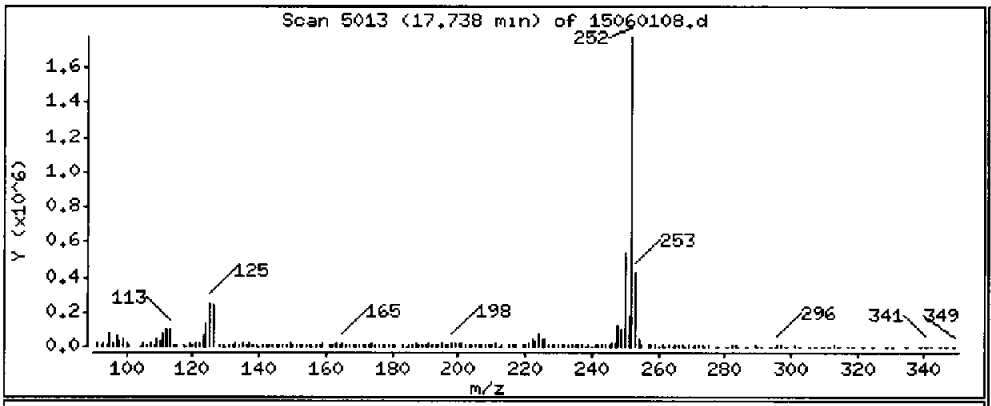
Operator: JZ

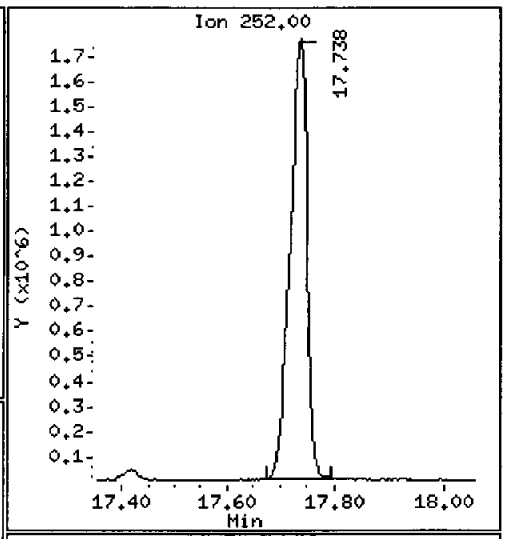
Column phase: ZB-35

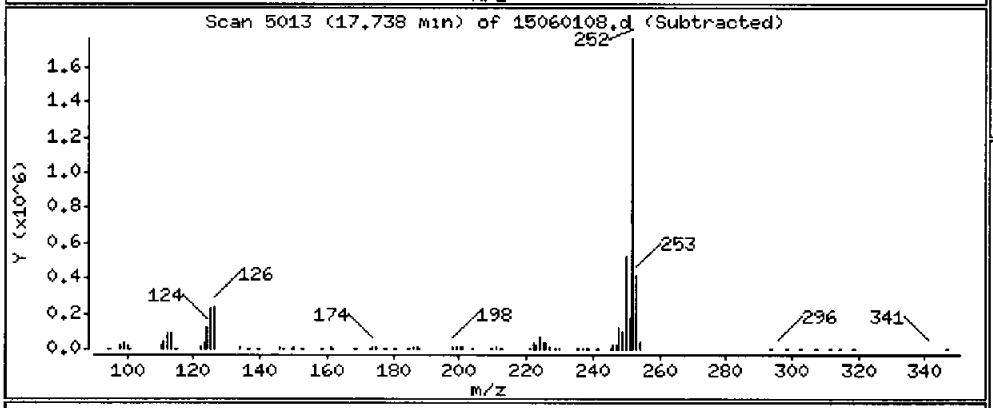
Column diameter: 0.25

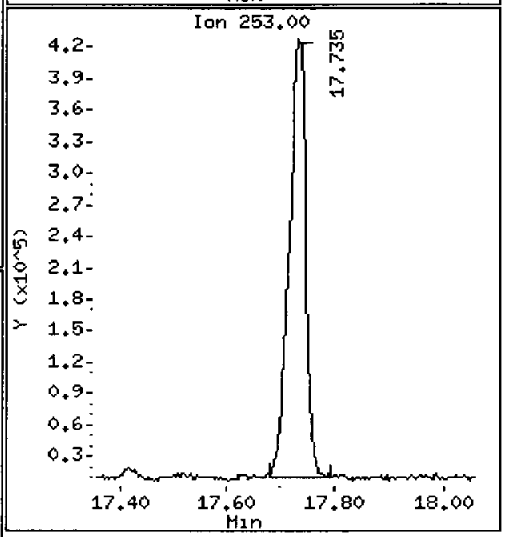
57 Perylene

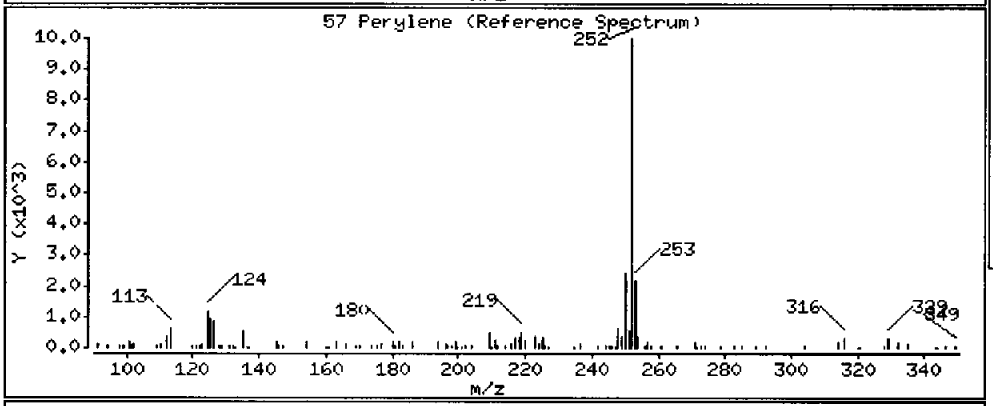
Concentration: 630.4 ug/kg

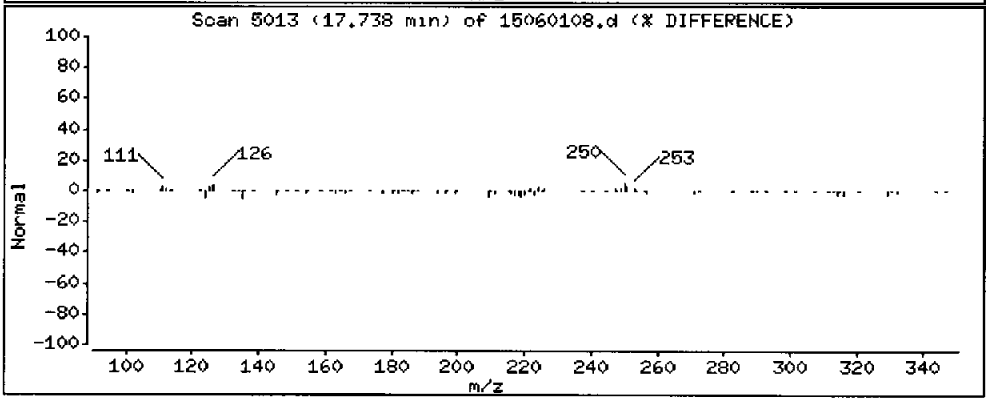












CO-ELUTION SUMMARY FOR FILE - 15060108.d

Lab ID: AGC9D, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060109.d
Lab Smp Id: AGC9E Client Smp ID: SDP-02(22.0-23.5)
Inj Date : 01-JUN-2015 13:08
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9E
Misc Info : 15-9435
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

6/10/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	14.33000	Weight of sample extracted (g)
M	24.30000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.739	4.739	(1.000)	442911	2.00000	
7 Naphthalene	128	4.764	4.767	(1.005)	252376	1.18285	54.52
$ 12 2-Methylnaphthalene-d10	152	5.466	5.463	(1.153)	171309	1.26660	58.38
14 2-Methylnaphthalene	141	5.510	5.510	(1.163)	33306	0.26179	12.07
15 1-methylnaphthalene	141	5 706	5.703	(1.204)	22500	0.18199	8 388
21 Acenaphthylene	152	6 892	6.892	(0.984)	95859	0.46770	21.56
* 22 Acenaphthene-d10	164	7 003	7.000	(1.000)	280647	2.00000	
23 Acenaphthene	153	7.053	7 050	(1.007)	46410	0.34031	15.69
11 Dibenzofuran	168	7 202	7.202	(1.028)	41983	0.22259	10.26
25 Fluorene	166	7 676	7.673	(1.096)	35327	0.23192	10.69
* 28 Phenanthrene-d10	188	9.023	9.020	(1.000)	486681	2.00000	
30 Phenanthrene	178	9.058	9.055	(1.004)	224486	0.96747	44.59
31 Anthracene	178	9.099	9.096	(1.008)	47645	0.22808	10.51
36 Fluoranthene	202	10.769	10.769	(1.193)	291342	1.07353	49.48
$ 253 Fluoranthene-d10	212	10.734	10.734	(1.190)	433726	1.81178	83.51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.265	11.265	(0.816)	317712	1.07776	49.68
	46 Benzo(a)anthracene	228	13.681	13.684	(0.991)	58743	0.22146	10.21
*	47 Chrysene-d12	240	13.807	13.807	(1.000)	528810	2.00000	
	48 Chrysene	228	13.874	13.880	(1.005)	69273	0.26046	12.01
	51 Benzo(b)fluoranthene	252	16.375	16.369	(0.928)	64226	0.21577	9.945
	52 Benzo(k)fluoranthene	252	16.435	16.429	(0.932)	27590	0.09277	4.276(M)
	251 Benzo(j)fluoranthene	252	16.508	16.505	(0.936)	33647	0.11594	5.344
	54 Benzo(a)pyrene	252	17.403	17.402	(0.987)	53929	0.20320	9.366
*	56 Perylene-d12	264	17.640	17 633	(1 000)	566805	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.055	20 046	(1.137)	53310	0.16724	7.708
$	60 Dibenzo(a,h)anthracene-d14	292	19.938	19 929	(1.130)	381127	1.76559	81.38
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	21.023	21.010	(1.192)	77082	0.27490	12.67
	57 Perylene	252	17.716	17.706	(1.004)	884167	3.20917	147 9

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060109.d
Lab Smp Id: AGC9E
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9435

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-02(22.0-23.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	442911	29.09
22 Acenaphthene-d10	230598	115299	461196	280647	21.70
28 Phenanthrene-d10	373928	186964	747856	486681	30.15
47 Chrysene-d12	381262	190631	762524	528810	38.70
56 Perylene-d12	380825	190412	761650	566805	48.84

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.64	0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

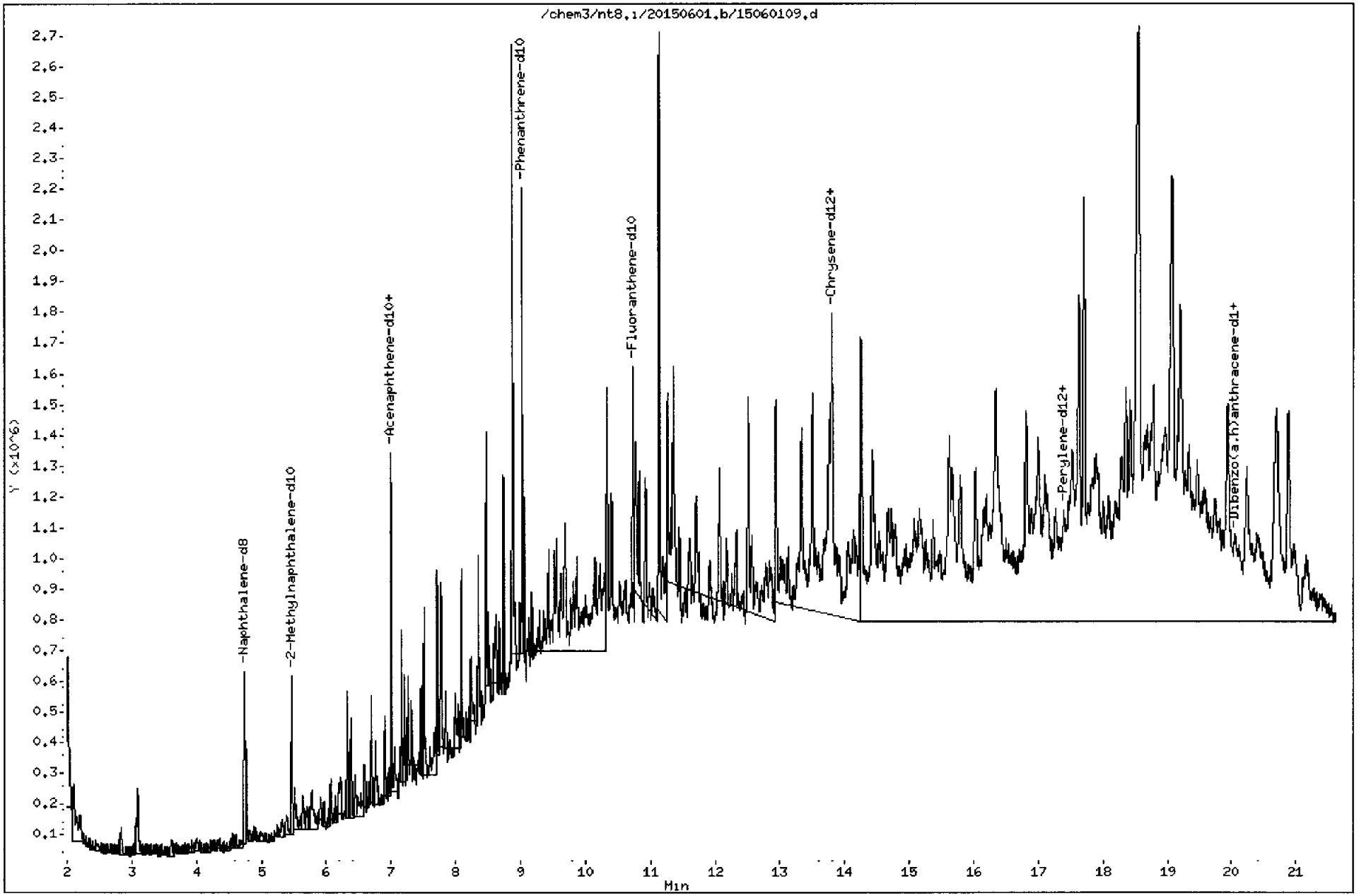
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9E
Client Smp ID: SDP-02(22.0-23.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9435

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	138.3	58.38	42.22	32-120
$ 253 Fluoranthene-d10	138.3	83.51	60.39	36-134
$ 60 Dibenzo(a,h)anthra	138.3	81.38	58.85	21-133

Data File: /chem3/nt8.1/20150601.b/15060109.d
Date : 01-JUN-2015 13:08
Client ID: SDP-02(22.0-23.5)
Sample Info: AGC9E
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1.2v150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

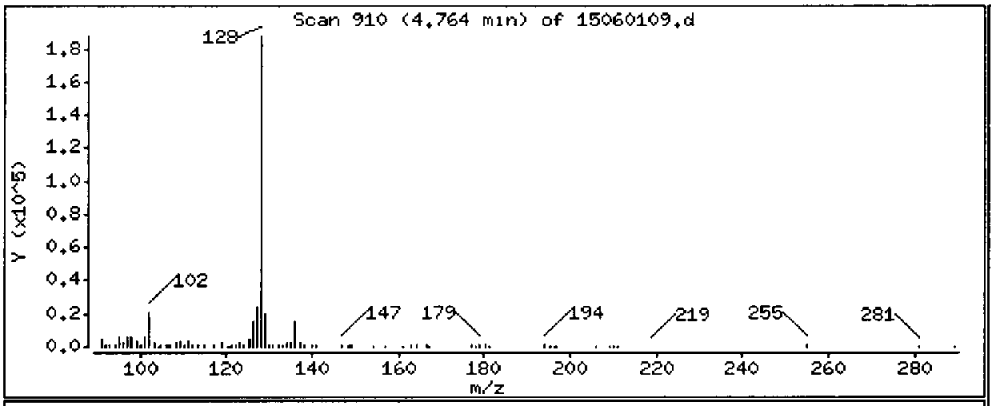
Operator: JZ

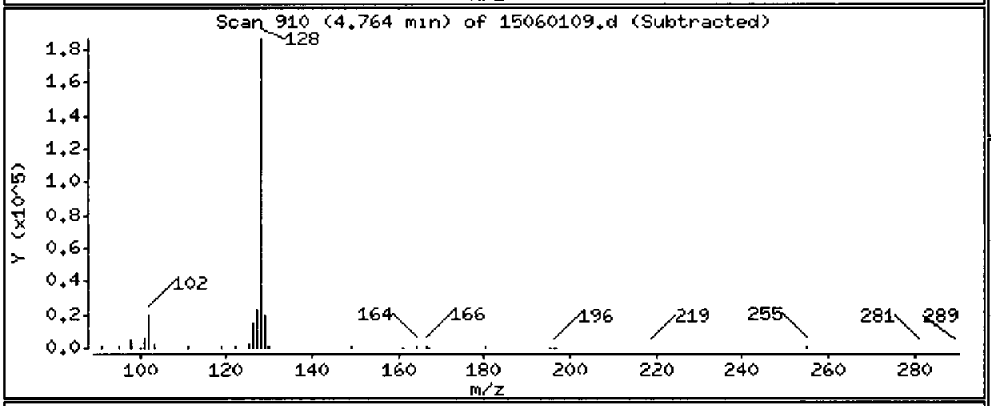
Column phase: ZB-35

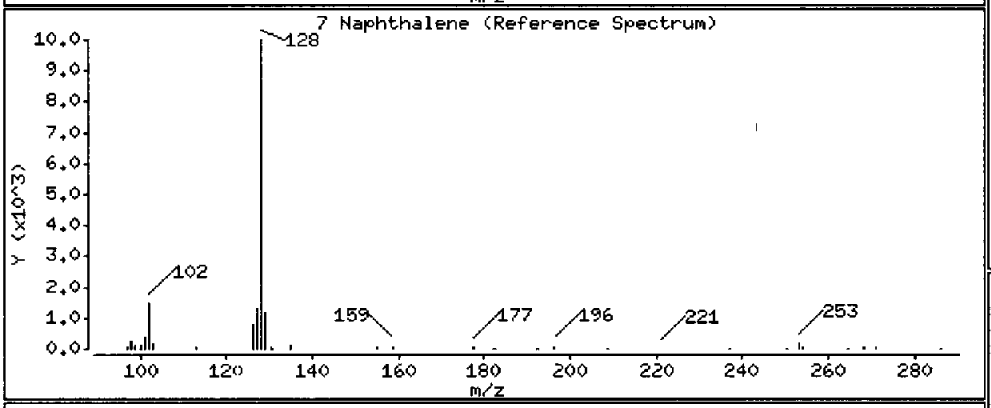
Column diameter: 0.25

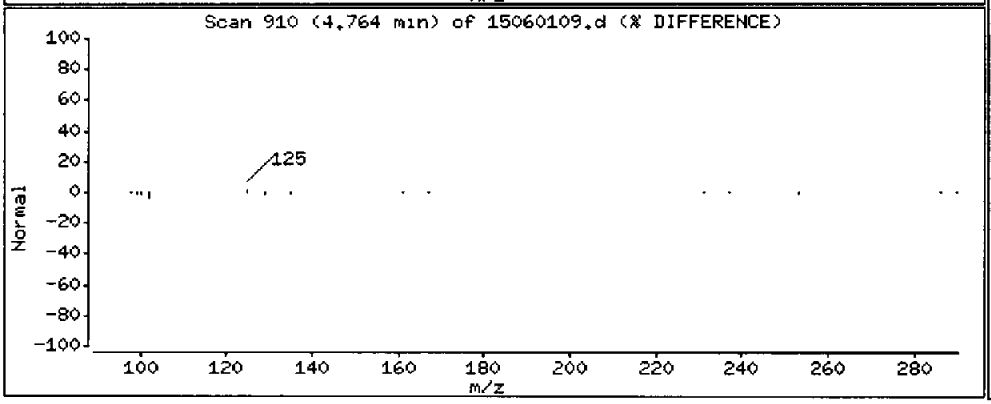
7 Naphthalene

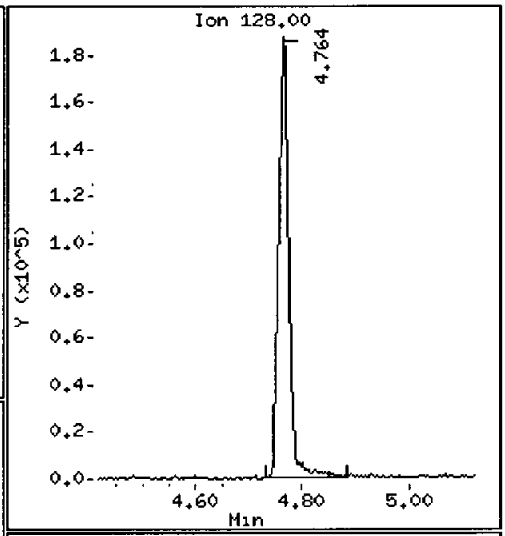
Concentration: 54.52 ug/kg

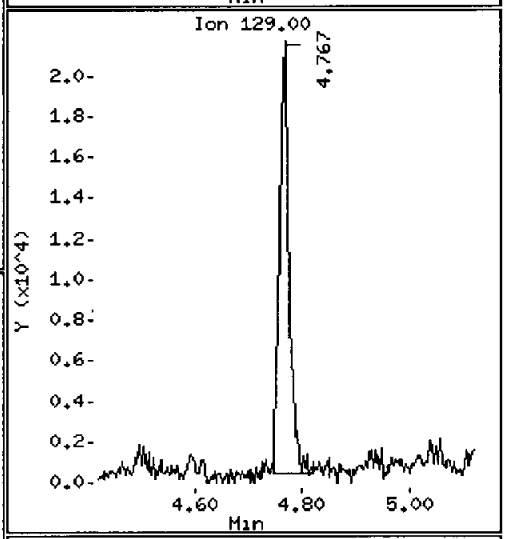


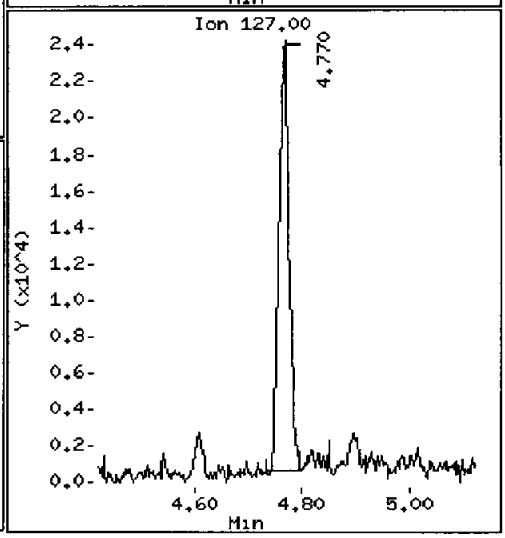












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

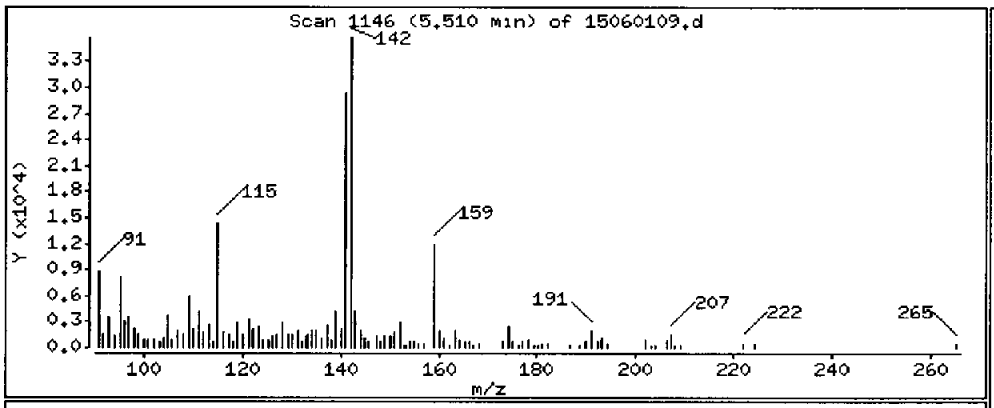
Operator: JZ

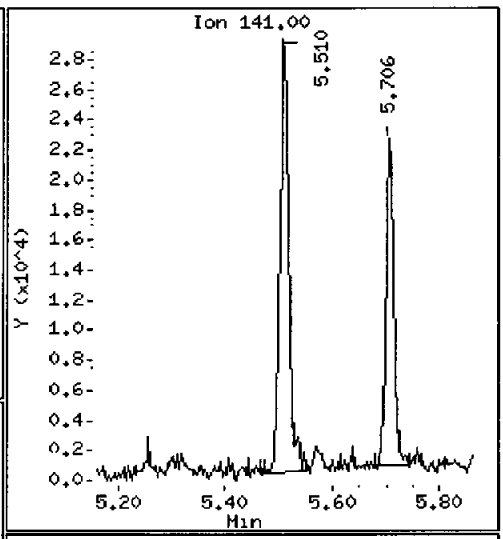
Column phase: ZB-35

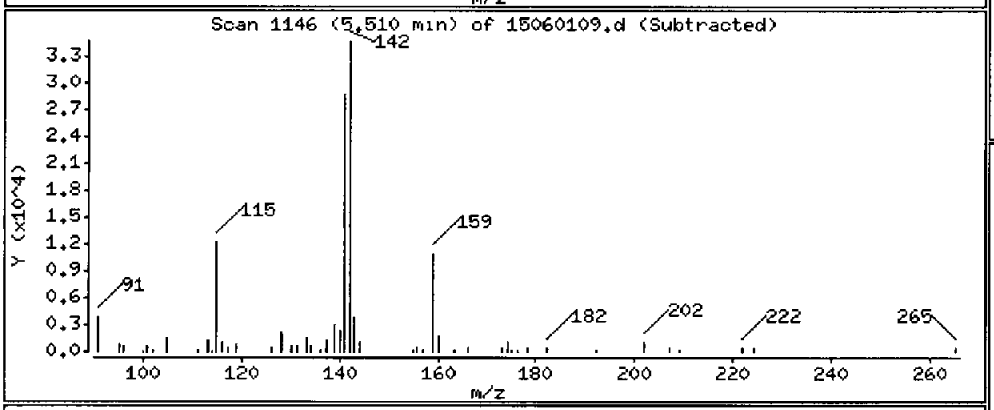
Column diameter: 0.25

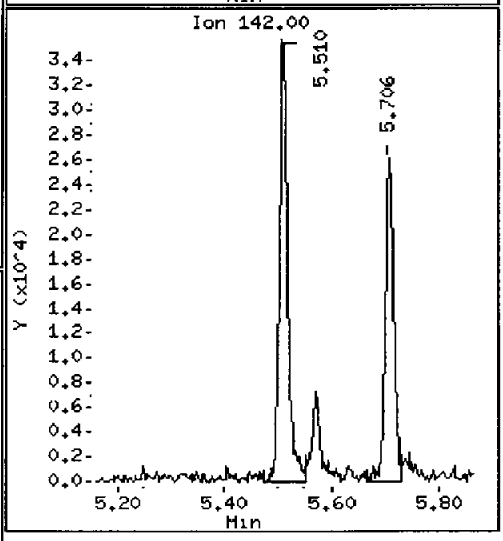
14 2-Methylnaphthalene

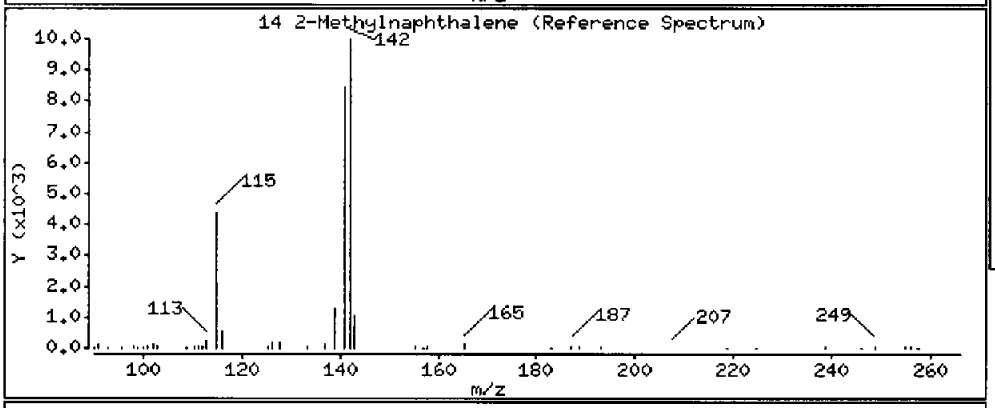
Concentration: 12.07 ug/kg

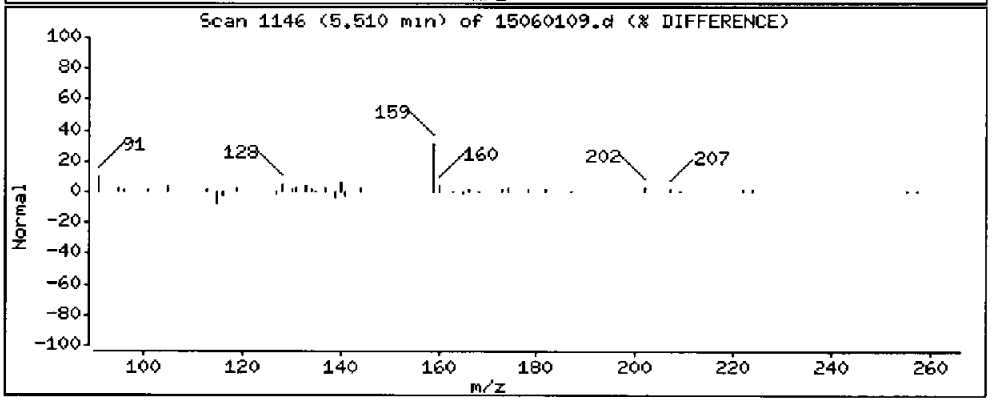












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

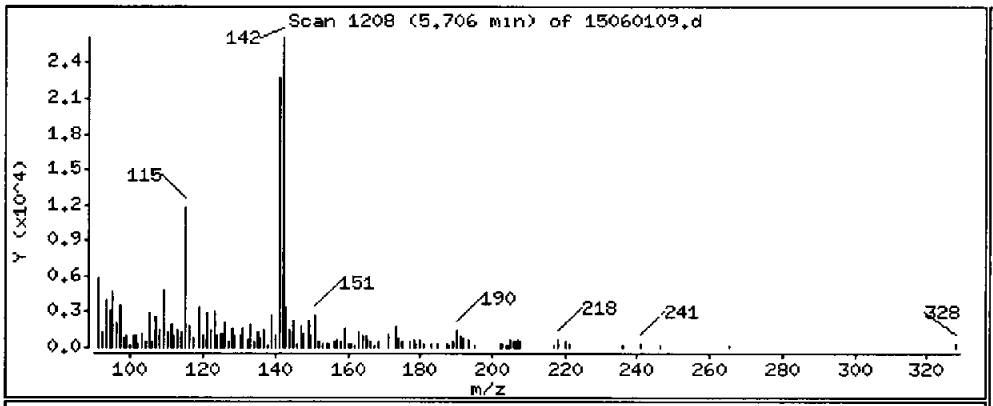
Operator: JZ

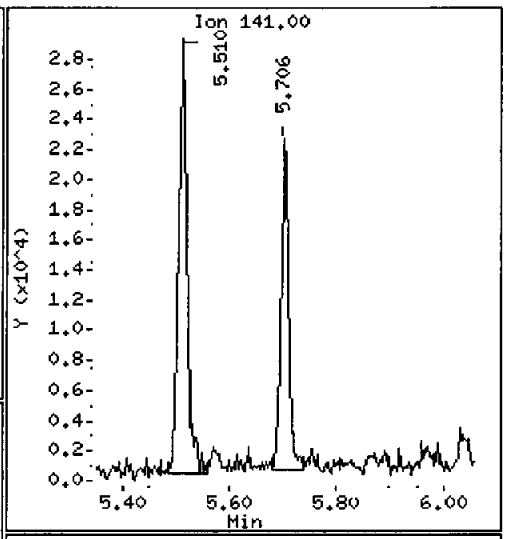
Column phase: ZB-35

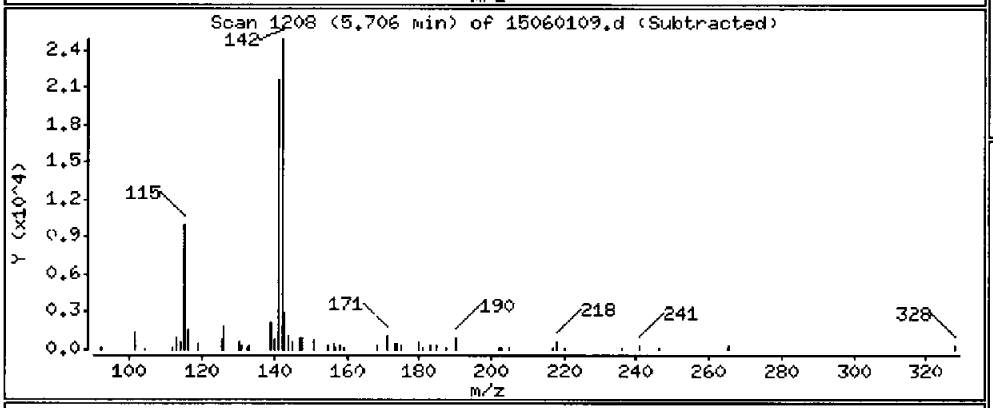
Column diameter: 0.25

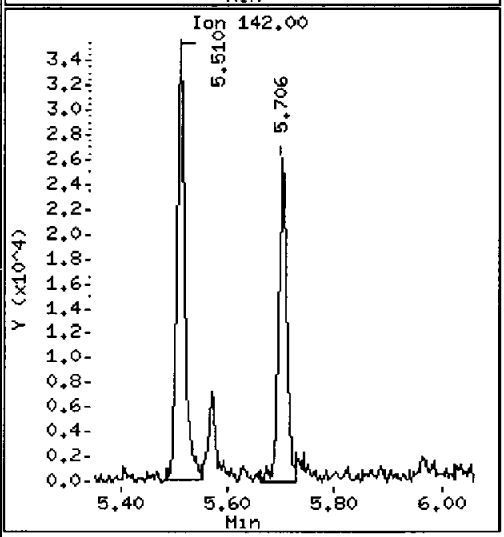
15 1-methylnaphthalene

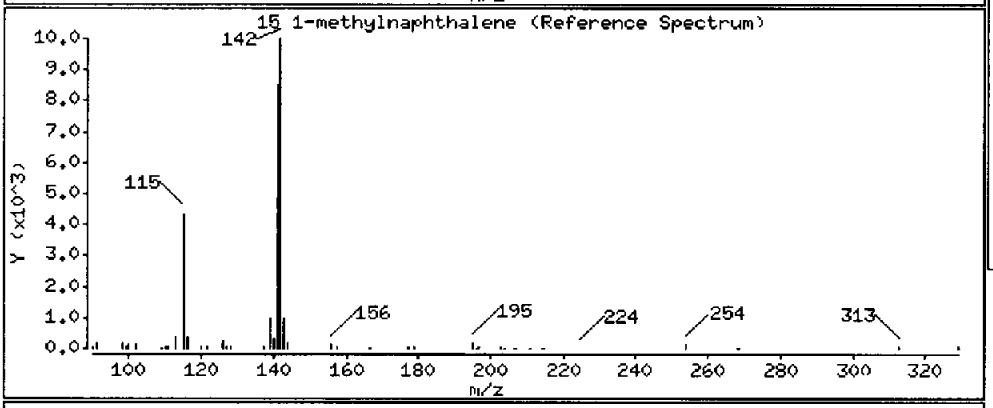
Concentration: 8.388 ug/kg

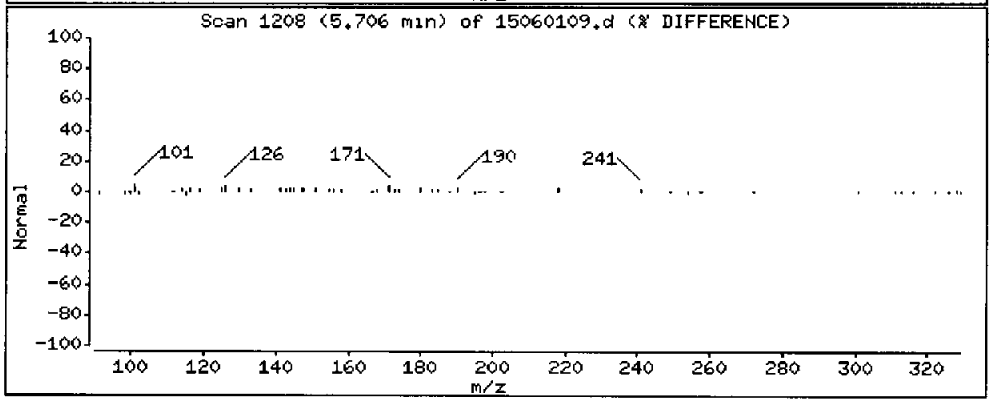












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

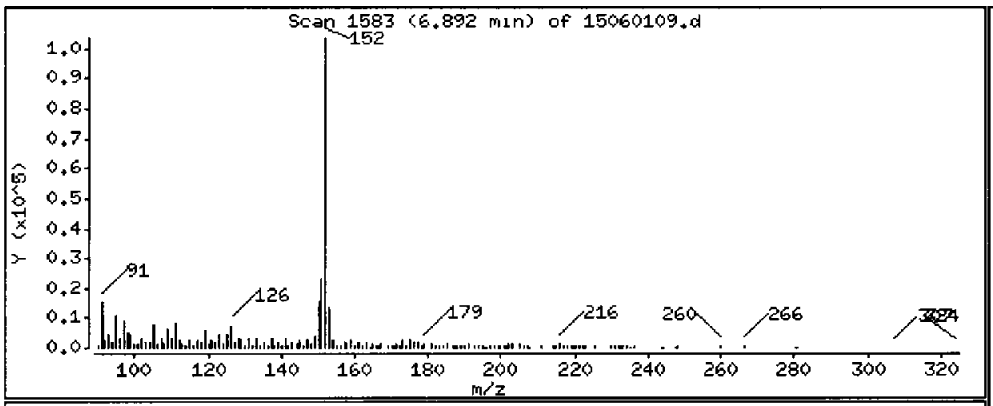
Operator: JZ

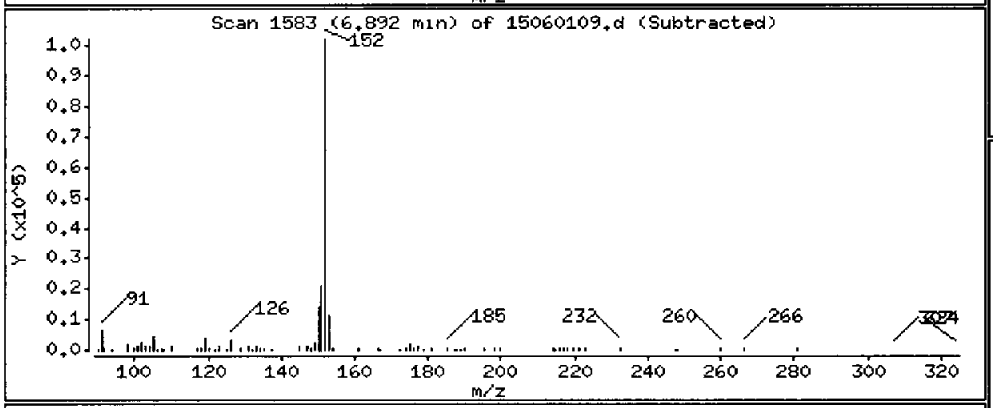
Column phase: ZB-35

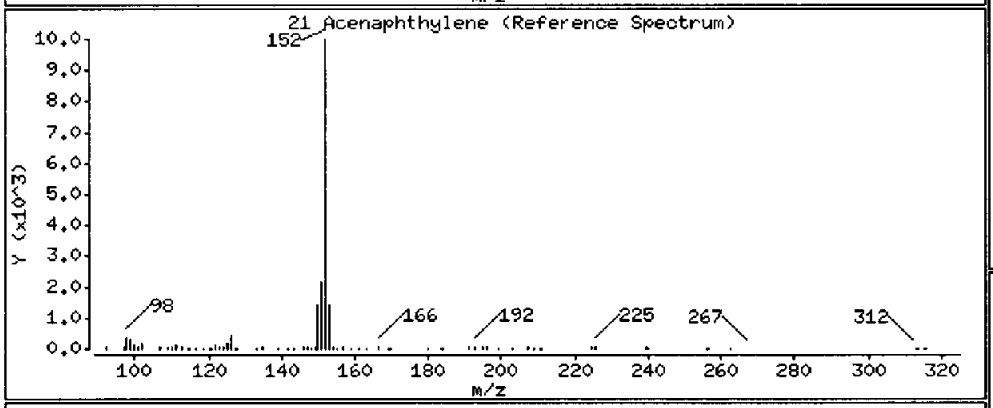
Column diameter: 0.25

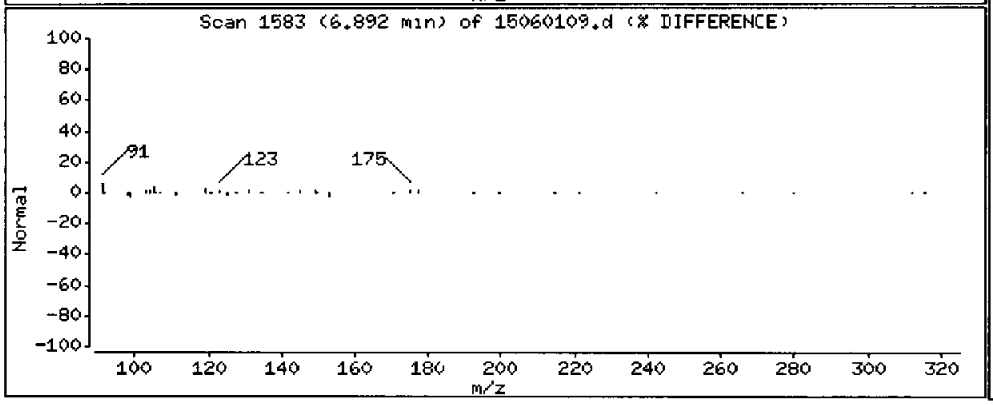
21 Acenaphthylene

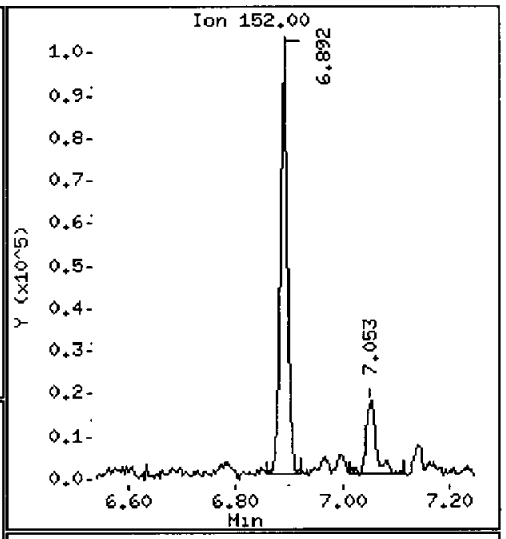
Concentration: 21.56 ug/kg

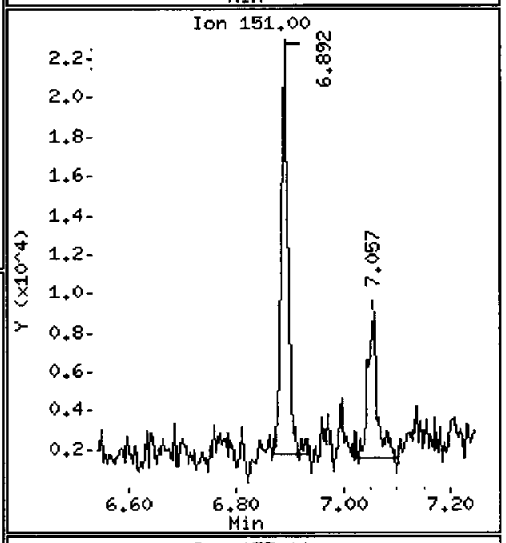


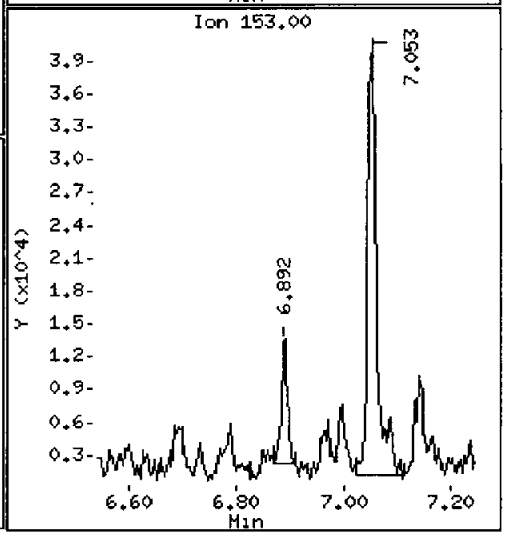












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

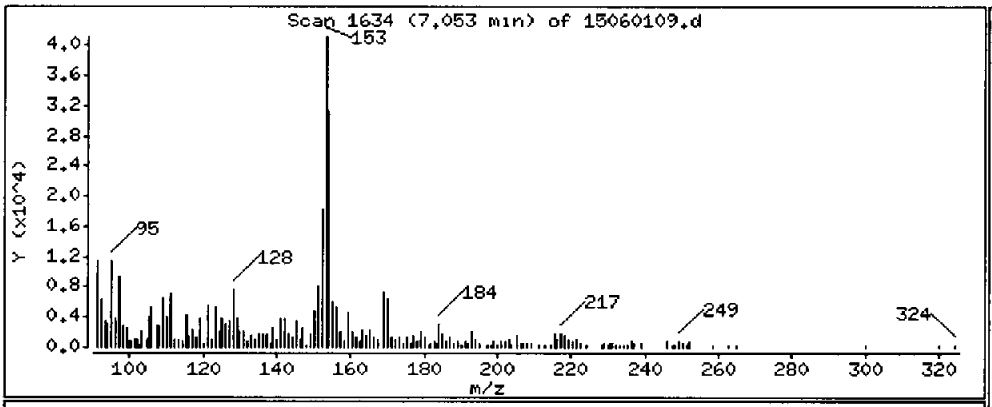
Operator: JZ

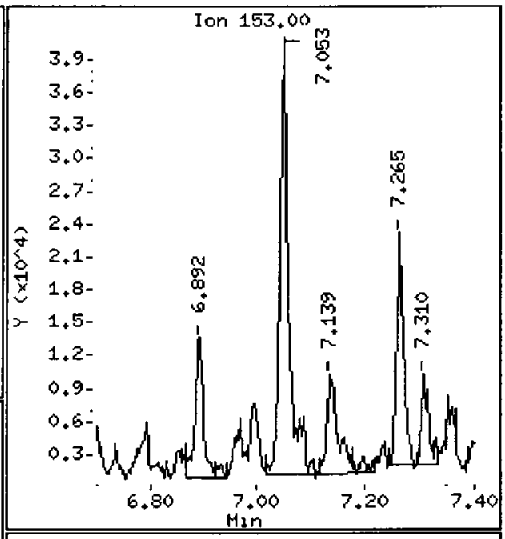
Column phase: ZB-35

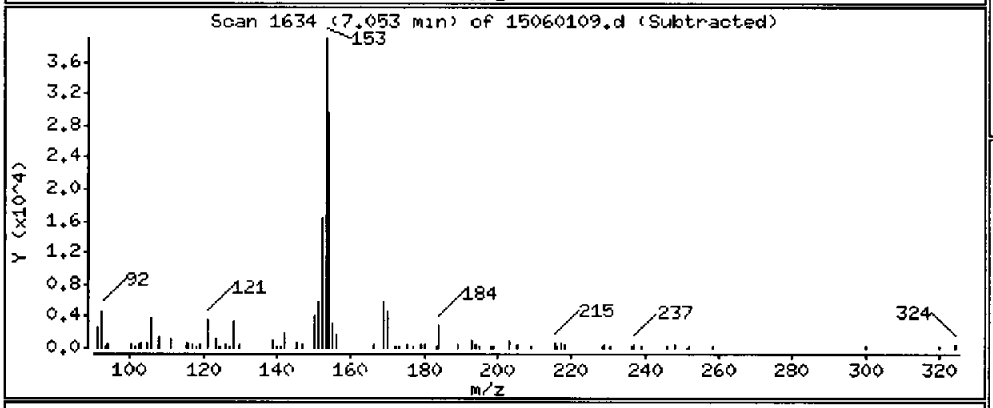
Column diameter: 0.25

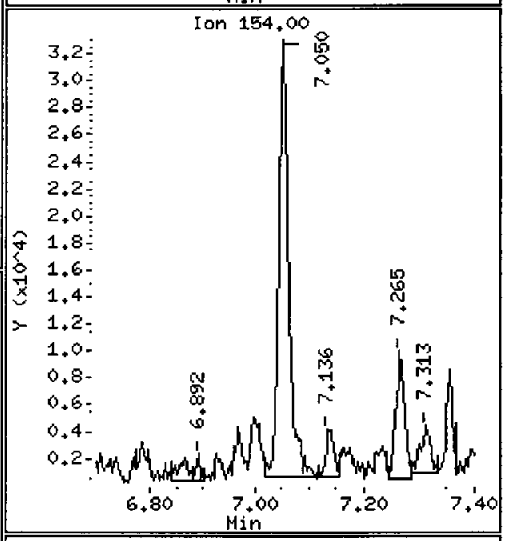
23 Acenaphthene

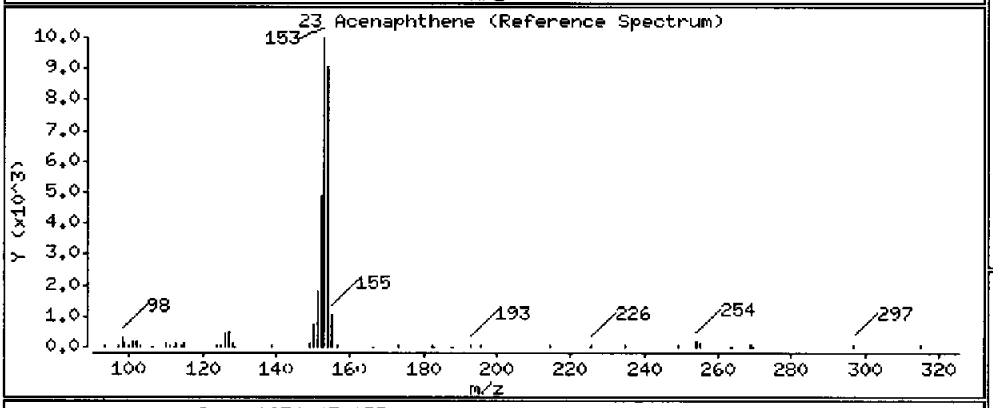
Concentration: 15.69 ug/kg

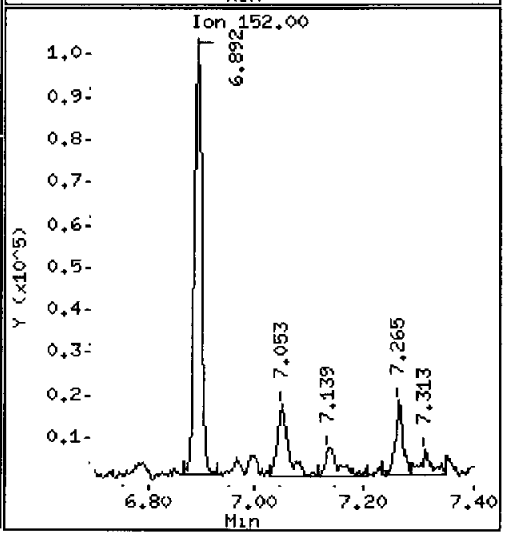


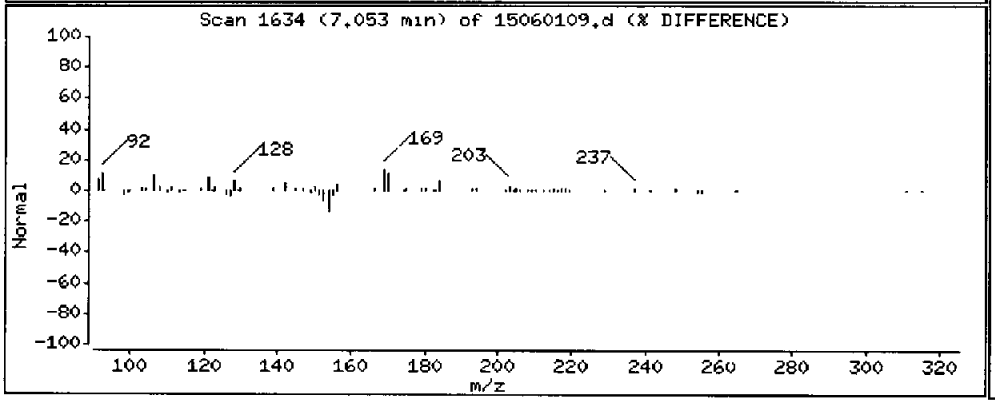












Data File: /chem3/nt8.i/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.i

Sample Info: AGC9E

Volume Injected (uL): 1.0

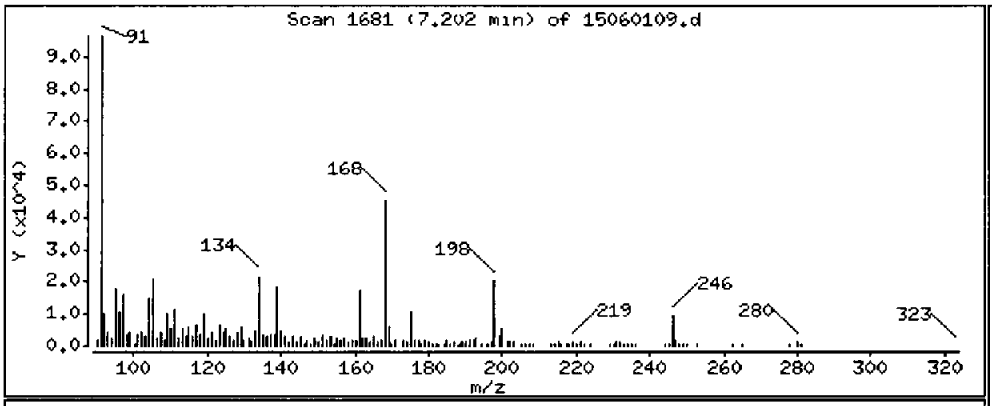
Operator: JZ

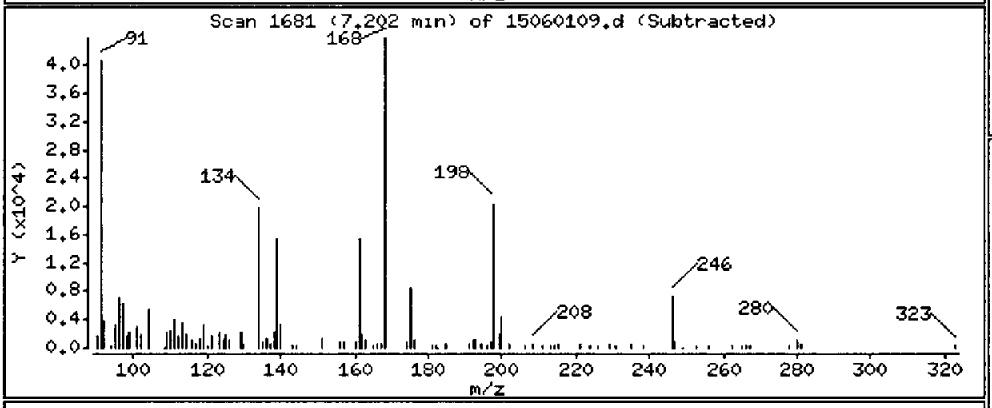
Column phase: ZB-35

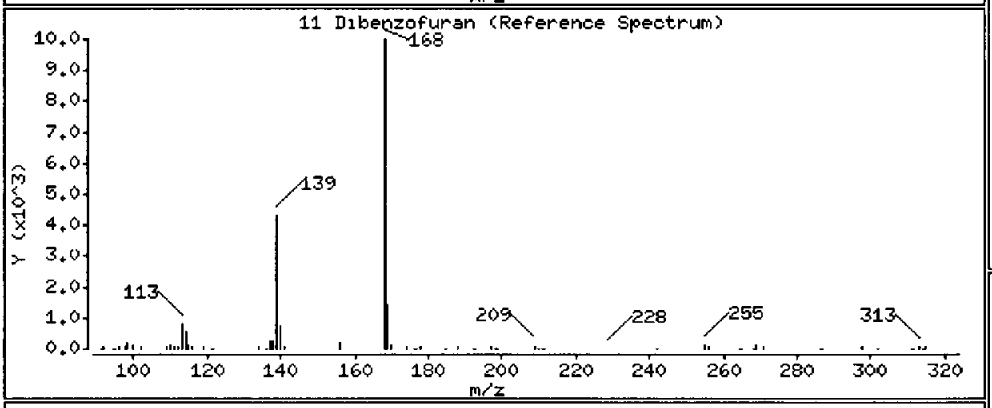
Column diameter: 0.25

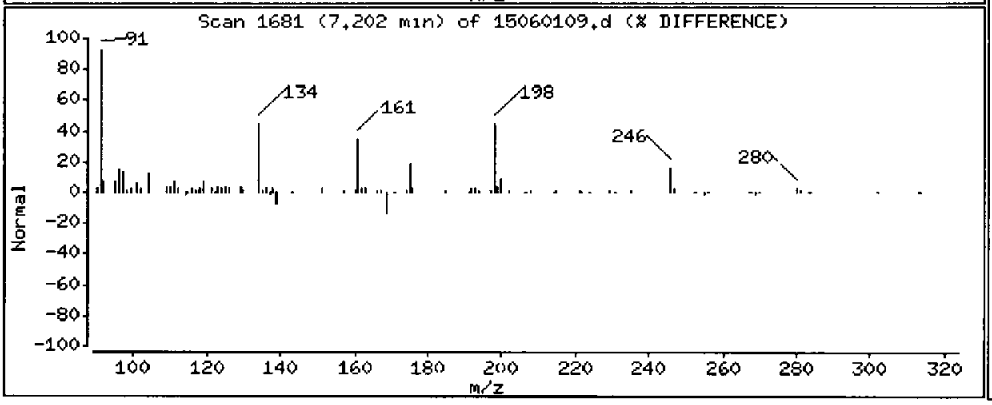
11 Dibenzofuran

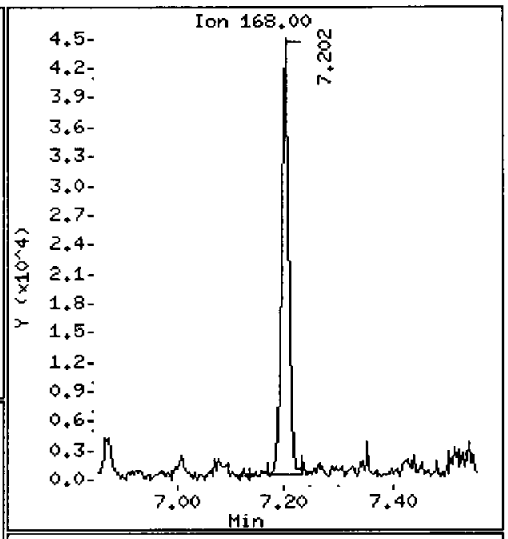
Concentration: 10.26 ug/kg

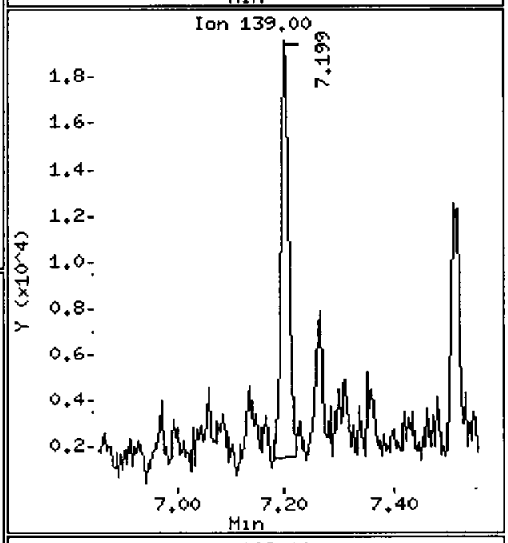


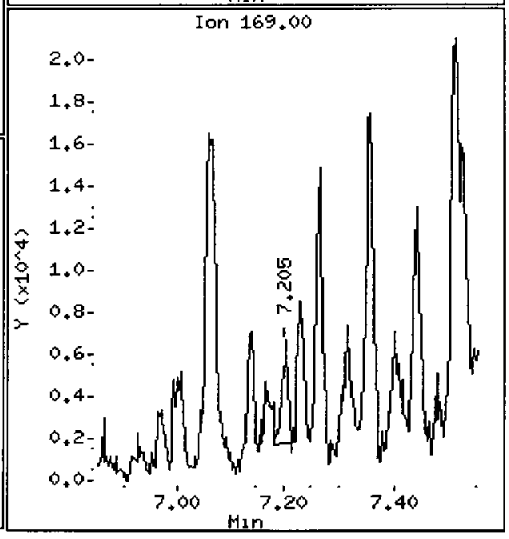












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

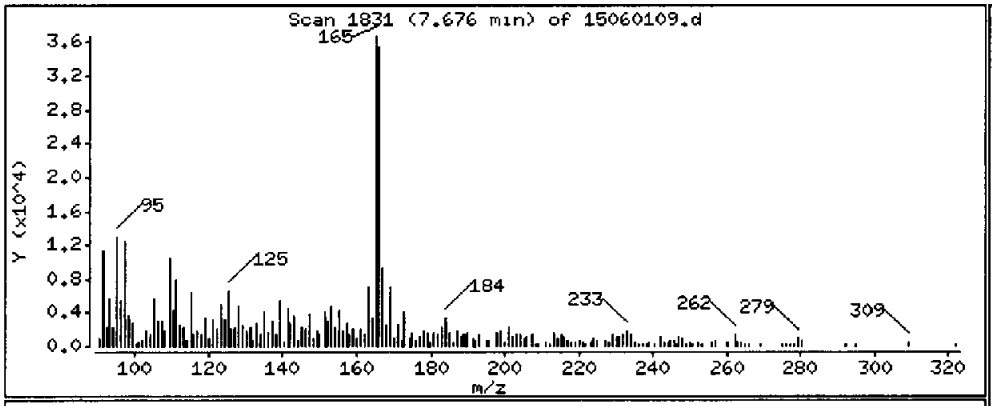
Operator: JZ

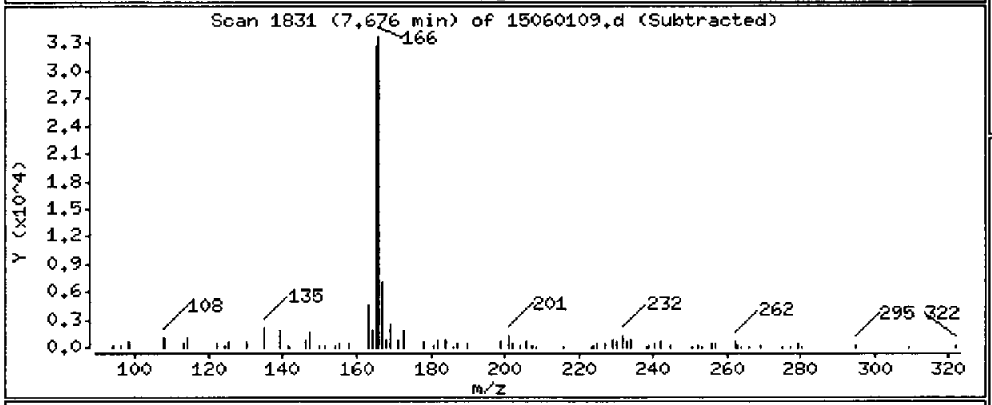
Column phase: ZB-35

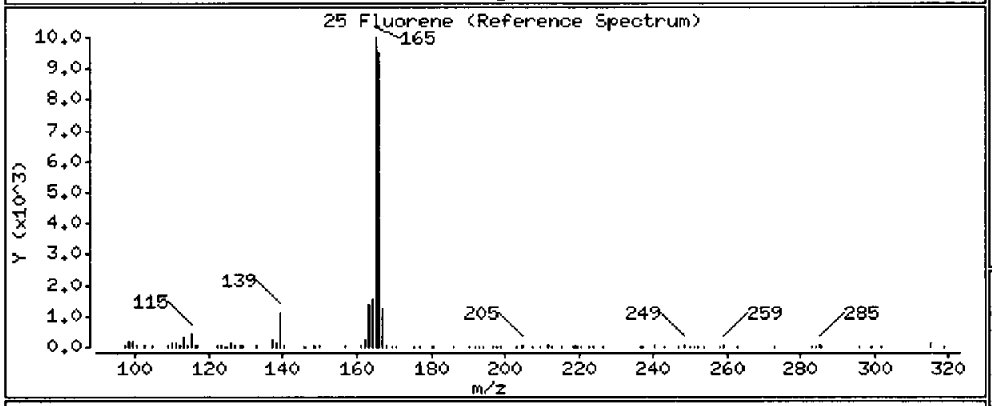
Column diameter: 0.25

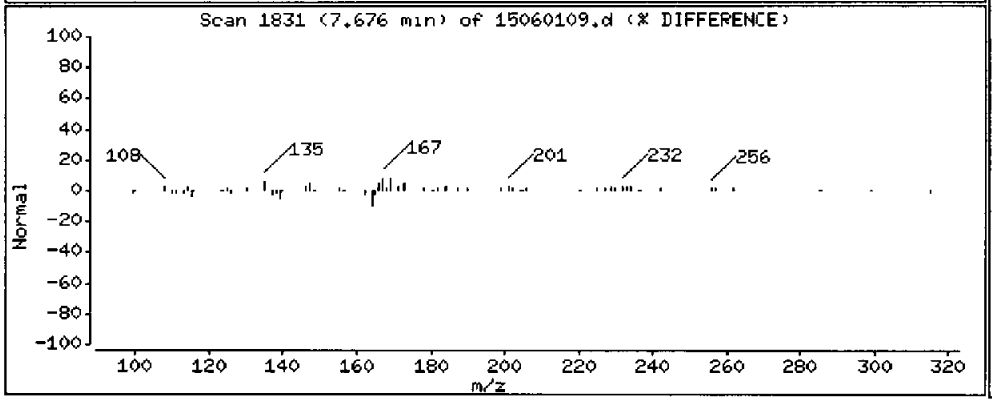
25 Fluorene

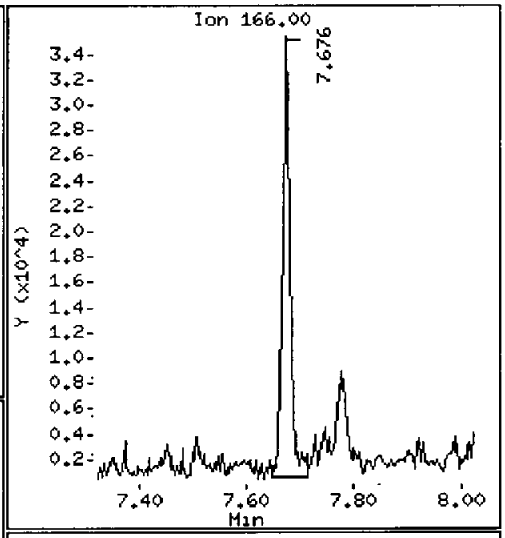
Concentration: 10.69 ug/kg

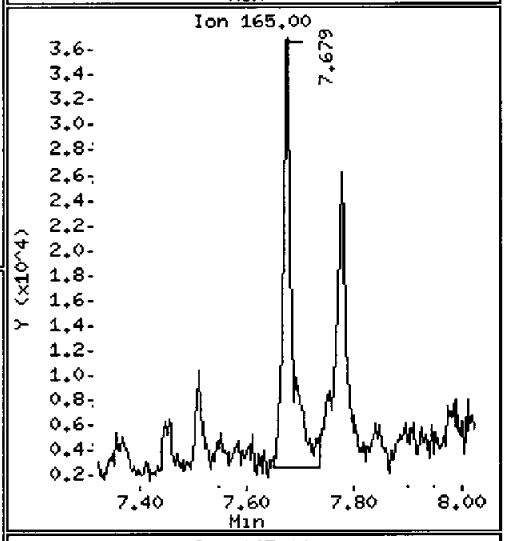


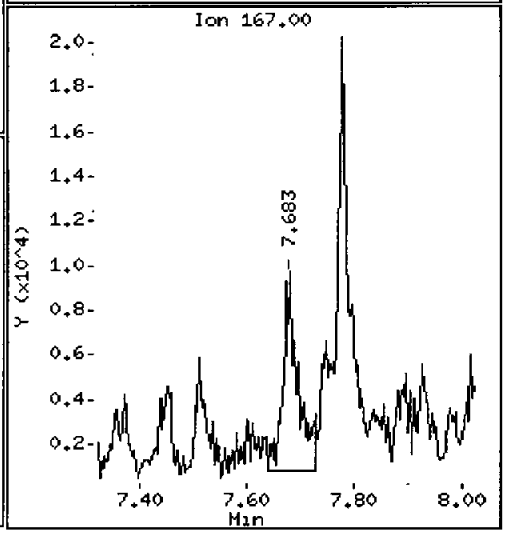












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

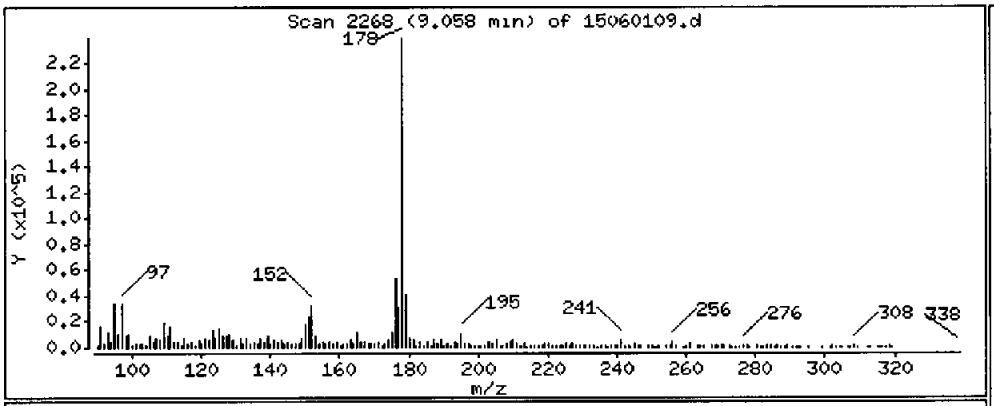
Operator: JZ

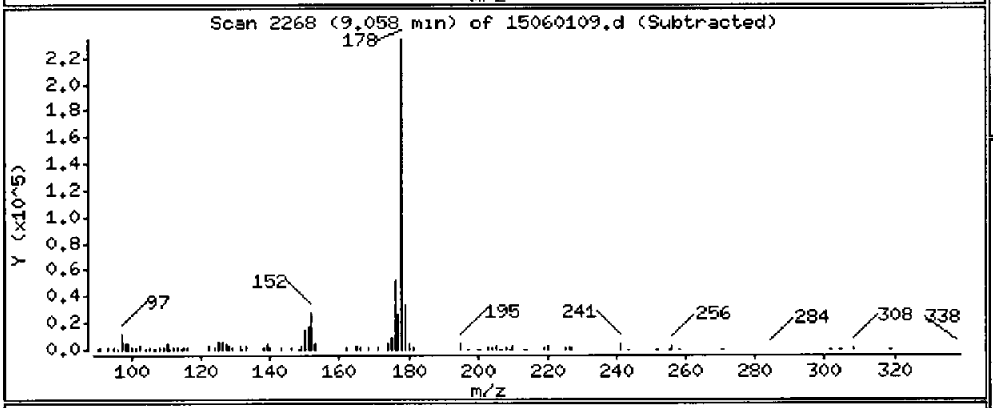
Column phase: ZB-35

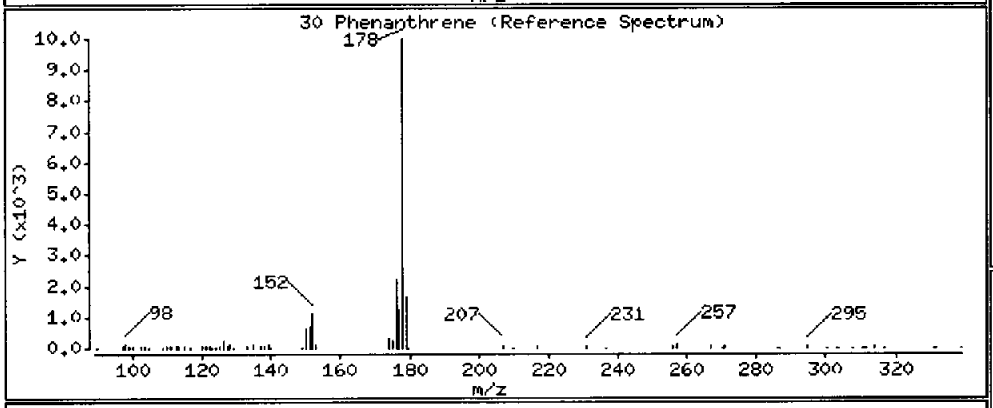
Column diameter: 0.25

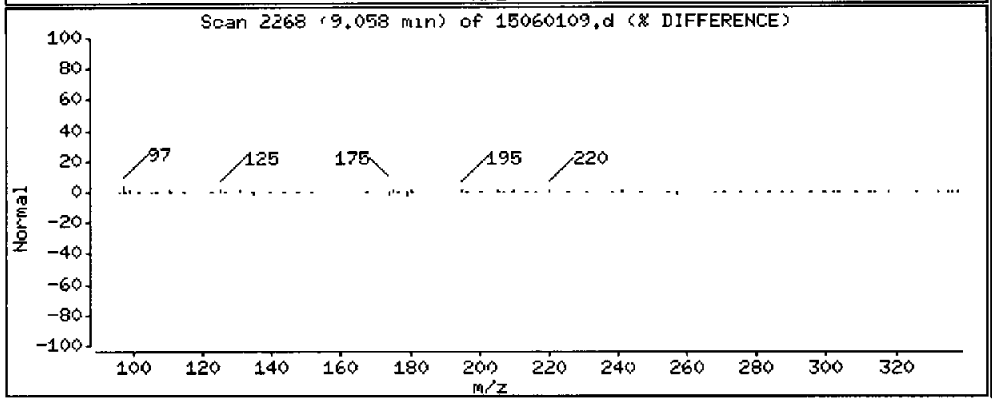
30 Phenanthrene

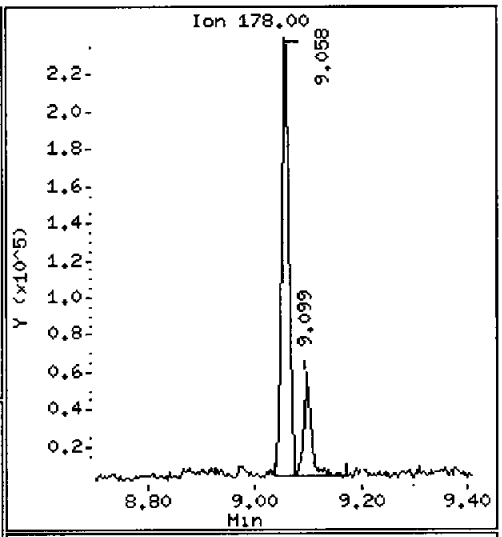
Concentration: 44.59 ug/kg

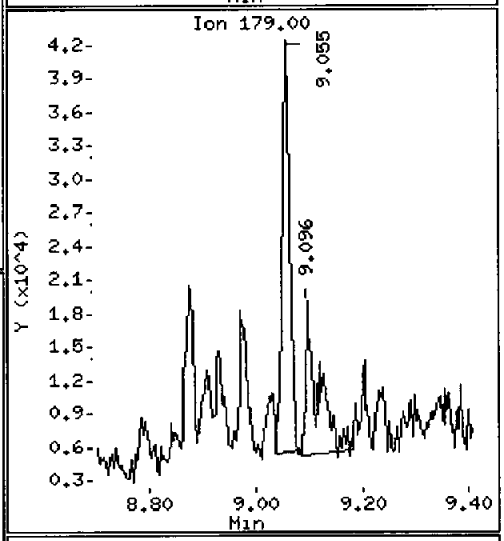


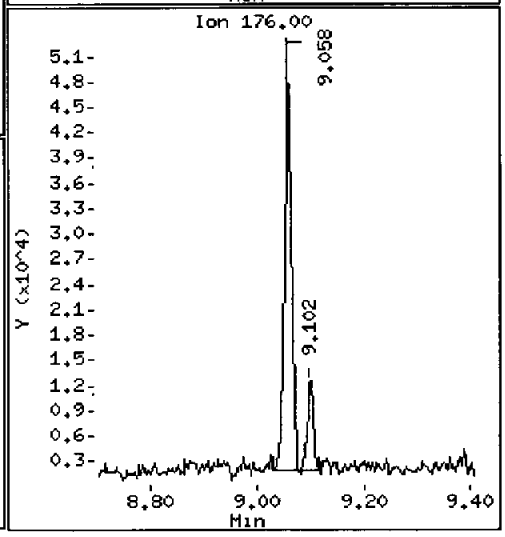












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

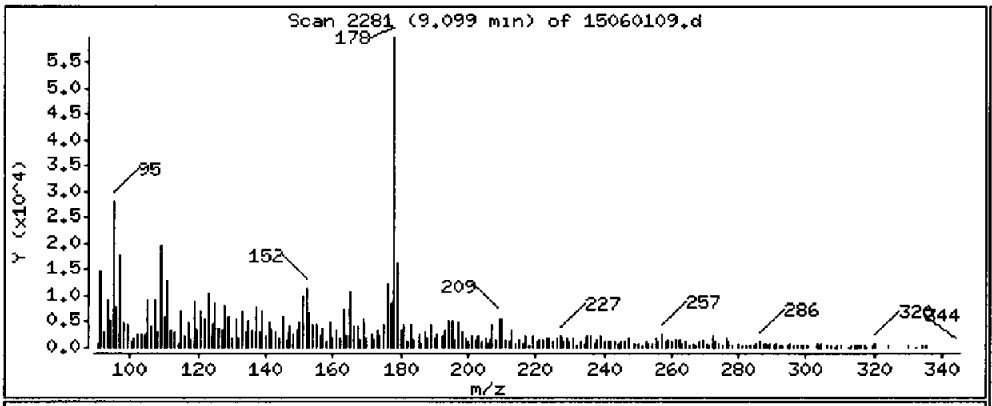
Operator: JZ

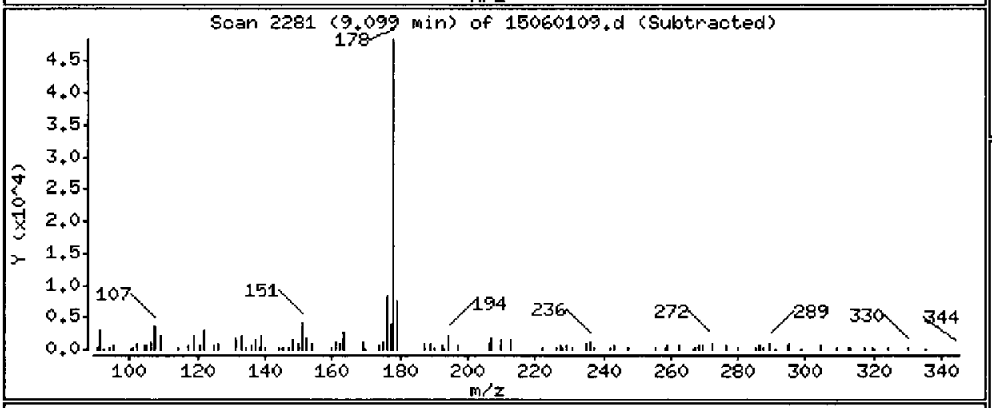
Column phase: ZB-35

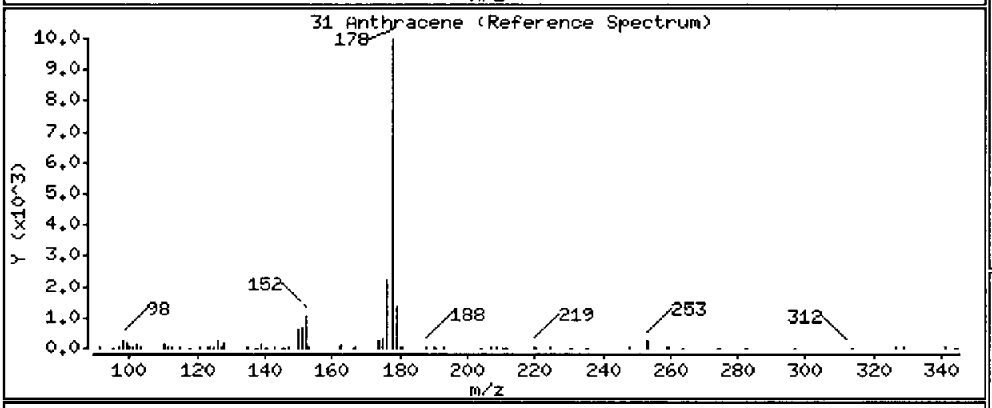
Column diameter: 0.25

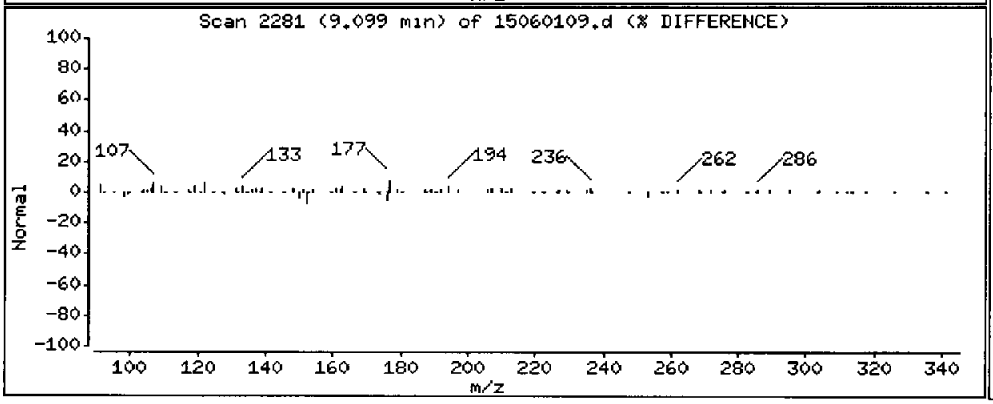
31 Anthracene

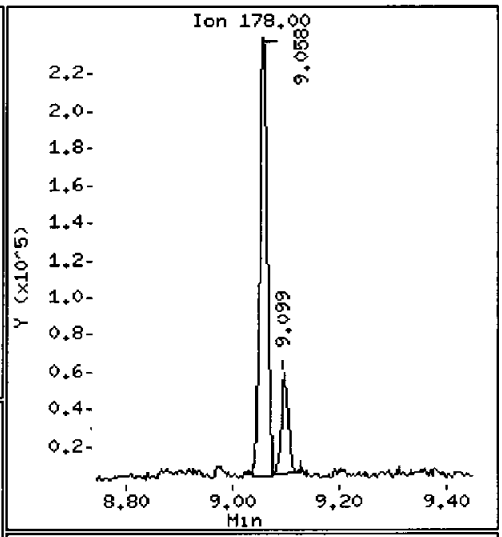
Concentration: 10.51 ug/kg

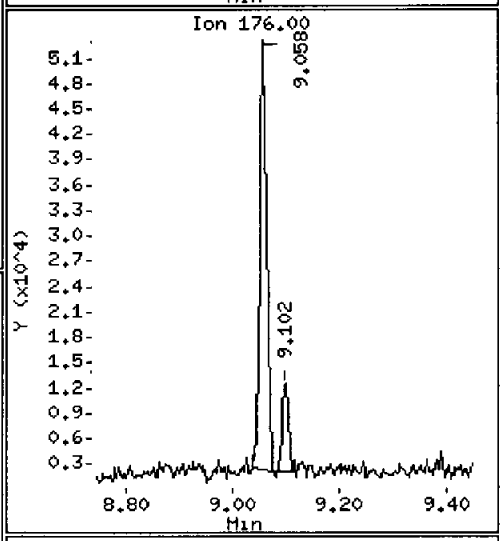


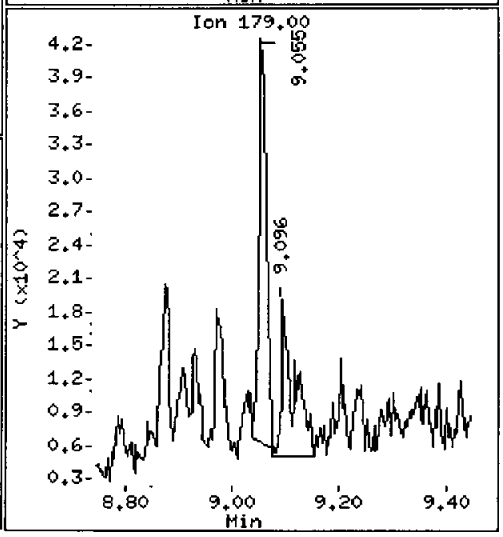












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

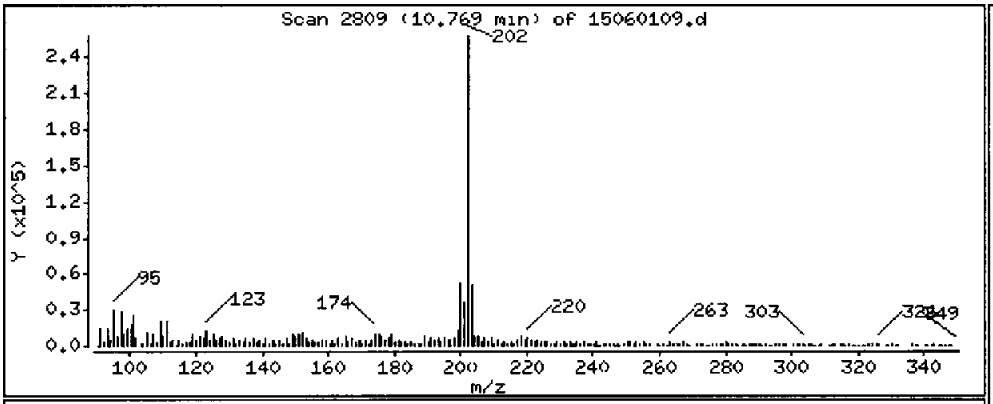
Operator: JZ

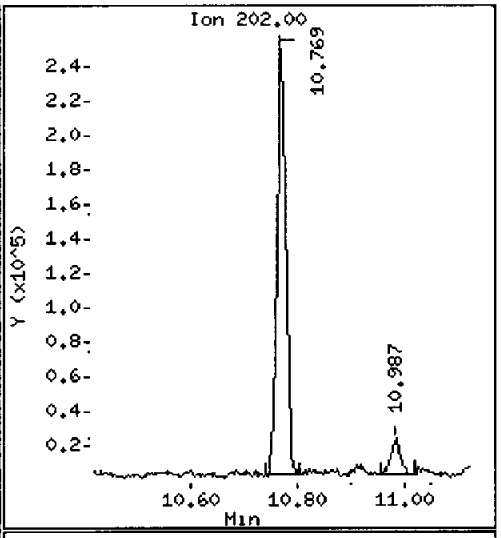
Column phase: ZB-35

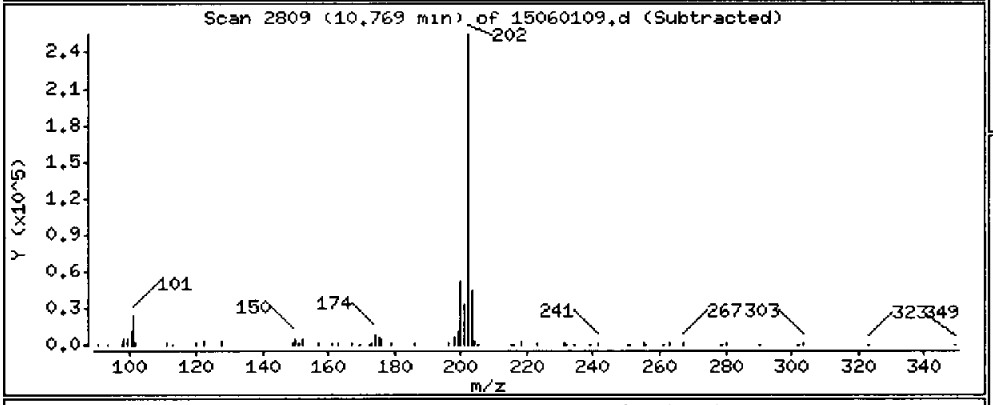
Column diameter: 0.25

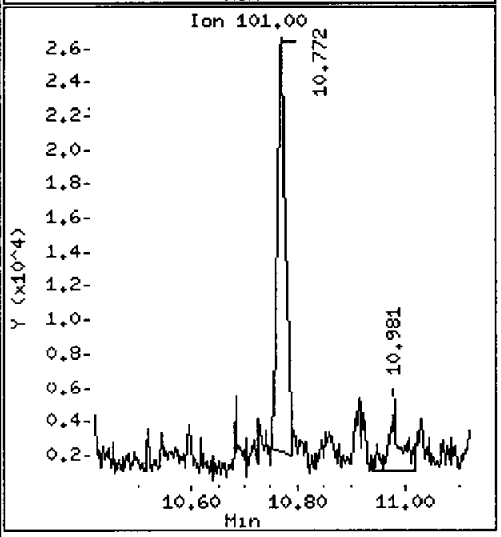
36 Fluoranthene

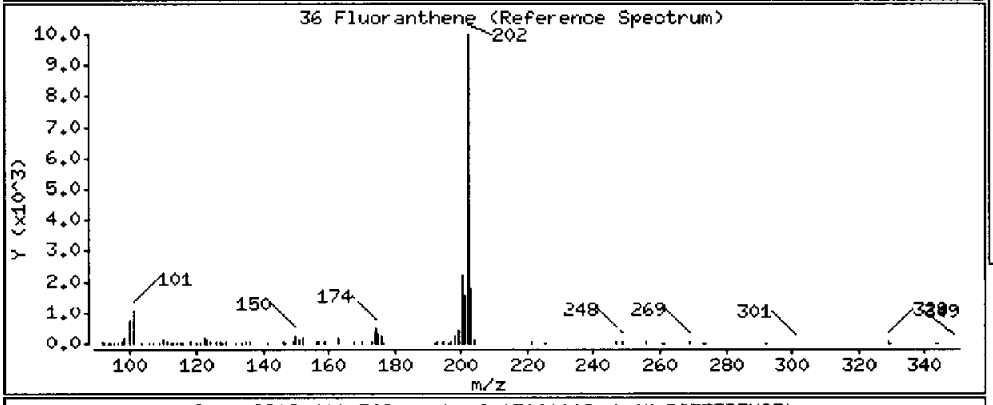
Concentration: 49.48 ug/kg

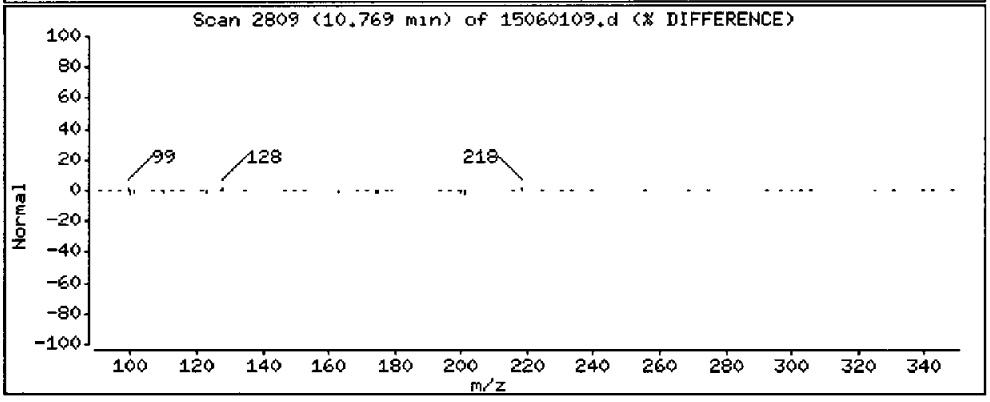












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

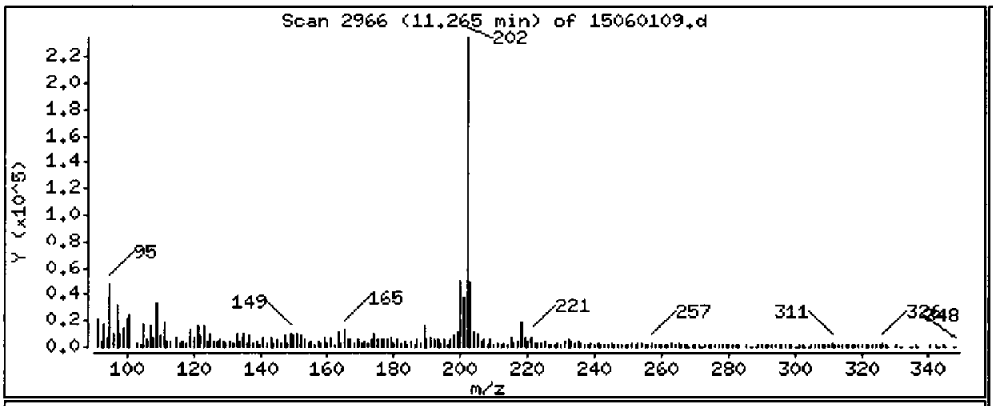
Operator: JZ

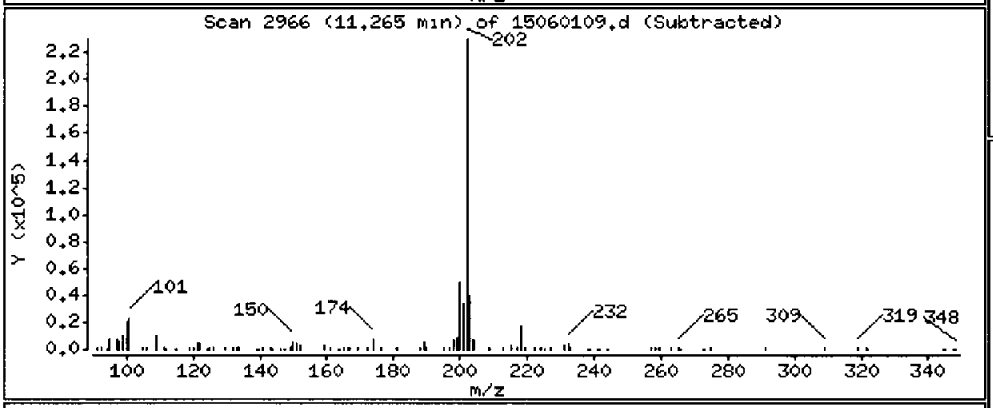
Column phase: ZB-35

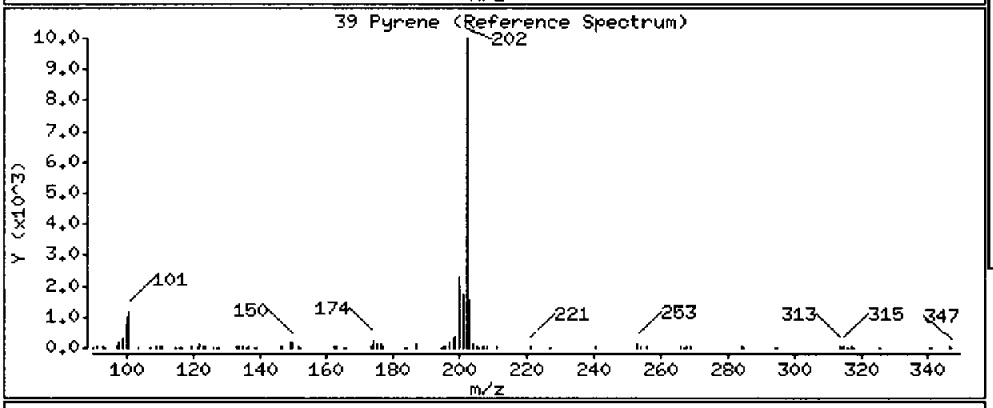
Column diameter: 0.25

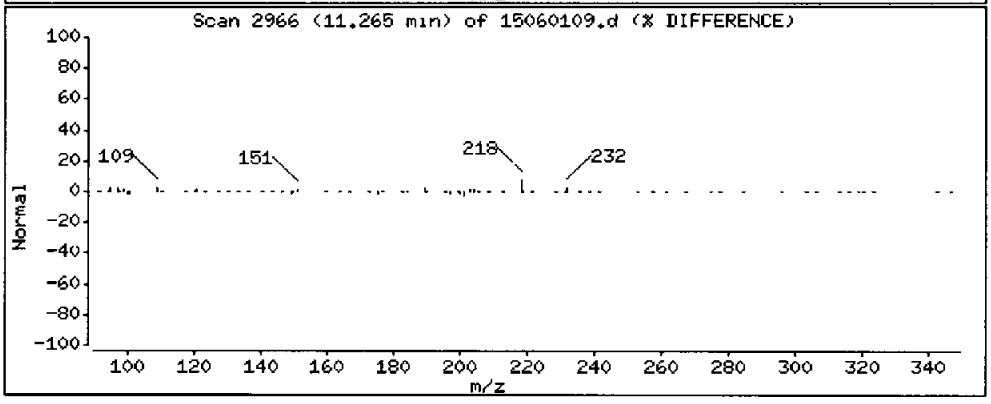
39 Pyrene

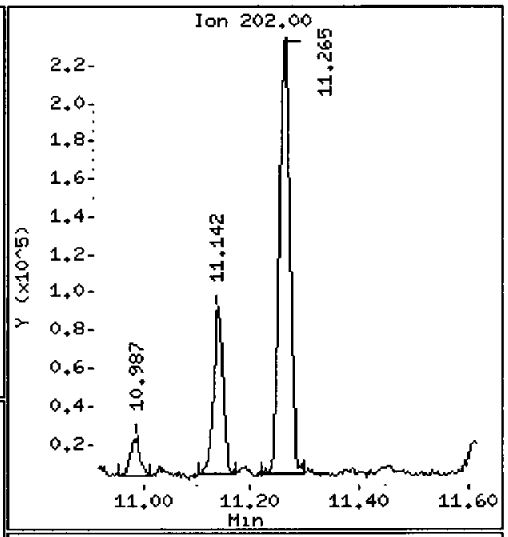
Concentration: 49.68 ug/kg

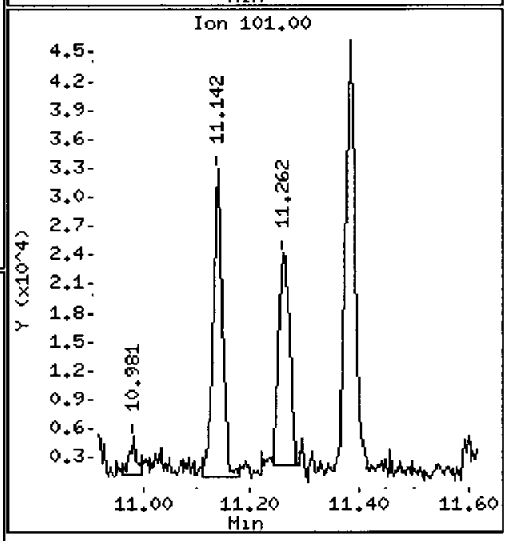












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

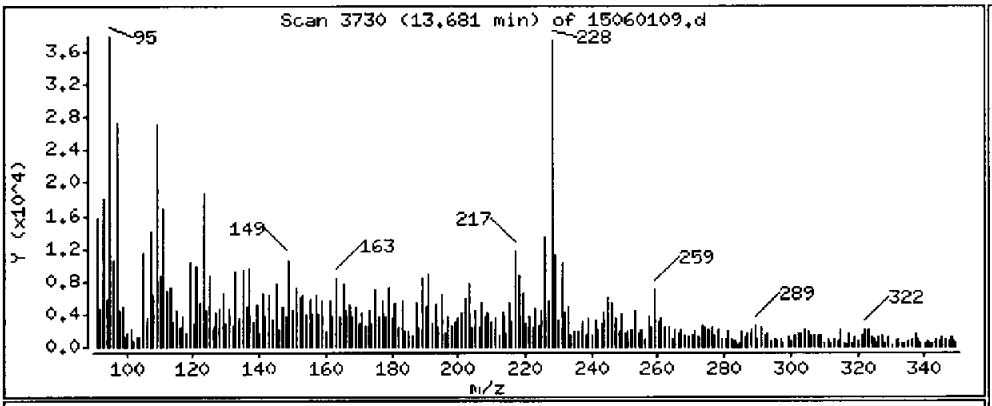
Operator: JZ

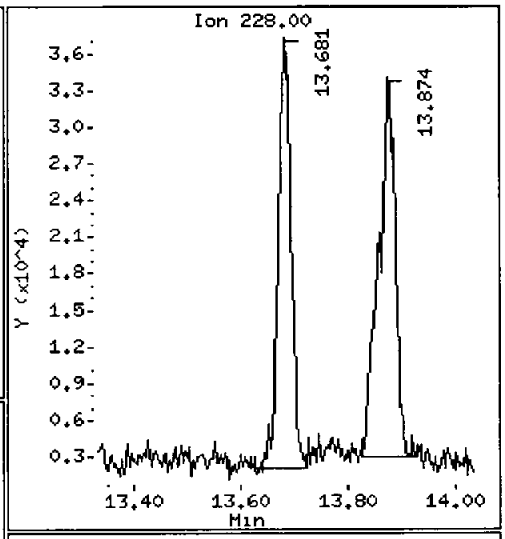
Column phase: ZB-35

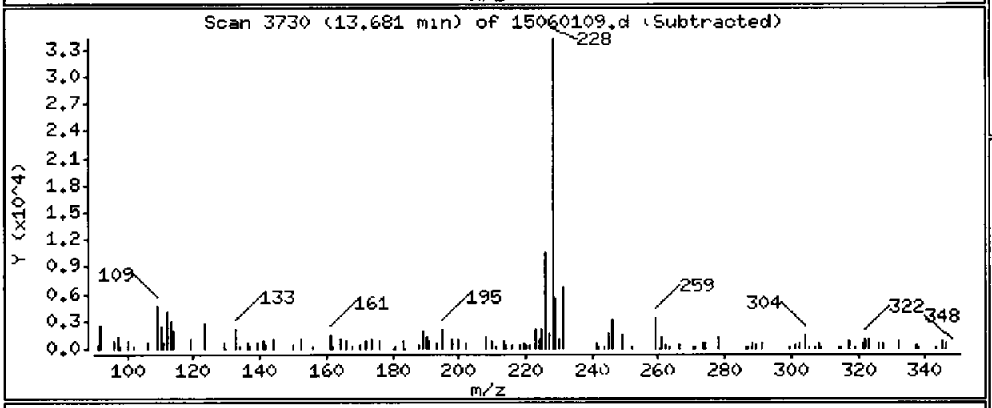
Column diameter: 0.25

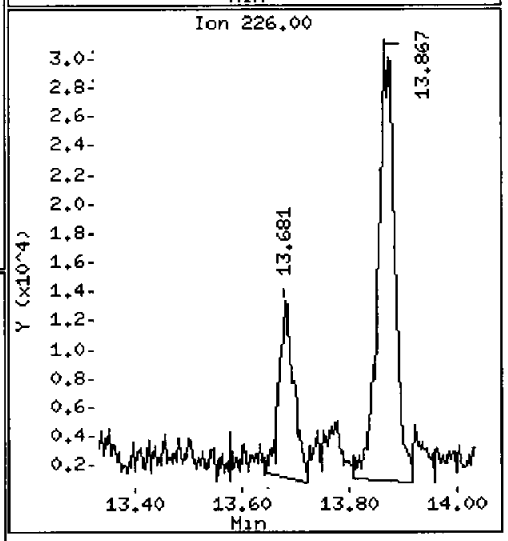
46 Benzo(a)anthracene

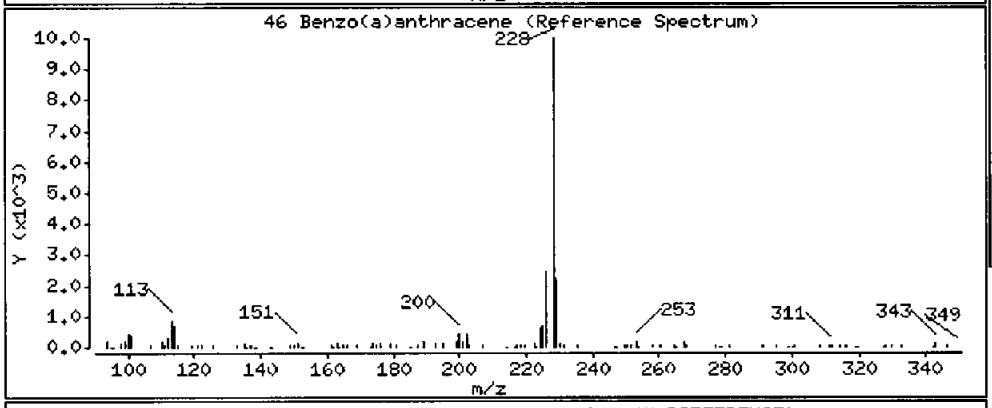
Concentration: 10.21 ug/kg

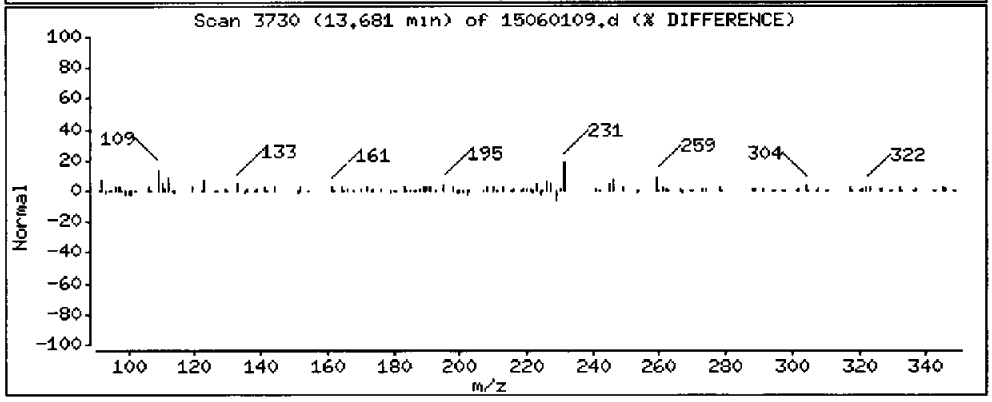












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

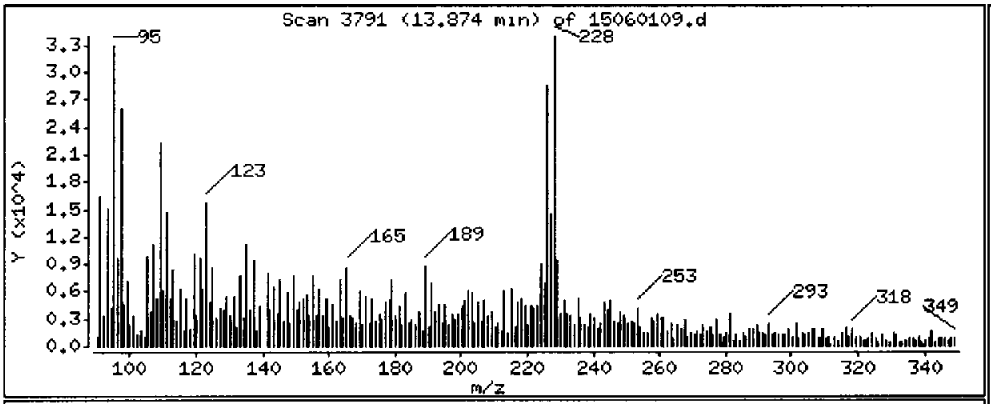
Operator: JZ

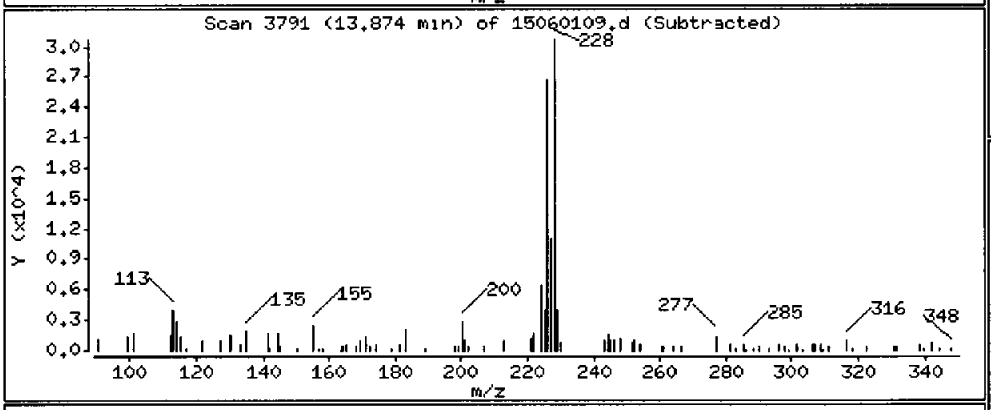
Column phase: ZB-35

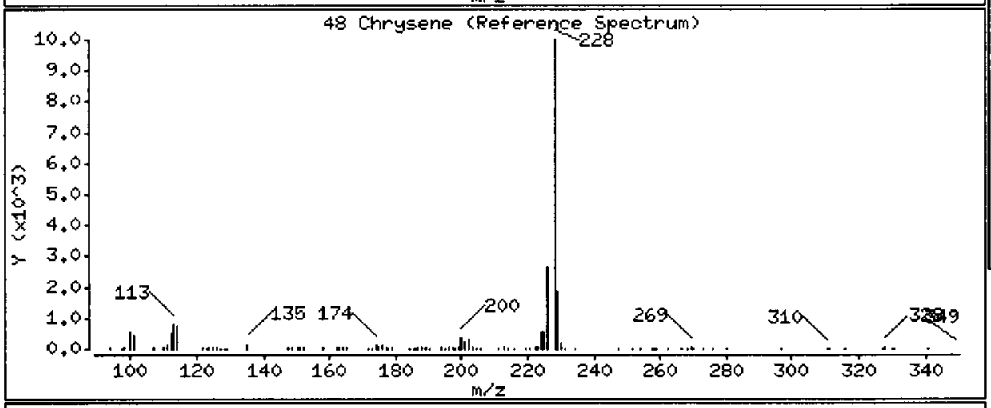
Column diameter: 0.25

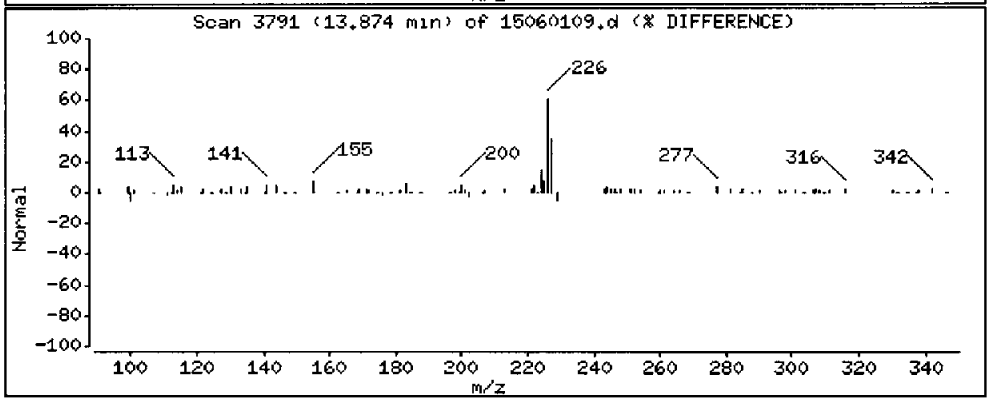
48 Chrysene

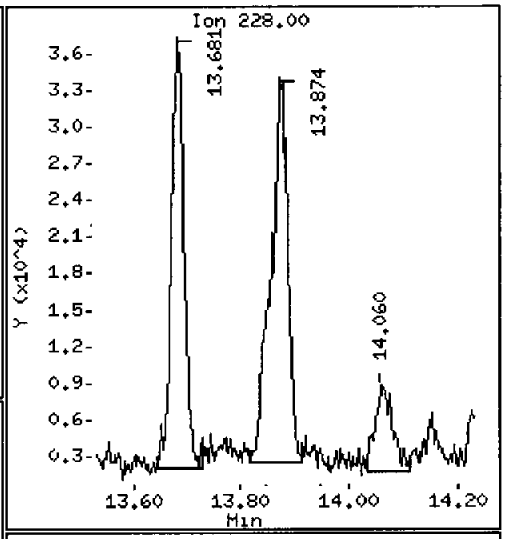
Concentration: 12.01 ug/kg

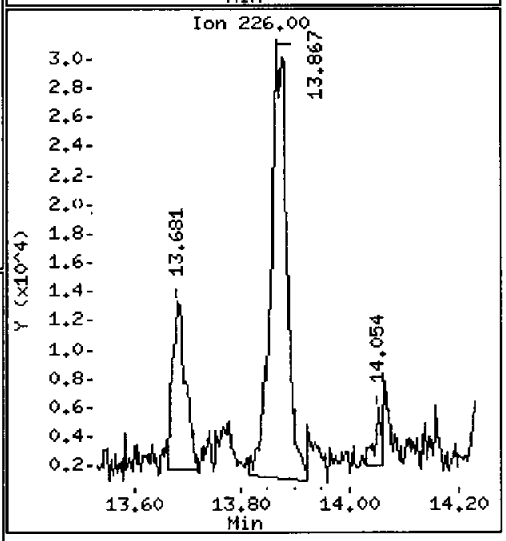












Data File: /chem3/nt8.i/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.i

Sample Info: AGC9E

Volume Injected (uL): 1.0

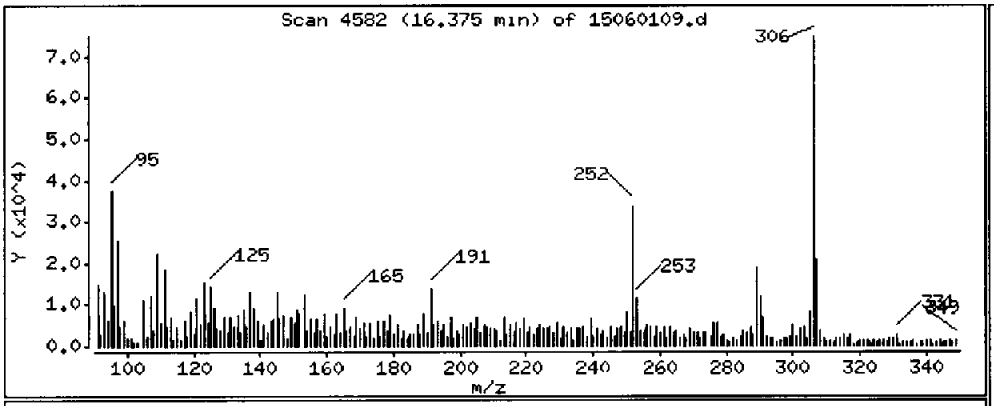
Operator: JZ

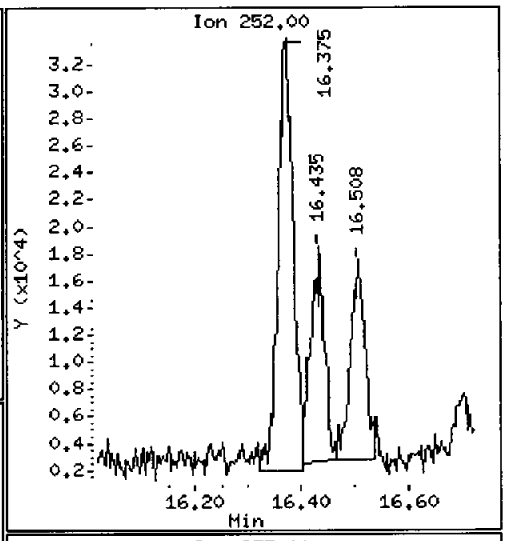
Column phase: ZB-35

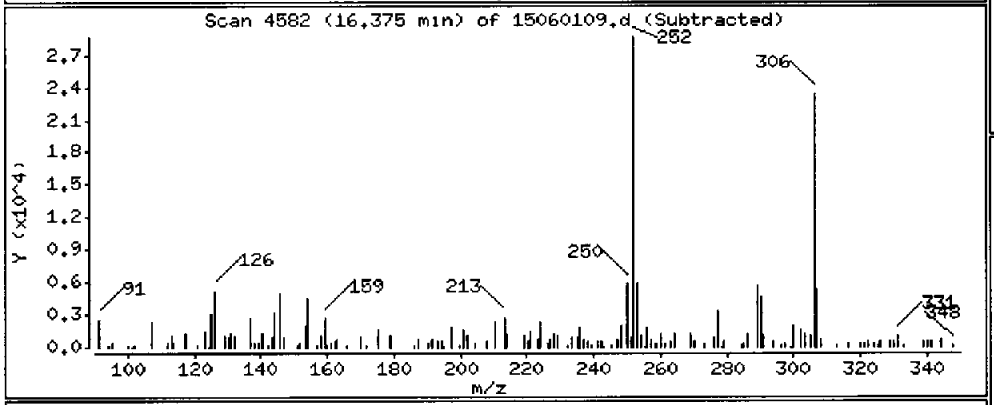
Column diameter: 0.25

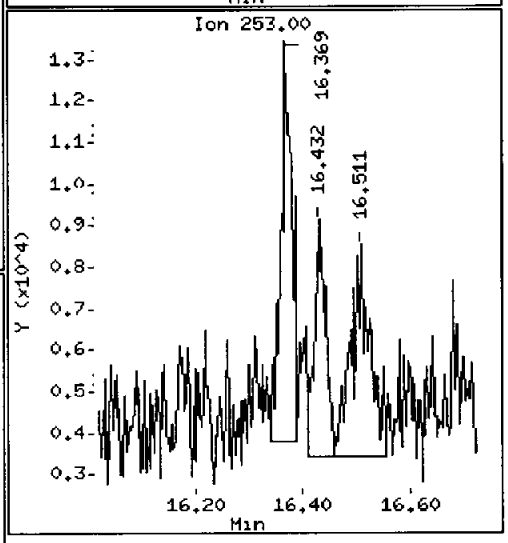
51 Benzo(b)fluoranthene

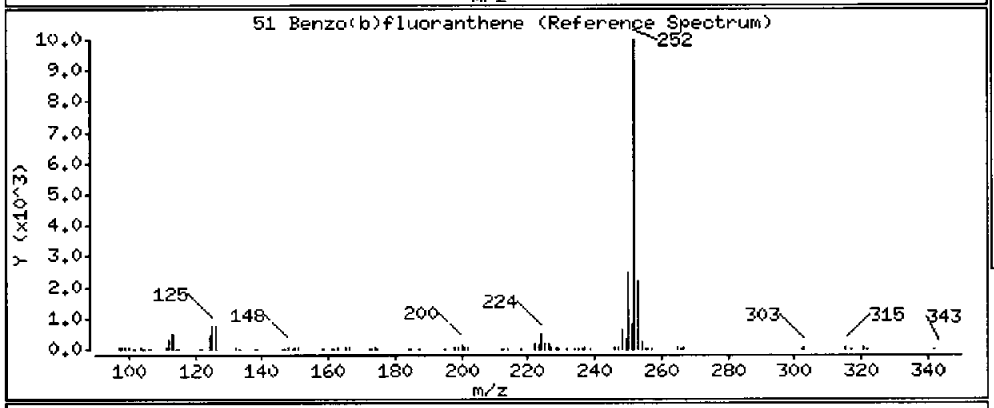
Concentration: 9.945 ug/kg

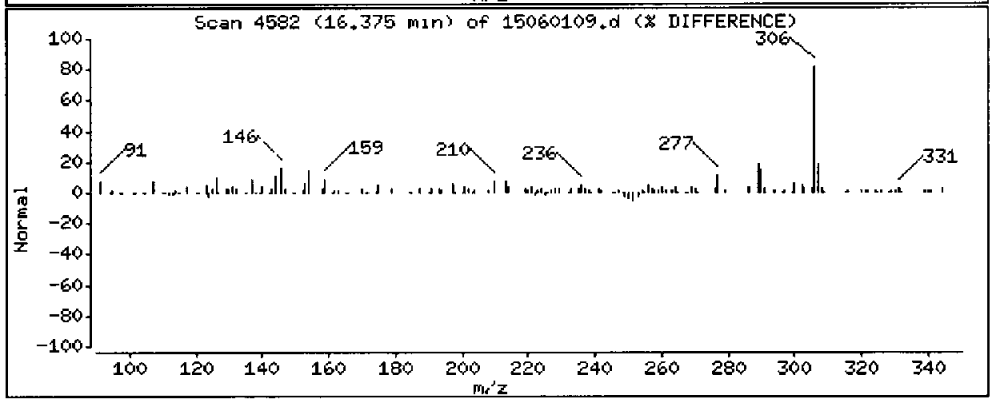






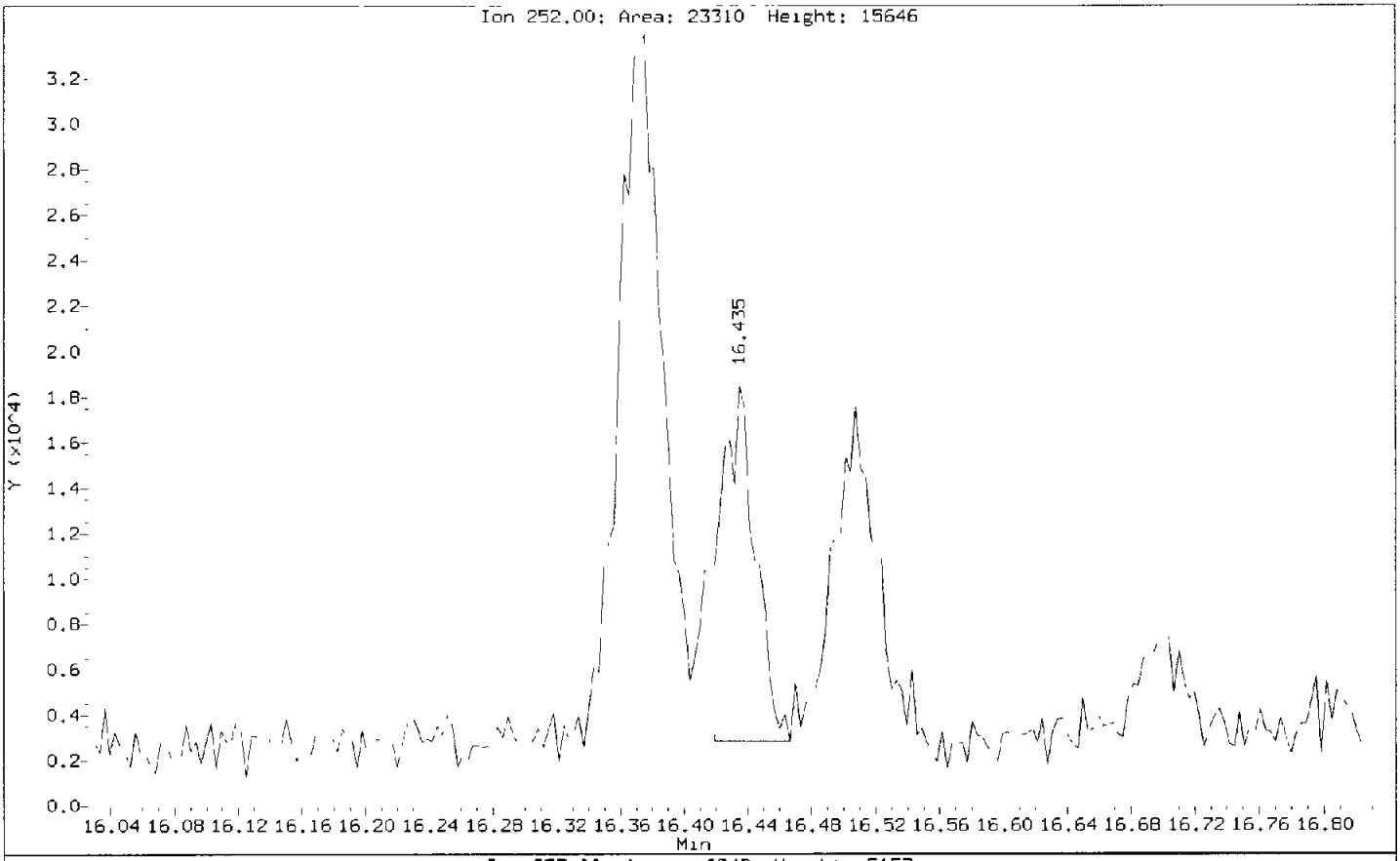


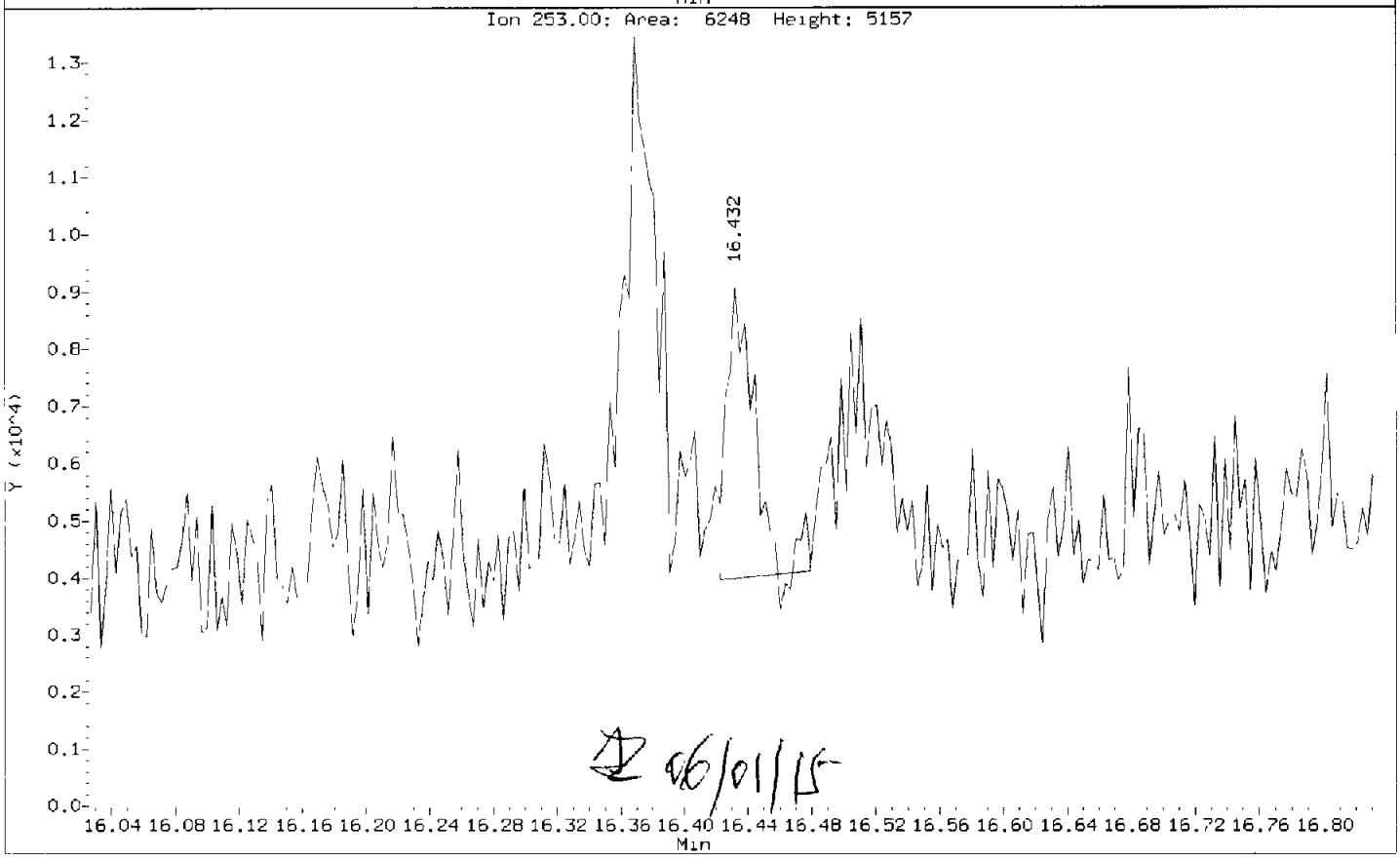




Data File: /chem3/nt8.1/20150601.b/15060109.d
Injection Date: 01-JUN-2015 13:08
Instrument: nt8.1
Client Sample ID: SDP-02(22.0-23.5)

Compound: Benzo(k)fluoranthene
CAS Number: 207-08-9

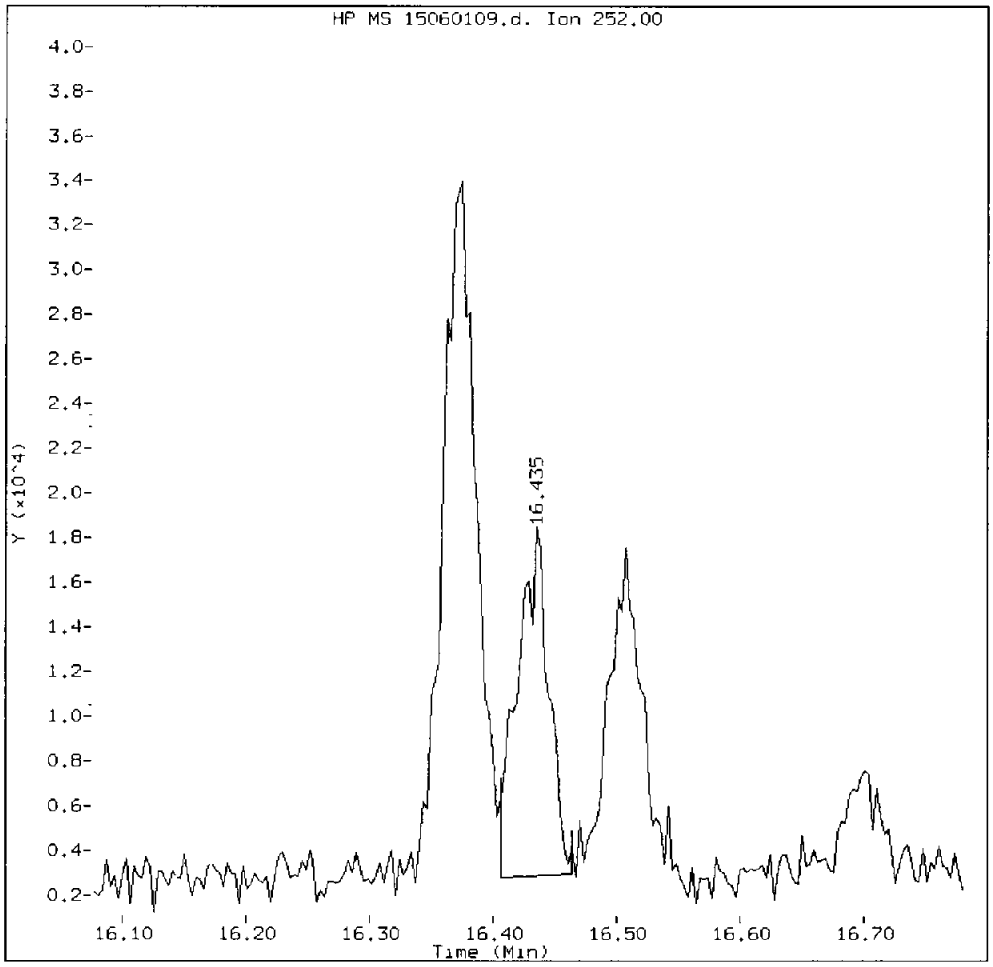




06/01/15

AGC9E, /chem3/nt8.i/20150601.b/15060109.d

Benzo(k)fluoranthene Amount: 0.09 Area: 27590



MANUAL INTEGRATION for Benzo(k)fluoranthene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 6/9/15

Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

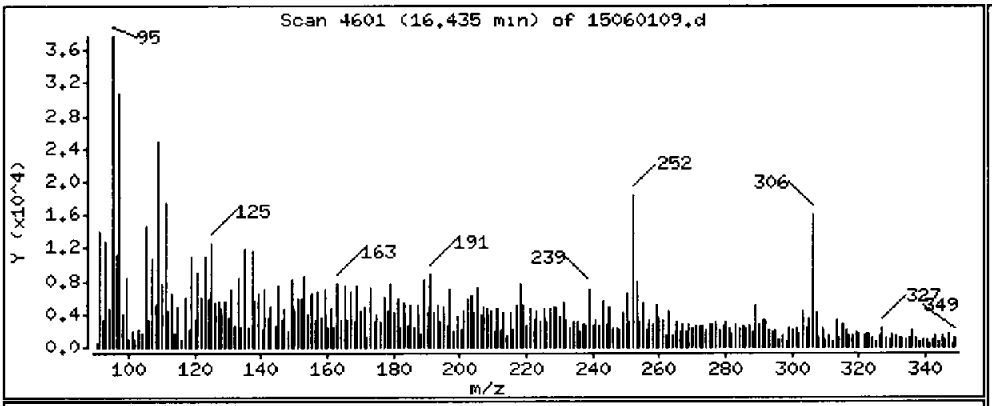
Operator: JZ

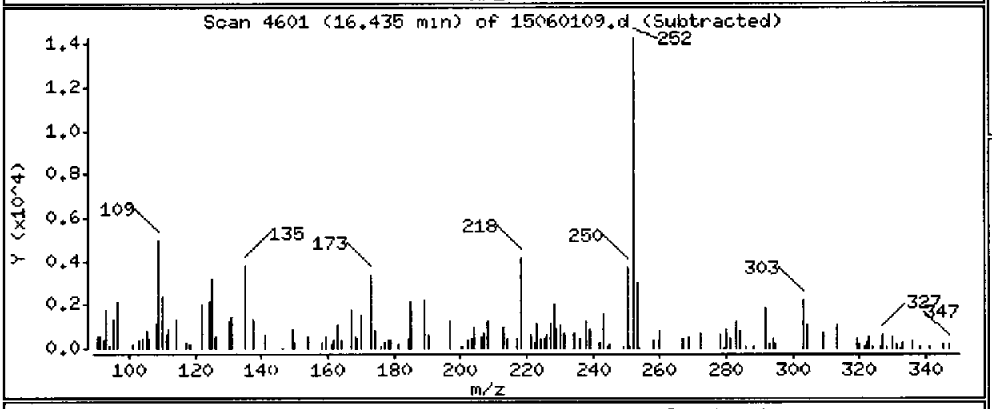
Column phase: ZB-35

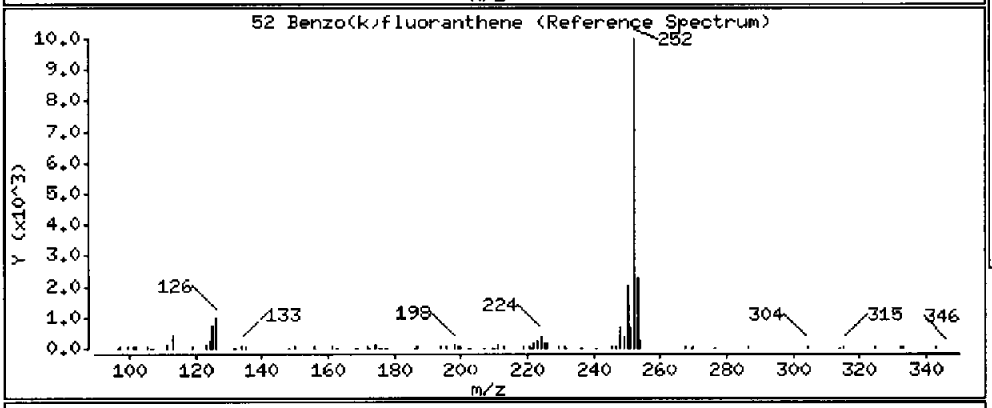
Column diameter: 0.25

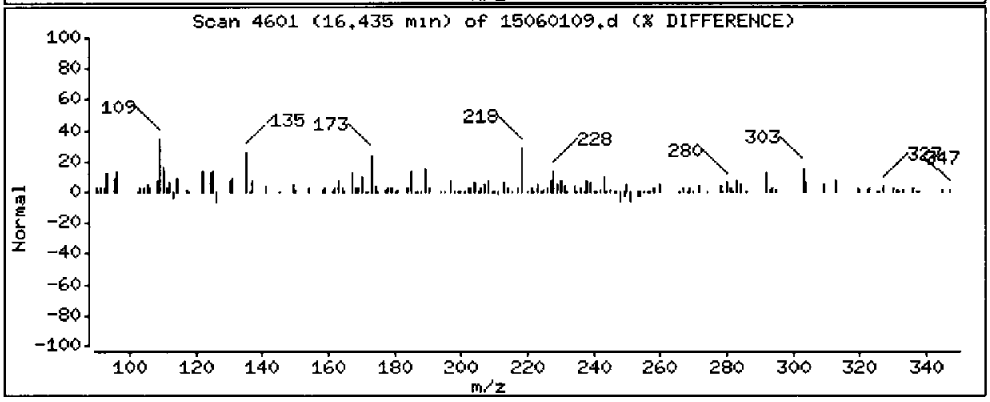
52 Benzo(k)fluoranthene

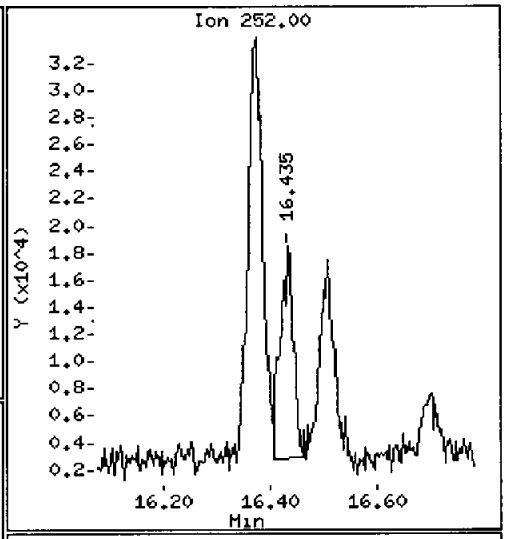
Concentration: 4.276 ug/kg

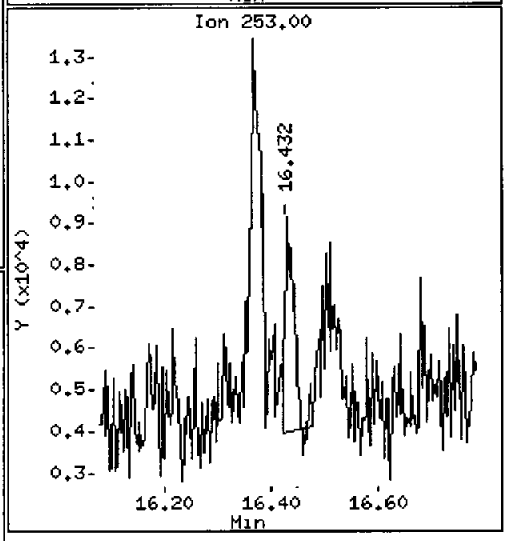












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

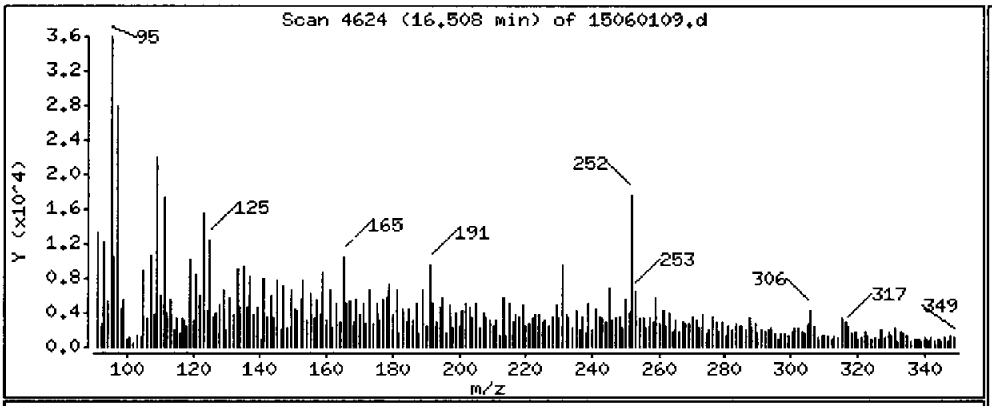
Operator: JZ

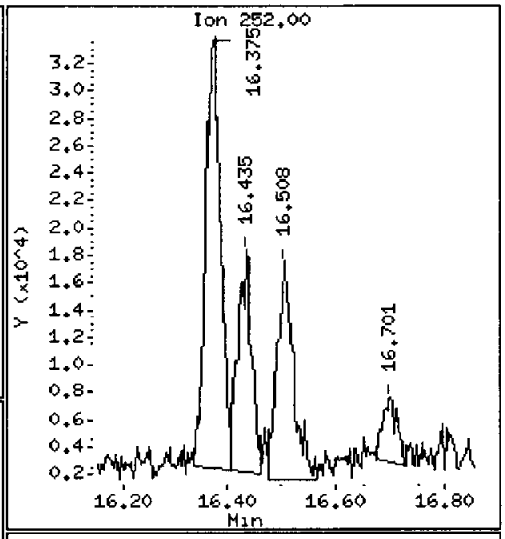
Column phase: ZB-35

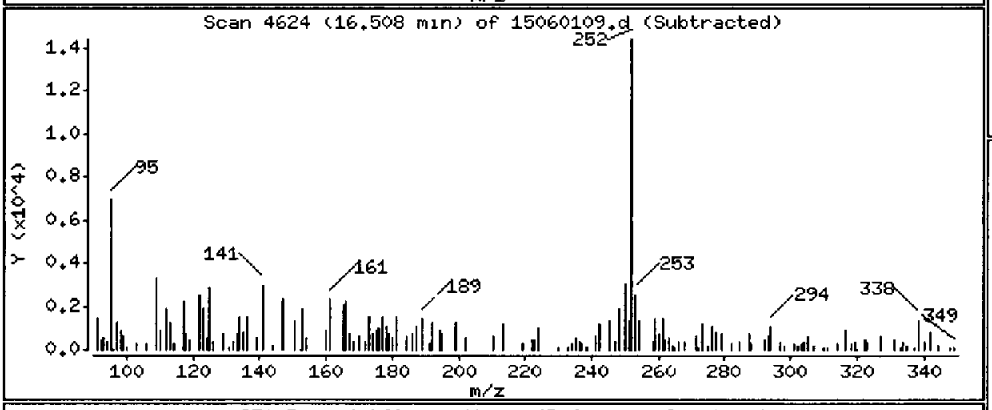
Column diameter: 0.25

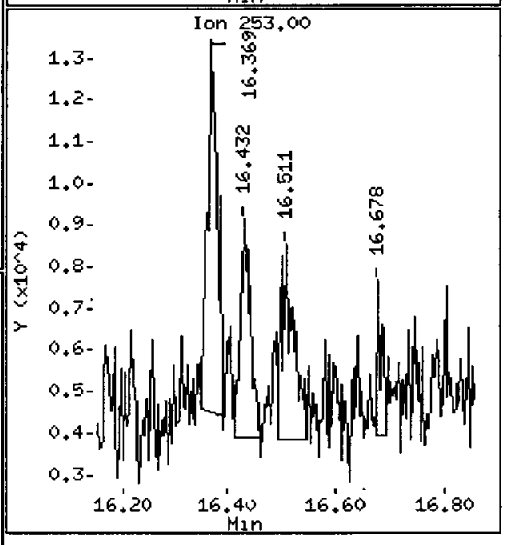
251 Benzo(j)fluoranthene

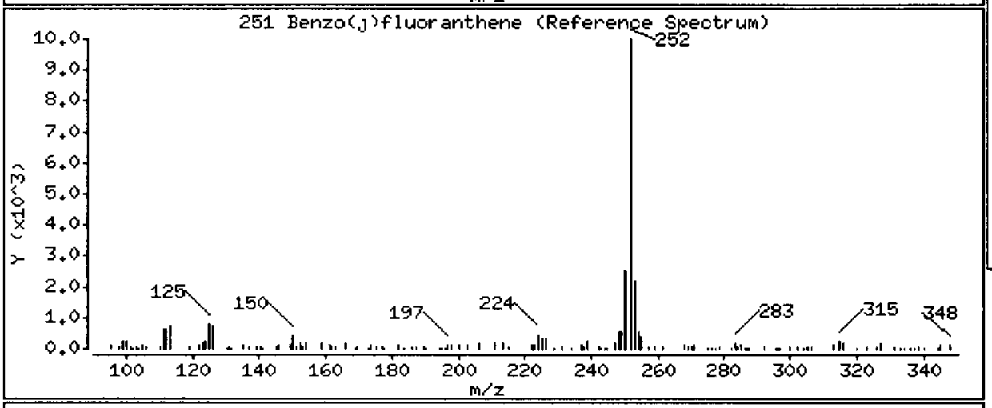
Concentration: 5.344 ug/kg

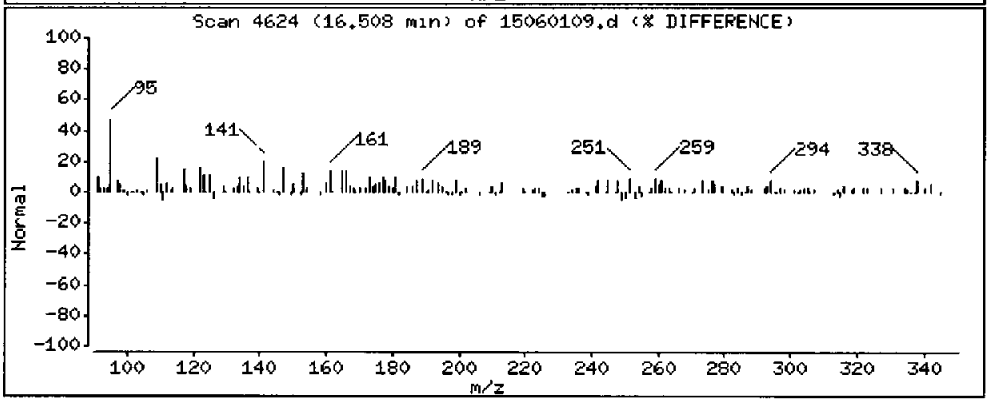












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

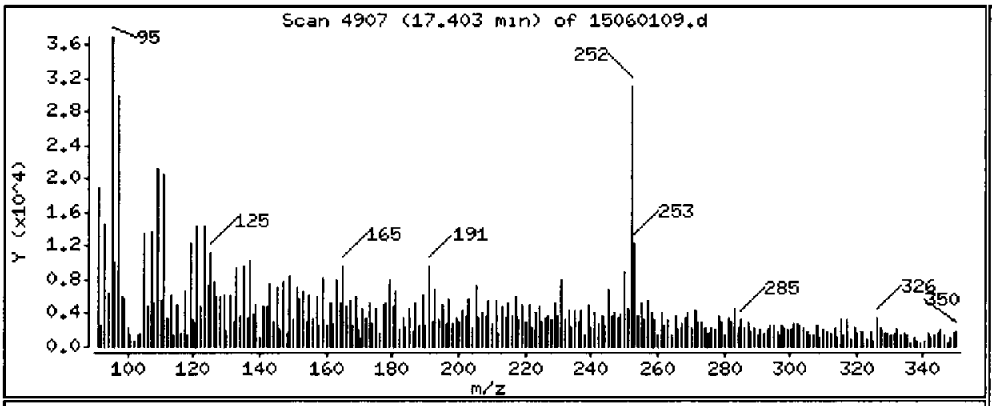
Operator: JZ

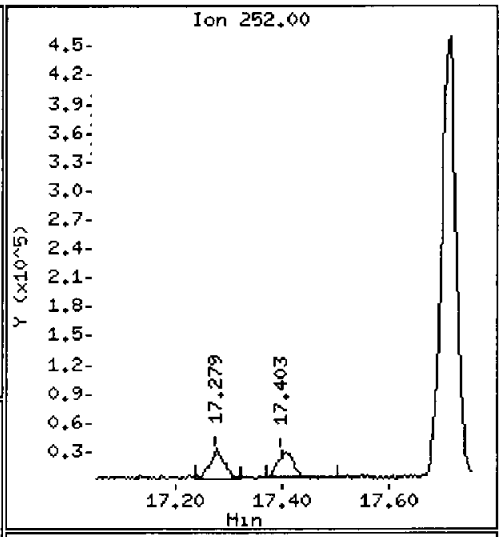
Column phase: ZB-35

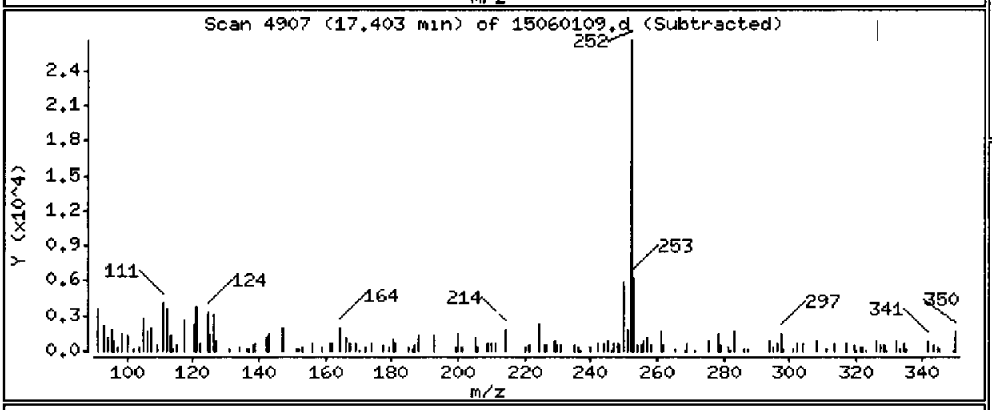
Column diameter: 0.25

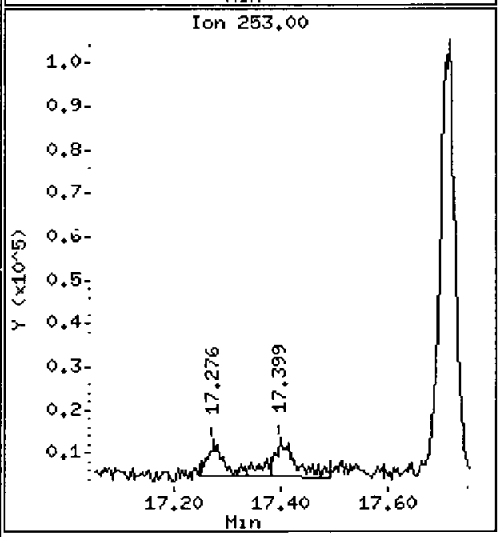
54 Benzo(a)pyrene

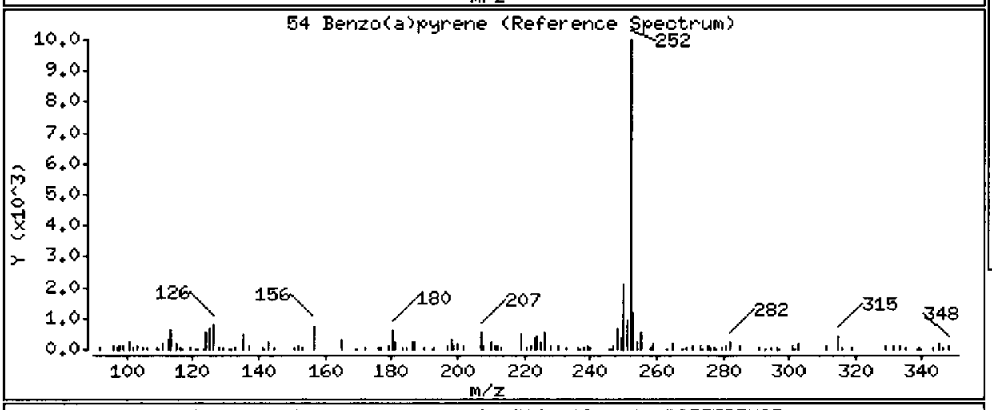
Concentration: 9.366 ug/kg

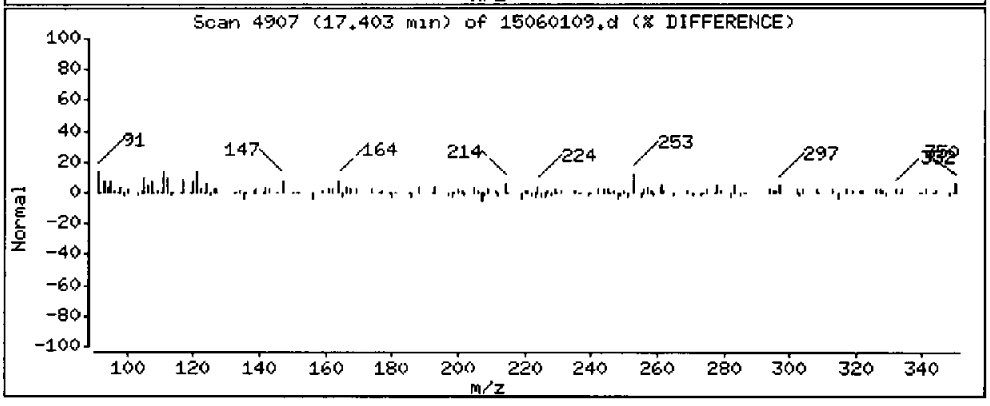












Data File: /chem3/nt8.i/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.i

Sample Info: AGC9E

Volume Injected (uL): 1.0

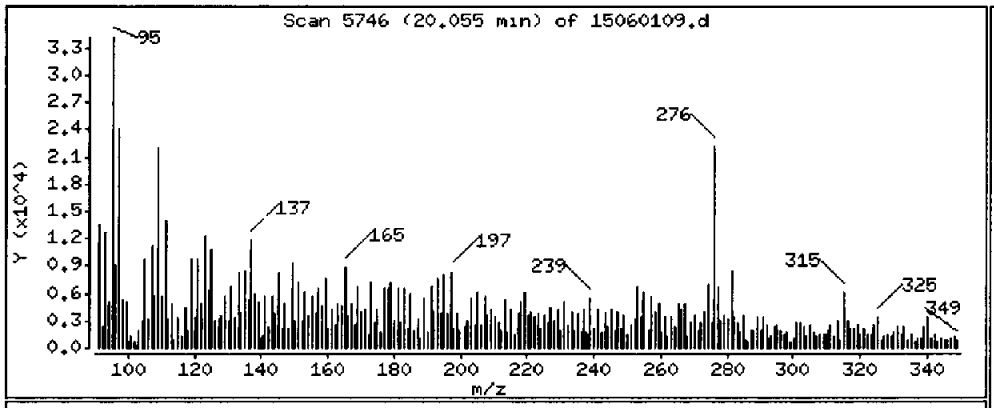
Operator: JZ

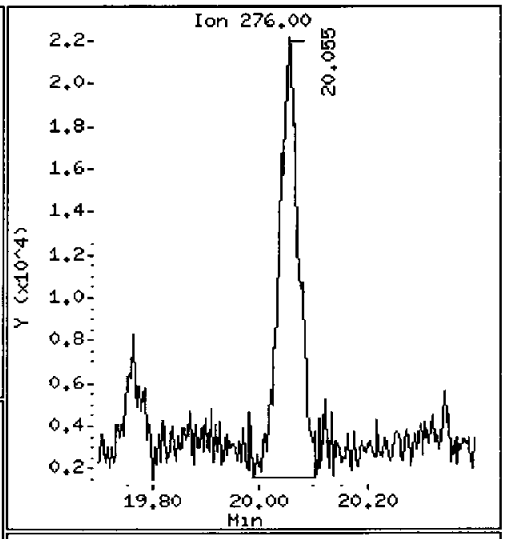
Column phase: ZB-35

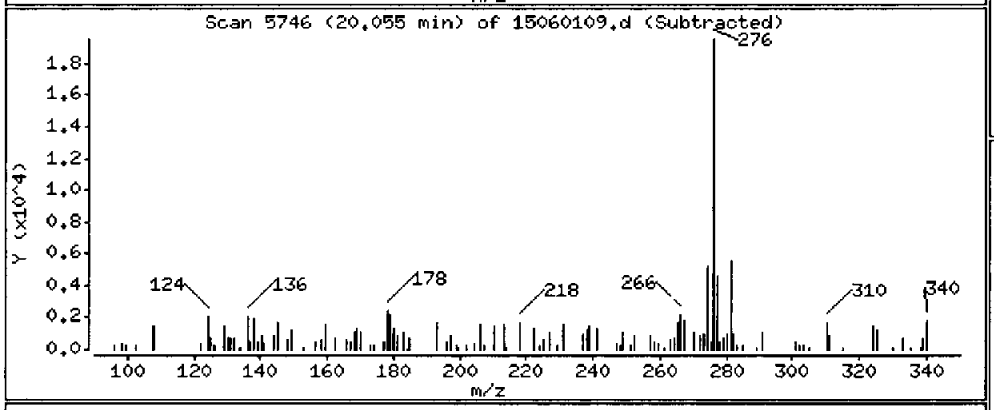
Column diameter: 0.25

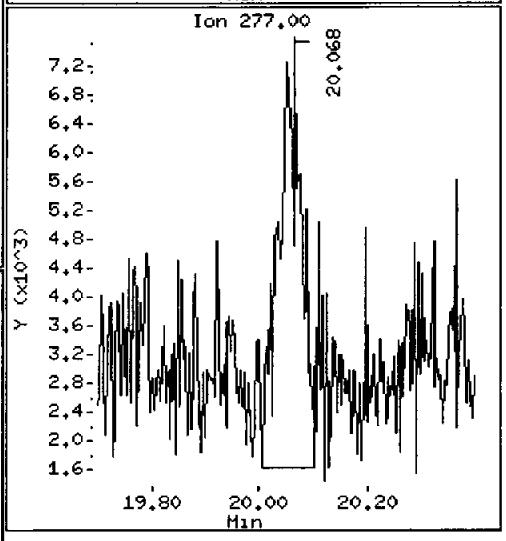
63 Indeno(1,2,3-cd)pyrene

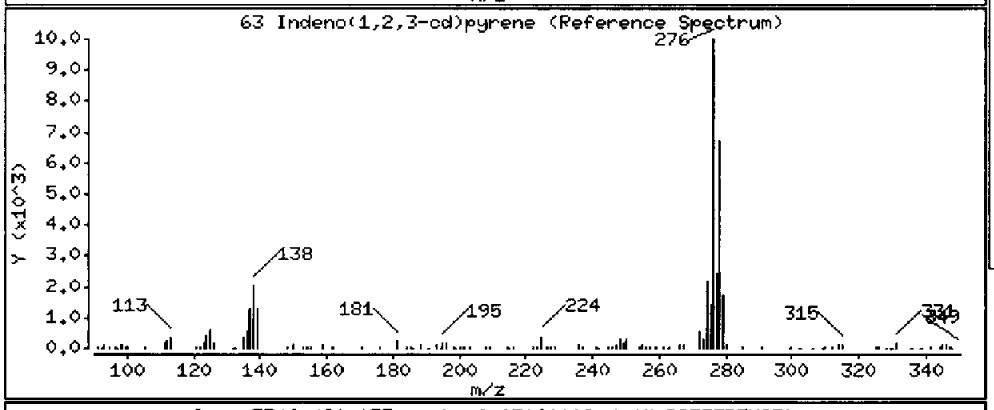
Concentration: 7.708 ug/kg

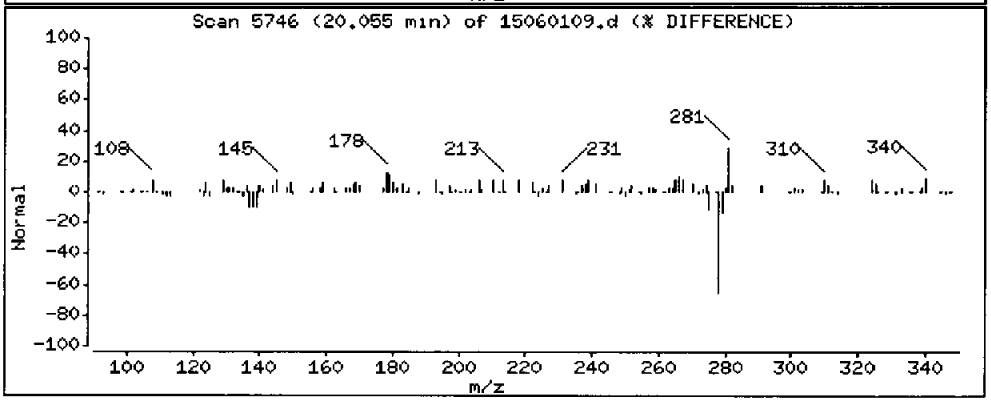












Data File: /chem3/nt8.1/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.1

Sample Info: AGC9E

Volume Injected (uL): 1.0

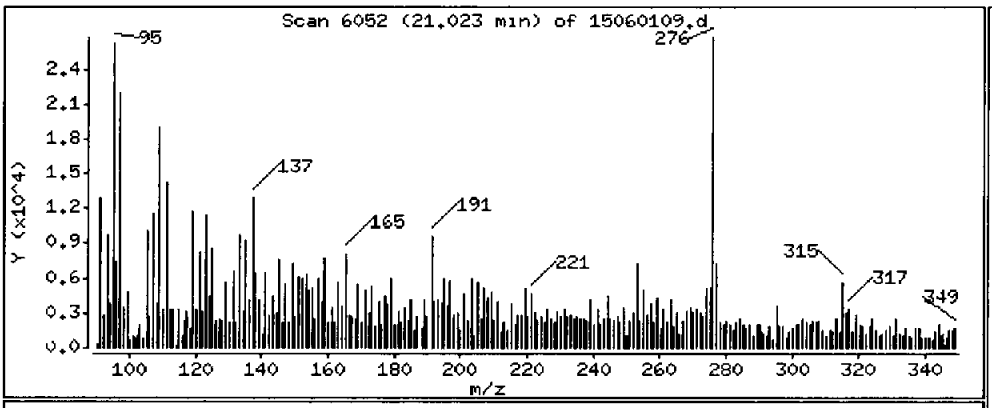
Operator: JZ

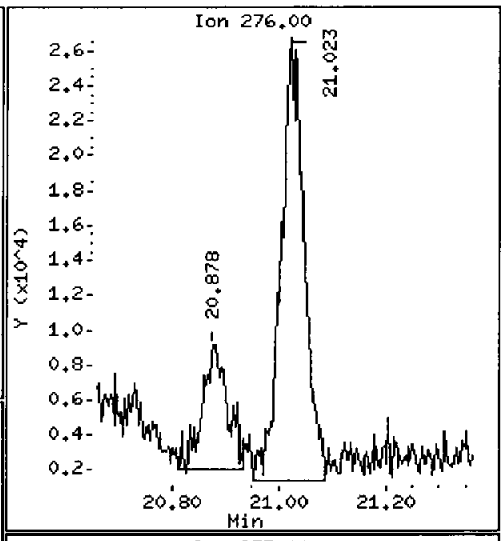
Column phase: ZB-35

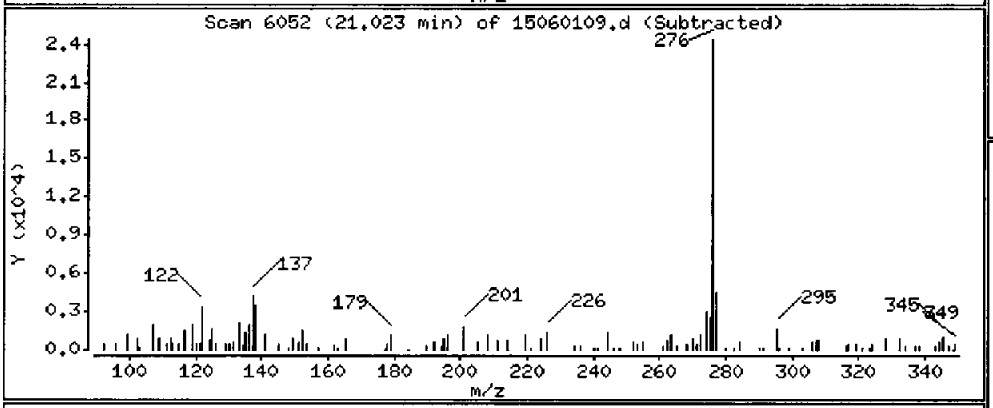
Column diameter: 0.25

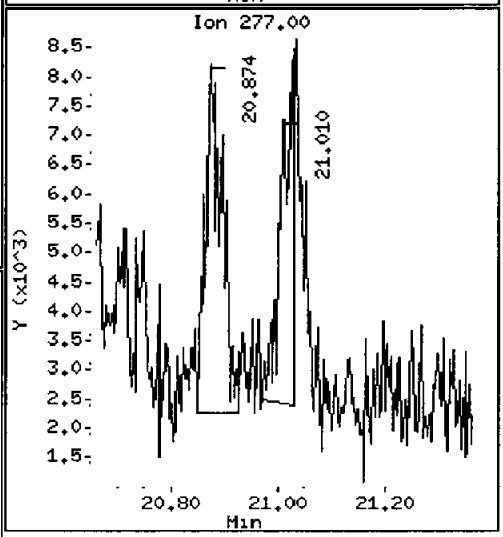
61 Benzo(g,h,i)perylene

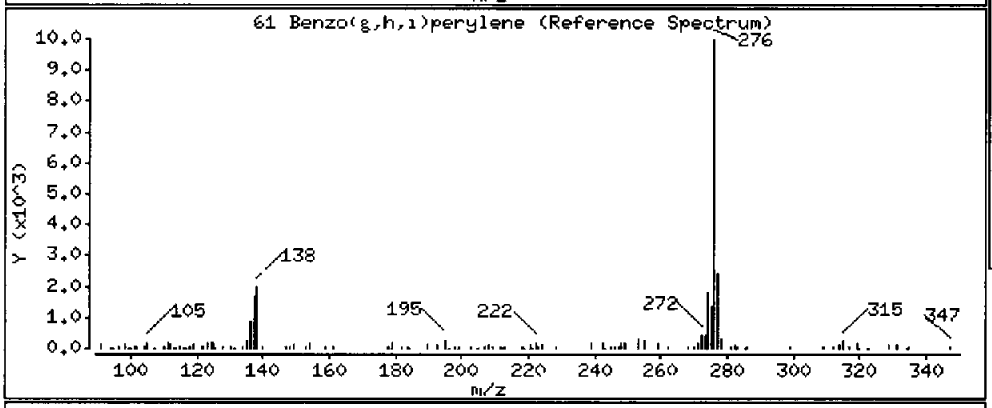
Concentration: 12.67 ug/kg

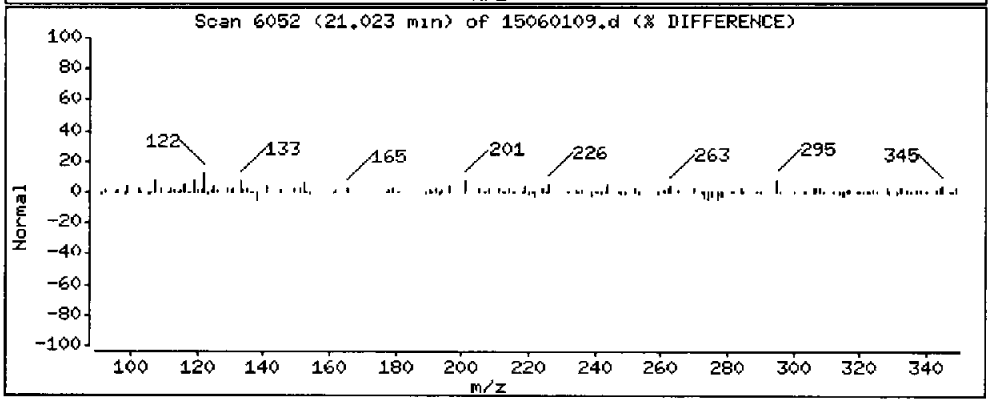












Data File: /chem3/nt8.i/20150601.b/15060109.d

Date : 01-JUN-2015 13:08

Client ID: SDP-02(22.0-23.5)

Instrument: nt8.i

Sample Info: AGC9E

Volume Injected (uL): 1.0

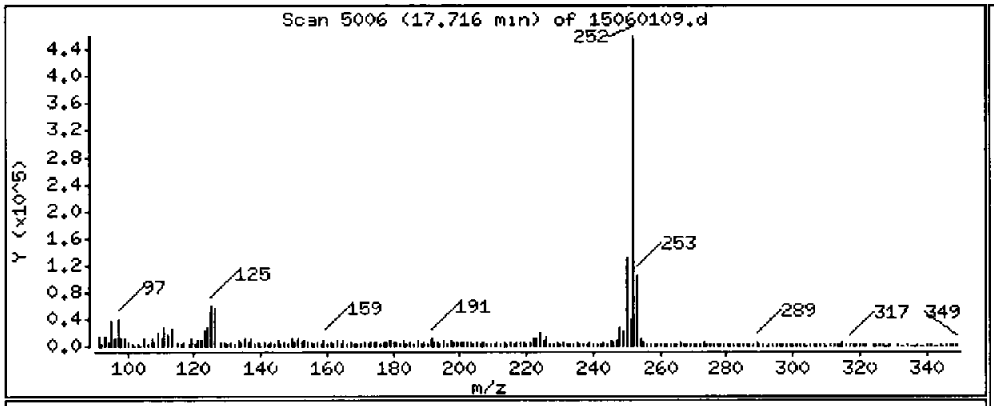
Operator: JZ

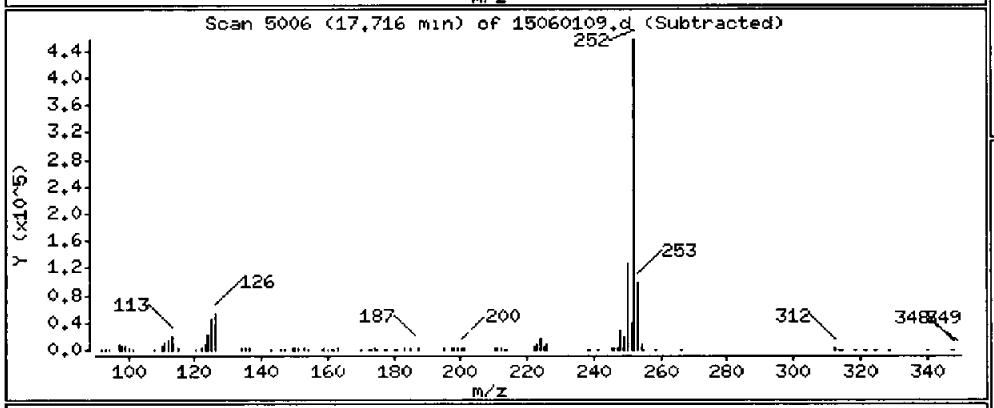
Column phase: ZB-35

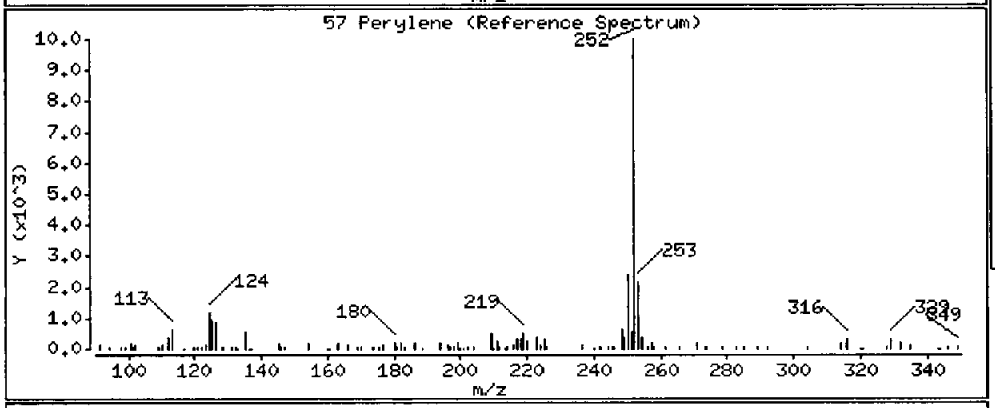
Column diameter: 0.25

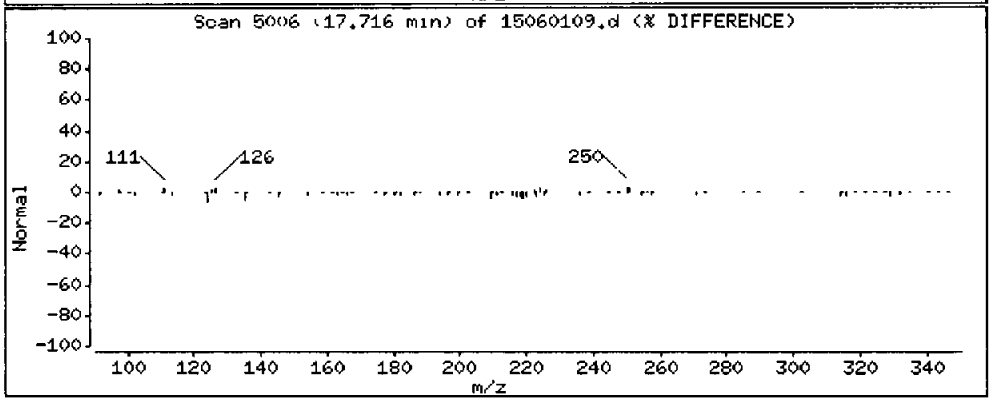
57 Perylene

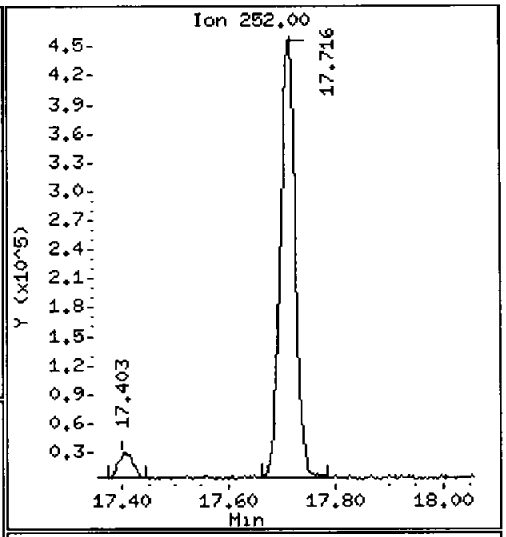
Concentration: 147.9 ug/kg

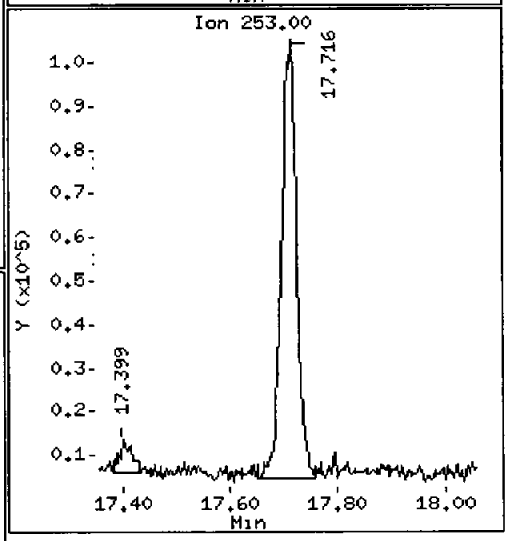












CO-ELUTION SUMMARY FOR FILE - 15060109.d

Lab ID: AGC9E, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC9 - 2015

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060110.d
Lab Smp Id: AGC9F Client Smp ID: SDP-03(6.5-8.0)
Inj Date : 01-JUN-2015 13:34
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9F
Misc Info : 15-9436
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	11.20000	Weight of sample extracted (g)
M	8.60000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.732	4.739	(1.000)	395146	2.00000	
	7 Naphthalene	128	4.764	4.767	(1.007)	38075	0.20002	9.770
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	201069	1.66634	81.39
	14 2-Methylnaphthalene	141	5.507	5.510	(1.164)	23699	0.20880	10.20
	15 1-methylnaphthalene	141	5.706	5.703	(1.206)	13839	0.12546	6.128
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.003	7 000	(1.000)	256094	2.00000	
	23 Acenaphthene	153	7.050	7 050	(1.007)	9936	0.07984	3 900
	11 Dibenzofuran	168	7.199	7.202	(1.028)	16375	0.09514	4.647
	25 Fluorene	166	7.673	7.673	(1.096)	11344	0.08161	3.986
*	28 Phenanthrene-d10	188	9.023	9.020	(1.000)	436464	2 00000	
	30 Phenanthrene	178	9.058	9.055	(1.004)	575430	2.76525	135.1
	31 Anthracene	178	9.099	9.096	(1.008)	96872	0.51708	25.26
	36 Fluoranthene	202	10.775	10.769	(1.194)	2328859	9.56866	467.4
$	253 Fluoranthene-d10	212	10.737	10 734	(1.190)	505204	2.35317	114.9

AGCS 60417

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.271	11 265	(0.816)	2129136	7.72977	377.5
	46 Benzo(a)anthracene	228	13.690	13 684	(0.991)	1385405	5.58968	273.0
*	47 Chrysene-d12	240	13.811	13.807	(1.000)	494112	2.00000	
	48 Chrysene	228	13.886	13.880	(1.005)	1848081	7.43669	363 2
	51 Benzo(b)fluoranthene	252	16.378	16.369	(0.929)	1481390	5.27898	257 8
	52 Benzo(k)fluoranthene	252	16.438	16.429	(0.932)	710525	2.53409	123.8
	251 Benzo(j)fluoranthene	252	16.514	16.505	(0.936)	616658	2.25390	110.1
	54 Benzo(a)pyrene	252	17.415	17.402	(0 987)	1275811	5.09901	249.1
*	56 Perylene-d12	264	17.637	17.633	(1 000)	534360	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.071	20.046	(1.138)	887951	2.95467	144.3
$	60 Dibenzo(a,h)anthracene-d14	292	19.951	19.929	(1 131)	414500	2.03678	99.48(M)
	62 Dibenzo(a,h)anthracene	278	20.046	20.033	(1.137)	223494	0.91307	44.60
	61 Benzo(g,h,i)perylene	276	21.045	21.010	(1.193)	864198	3.26914	159.7
	57 Perylene	252	17 712	17.706	(1.004)	439182	1.69084	82.59

QC Flag Legend

M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060110.d
Lab Smp Id: AGC9F
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9436

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-03(6.5-8.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	395146	15.17
22 Acenaphthene-d10	230598	115299	461196	256094	11.06
28 Phenanthrene-d10	373928	186964	747856	436464	16.72
47 Chrysene-d12	381262	190631	762524	494112	29.60
56 Perylene-d12	380825	190412	761650	534360	40.32

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.02
56 Perylene-d12	17.63	17.13	18.13	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

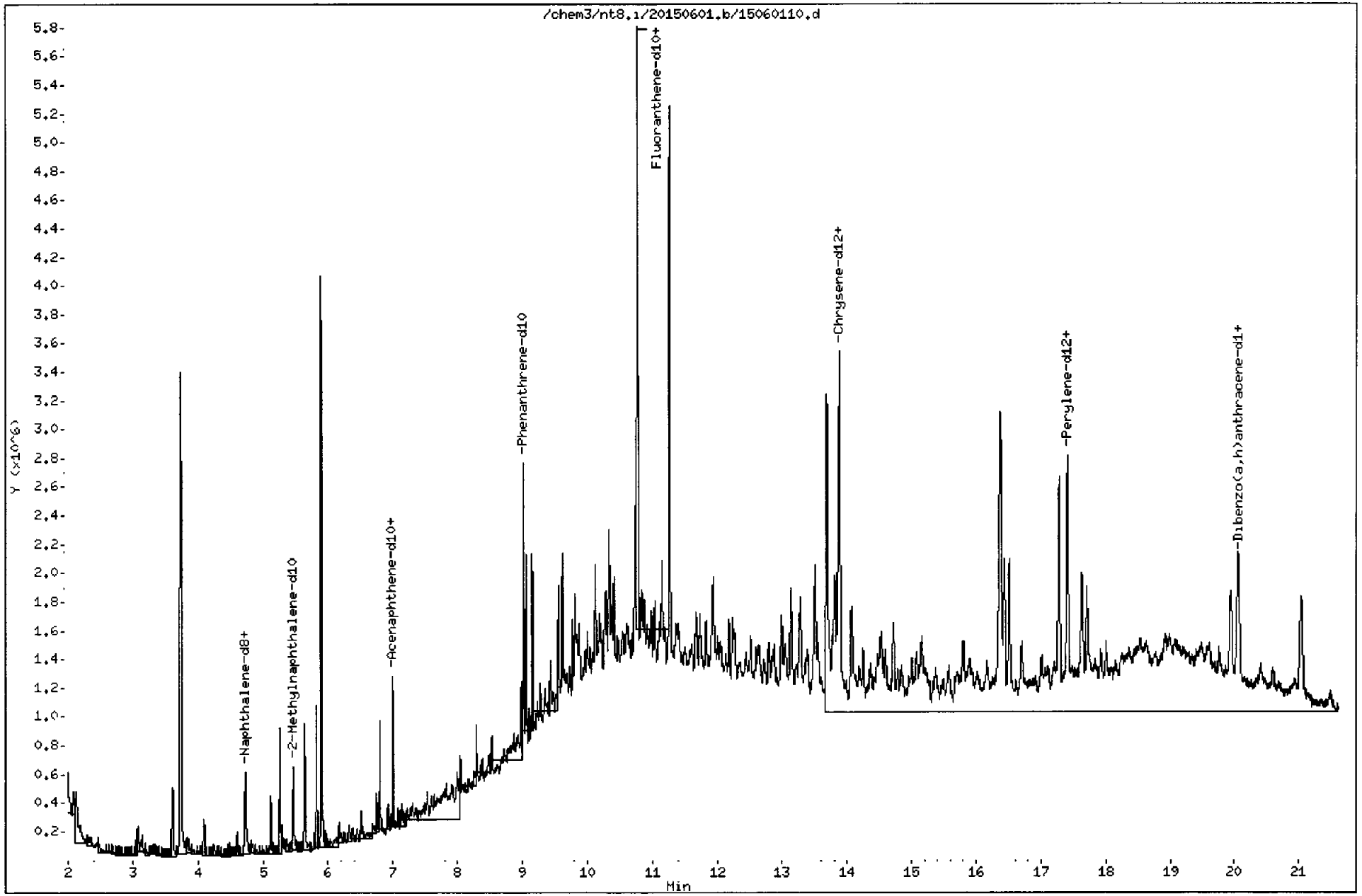
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9F
Client Smp ID: SDP-03(6.5-8.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9436

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	146.5	81.39	55.54	32-120
$ 253 Fluoranthene-d10	146.5	114.9	78.44	36-134
$ 60 Dibenzo(a,h)anthra	146.5	99.48	67.89	21-133

Data File: /chem3/nt8.1/20150601.b/15060110.d
Date : 01-JUN-2015 13:34
Client ID: SDP-03(6.5-8.0)
Sample Info: AGC9F
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

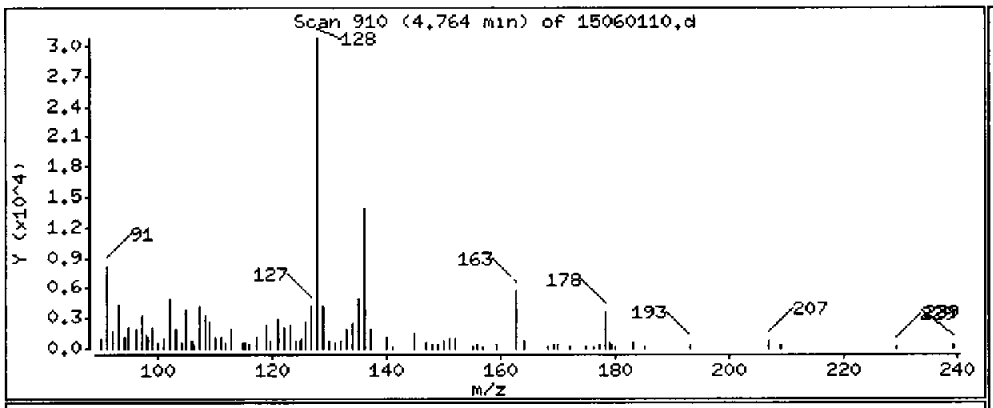
Operator: JZ

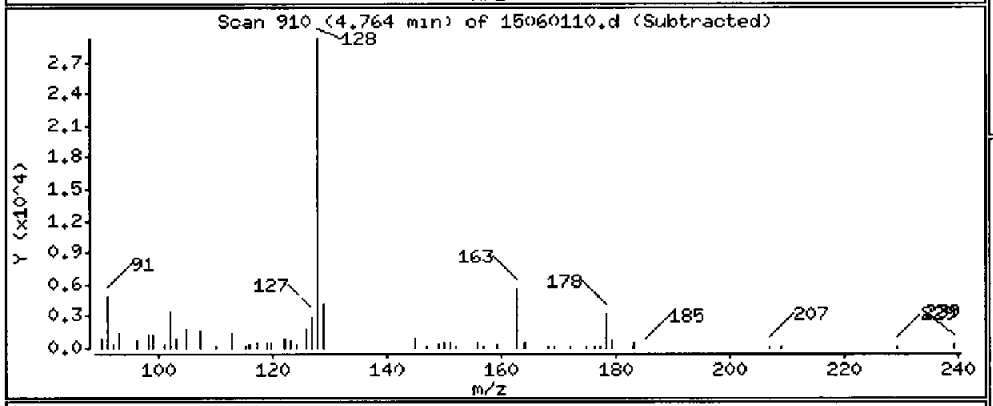
Column phase: ZB-35

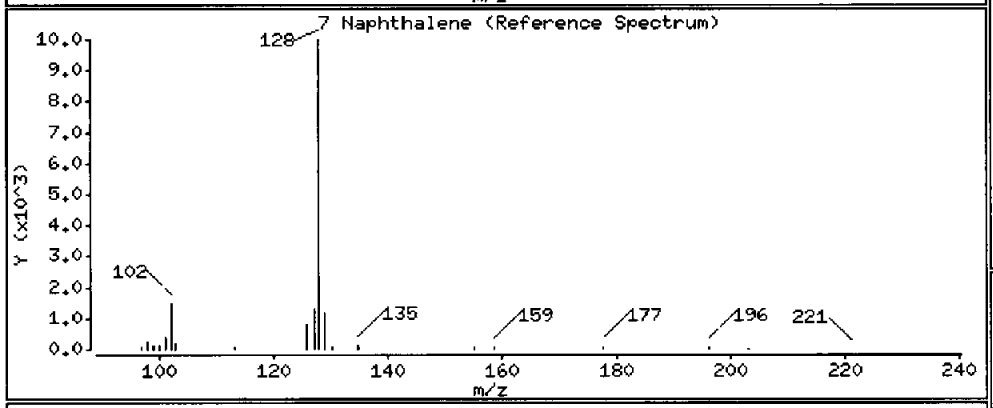
Column diameter: 0.25

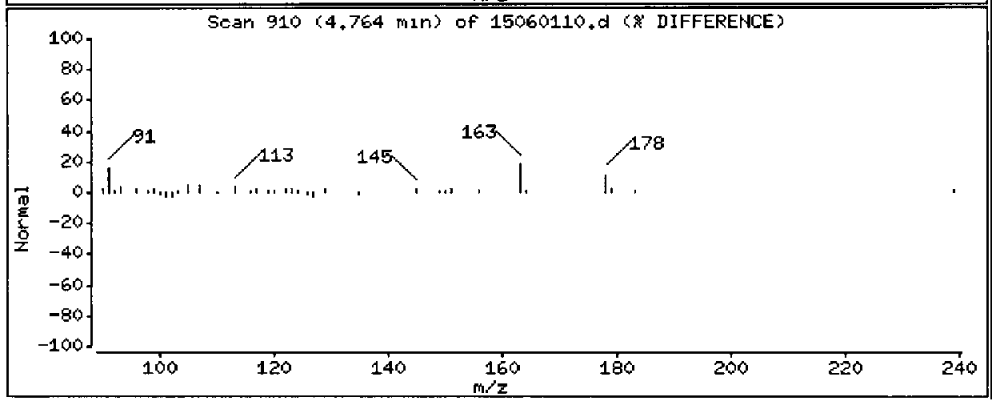
7 Naphthalene

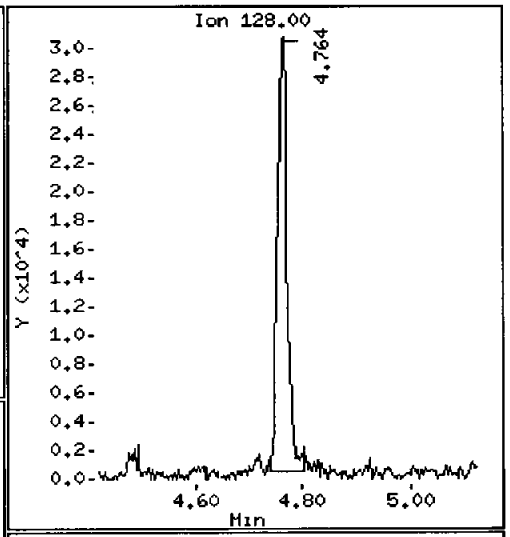
Concentration: 9.770 ug/kg

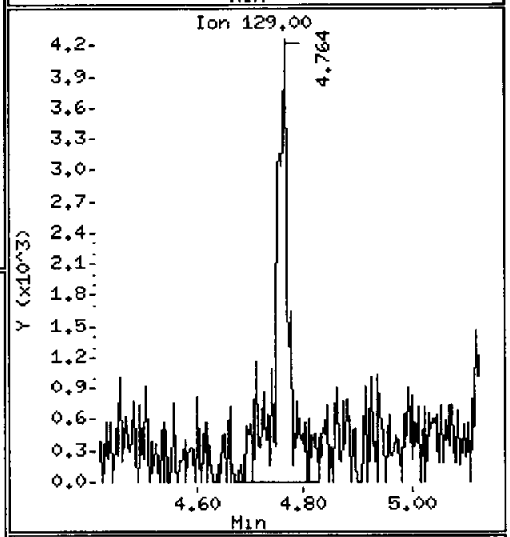


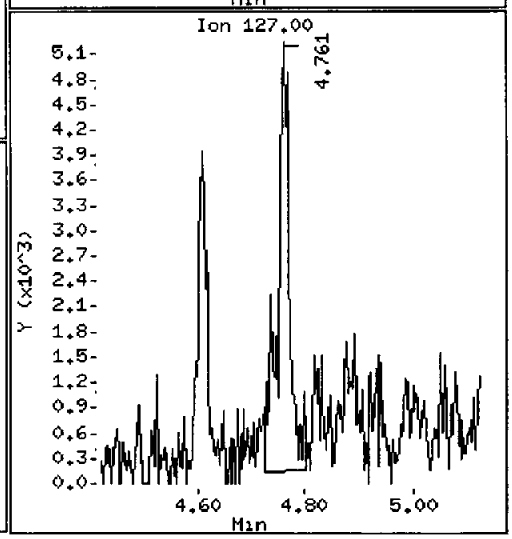












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

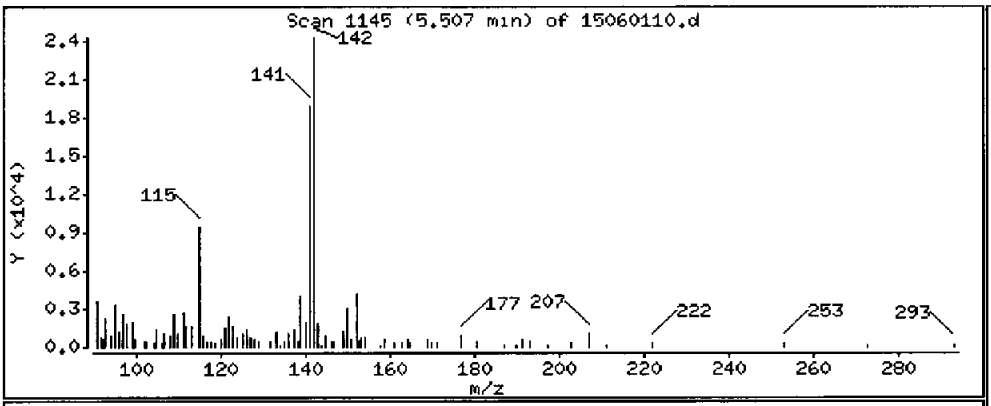
Operator: JZ

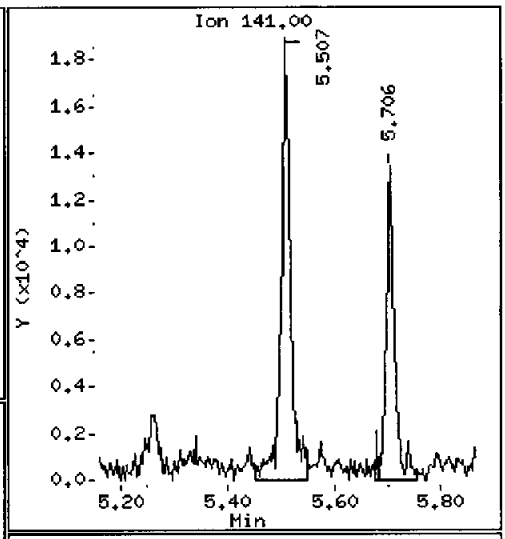
Column phase: ZB-35

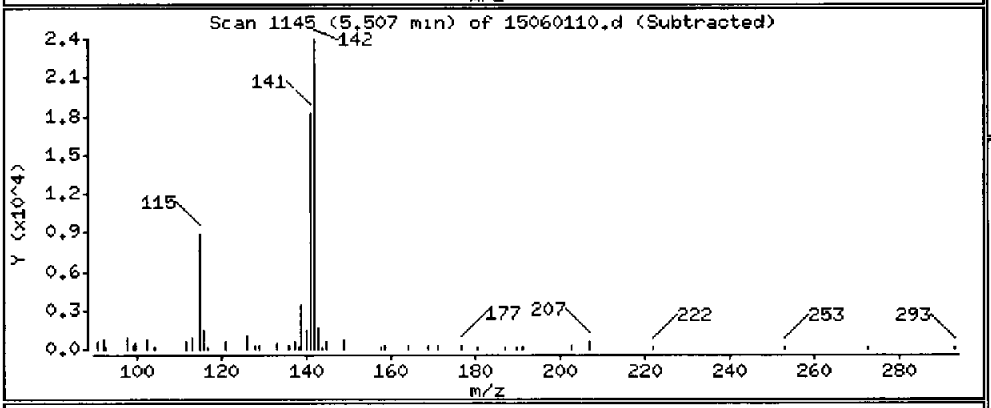
Column diameter: 0.25

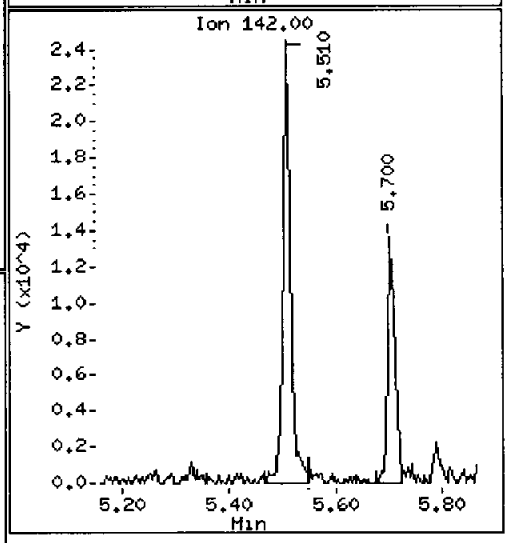
14 2-Methylnaphthalene

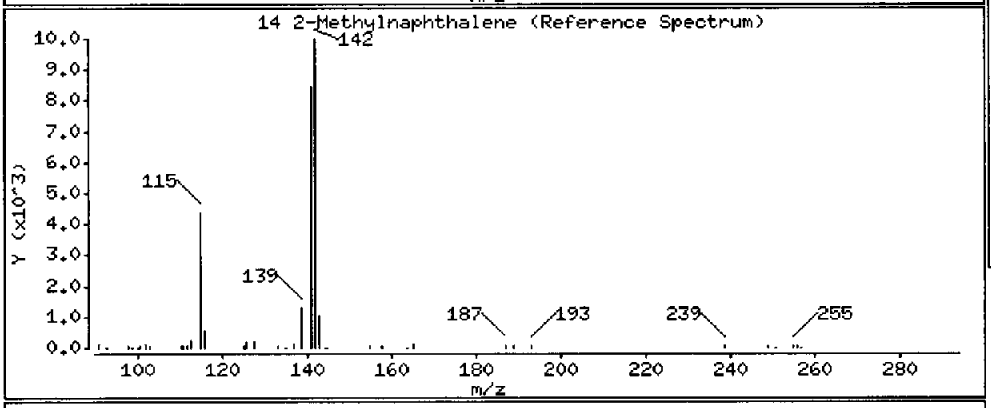
Concentration: 10.20 ug/kg

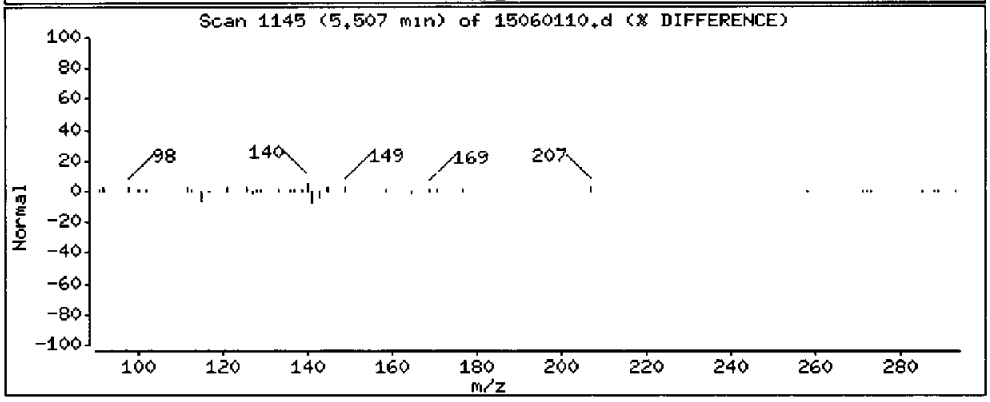












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

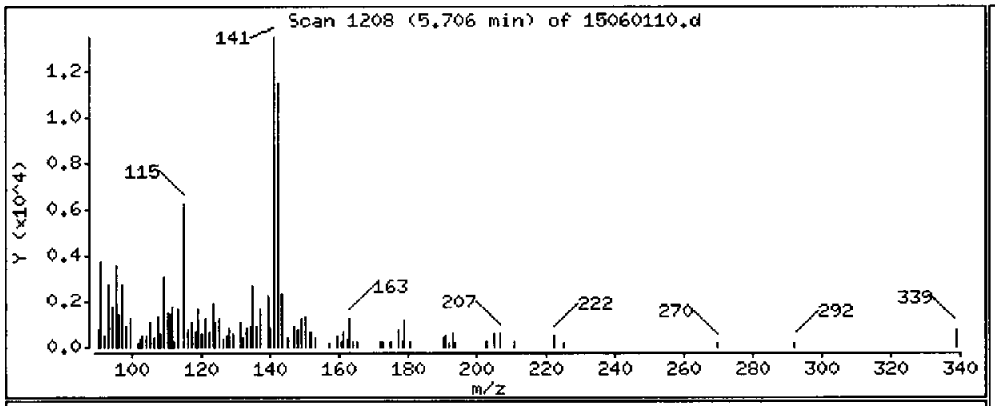
Operator: JZ

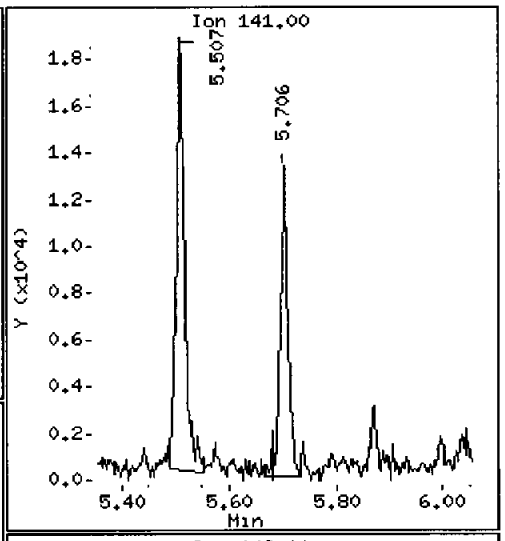
Column phase: ZB-35

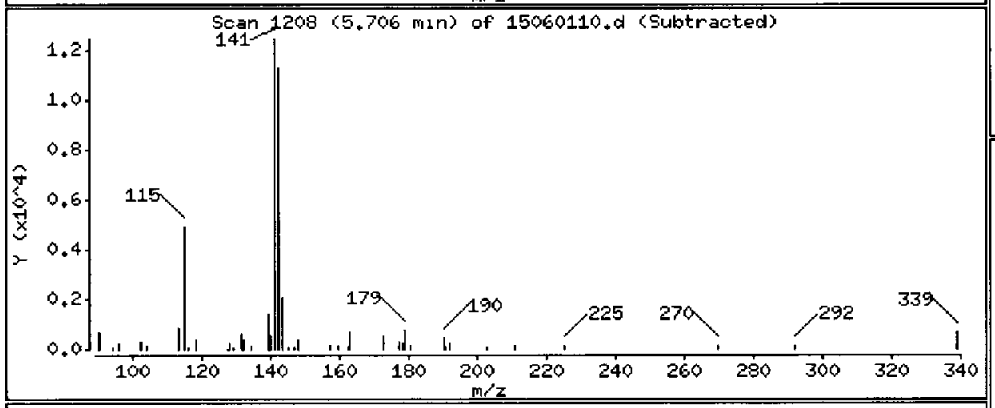
Column diameter: 0.25

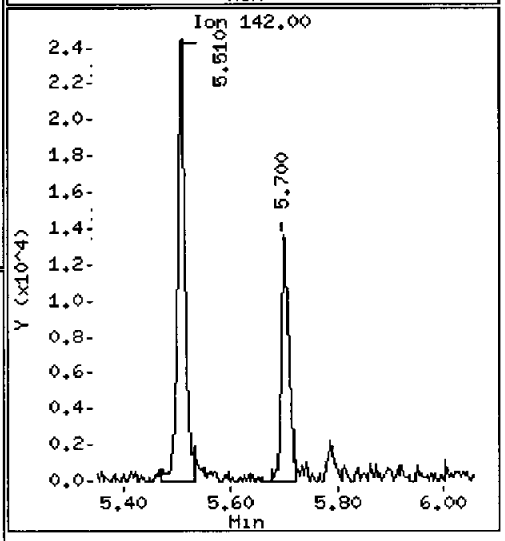
15 1-methylnaphthalene

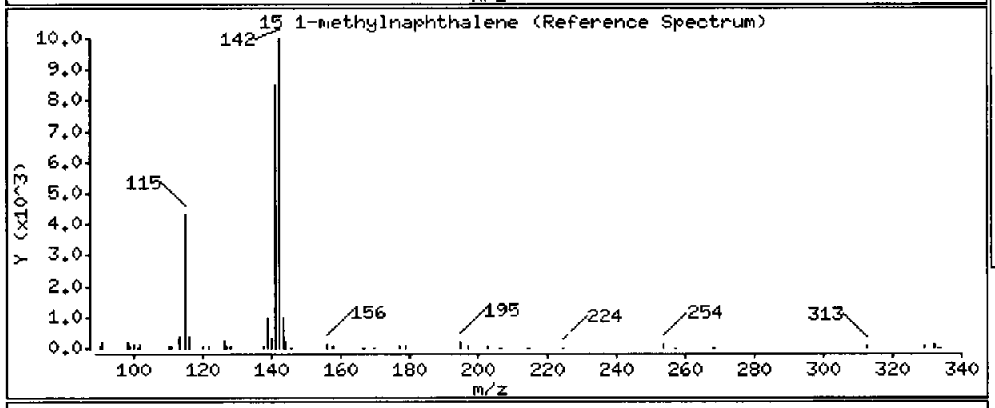
Concentration: 6.128 ug/kg

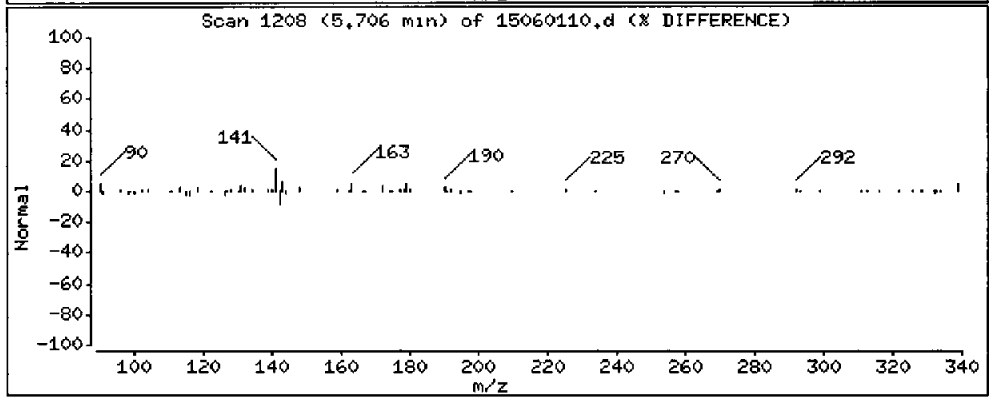












Data File: /chem3/nt8.i/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.i

Sample Info: AGC9F

Volume Injected (uL): 1.0

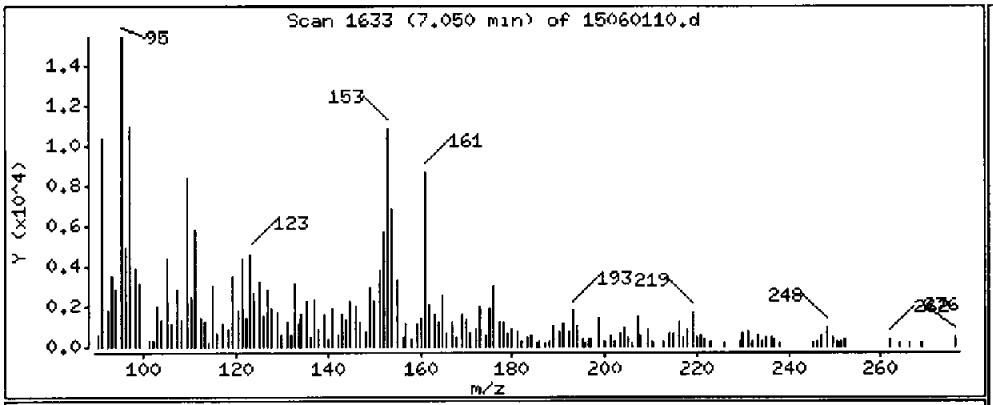
Operator: JZ

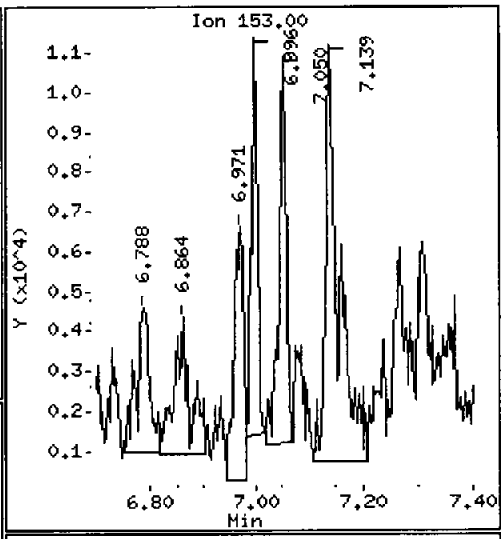
Column phase: ZB-35

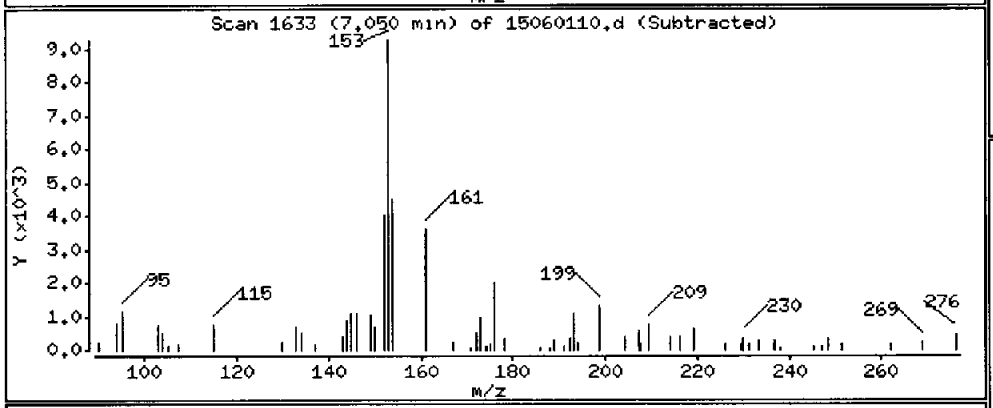
Column diameter: 0.25

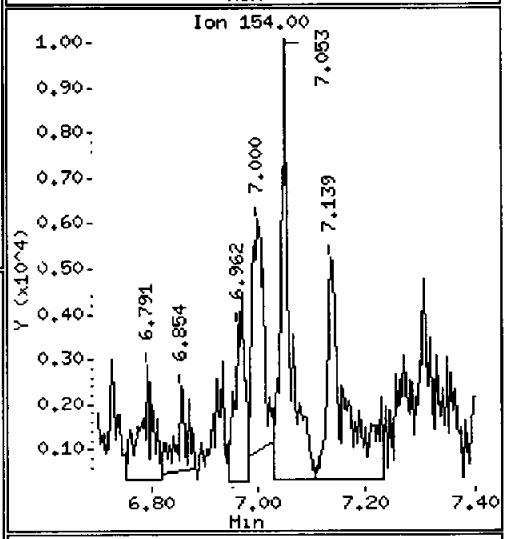
23 Acenaphthene

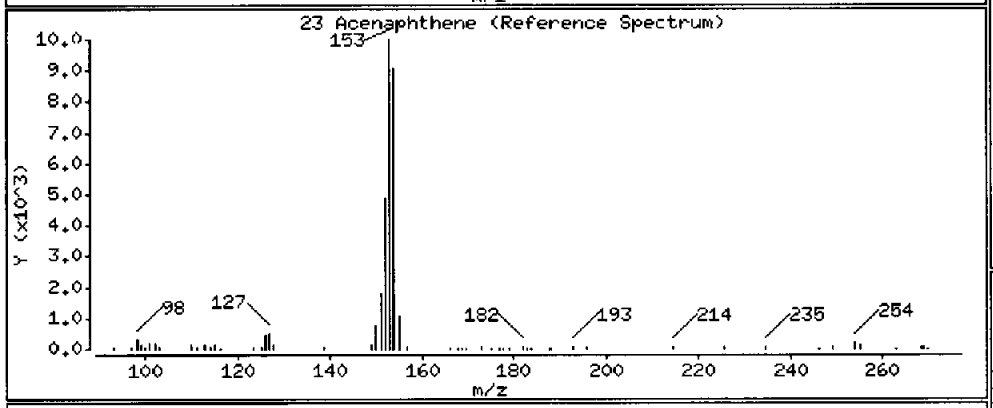
Concentration: 3.900 ug/kg

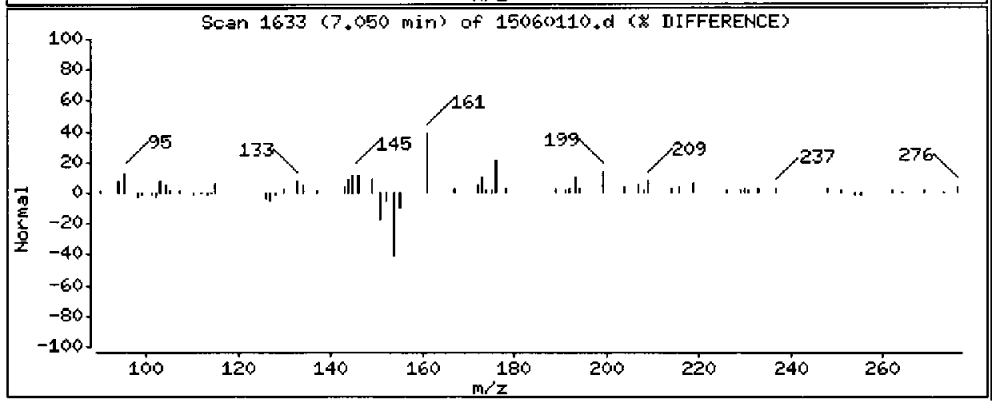


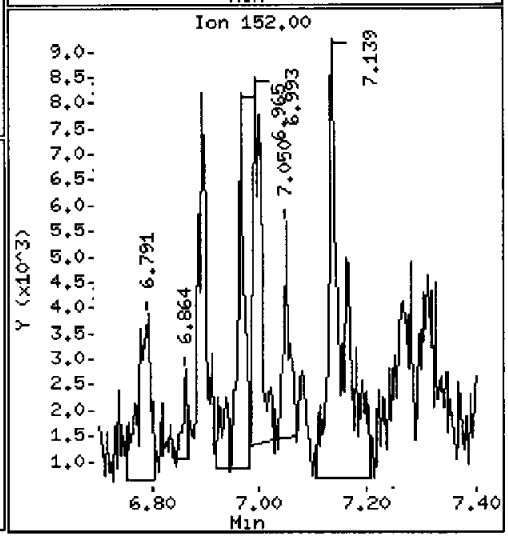












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

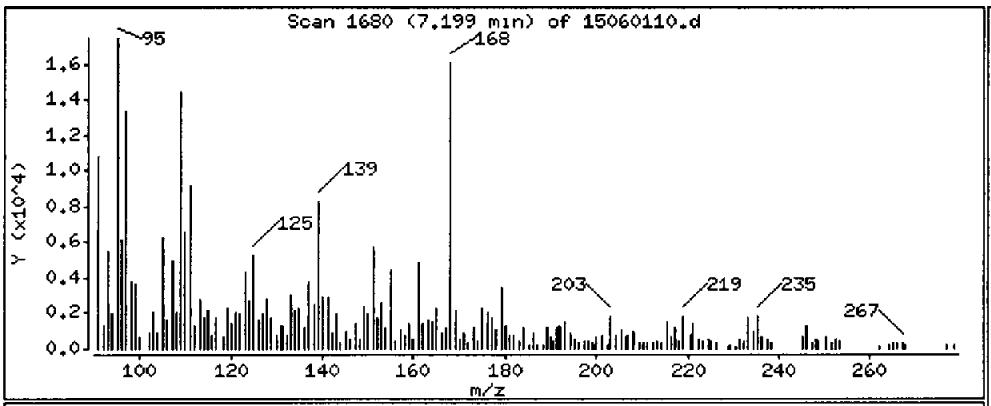
Operator: JZ

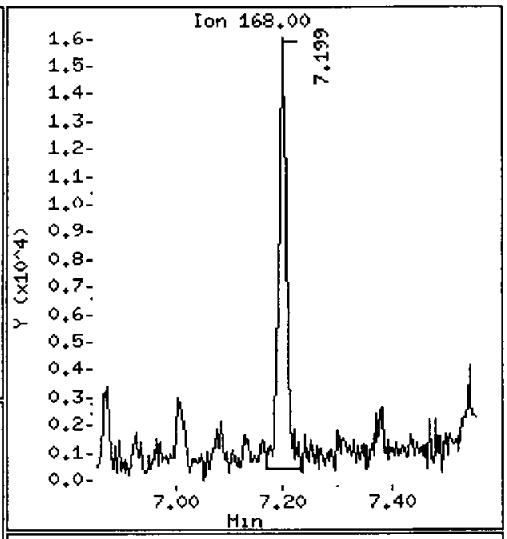
Column phase: ZB-35

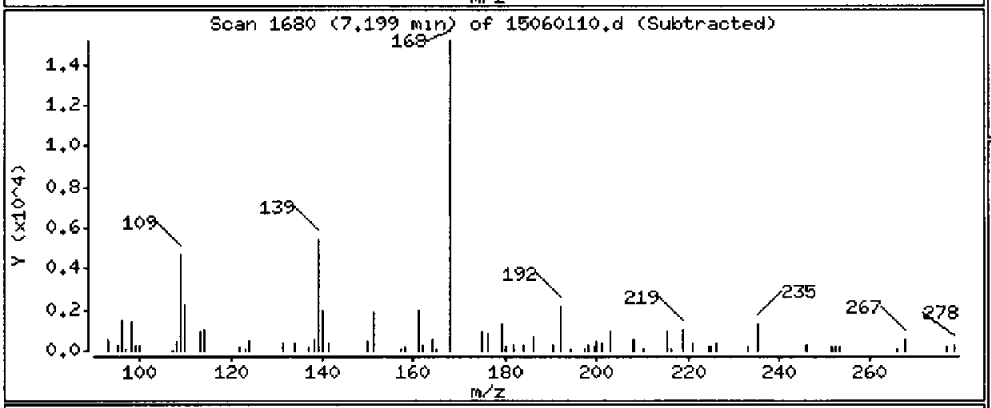
Column diameter: 0.25

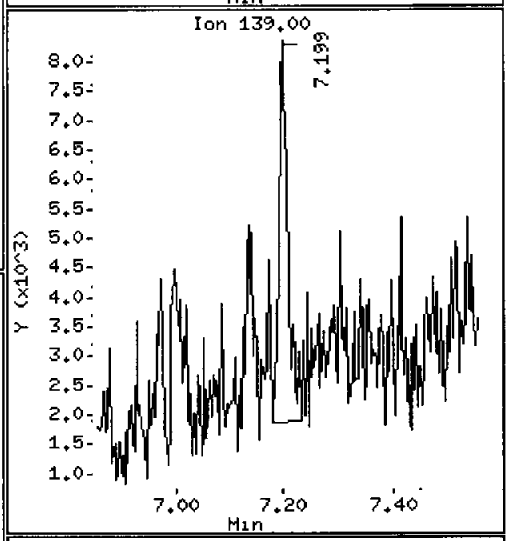
11 Dibenzofuran

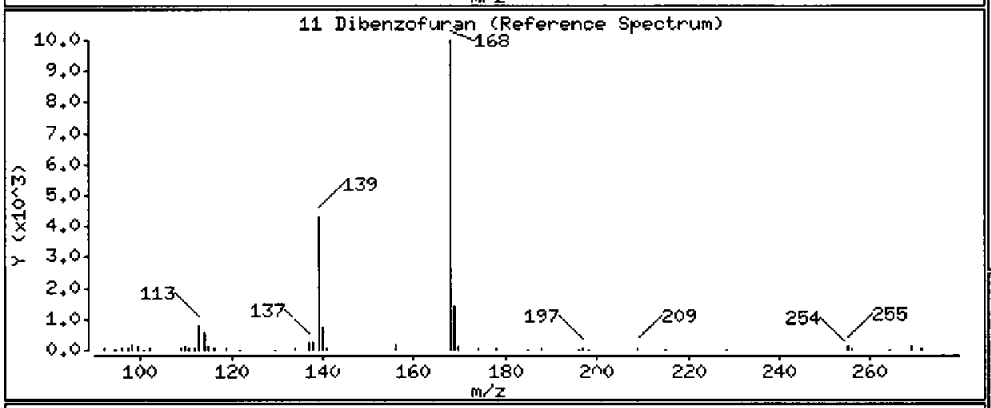
Concentration: 4.647 ug/kg

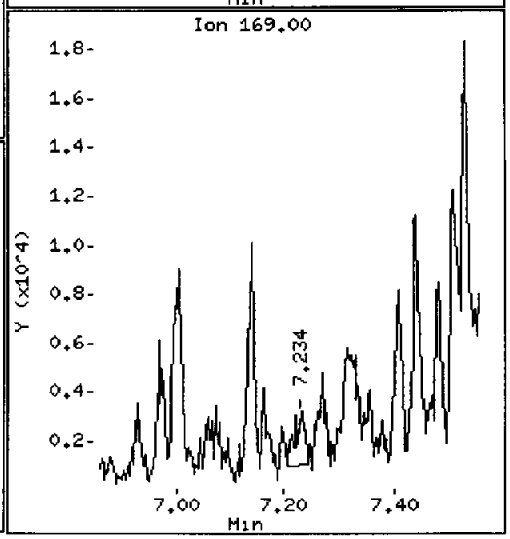


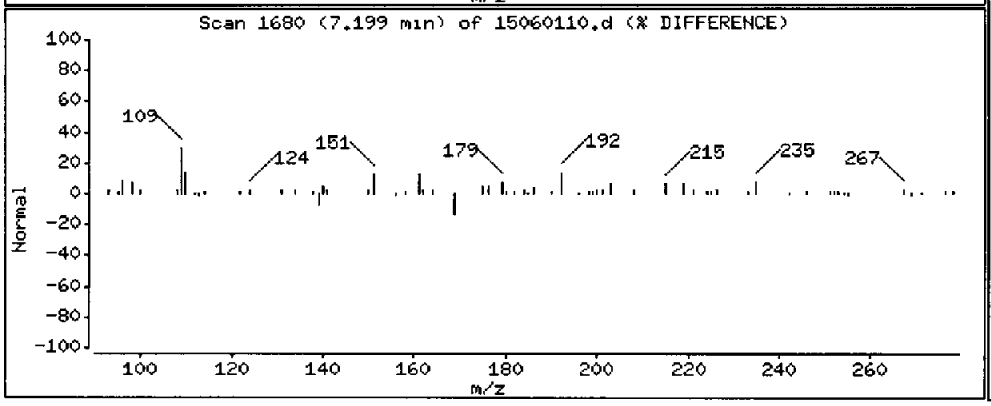












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

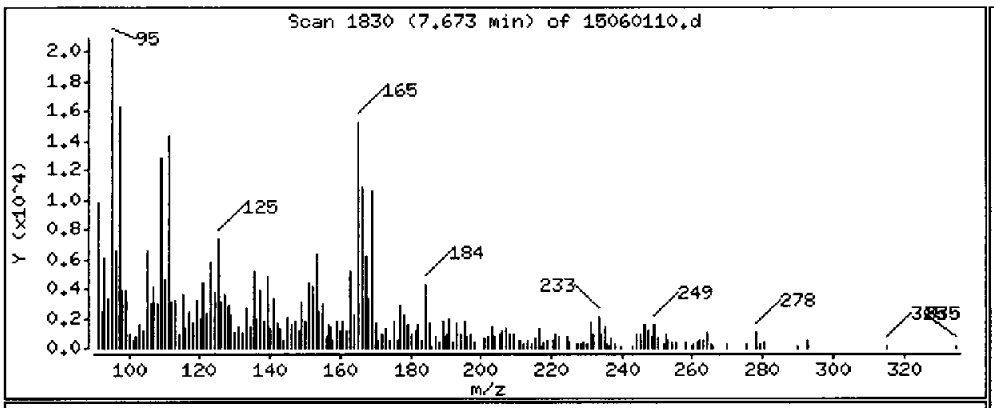
Operator: JZ

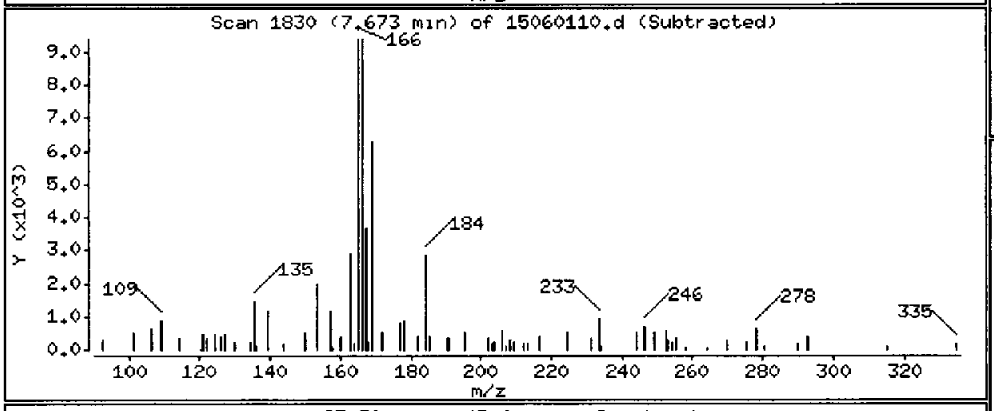
Column phase: ZB-35

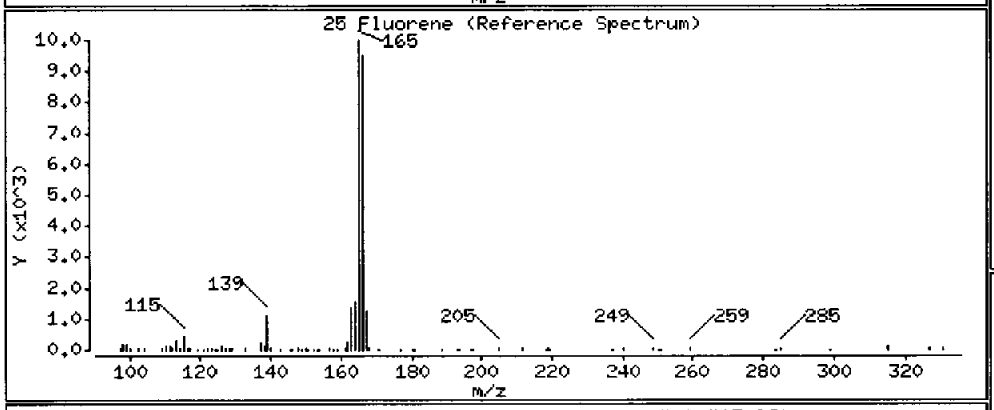
Column diameter: 0.25

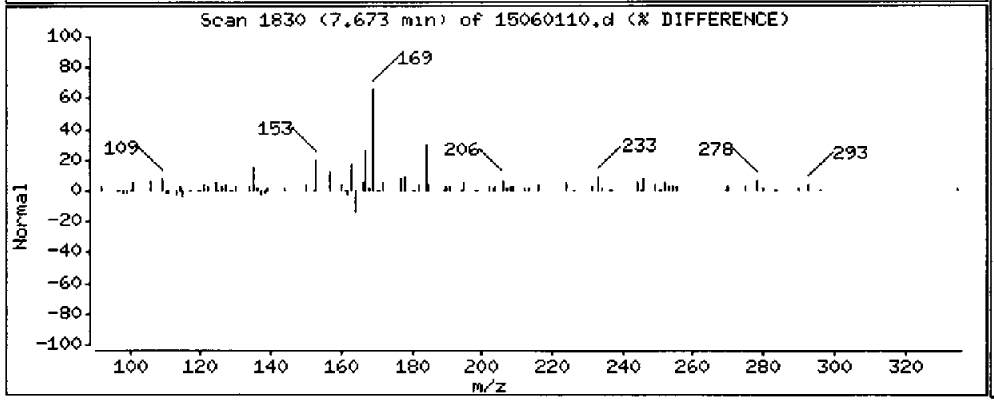
25 Fluorene

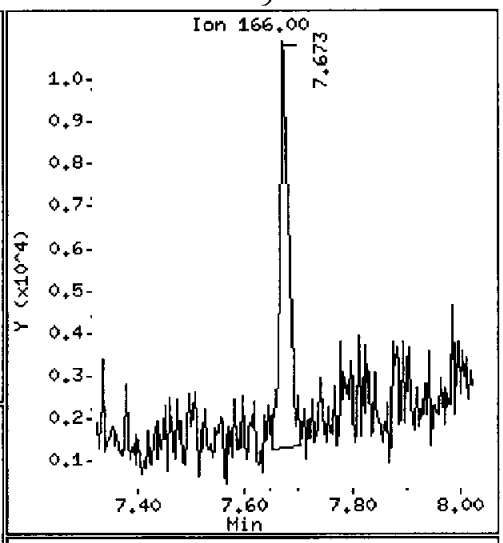
Concentration: 3.986 ug/kg

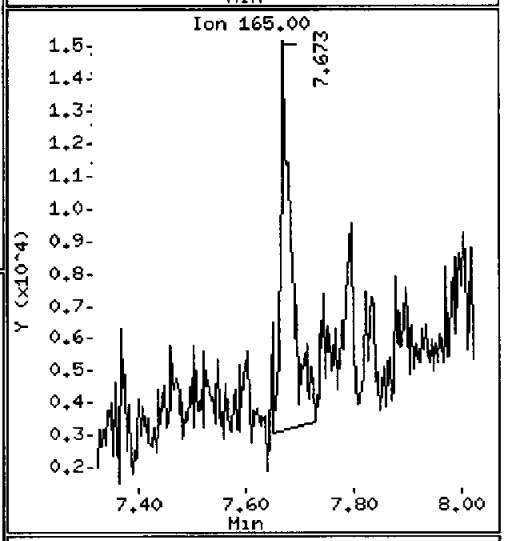


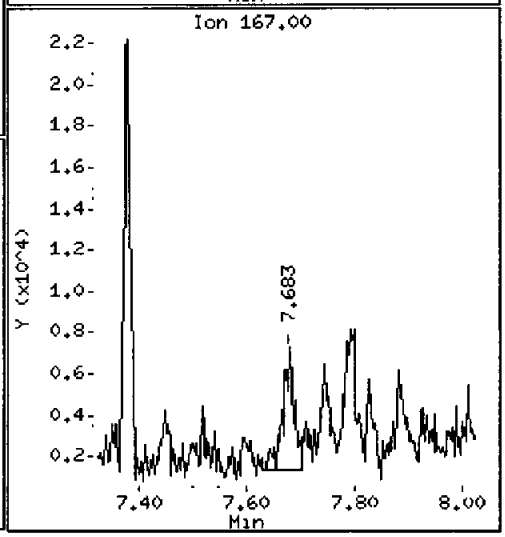












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

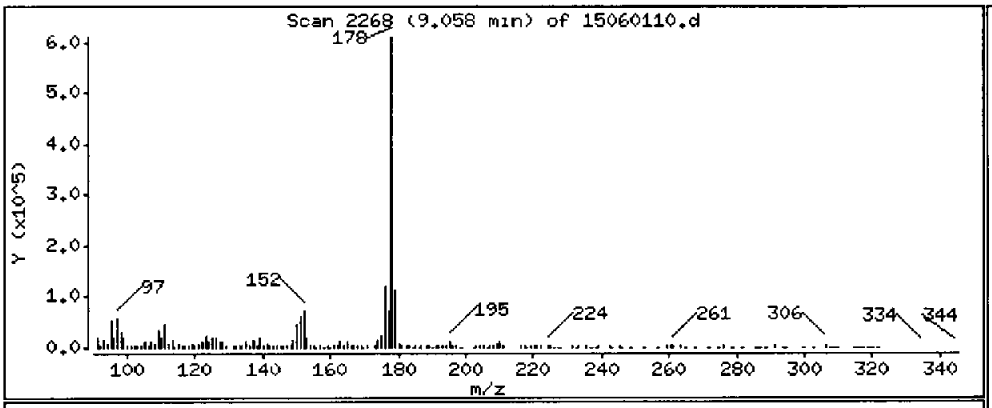
Operator: JZ

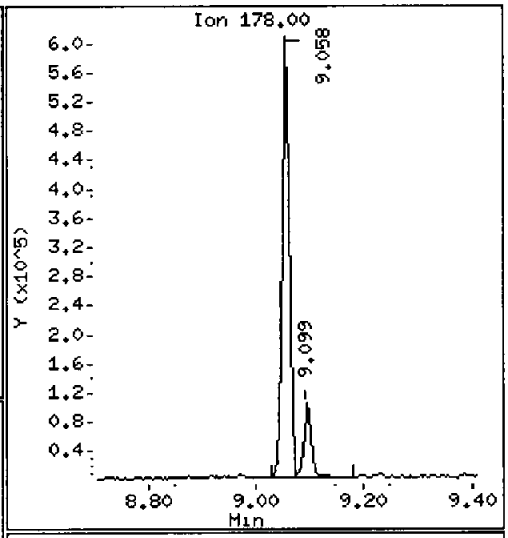
Column phase: ZB-35

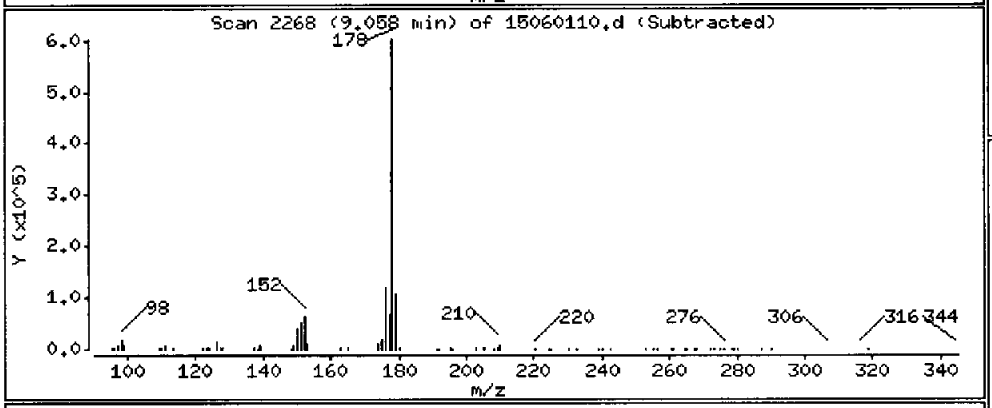
Column diameter: 0.25

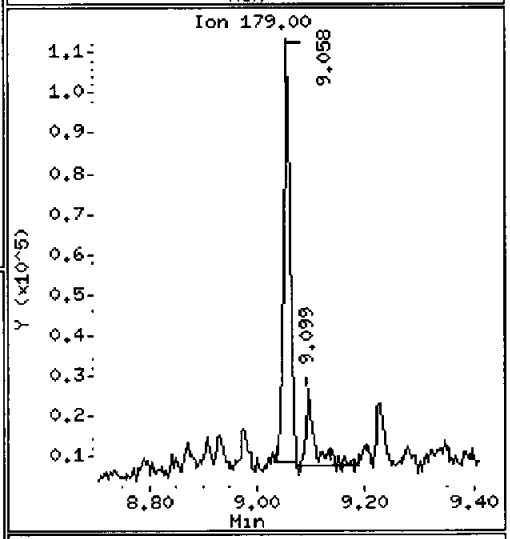
30 Phenanthrene

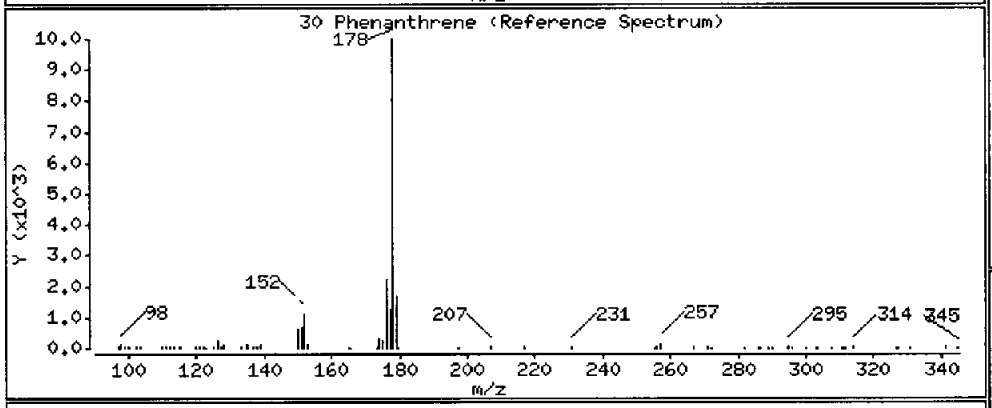
Concentration: 135.1 ug/kg

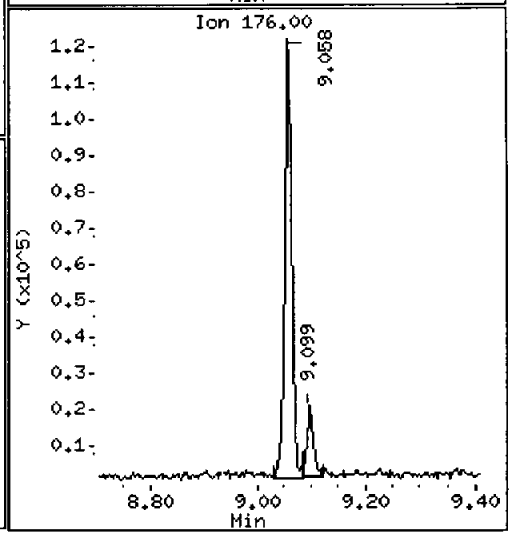


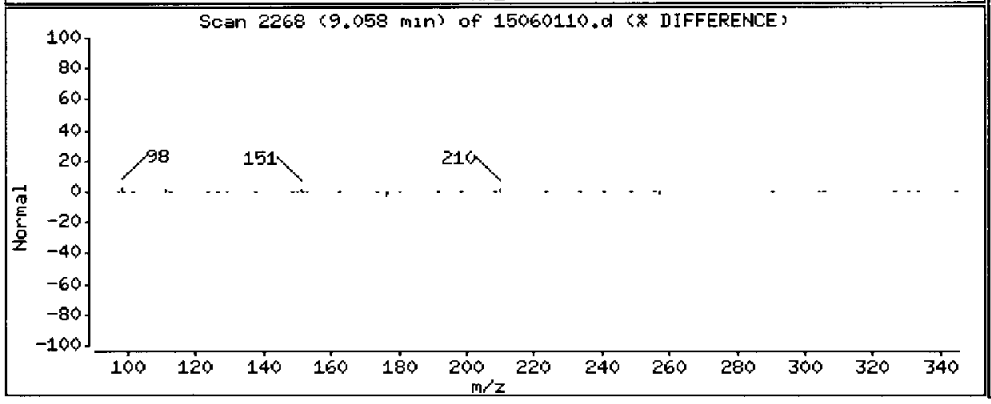












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

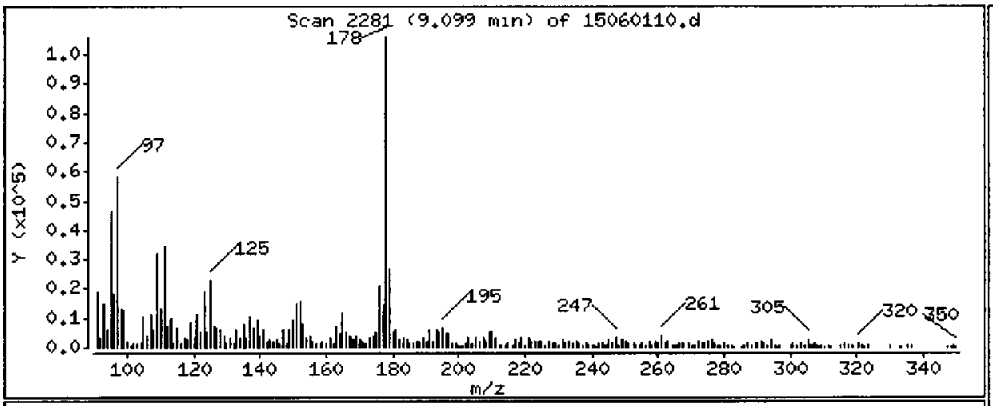
Operator: JZ

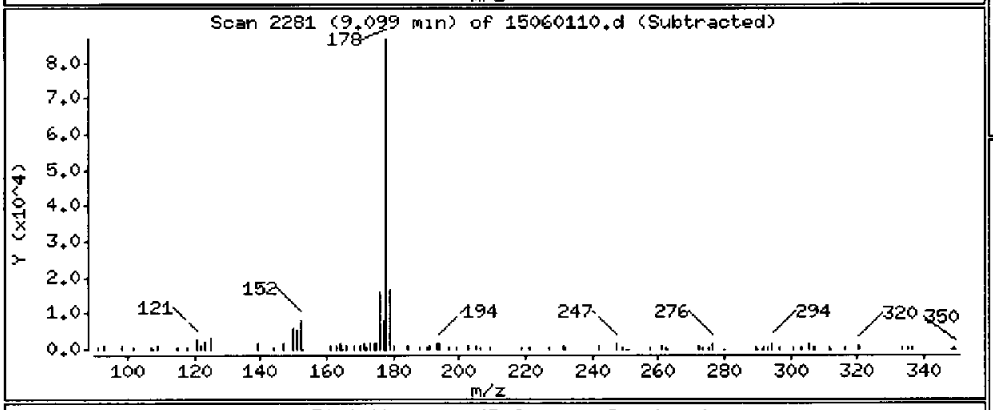
Column phase: ZB-35

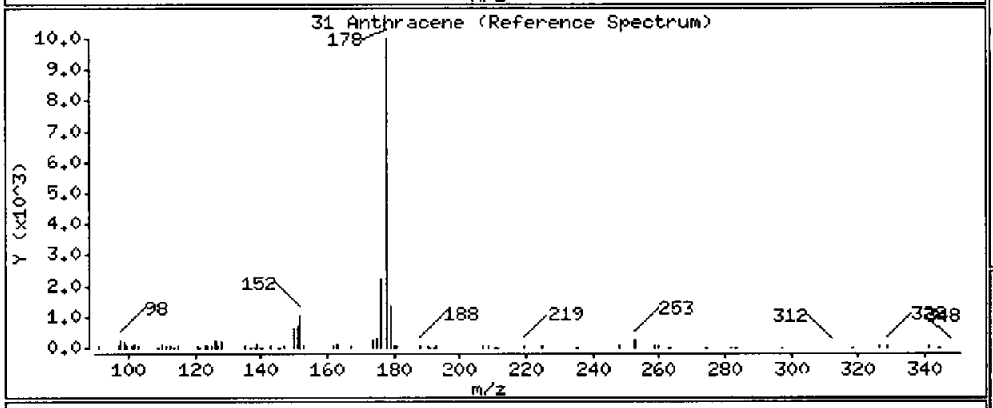
Column diameter: 0.25

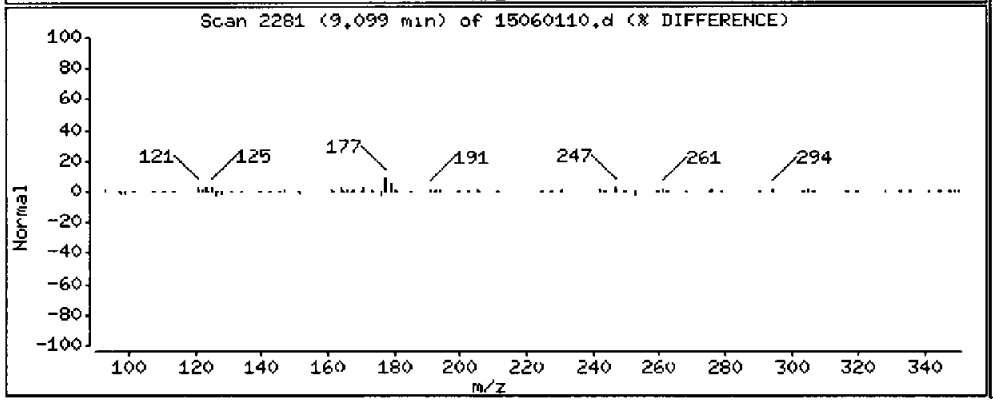
31 Anthracene

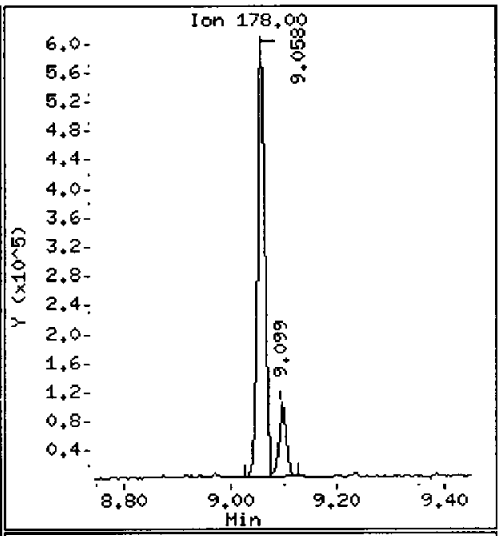
Concentration: 25.26 ug/kg

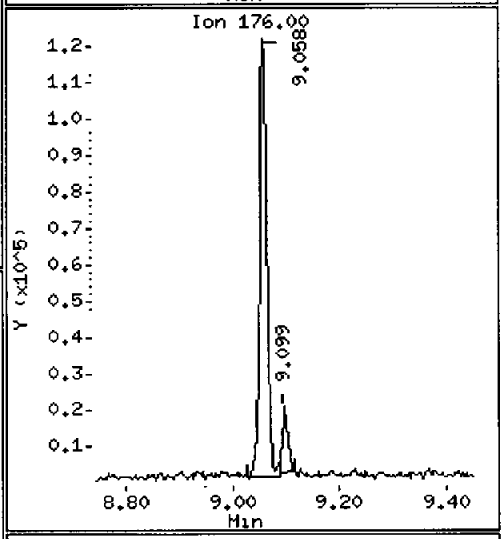


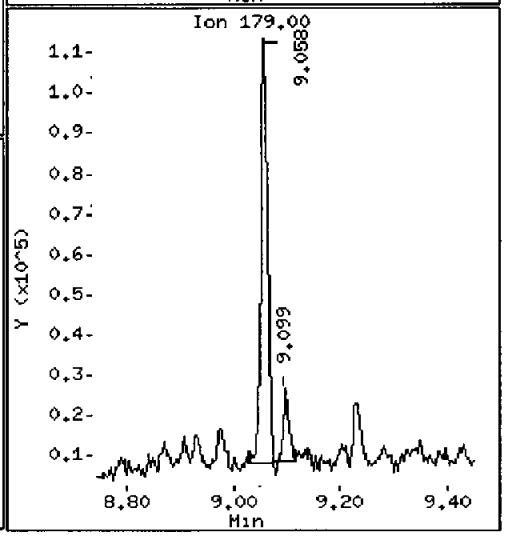












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

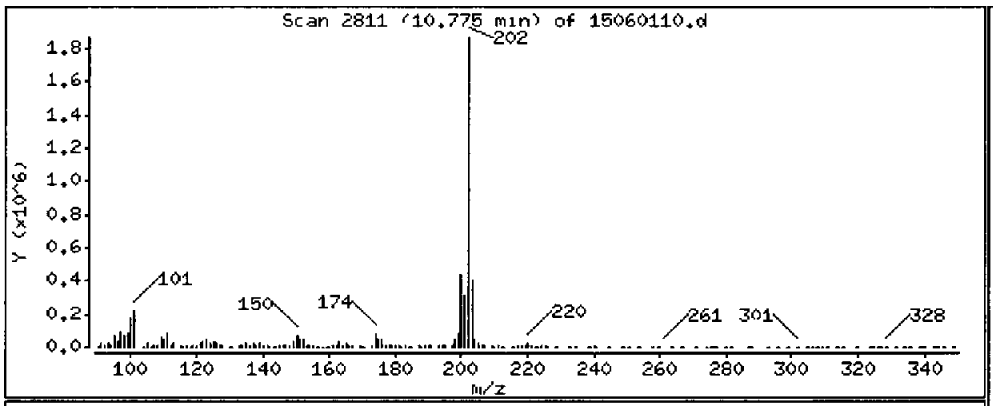
Operator: JZ

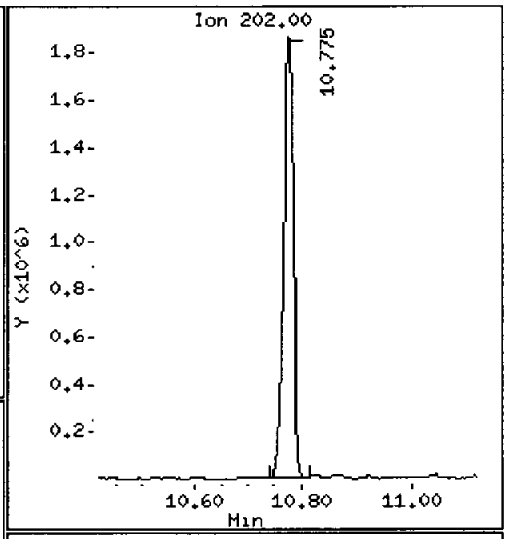
Column phase: ZB-35

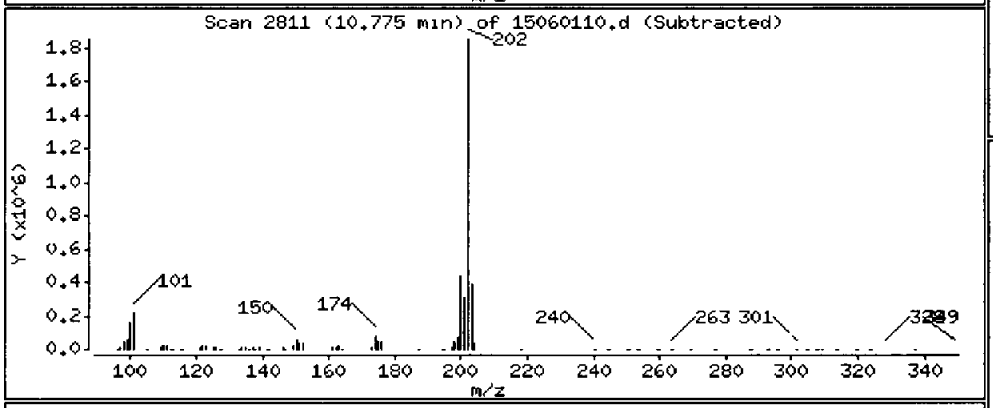
Column diameter: 0.25

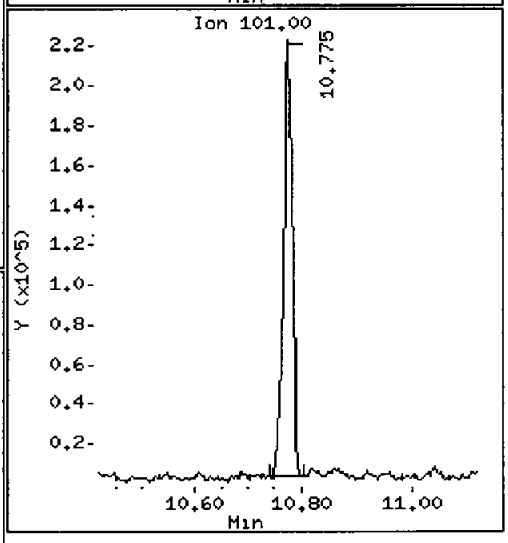
36 Fluoranthene

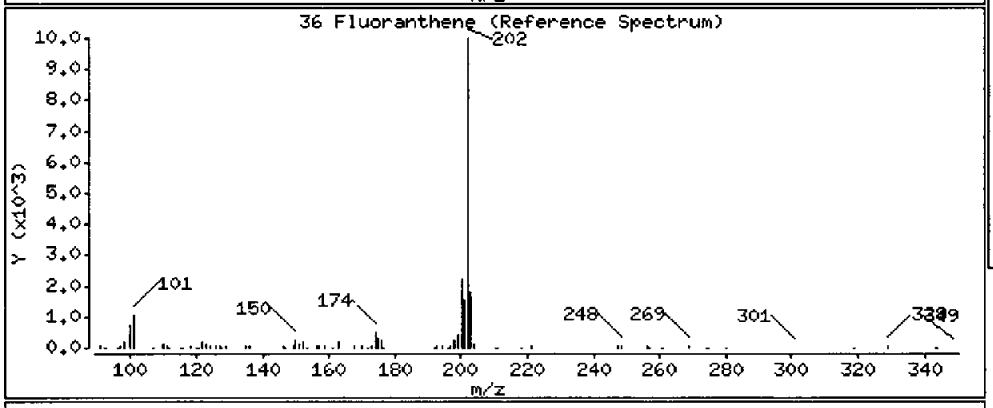
Concentration: 467.4 ug/kg

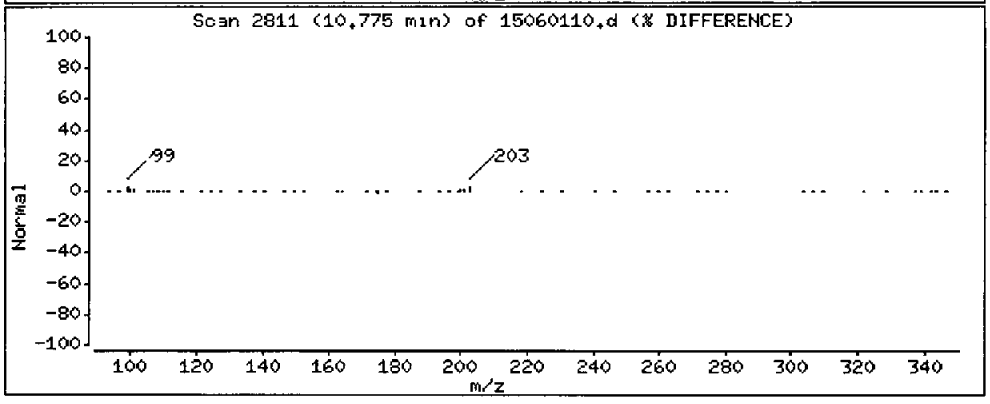












Data File: /chem3/nt8.i/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.i

Sample Info: AGC9F

Volume Injected (uL): 1.0

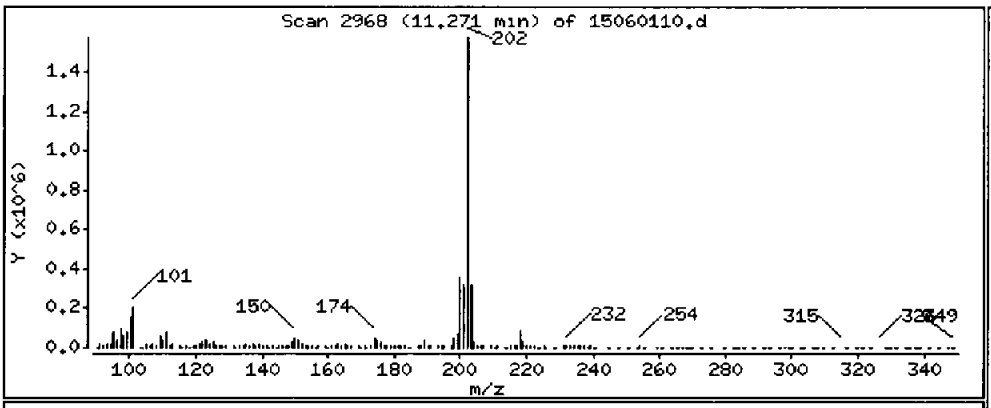
Operator: JZ

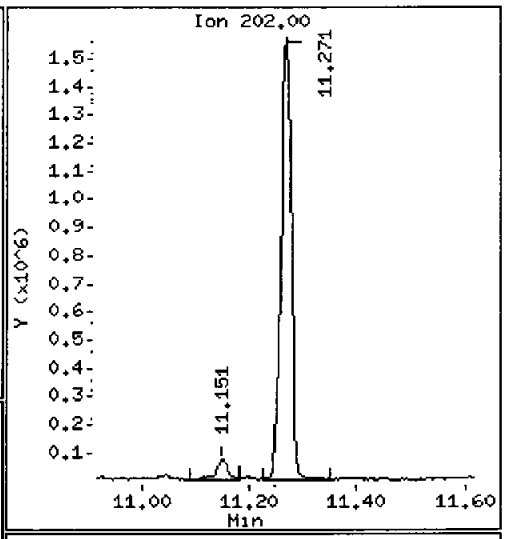
Column phase: ZB-35

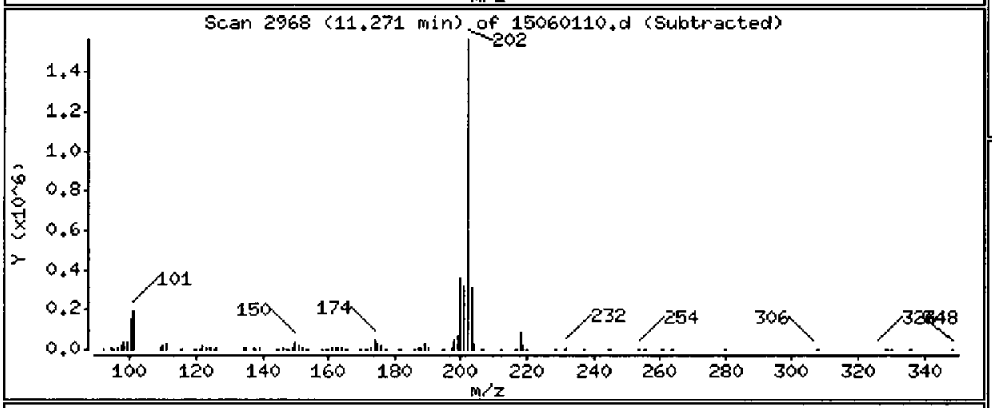
Column diameter: 0.25

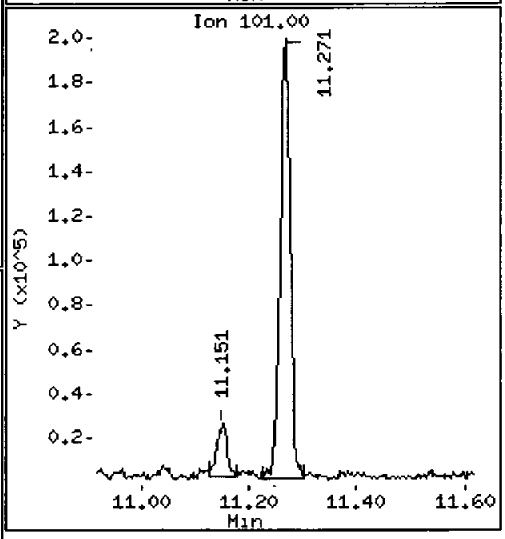
39 Pyrene

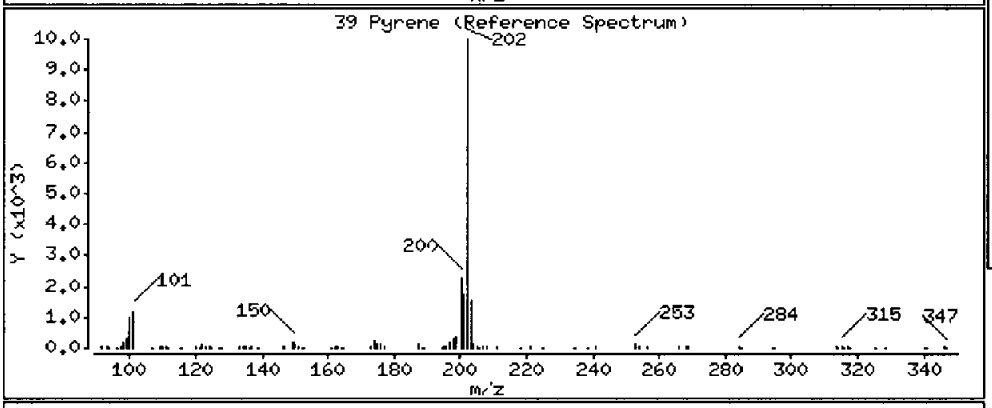
Concentration: 377.5 ug/kg

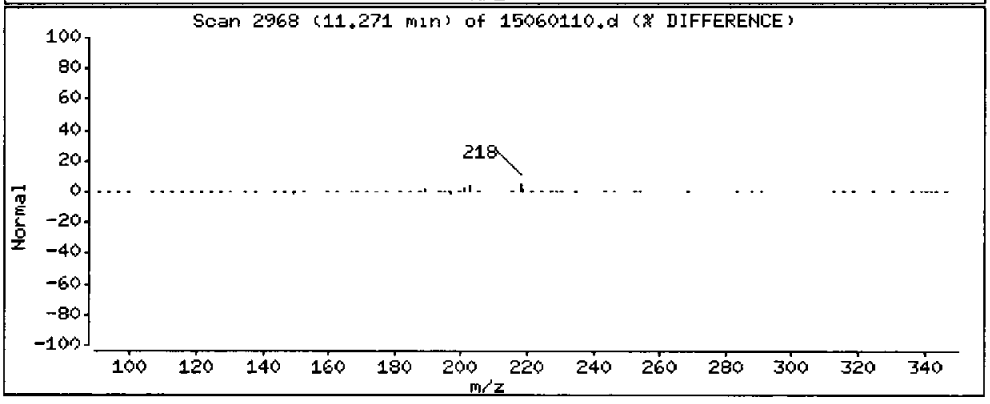












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

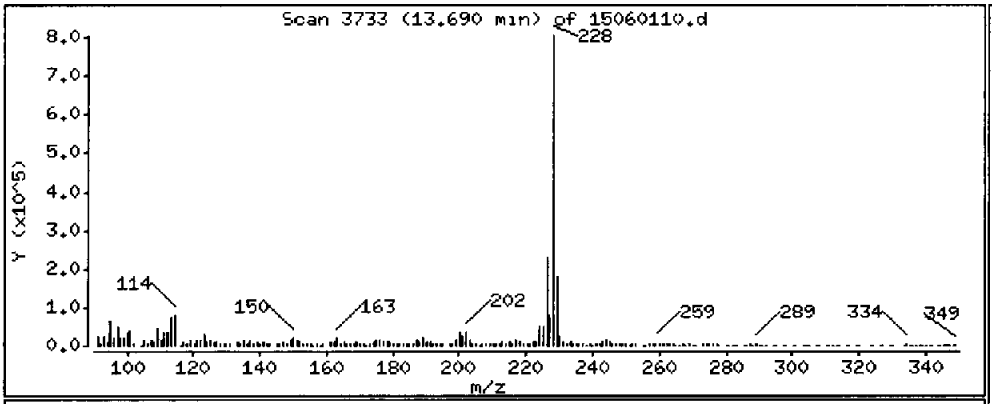
Operator: JZ

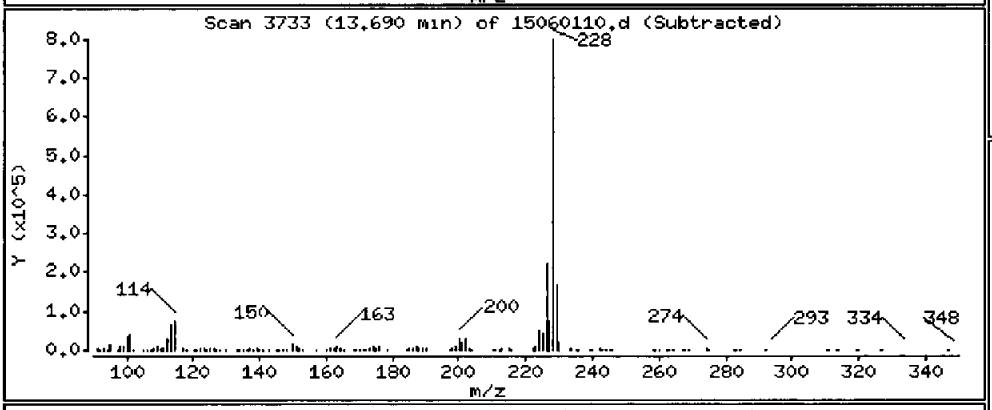
Column phase: ZB-35

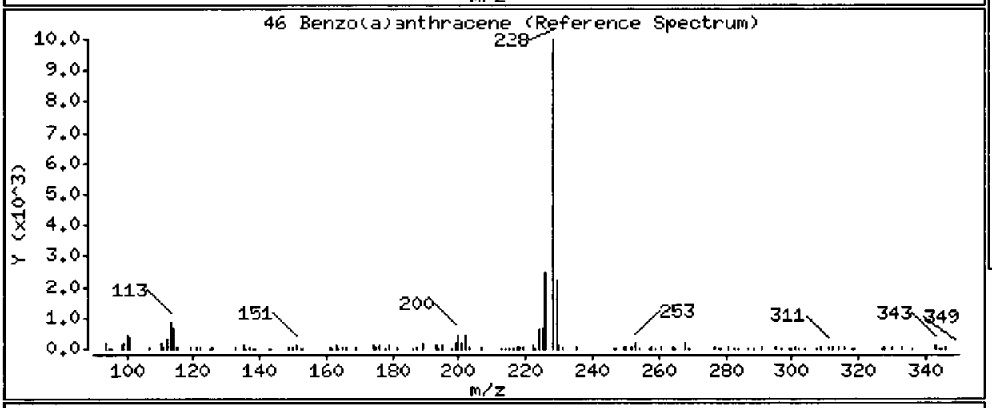
Column diameter: 0.25

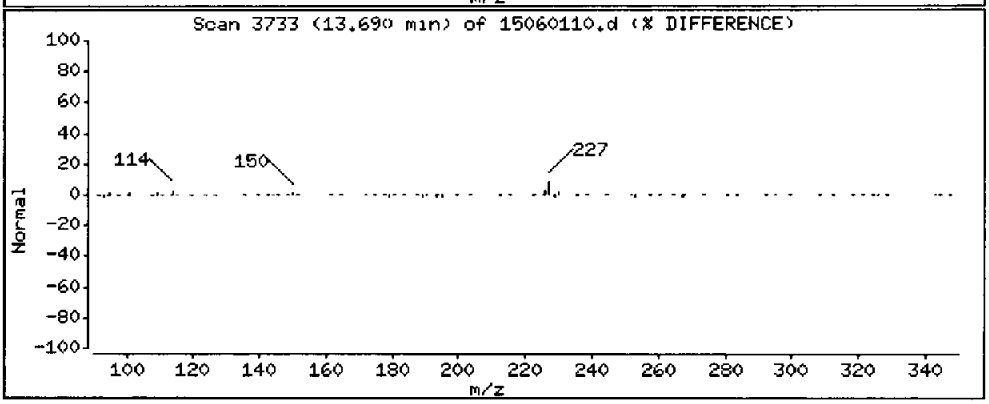
46 Benzo(a)anthracene

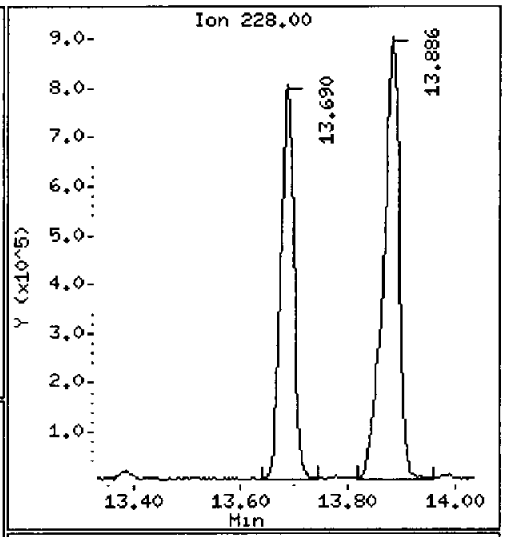
Concentration: 273.0 ug/kg

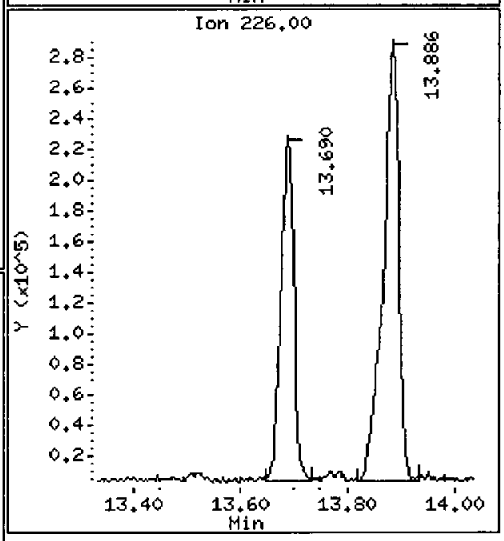












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

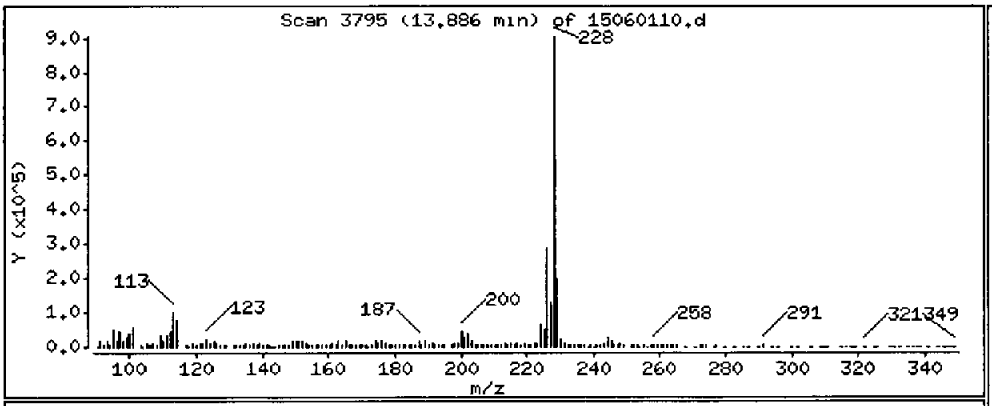
Operator: JZ

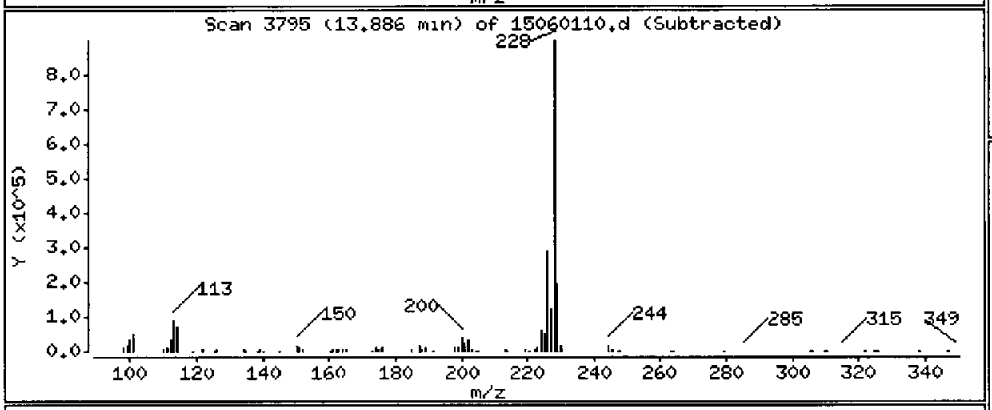
Column phase: ZB-35

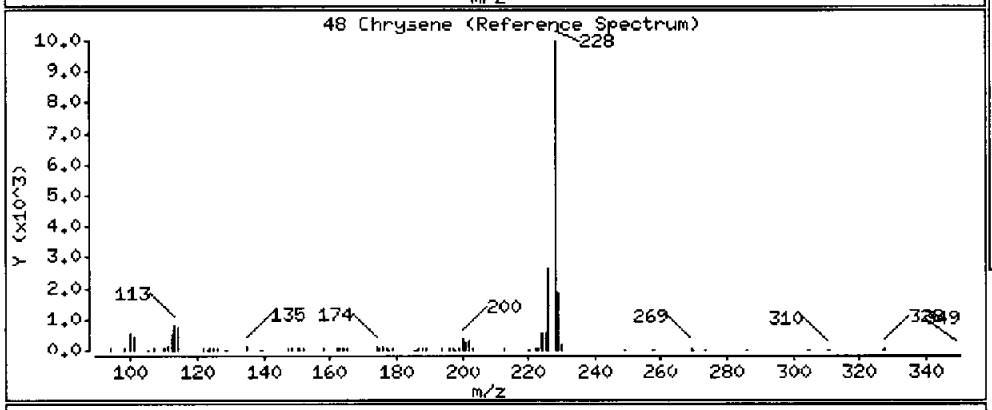
Column diameter: 0.25

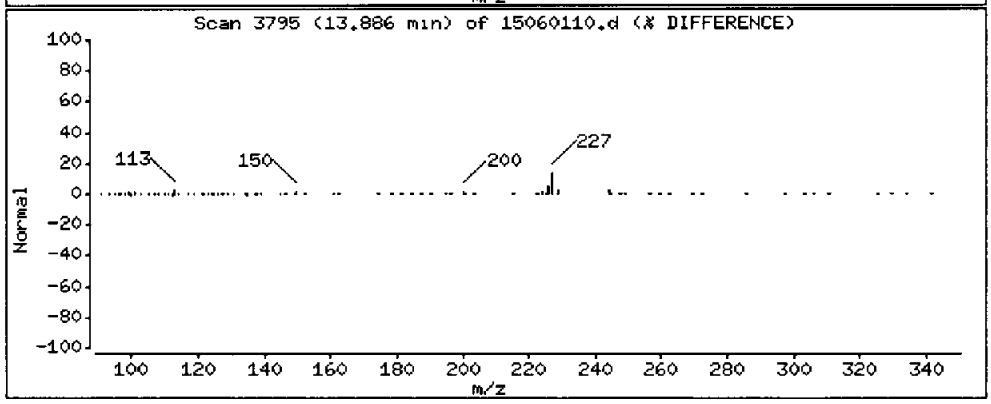
48 Chrysene

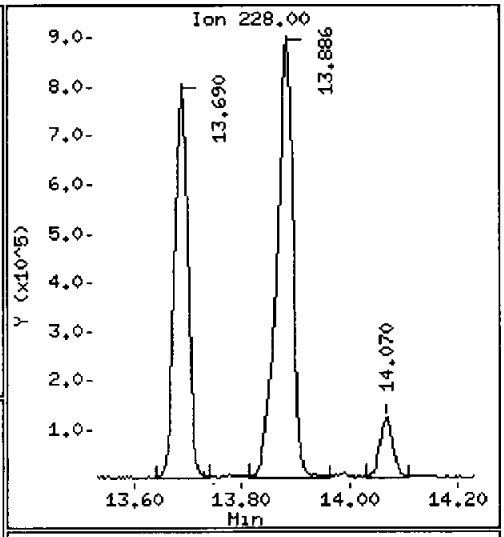
Concentration: 363.2 ug/kg

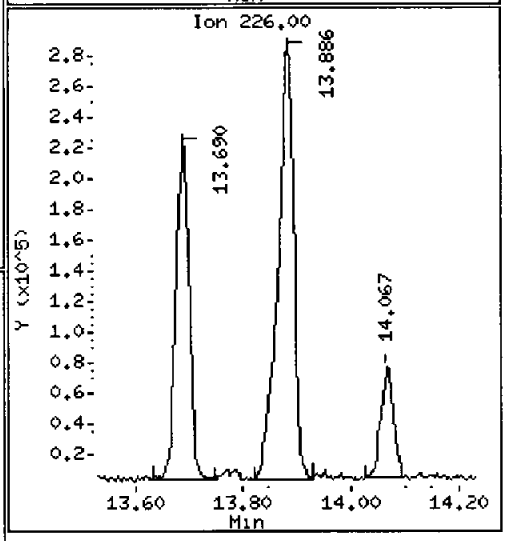












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

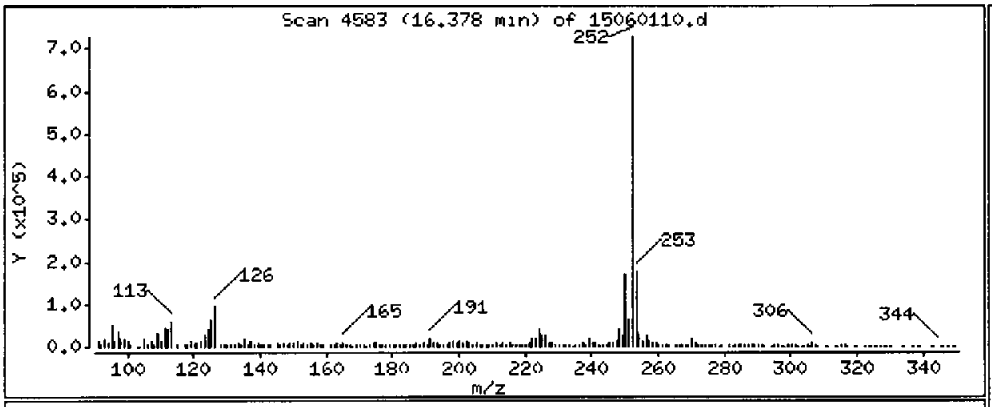
Operator: JZ

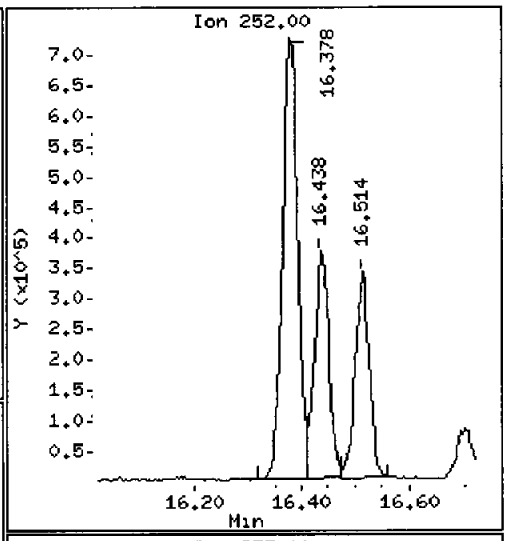
Column phase: ZB-35

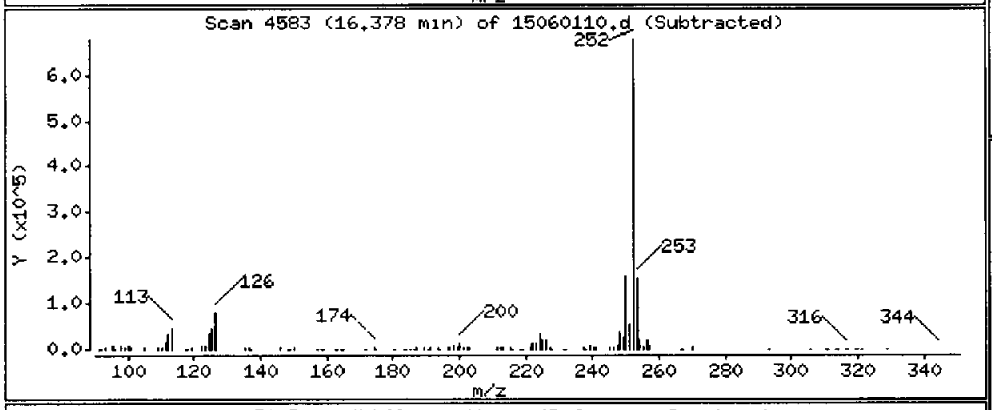
Column diameter: 0.25

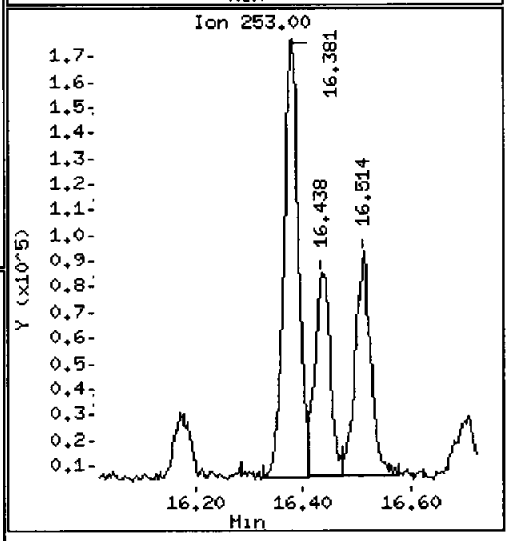
51 Benzo(b)fluoranthene

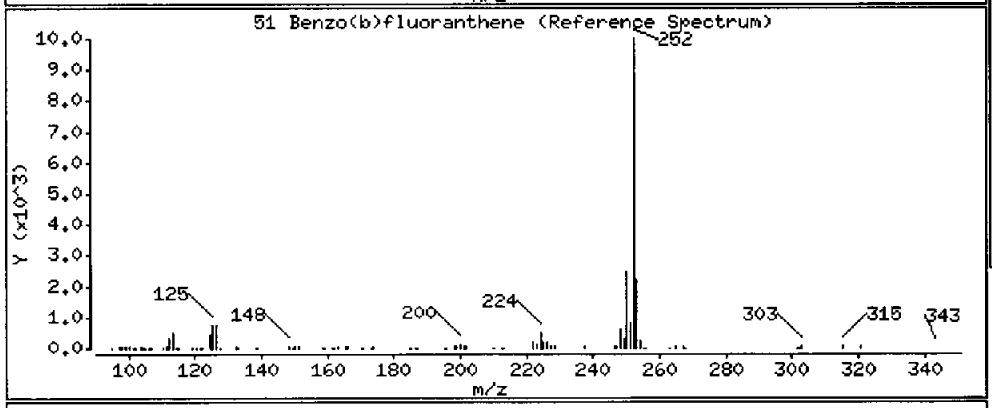
Concentration: 257.8 ug/kg

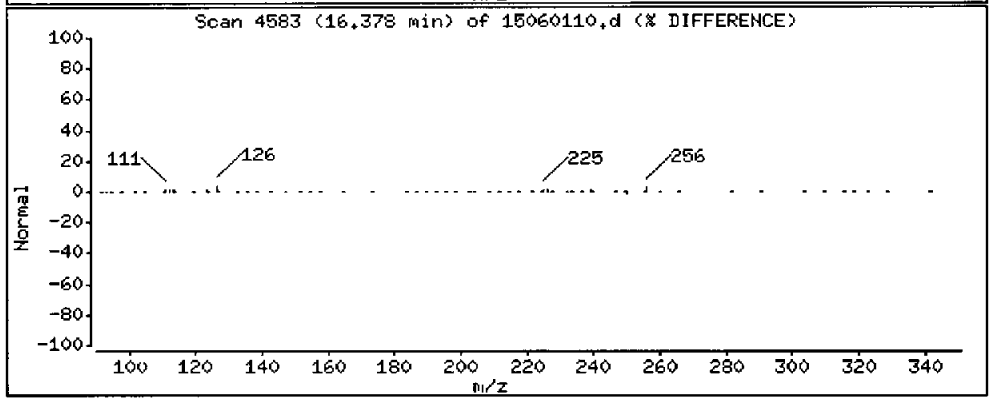












Data File: /chem3/nt8.i/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.i

Sample Info: AGC9F

Volume Injected (uL): 1.0

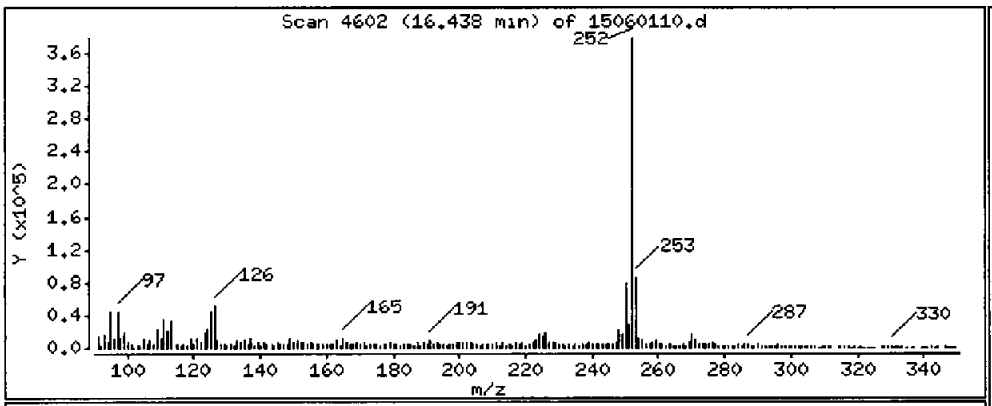
Operator: JZ

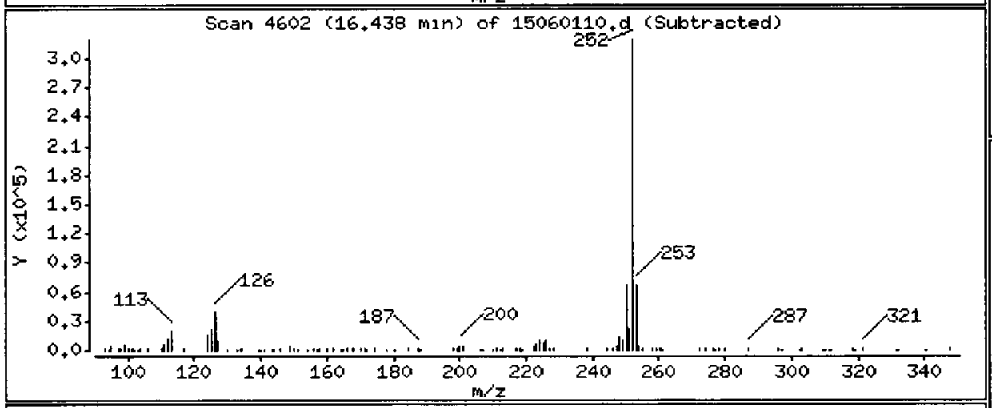
Column phase: ZB-35

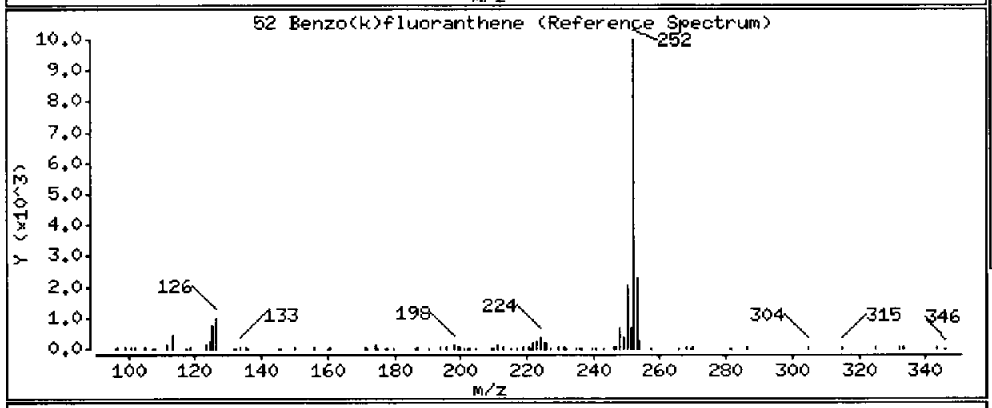
Column diameter: 0.25

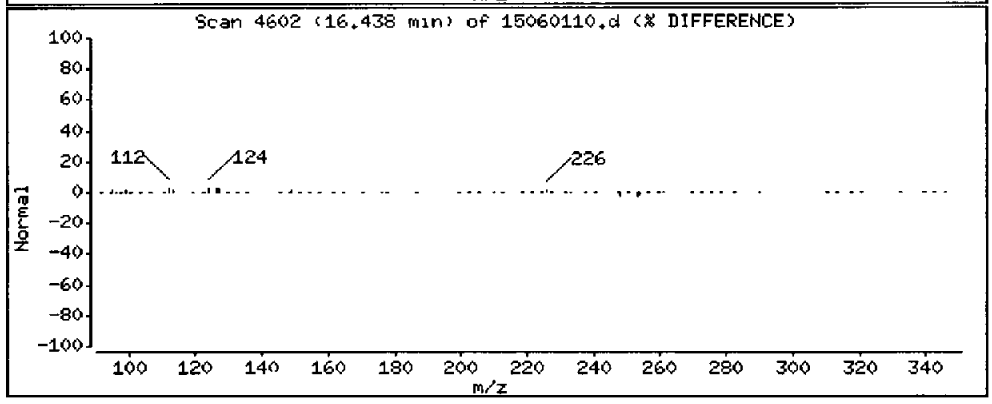
52 Benzo(k)fluoranthene

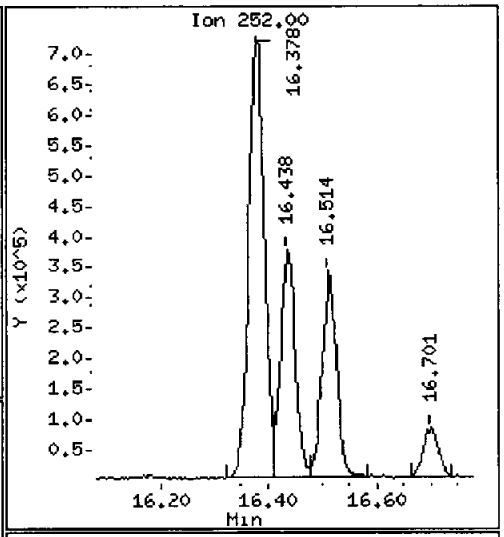
Concentration: 123.8 ug/kg

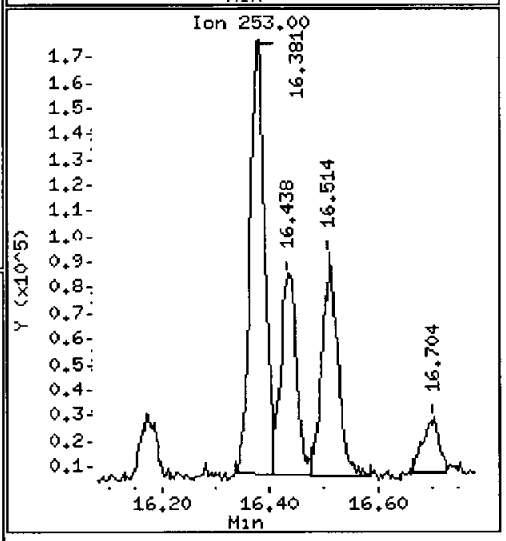












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

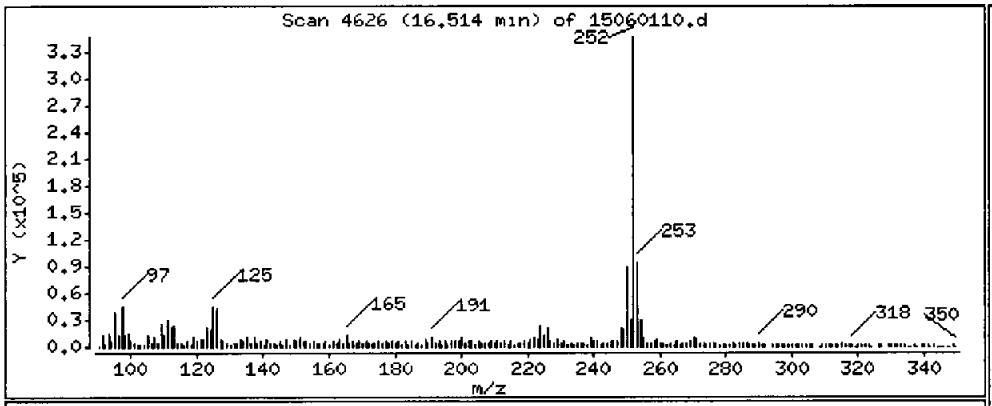
Operator: JZ

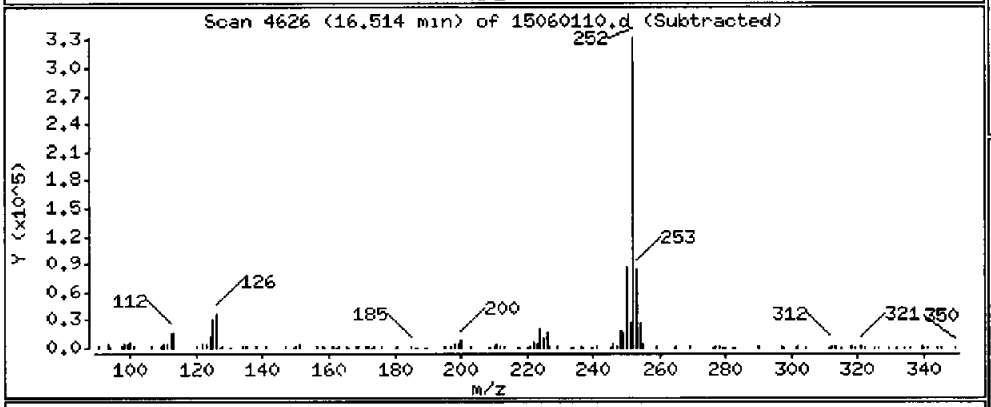
Column phase: ZB-35

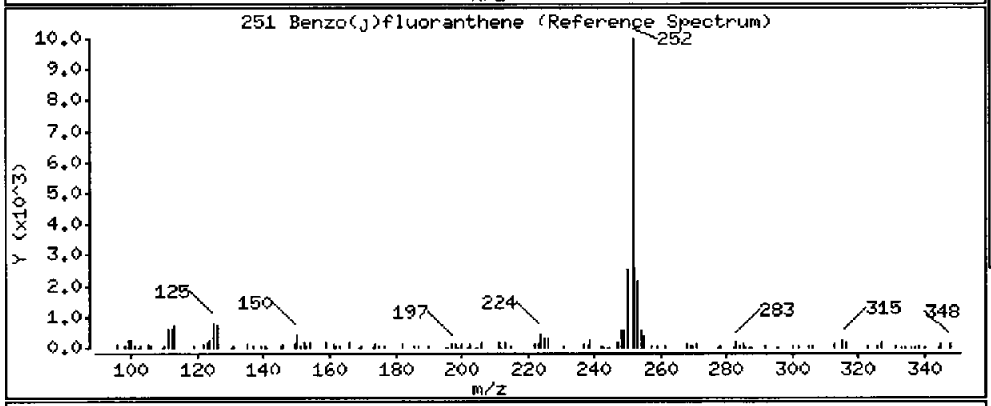
Column diameter: 0.25

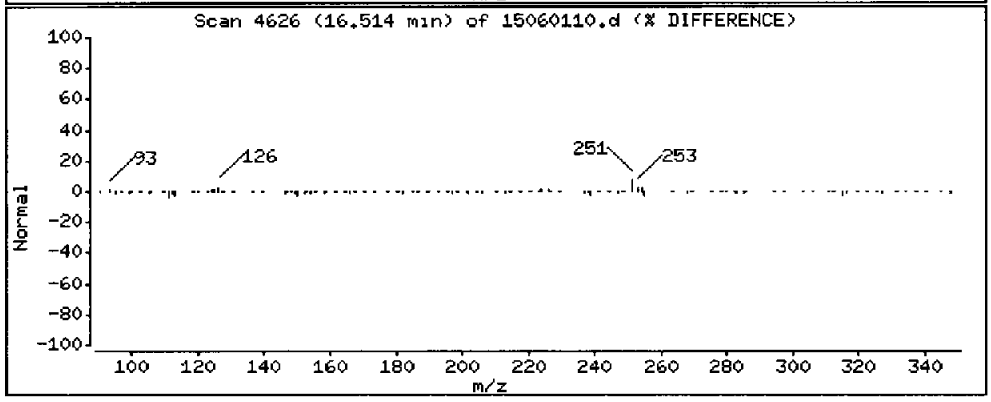
251 Benzo(j)fluoranthene

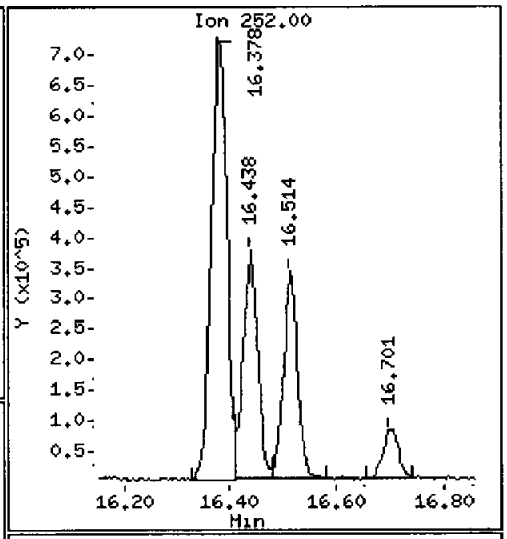
Concentration: 110.1 ug/kg

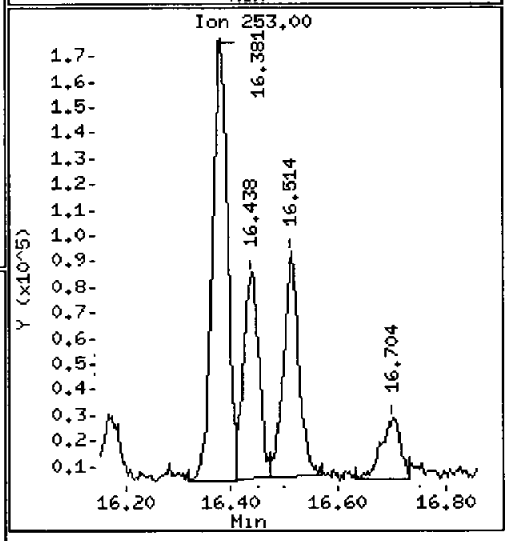












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

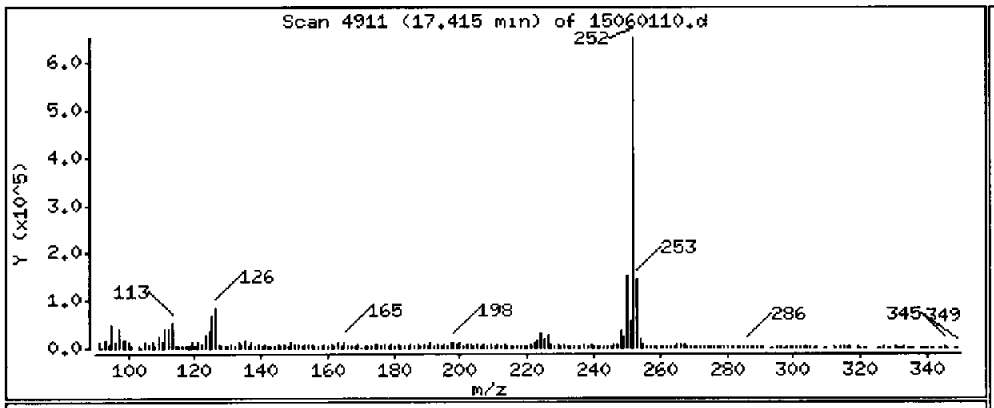
Operator: JZ

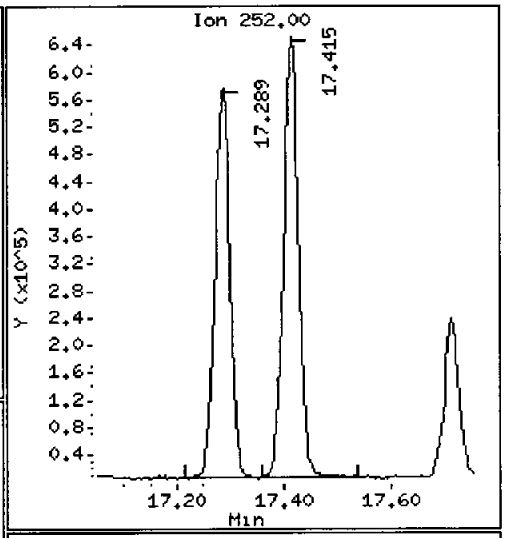
Column phase: ZB-35

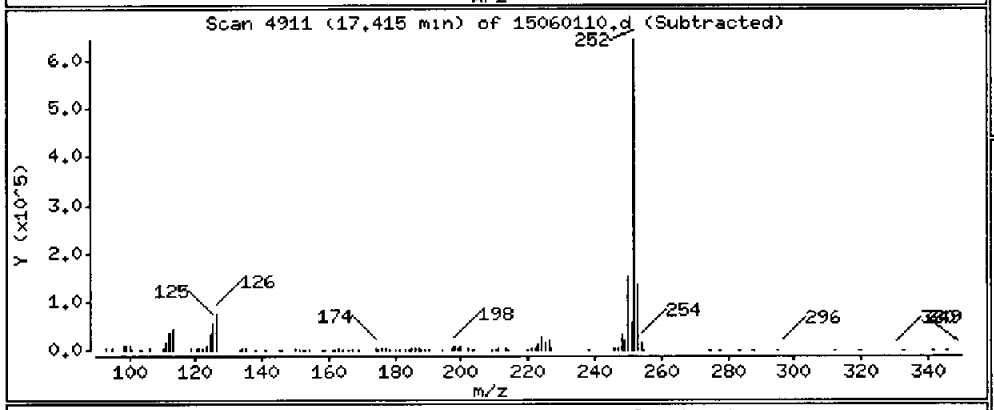
Column diameter: 0.25

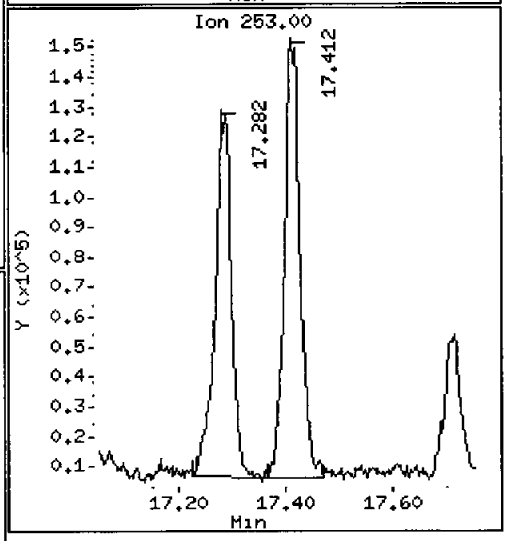
54 Benzo(a)pyrene

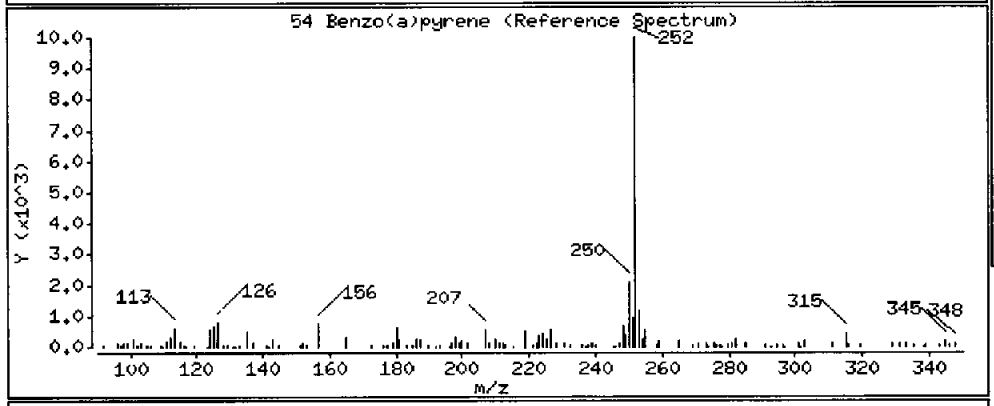
Concentration: 249.1 ug/kg

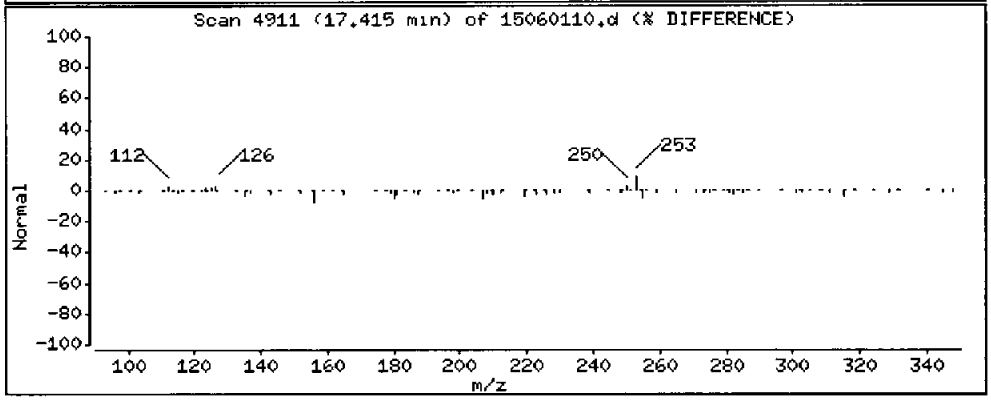












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

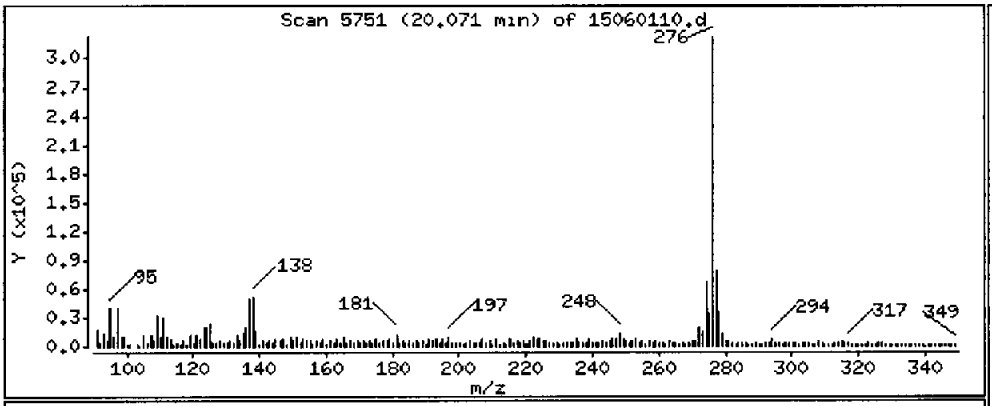
Operator: JZ

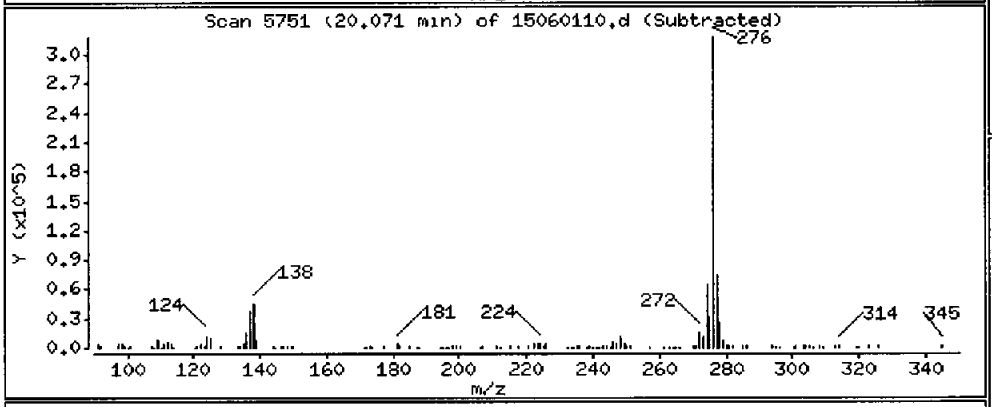
Column phase: ZB-35

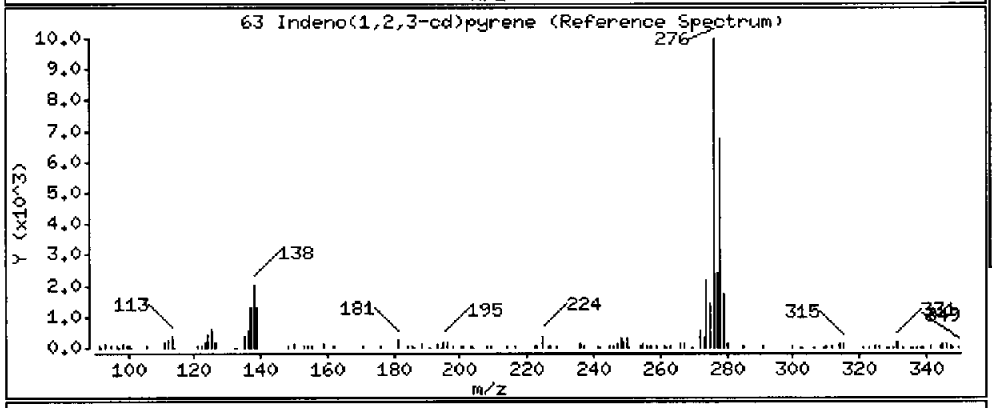
Column diameter: 0.25

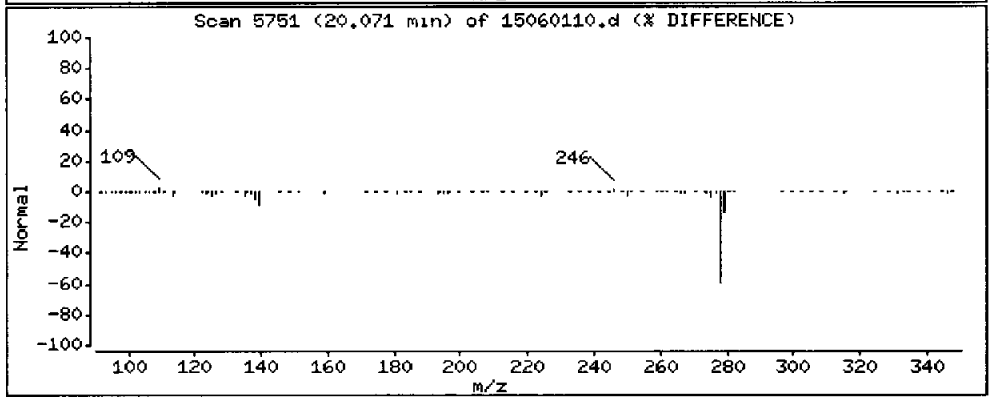
63 Indeno(1.2,3-cd)pyrene

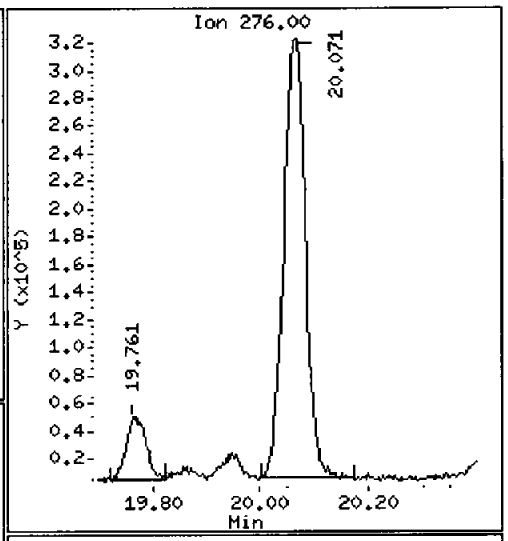
Concentration: 144.3 ug/kg

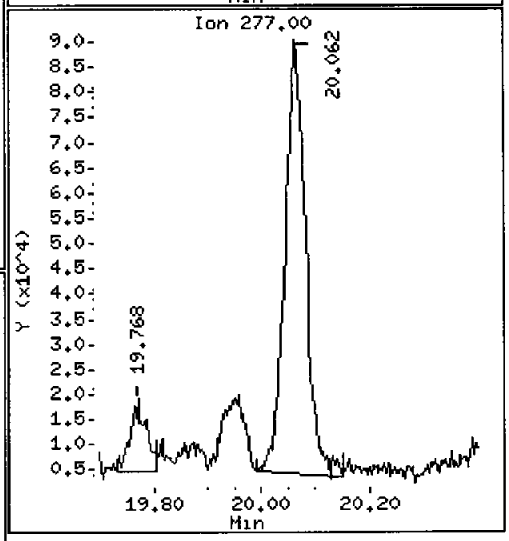












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

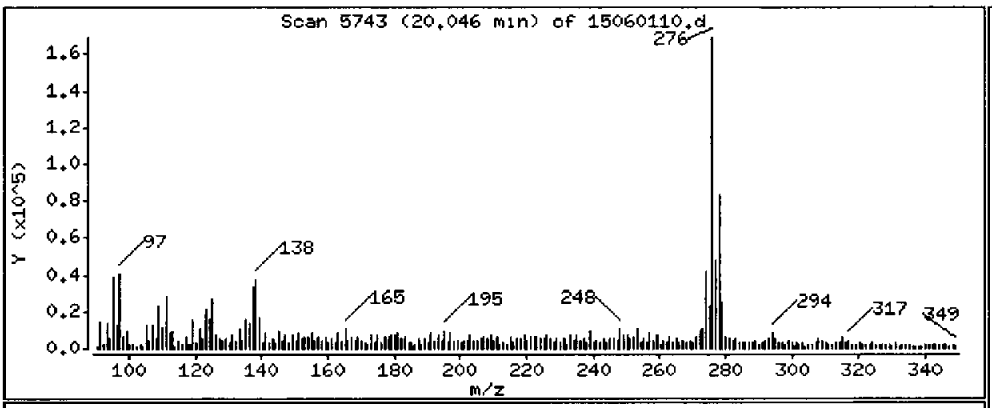
Operator: JZ

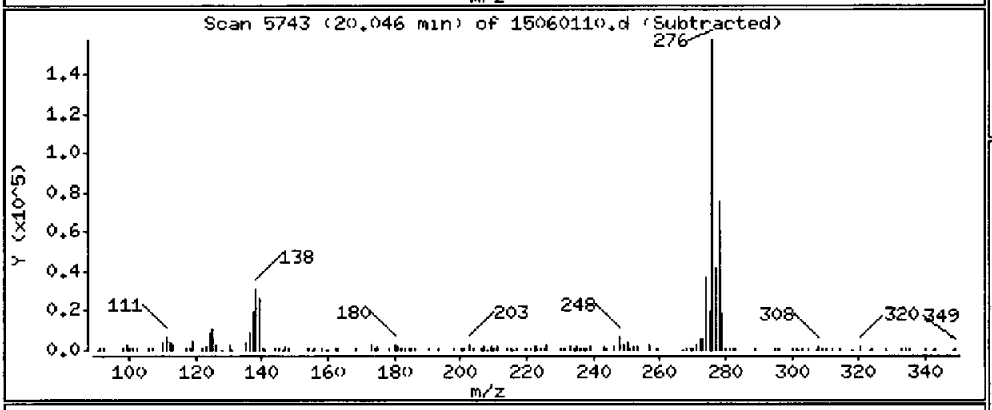
Column phase: ZB-35

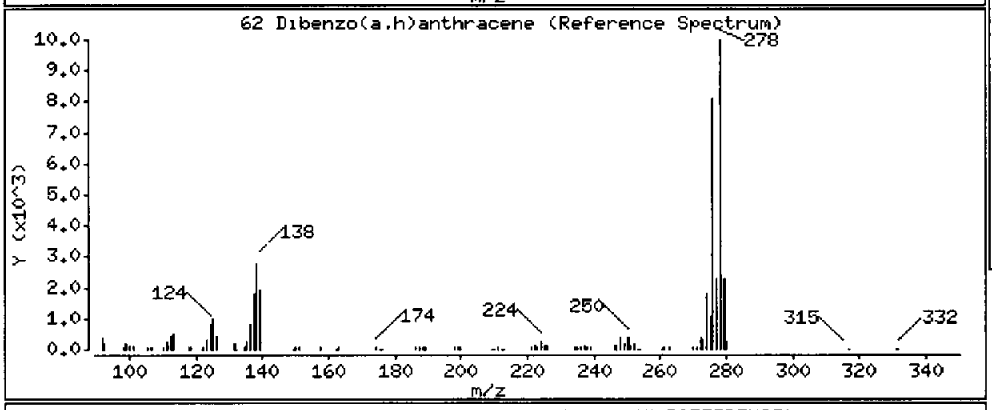
Column diameter: 0.25

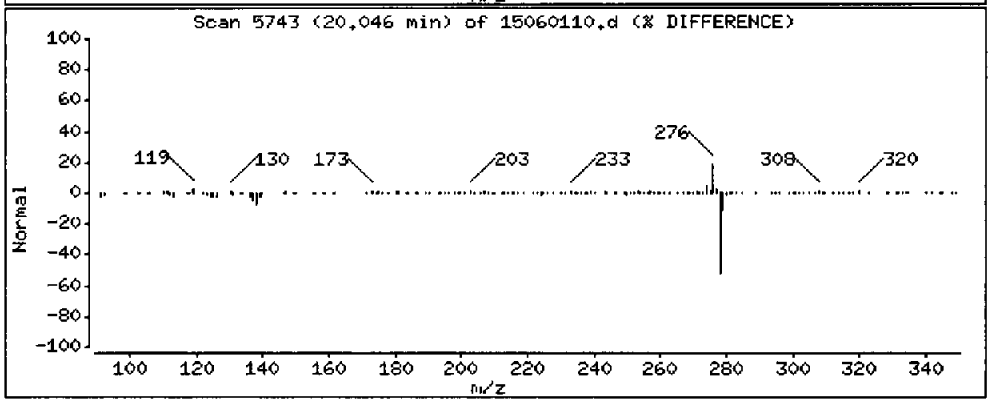
62 Dibenzo(a,h)anthracene

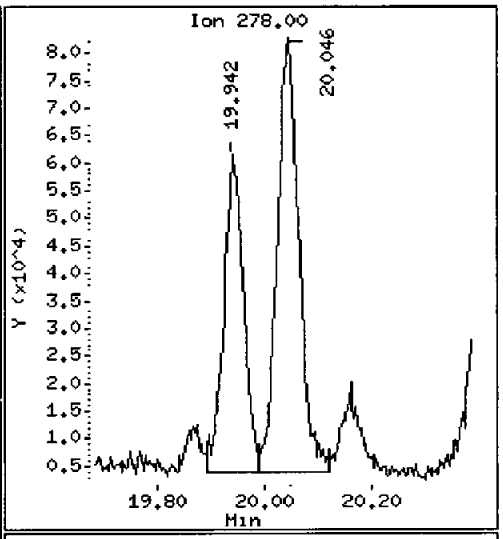
Concentration: 44.60 ug/kg

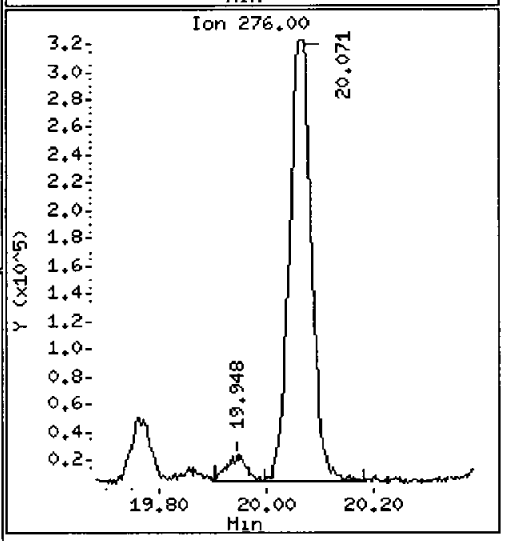












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

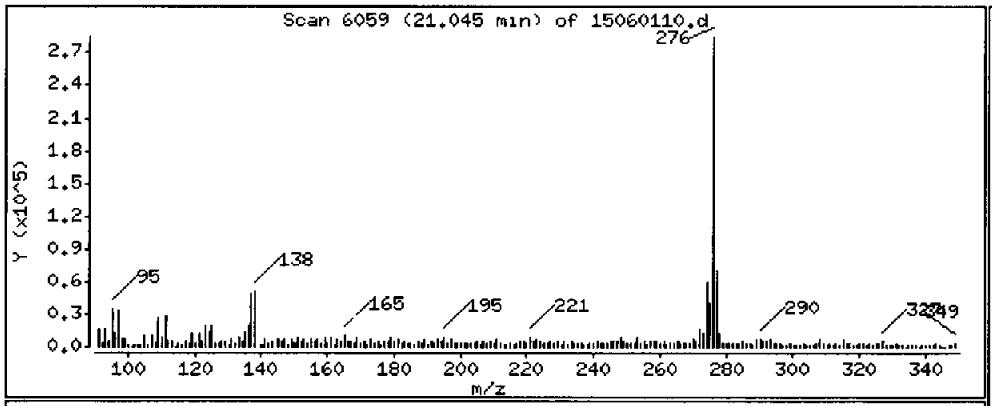
Operator: JZ

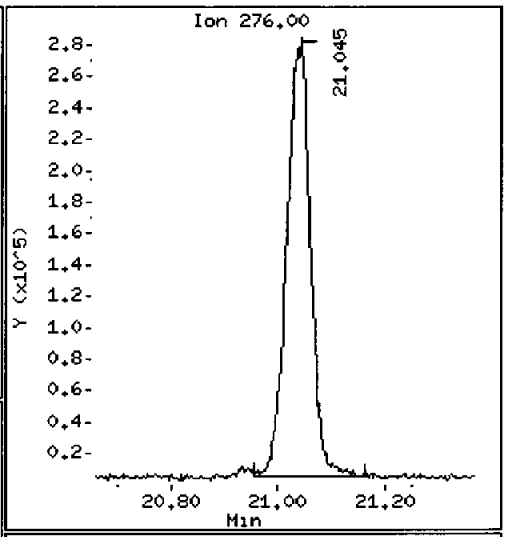
Column phase: ZB-35

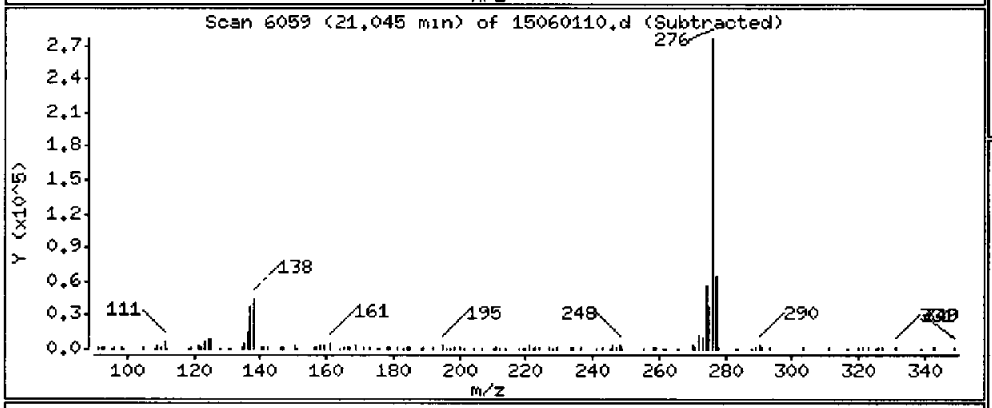
Column diameter: 0.25

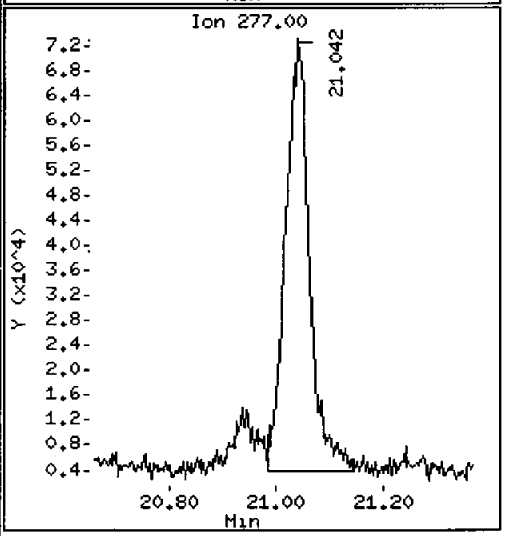
61 Benzo(g,h,i)perylene

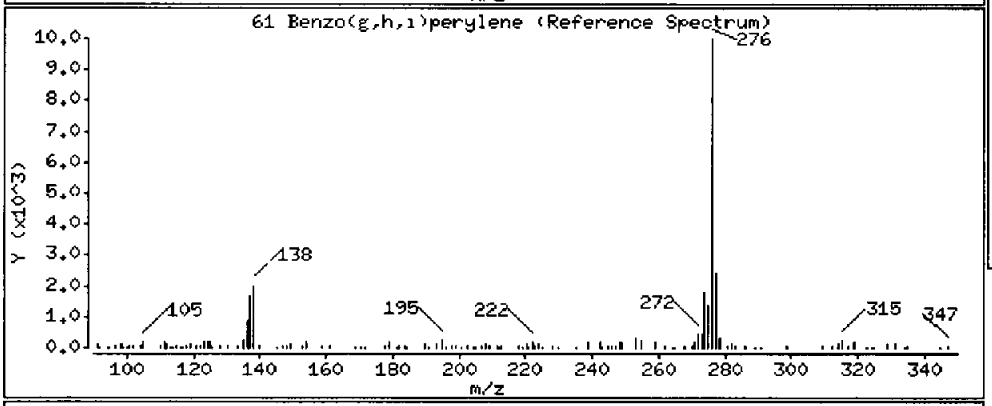
Concentration: 159.7 ug/kg

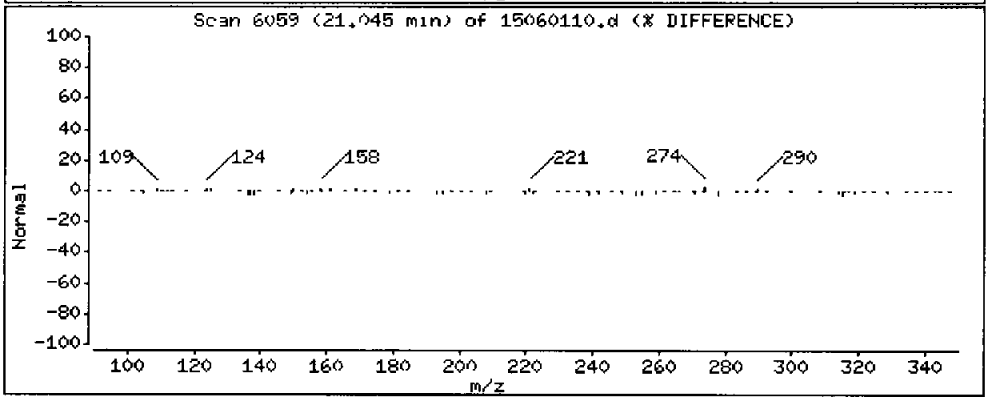












Data File: /chem3/nt8.1/20150601.b/15060110.d

Date : 01-JUN-2015 13:34

Client ID: SDP-03(6.5-8.0)

Instrument: nt8.1

Sample Info: AGC9F

Volume Injected (uL): 1.0

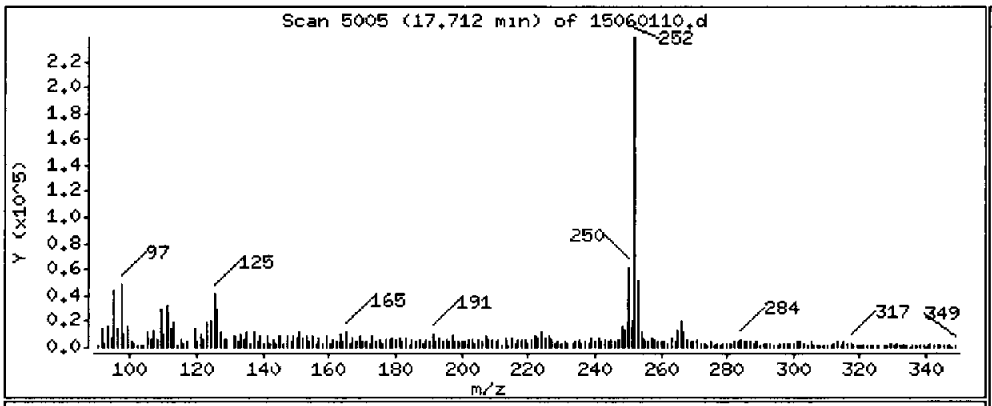
Operator: JZ

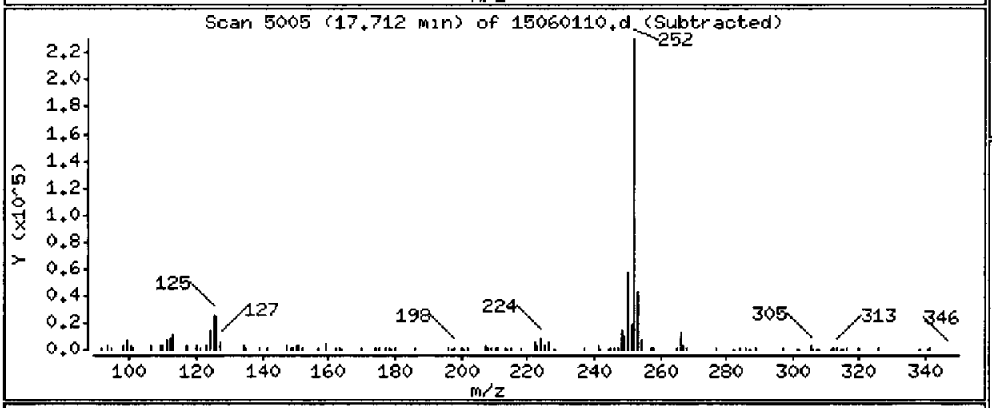
Column phase: ZB-35

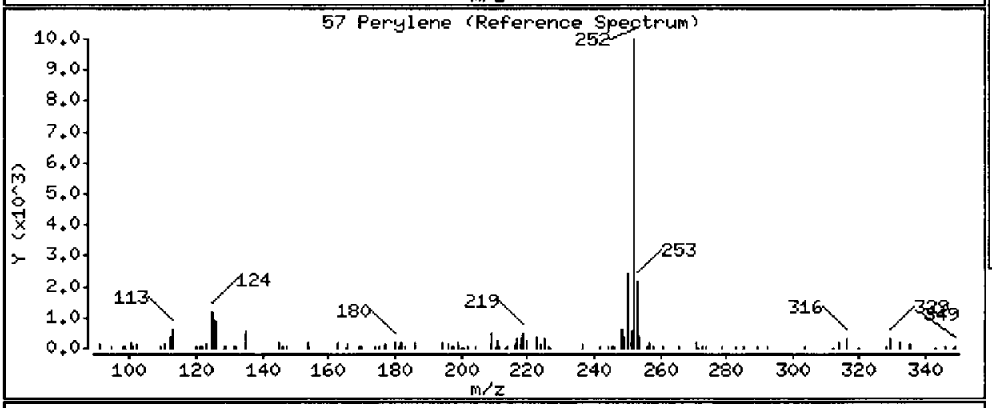
Column diameter: 0.25

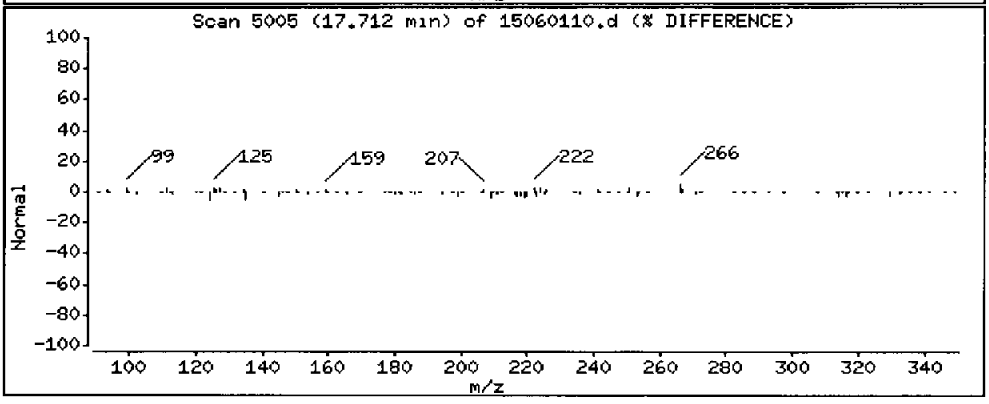
57 Perylene

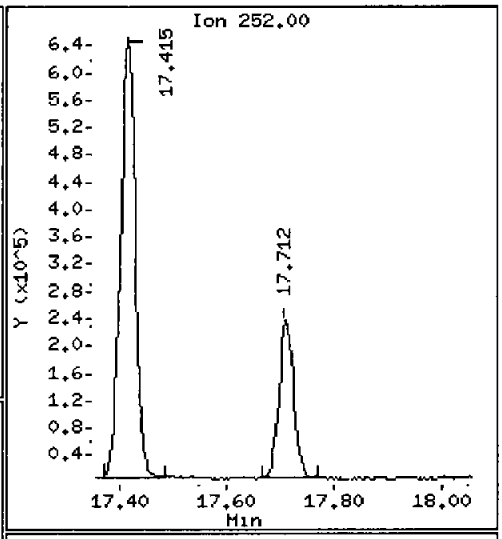
Concentration: 82.59 ug/kg

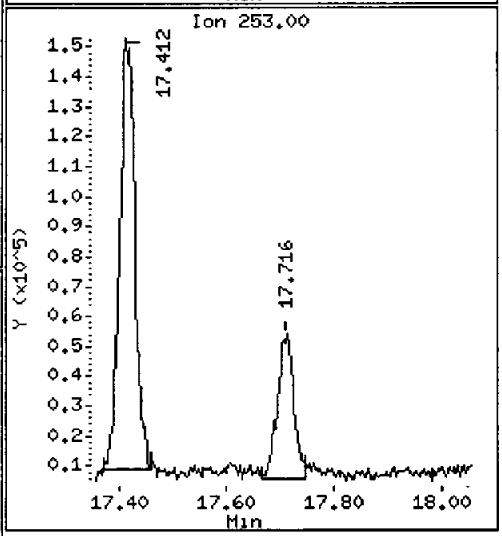






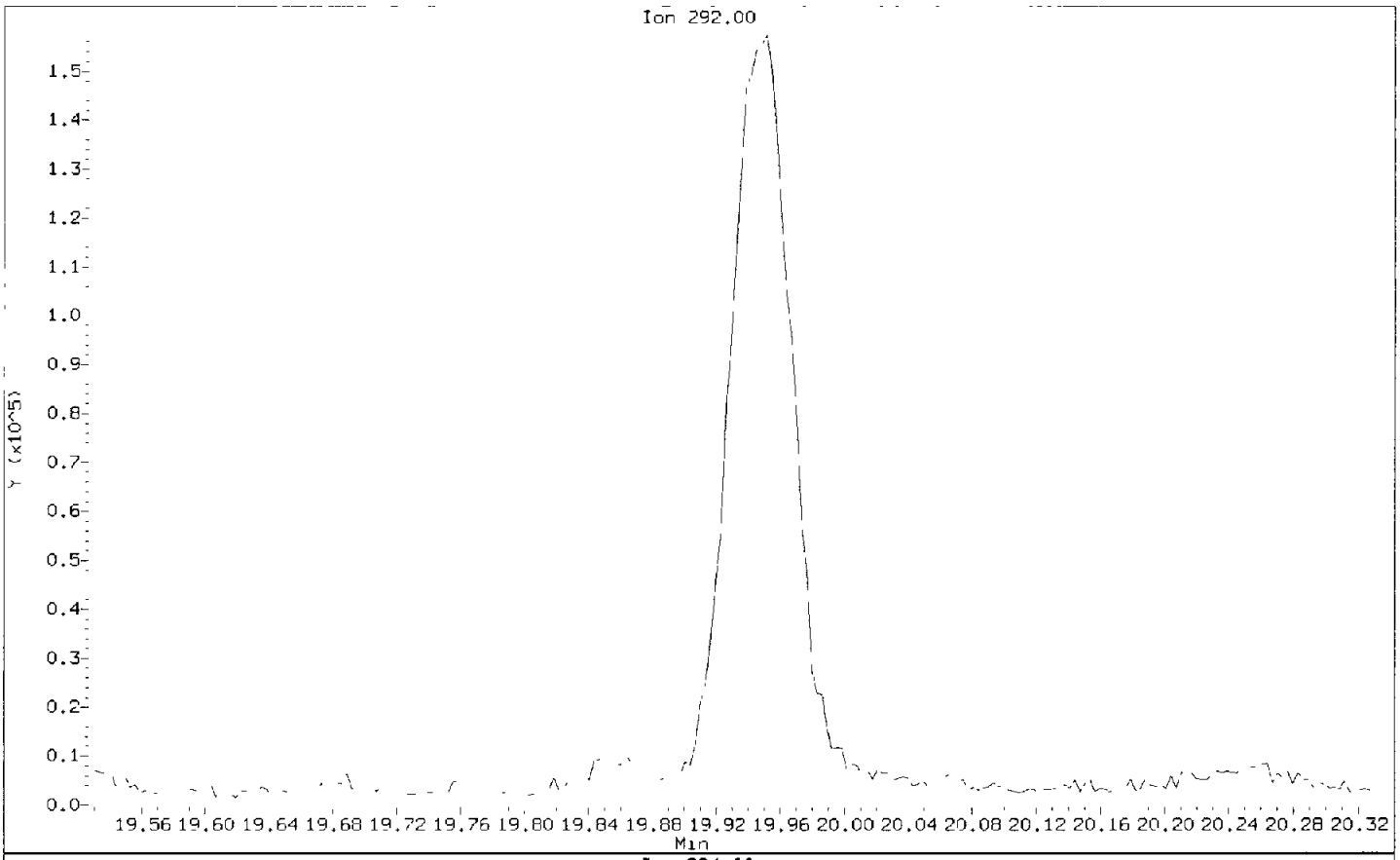






Data File: /chem3/nt8.i/20150601.b/15060110.d
Injection Date: 01-JUN-2015 13:34
Instrument: nt8.i
Client Sample ID: SDP-03(6.5-8.0)

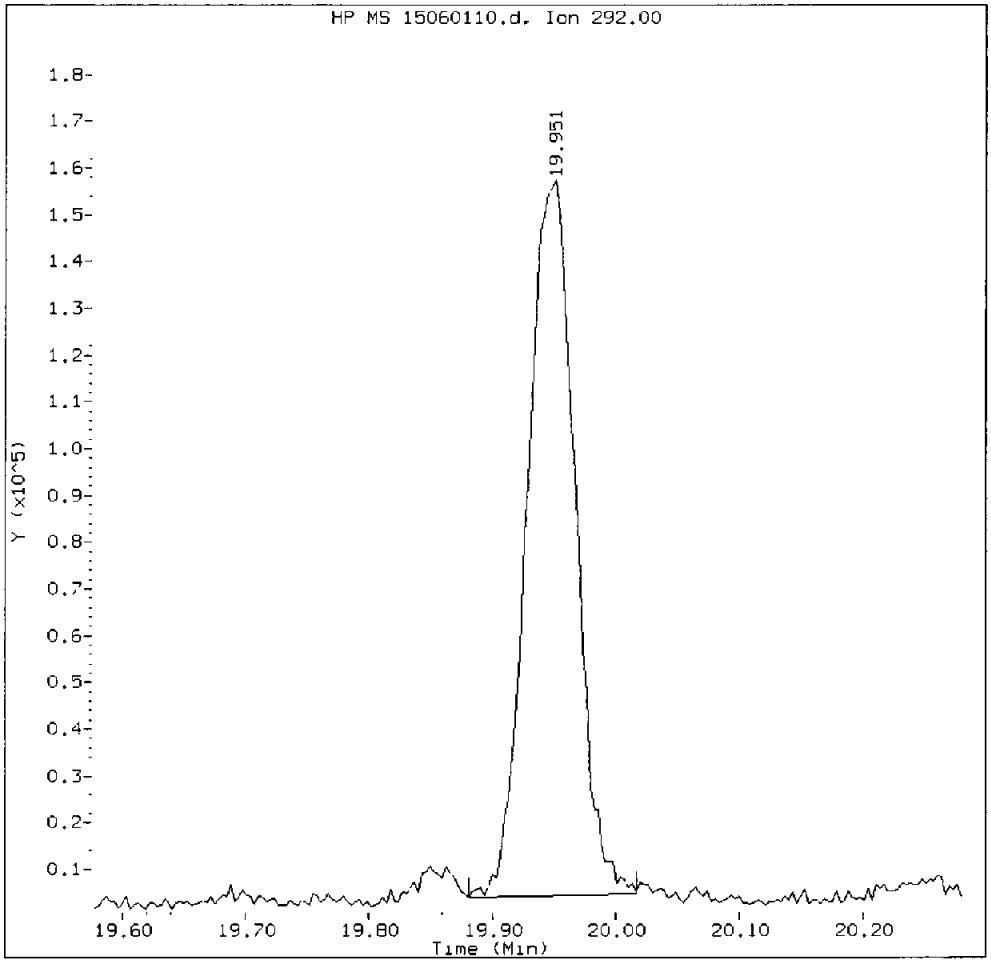
Compound: Dibenzo(a,h)anthracene-d14
CAS Number:



06/01/15

AGC9F, /chem3/nt8.i/20150601.b/15060110.d

Dibenzo(a,h)anthracene-d14 Amount: 2.04 Area: 414500



MANUAL INTEGRATION for Dibenzo(a,h)anthracene-d14

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: _____ Date: 06/11/15

ACCQ QAU13

CO-ELUTION SUMMARY FOR FILE - 15060110.d

Lab ID: AGC9F, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC9 00111

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060111.d
Lab Smp Id: AGC9G Client Smp ID: SDP-03(23.5-24.5)
Inj Date : 01-JUN-2015 14:00
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9G
Misc Info : 15-9437
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	13.07000	Weight of sample extracted (g)
M	22.20000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.733	4.739	(1.000)	439275	2.00000	
	7 Naphthalene	128	4.764	4.767	(1.007)	17132	0.08096	3.981
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	163164	1.21637	59.81
	14 2-Methylnaphthalene	141	5.511	5.510	(1.164)	10446	0.08279	4.071
	15 1-methylnaphthalene	141	5.703	5.703	(1.205)	6717	0.05479	2.694
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	270487	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.023	9.020	(1.000)	462404	2.00000	
	30 Phenanthrene	178	9.055	9.055	(1.004)	59104	0.26810	13.18
	31 Anthracene	178	9.099	9.096	(1.008)	11785	0.05938	2.920
	36 Fluoranthene	202	10.769	10.769	(1.193)	62587	0.24273	11.94
$	253 Fluoranthene-d10	212	10.734	10.734	(1.190)	447744	1.96853	96.80

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.265	11.265	(0.816)	115032	0.40437	19.88
	46 Benzo(a)anthracene	228	13 681	13.684	(0.991)	53451	0.20882	10.27
*	47 Chrysene-d12	240	13 808	13.807	(1.000)	510304	2 00000	
	48 Chrysene	228	13 877	13.880	(1.005)	78833	0.30716	15.10
	51 Benzo(b)fluoranthene	252	16 369	16.369	(0.928)	46905	0.15990	7.862
	52 Benzo(k)fluoranthene	252	16.429	16.429	(0.932)	18463	0.06300	3.098
	251 Benzo(j)fluoranthene	252	16.508	16.505	(0.936)	17692	0.06186	3.042
	54 Benzo(a)pyrene	252	17.403	17.402	(0.987)	63962	0.24455	12.03
*	56 Perylene-d12	264	17.637	17.633	(1.000)	558585	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.046	20.046	(1.137)	31969	0.10176	5.004
$	60 Dibenzo(a,h)anthracene-d14	292	19 939	19.929	(1.131)	442980	2.08232	102.4
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	21.036	21.010	(1.193)	54298	0.19650	9.662
	57 Perylene	252	17.713	17.706	(1.004)	735556	2.70906	133.2

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060111.d
Lab Smp Id: AGC9G
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9437

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-03(23.5-24.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	439275	28.03
22 Acenaphthene-d10	230598	115299	461196	270487	17.30
28 Phenanthrene-d10	373928	186964	747856	462404	23.66
47 Chrysene-d12	381262	190631	762524	510304	33.85
56 Perylene-d12	380825	190412	761650	558585	46.68

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

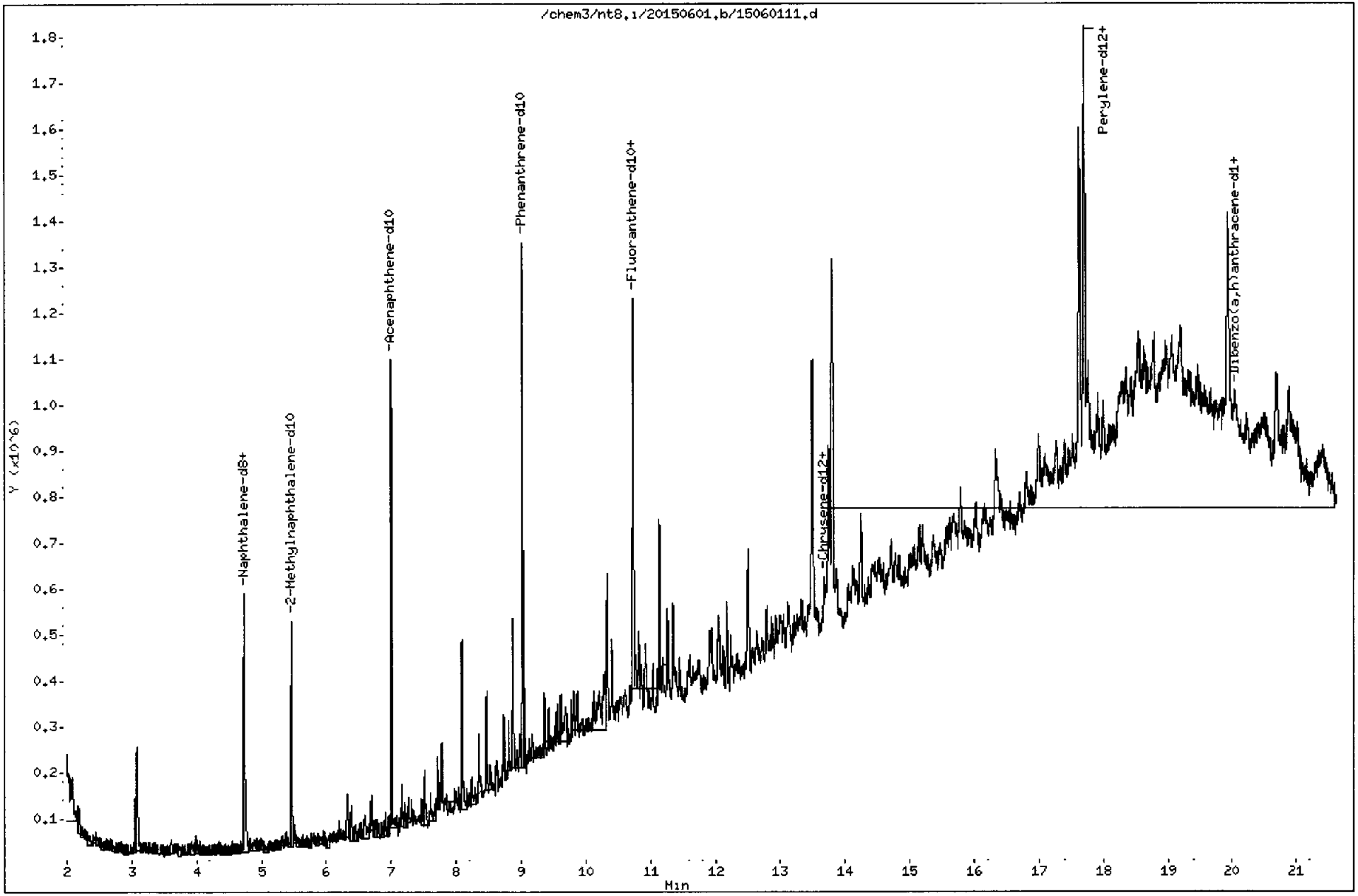
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9G
Client Smp ID: SDP-03(23.5-24.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9437

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	147.5	59.81	40.55	32-120
$ 253 Fluoranthene-d10	147.5	96.80	65.62	36-134
$ 60 Dibenzo(a,h)anthra	147.5	102.4	69.41	21-133

Data File: /chem3/nt8.i/20150601.b/15060111.d
Date : 01-JUN-2015 14:00
Client ID: SDP-03(23.5-24.5)
Sample Info: AGC9C
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

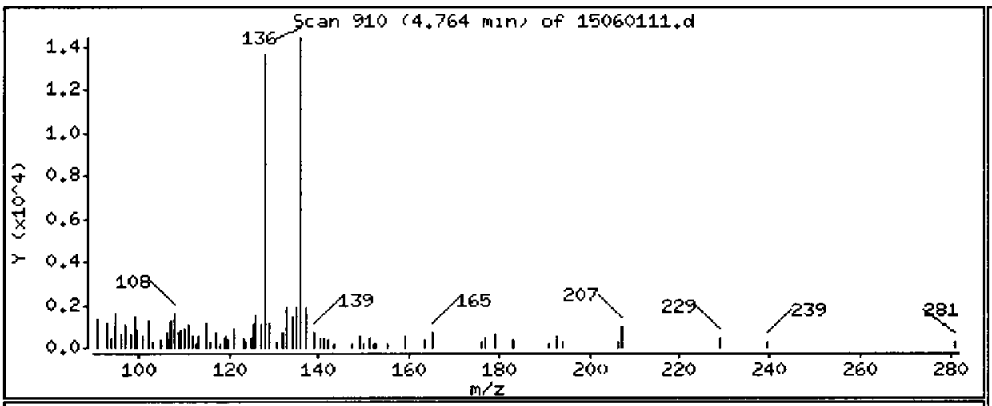
Operator: JZ

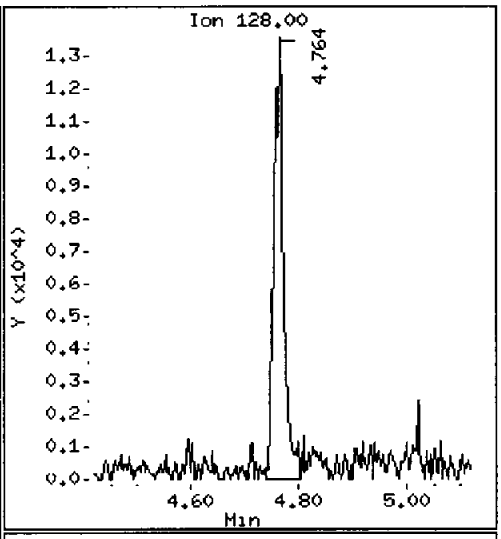
Column phase: ZB-35

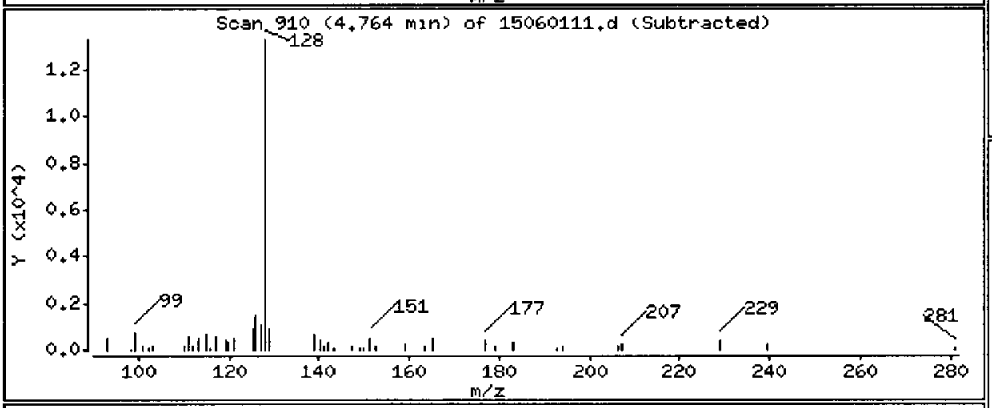
Column diameter: 0.25

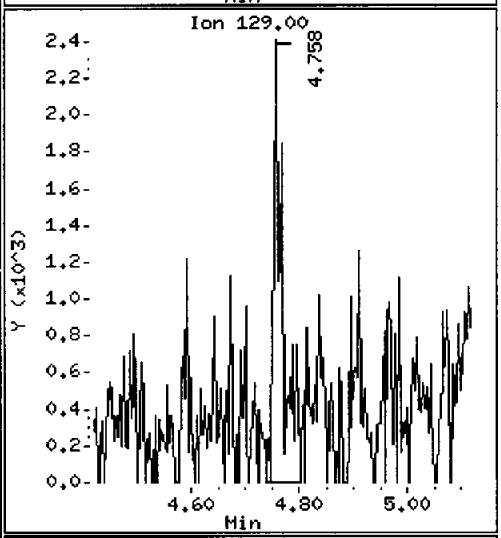
7 Naphthalene

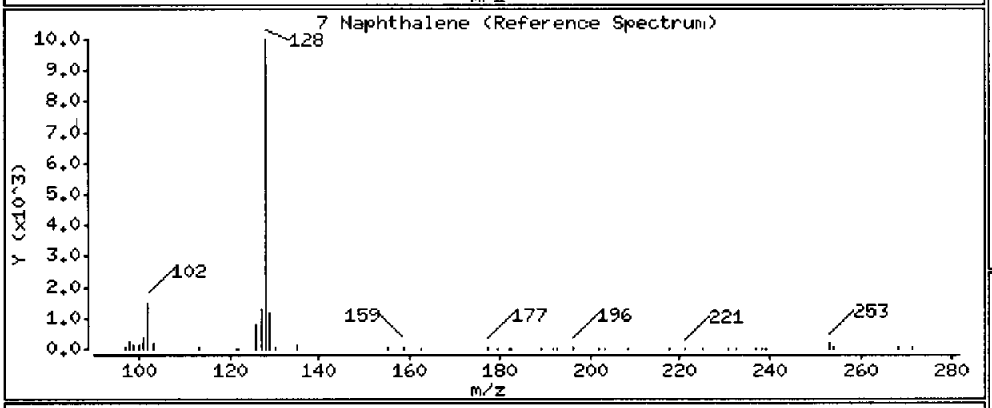
Concentration: 3.981 ug/kg

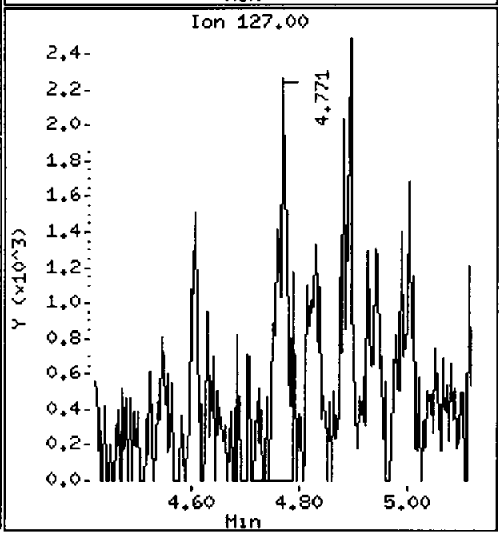


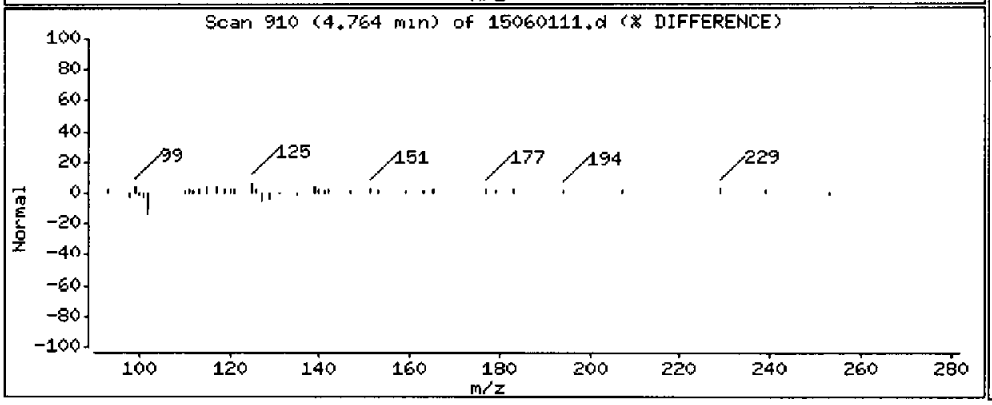












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

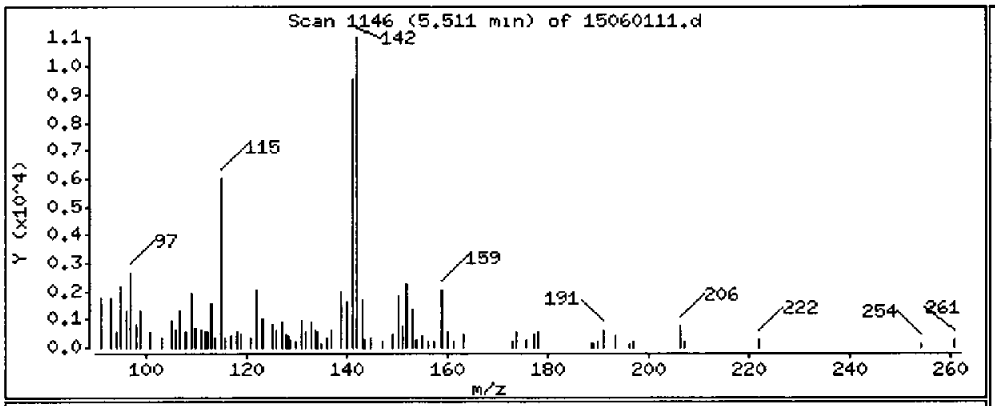
Operator: JZ

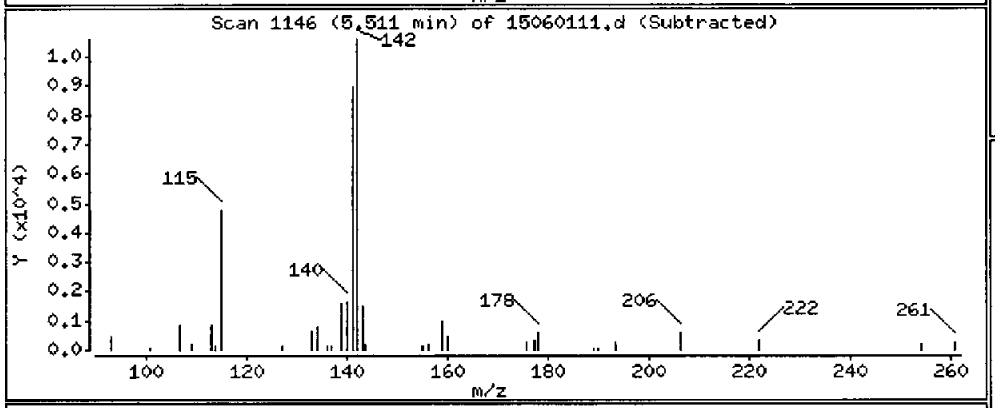
Column phase: ZB-35

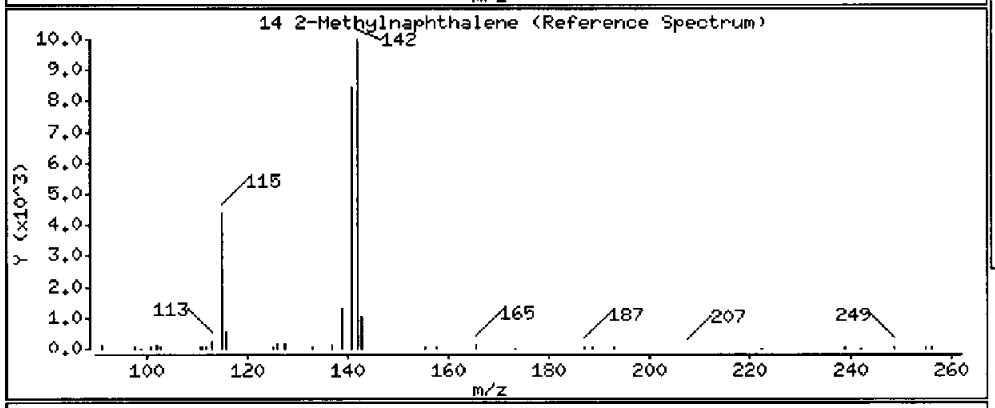
Column diameter: 0.25

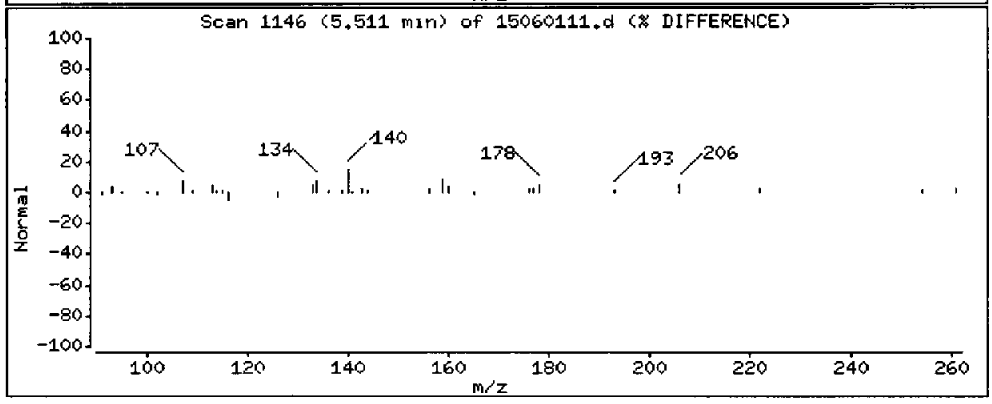
14 2-Methylnaphthalene

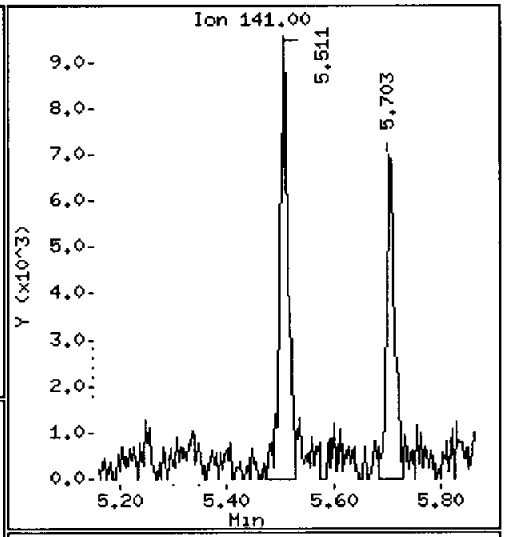
Concentration: 4.071 ug/kg

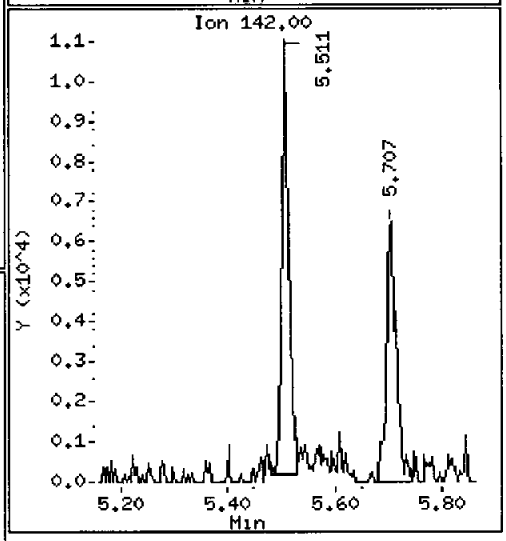












Data File: /chem3/nt8.i/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.i

Sample Info: AGC9G

Volume Injected (uL): 1.0

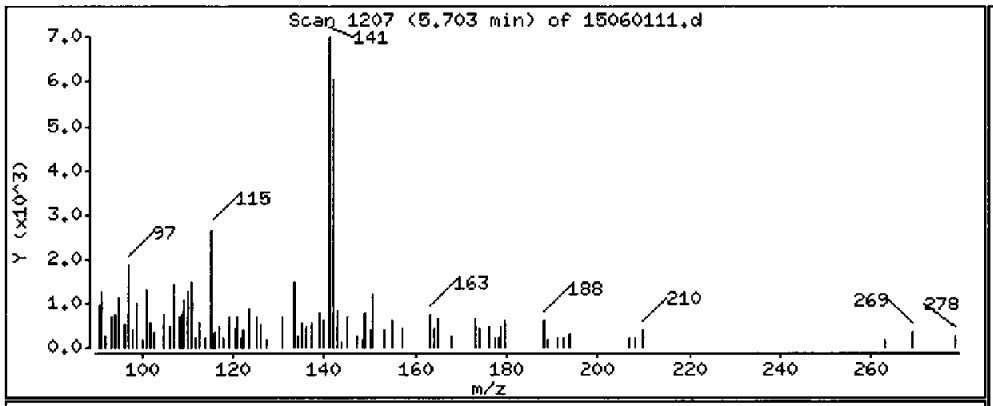
Operator: JZ

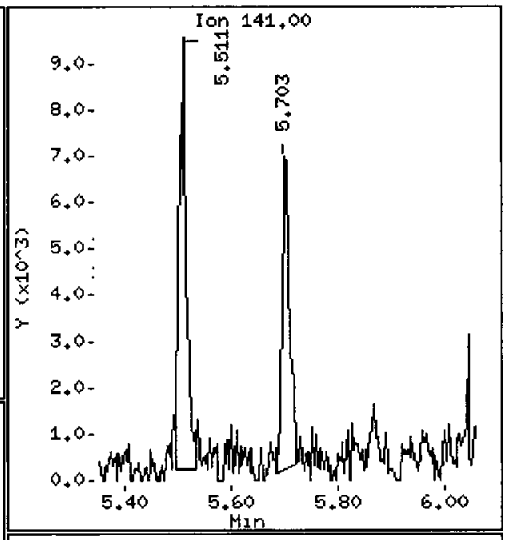
Column phase: ZB-35

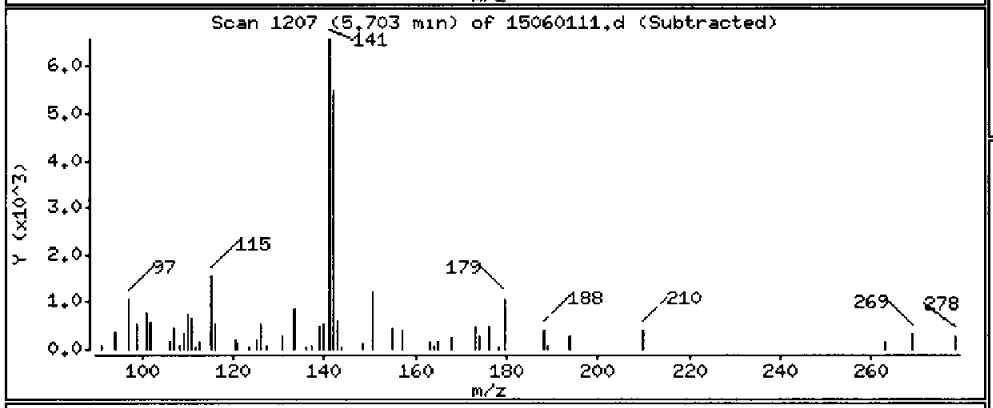
Column diameter: 0.25

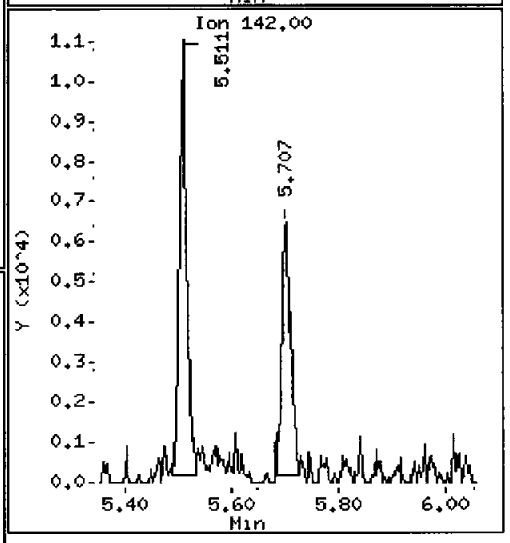
15 1-methylnaphthalene

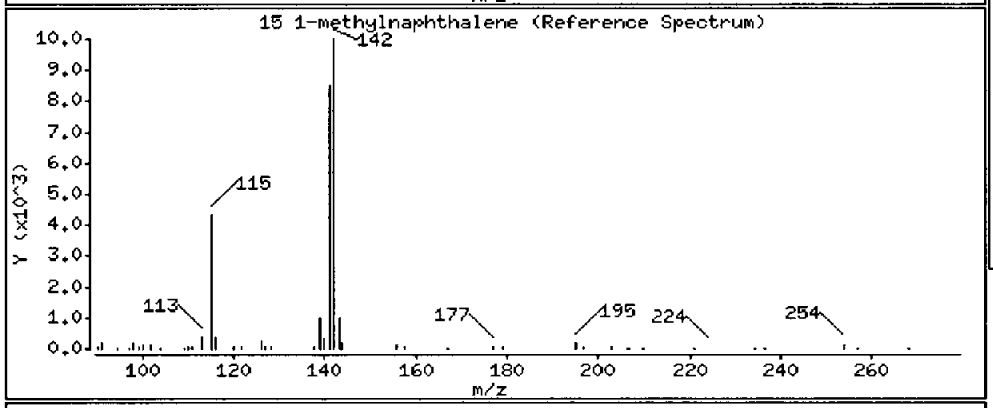
Concentration: 2.694 ug/kg

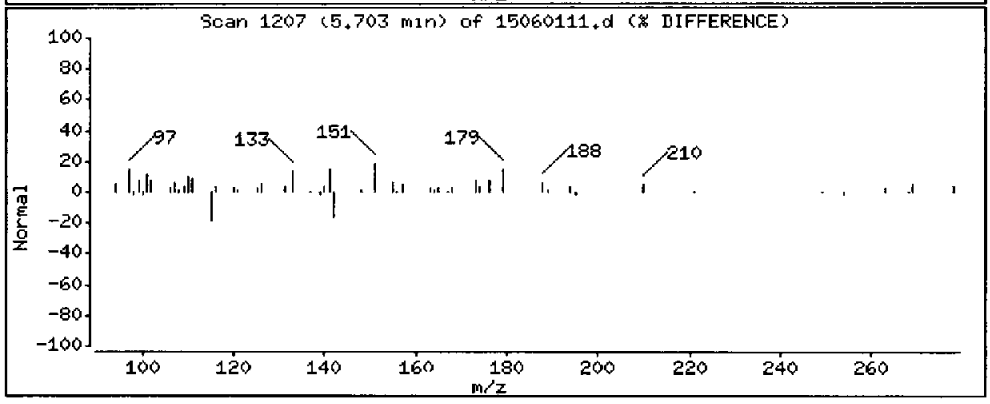












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

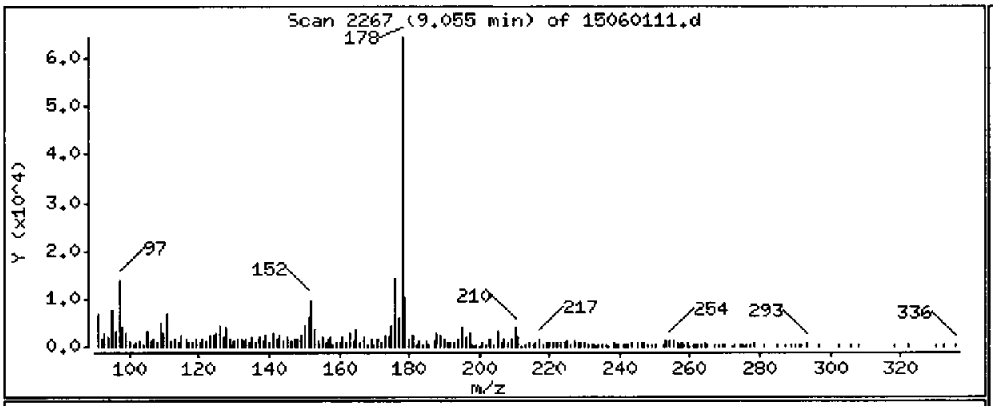
Operator: JZ

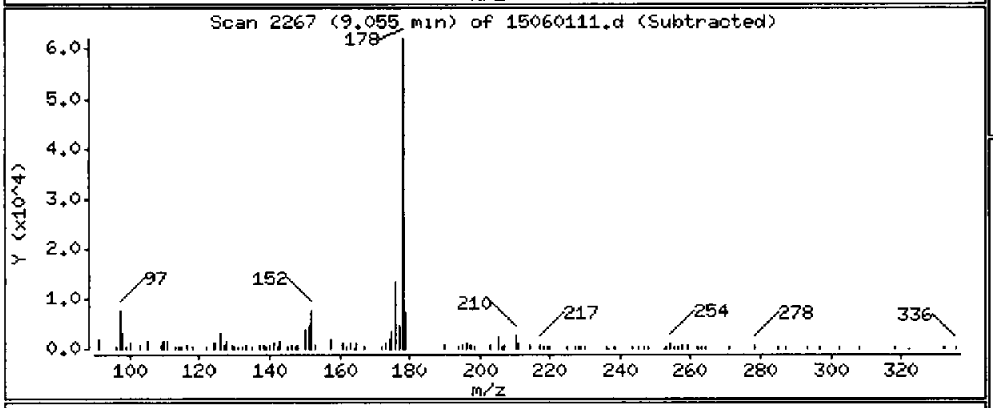
Column phase: ZB-35

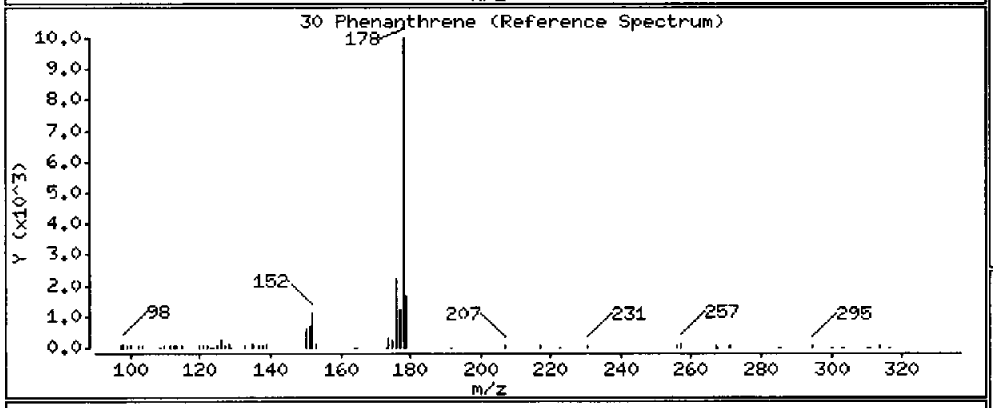
Column diameter: 0.25

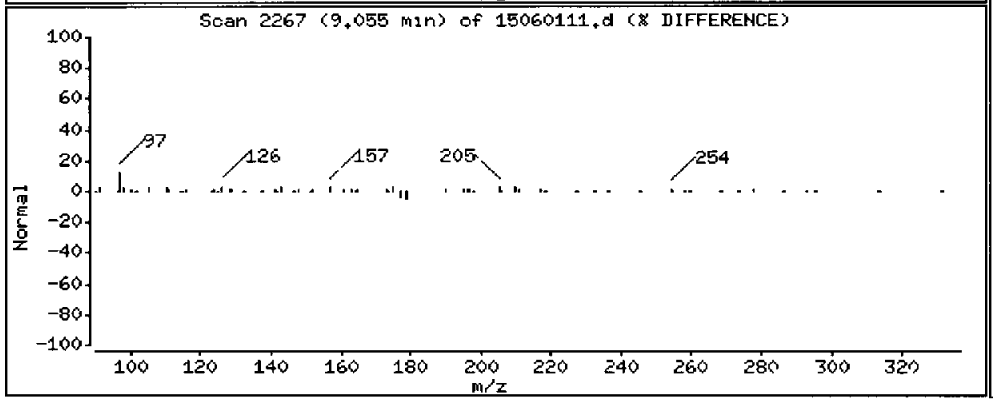
30 Phenanthrene

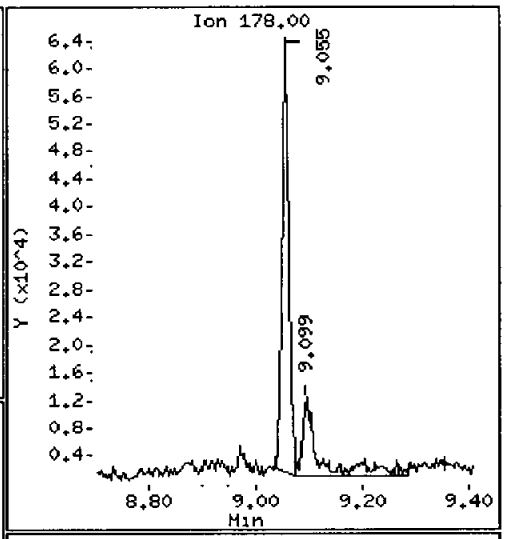
Concentration: 13.18 ug/kg

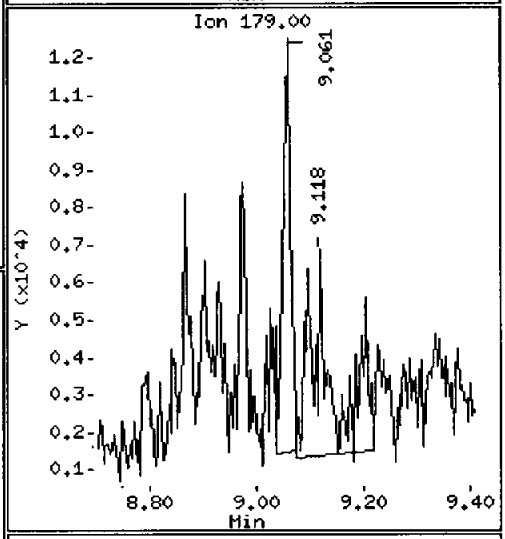


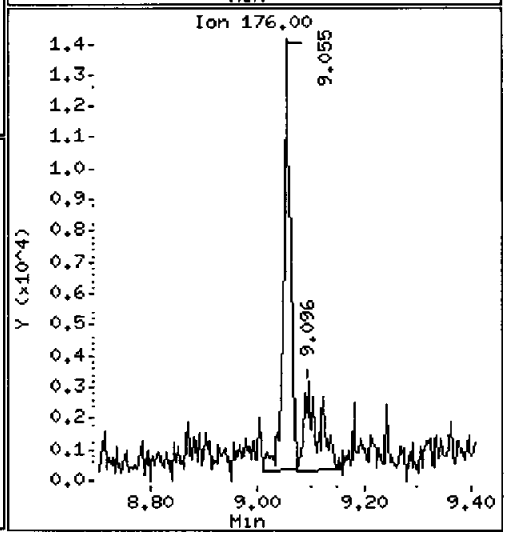












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

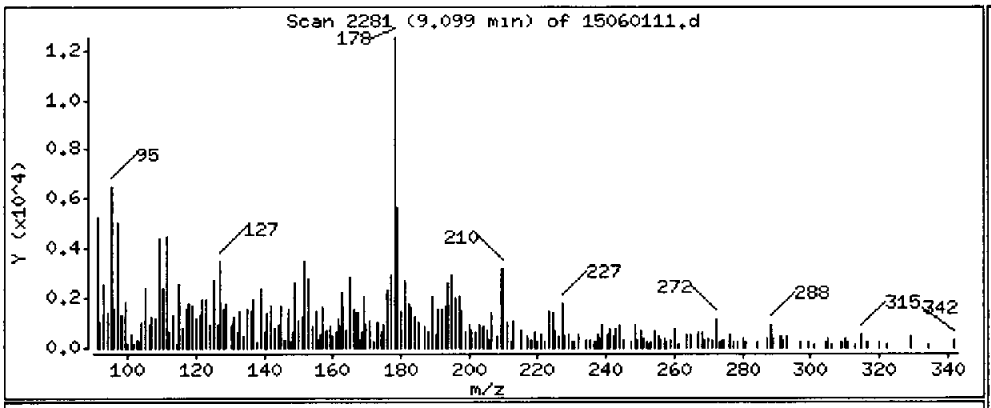
Operator: JZ

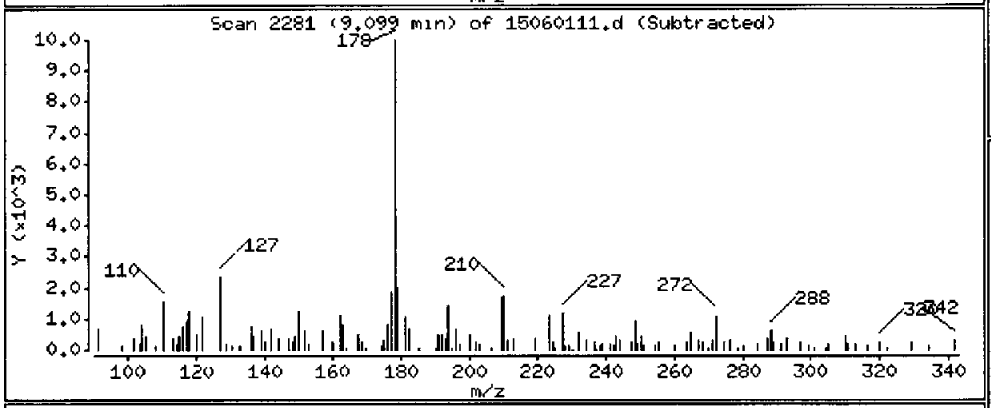
Column phase: ZB-35

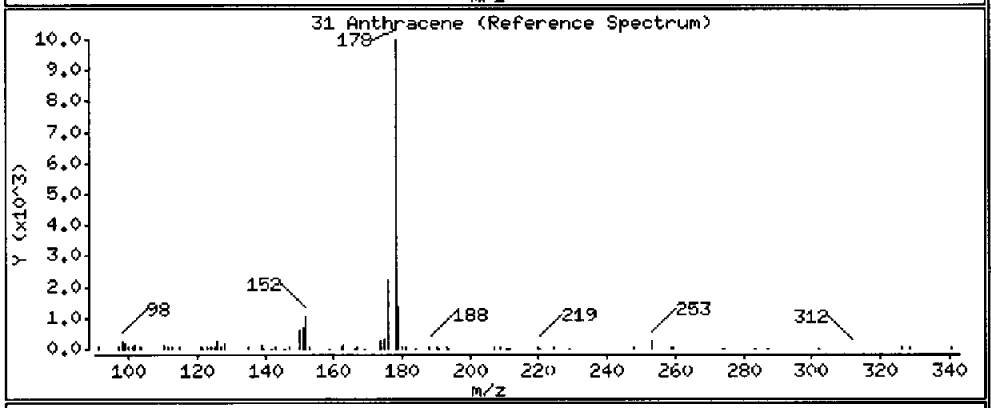
Column diameter: 0.25

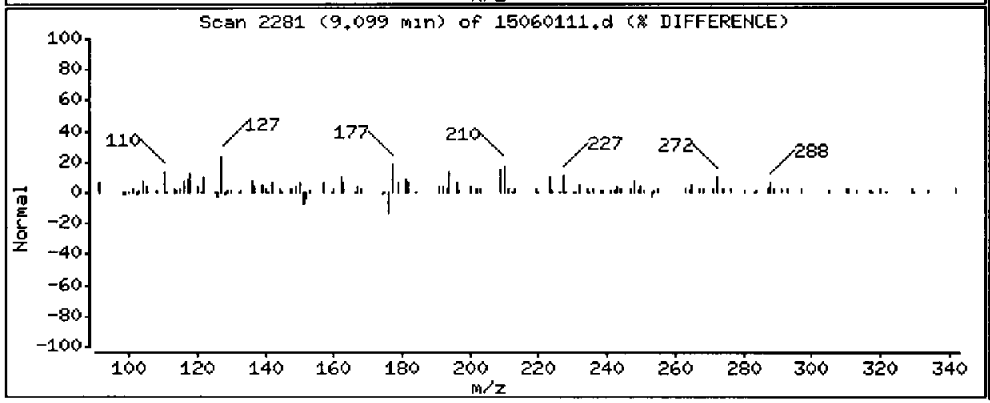
31 Anthracene

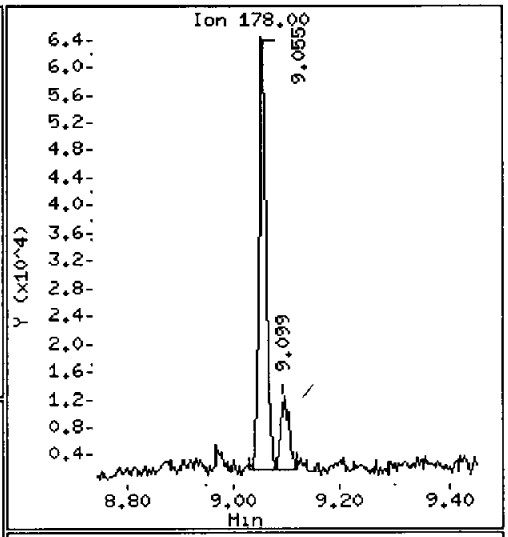
Concentration: 2.920 ug/kg

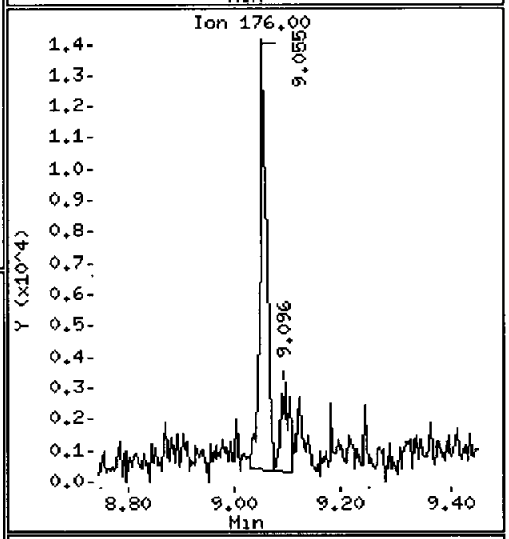


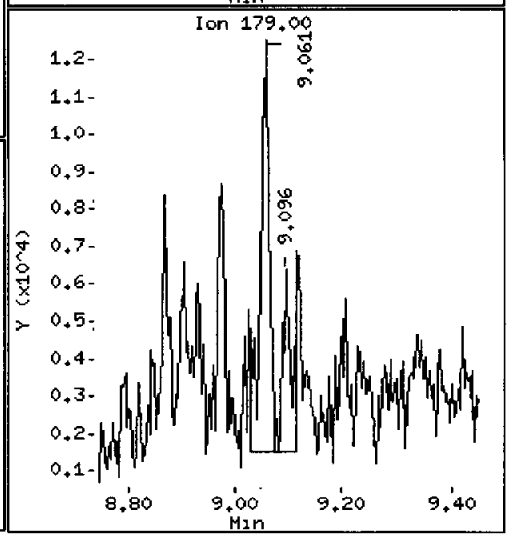












Data File: /chem3/nt8.i/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.i

Sample Info: AGC9G

Volume Injected (uL): 1.0

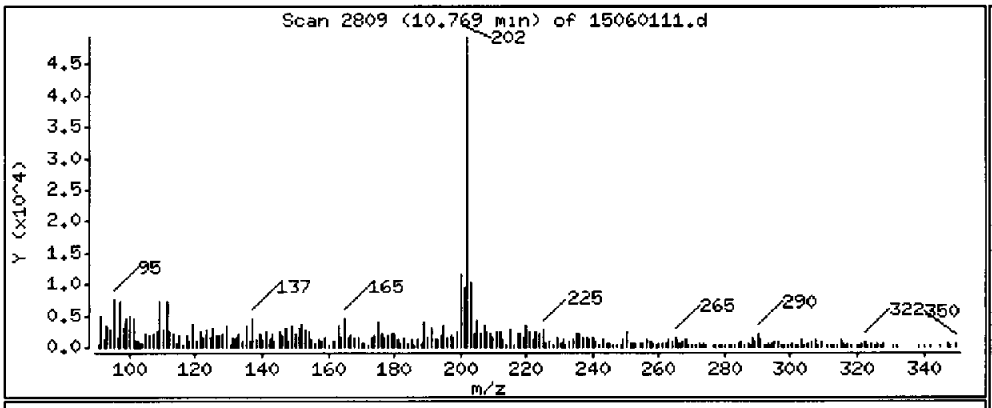
Operator: JZ

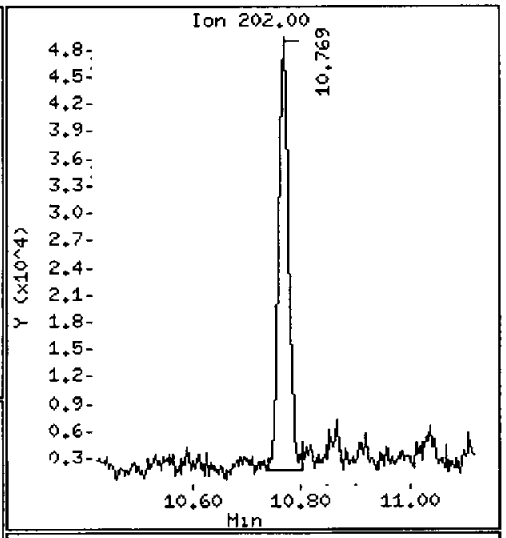
Column phase: ZB-35

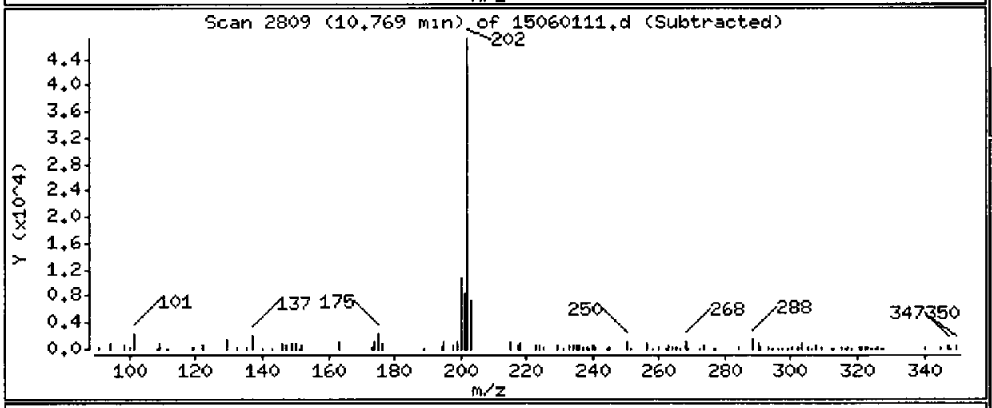
Column diameter: 0.25

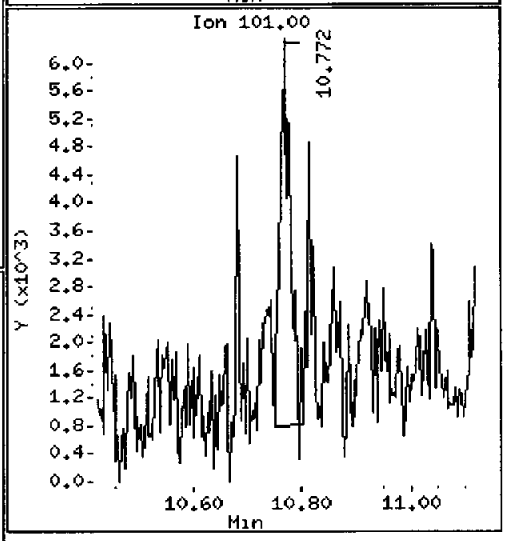
36 Fluoranthene

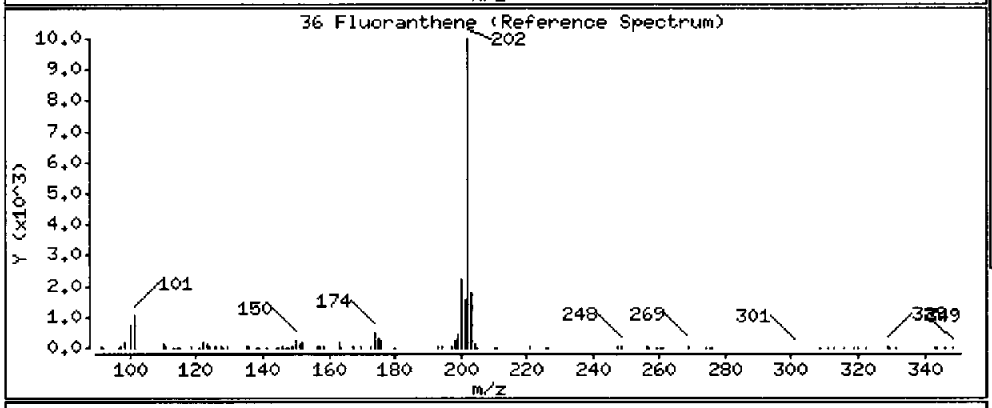
Concentration: 11.94 ug/kg

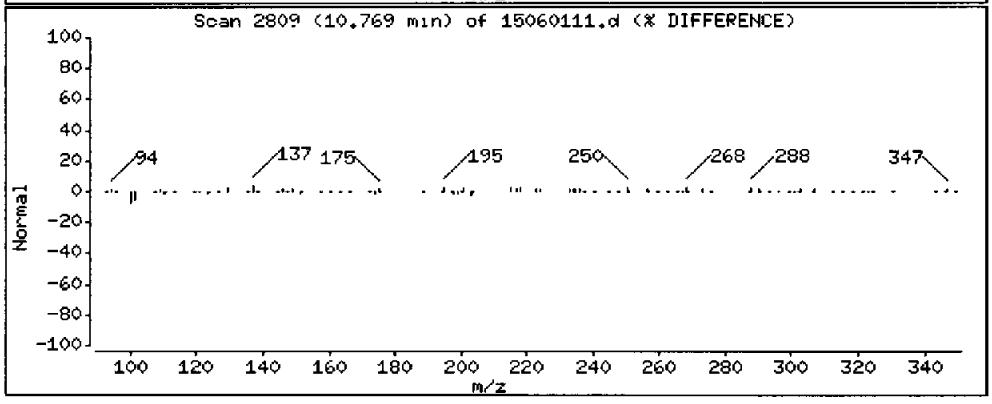












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

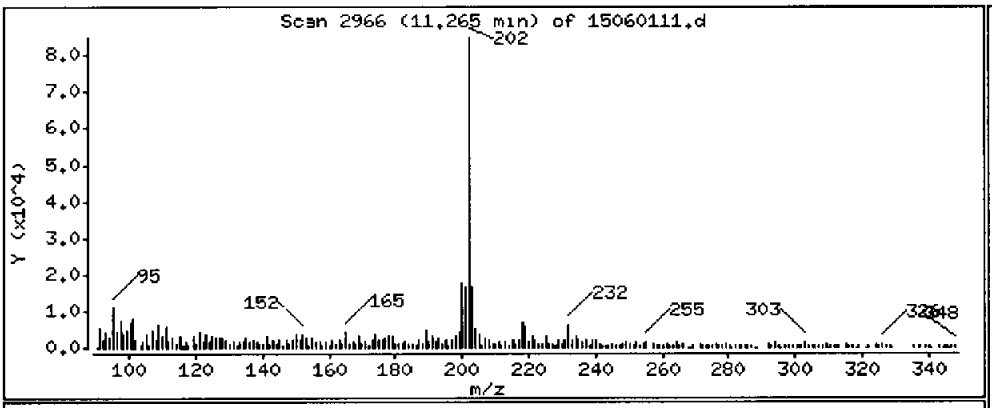
Operator: JZ

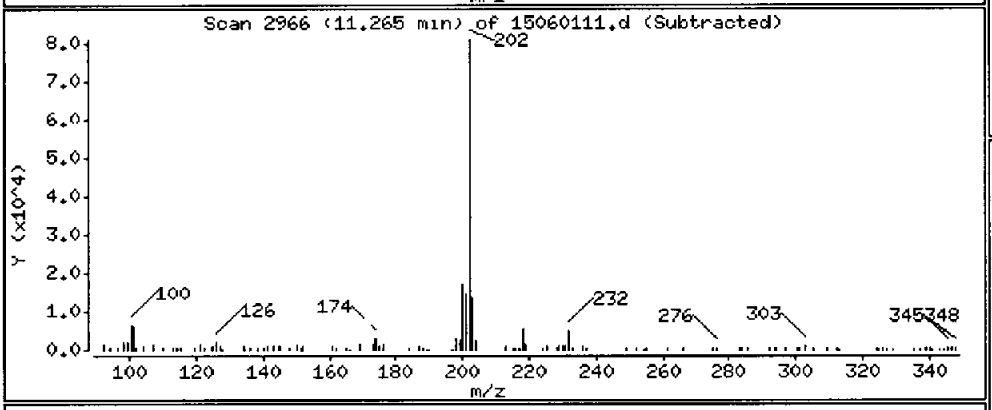
Column phase: ZB-35

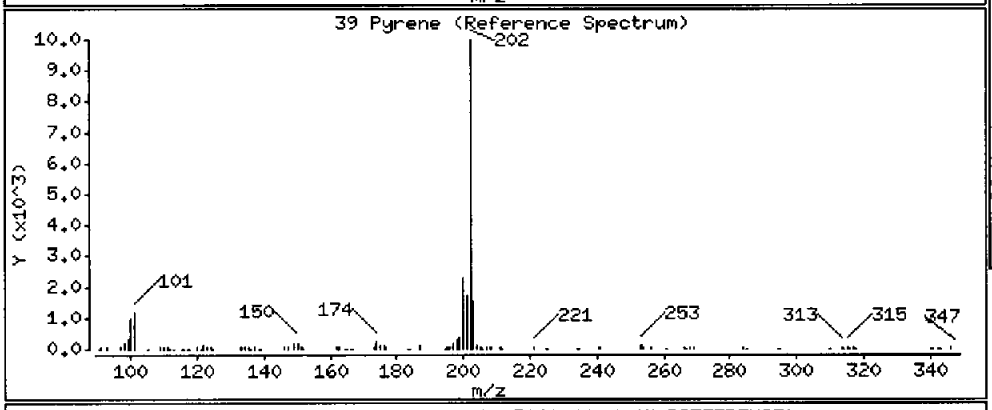
Column diameter: 0.25

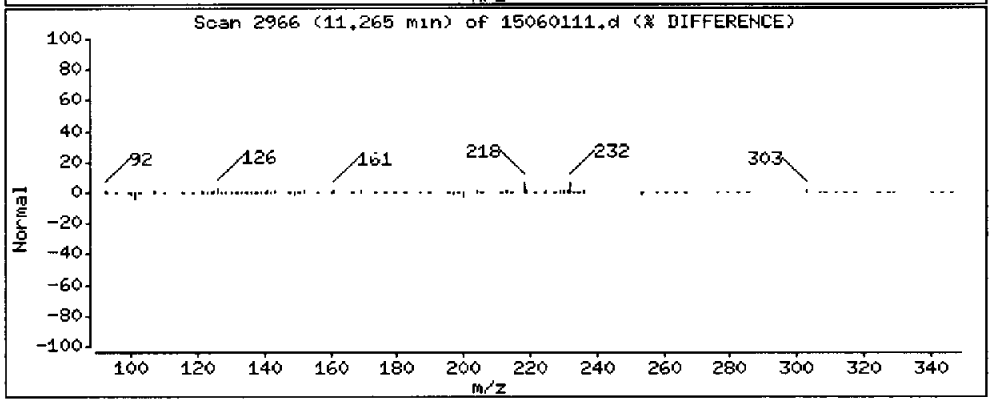
39 Pyrene

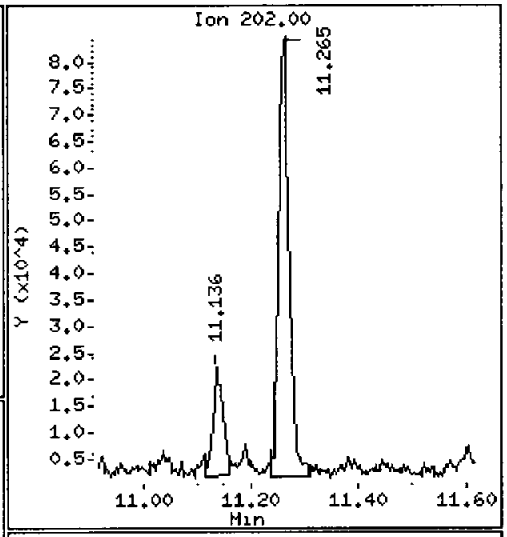
Concentration: 19.88 ug/kg

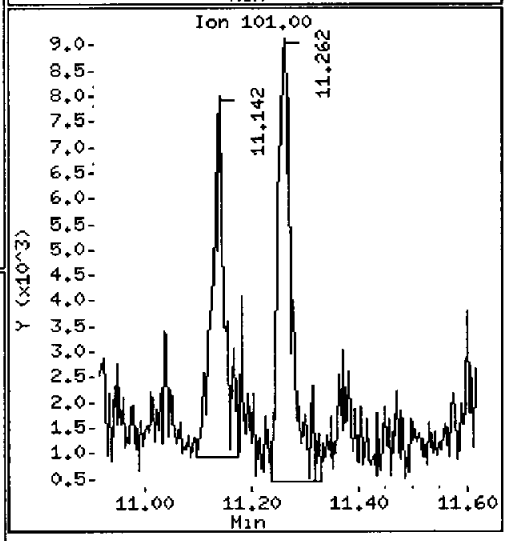












Data File: /chem3/nt8.i/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.i

Sample Info: AGC9G

Volume Injected (uL): 1.0

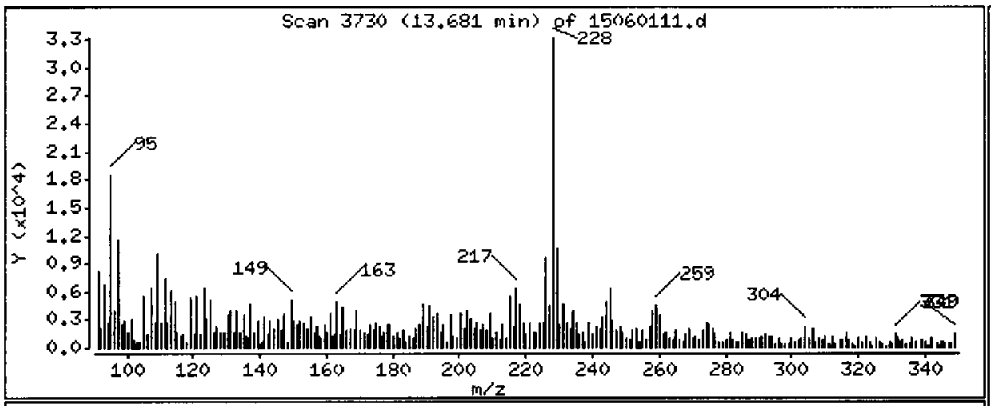
Operator: JZ

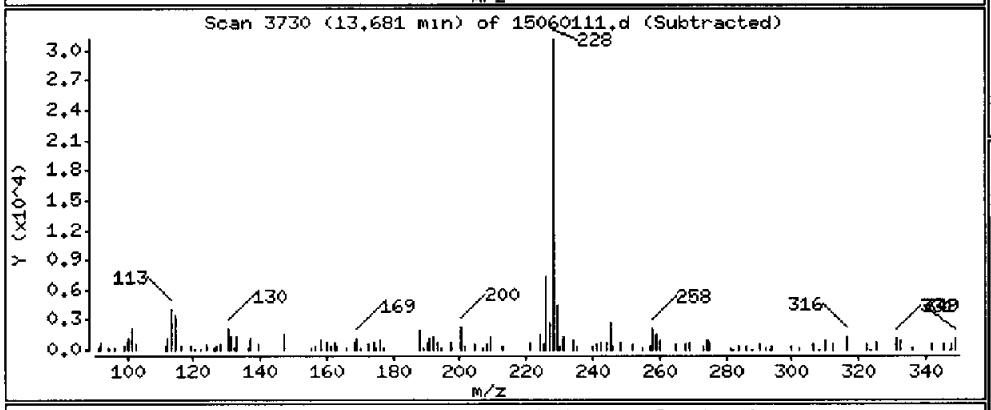
Column phase: ZB-35

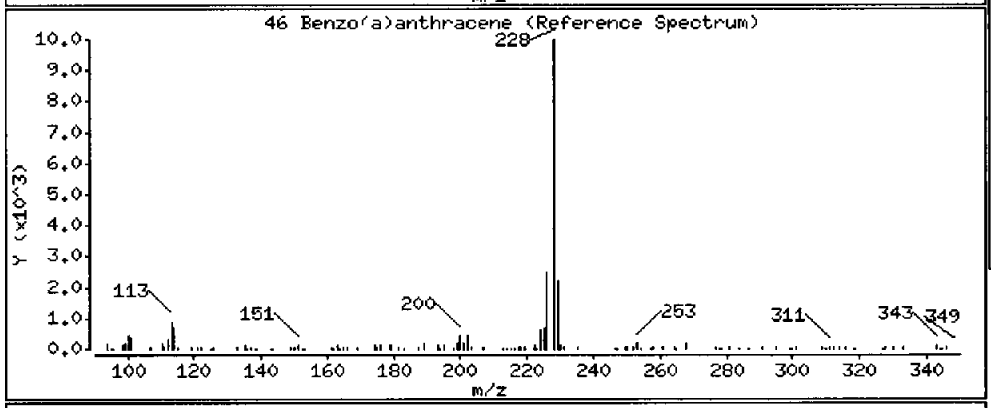
Column diameter: 0.25

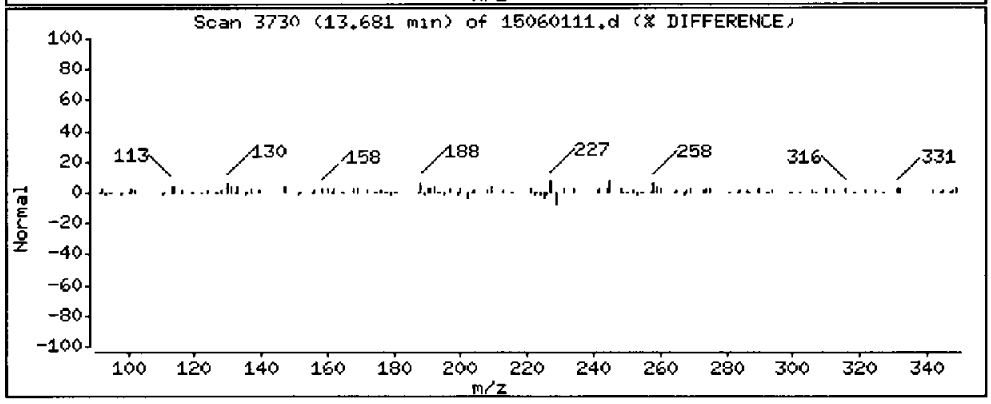
46 Benzo(a)anthracene

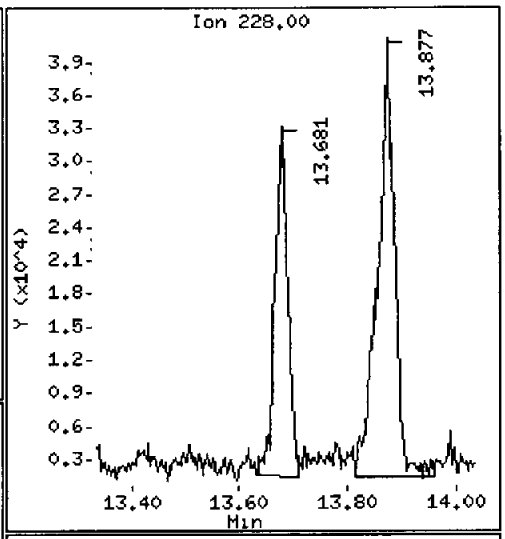
Concentration: 10.27 ug/kg

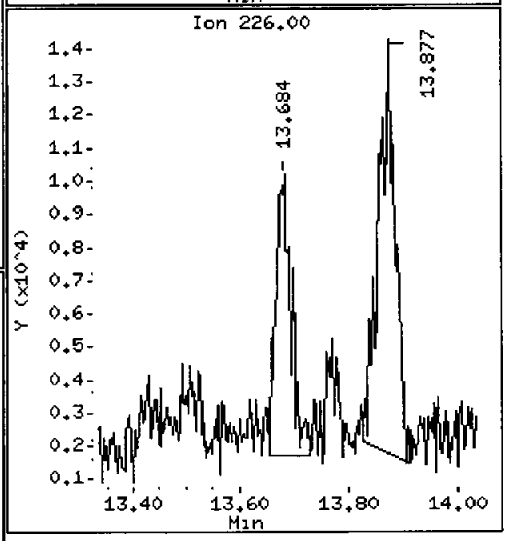












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

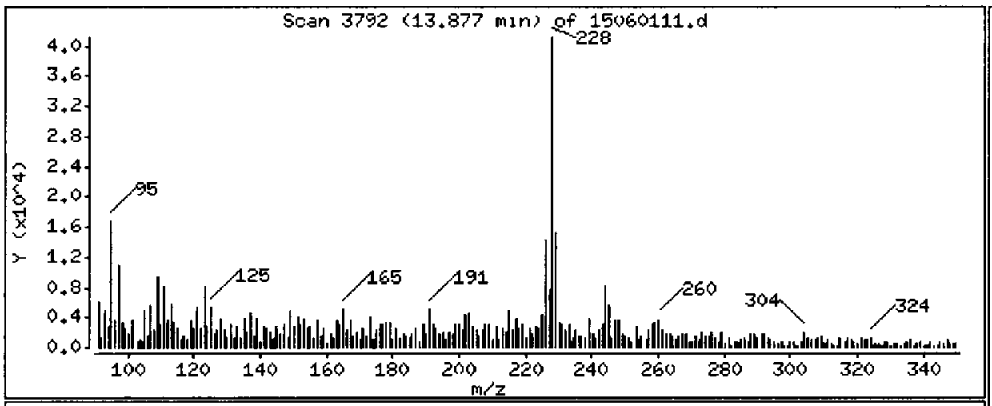
Operator: JZ

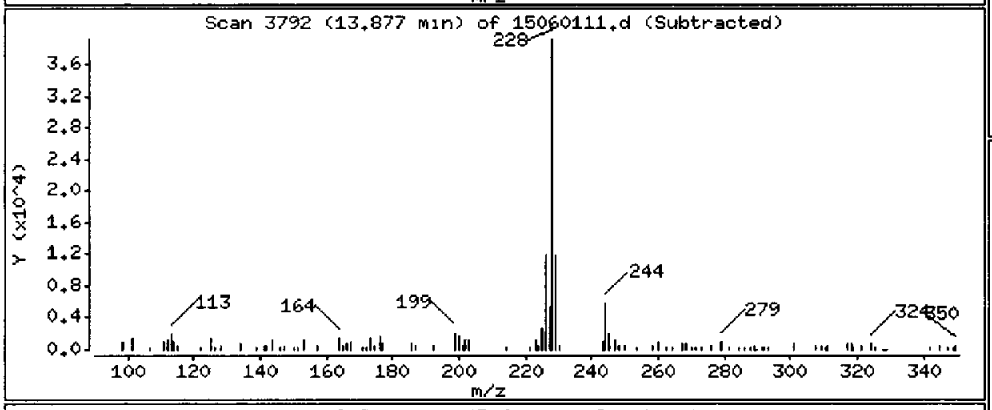
Column phase: ZB-35

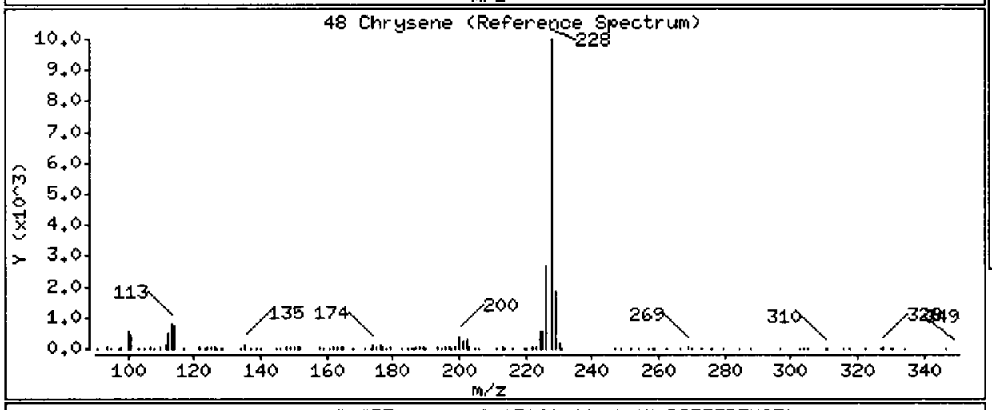
Column diameter: 0.25

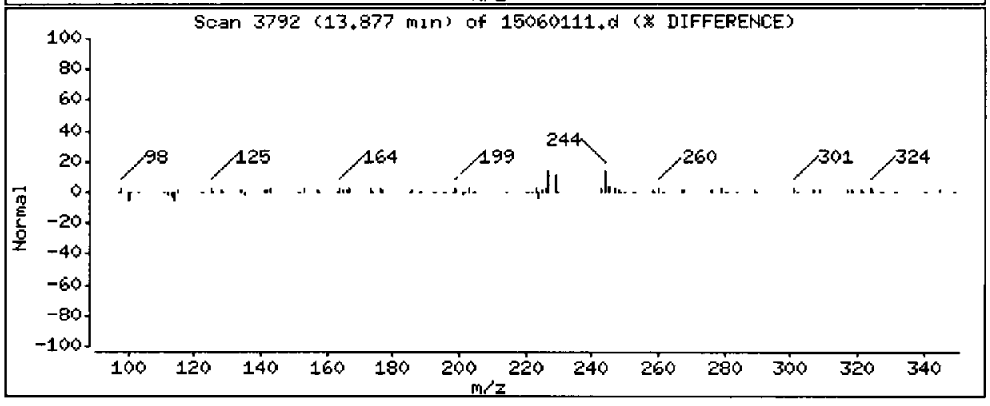
48 Chrysene

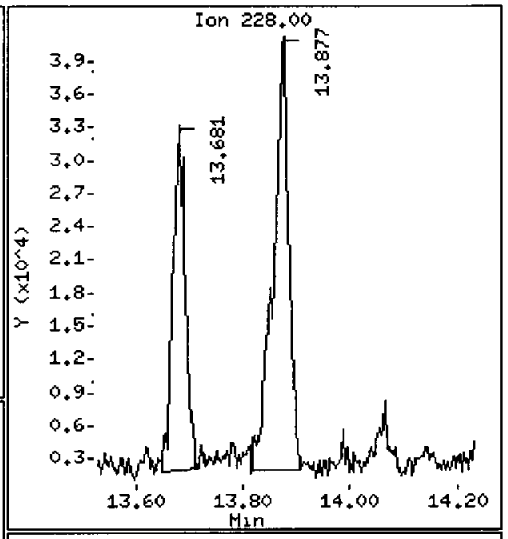
Concentration: 15.10 ug/kg

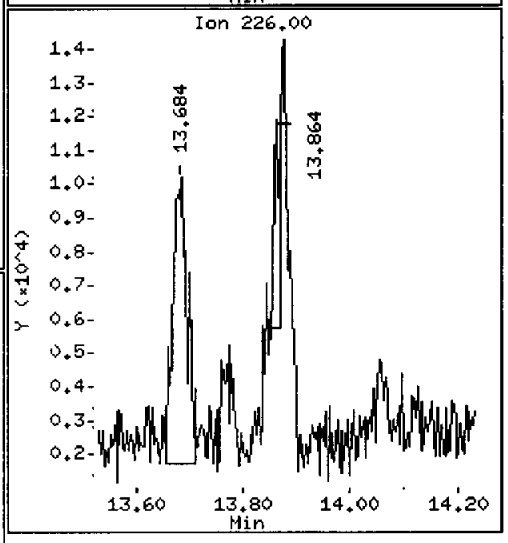












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

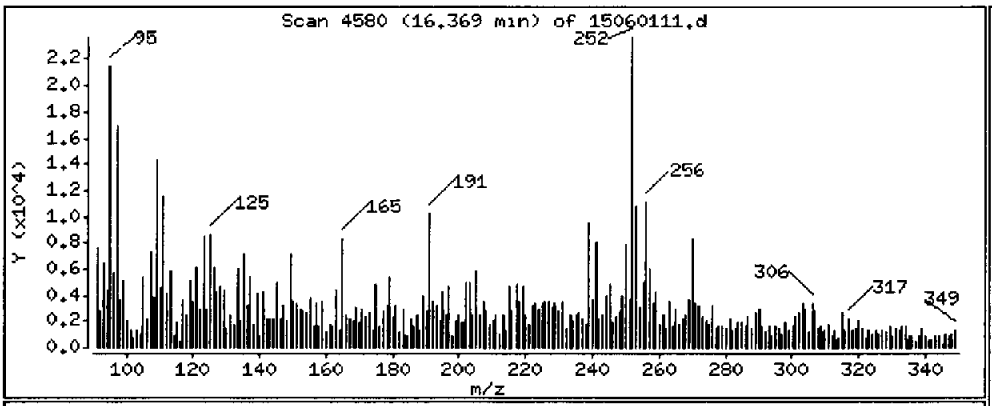
Operator: JZ

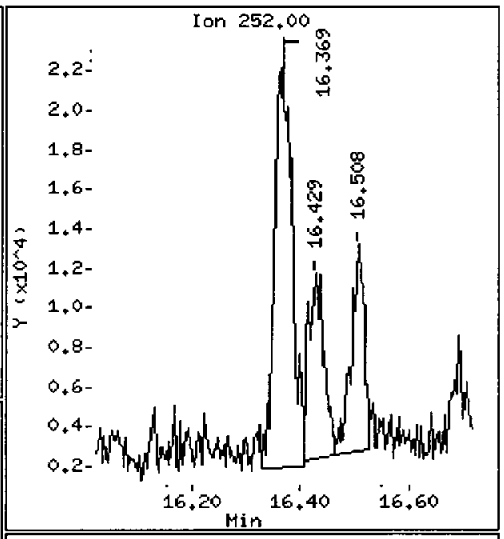
Column phase: ZB-35

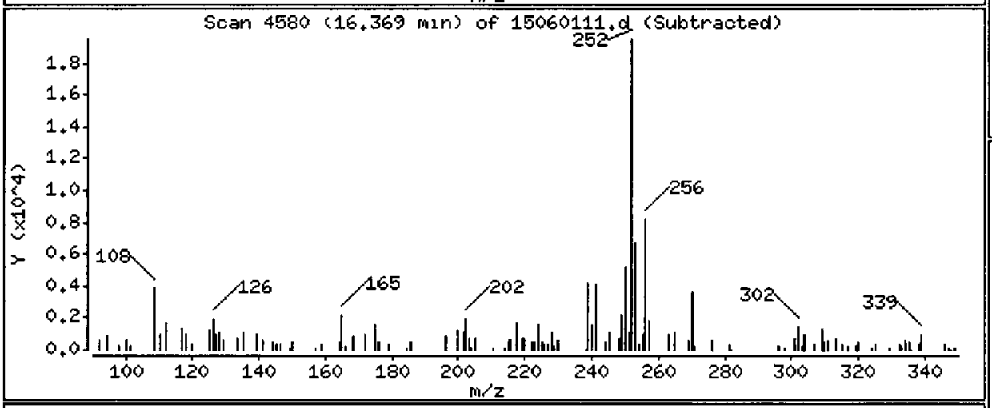
Column diameter: 0.25

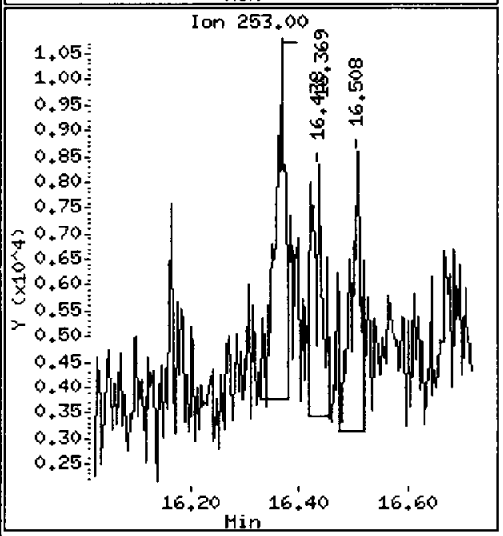
51 Benzo(b)fluoranthene

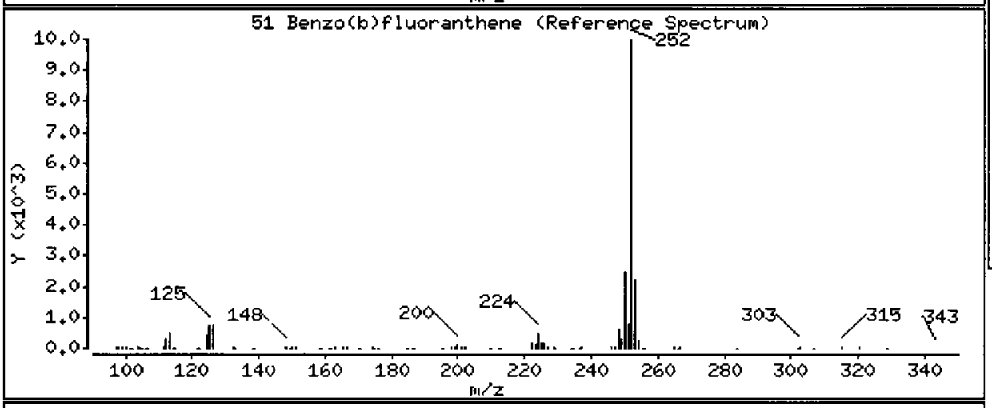
Concentration: 7.862 ug/kg

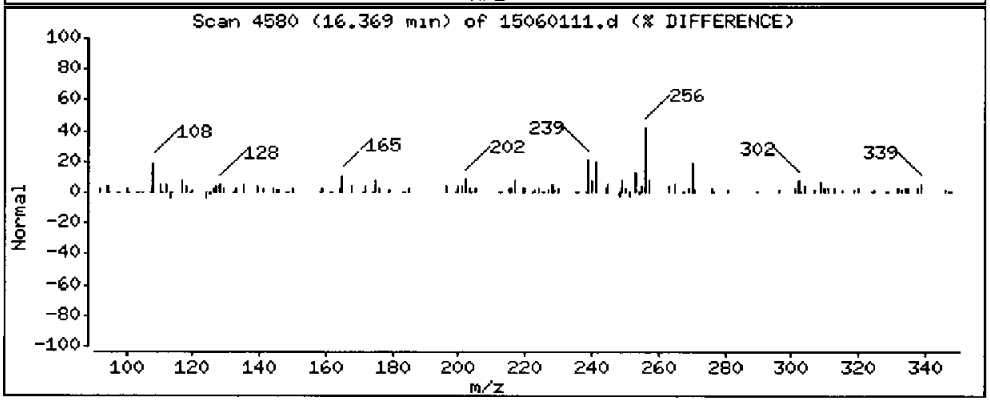












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

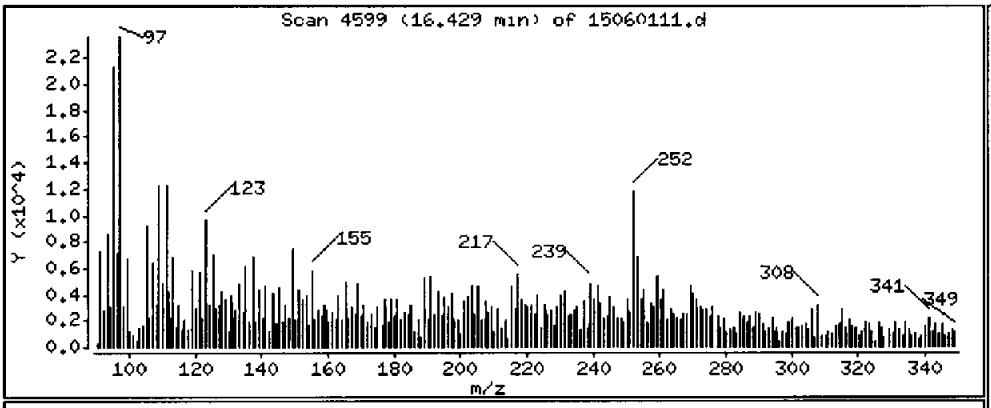
Operator: JZ

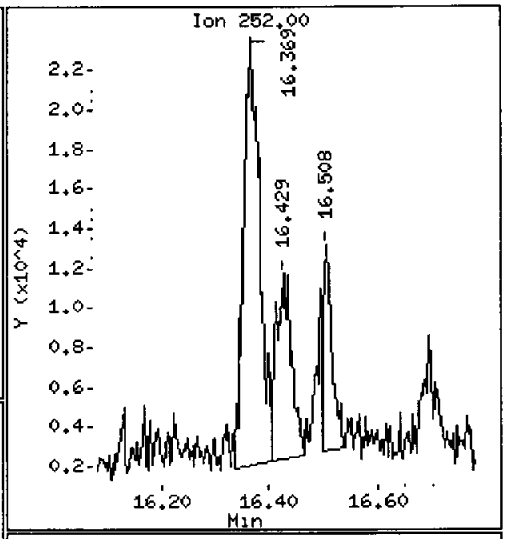
Column phase: ZB-35

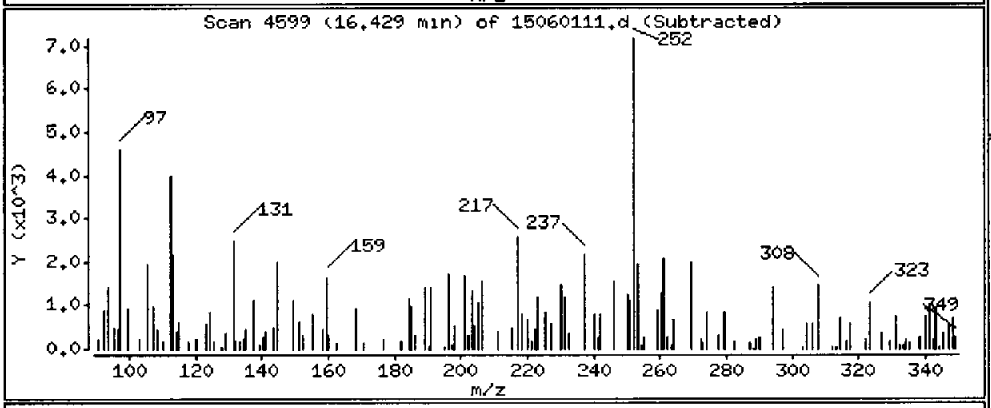
Column diameter: 0.25

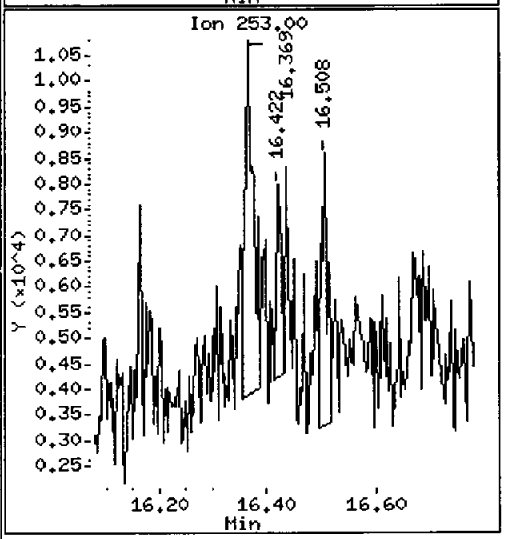
52 Benzo(k)fluoranthene

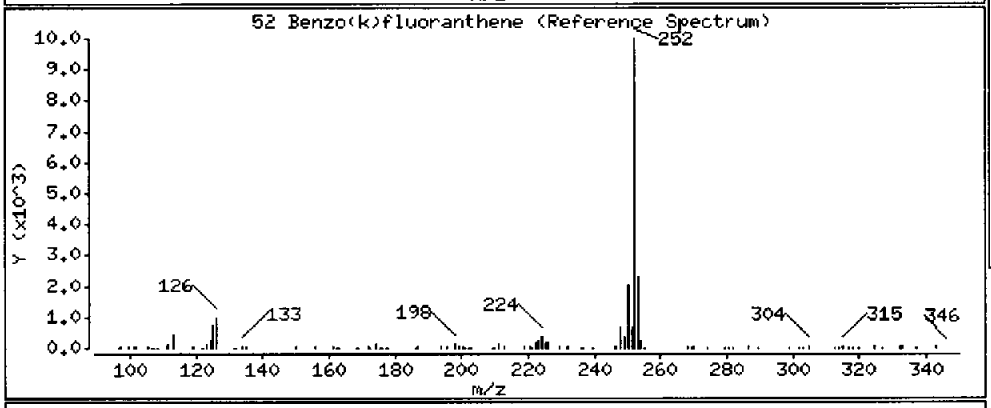
Concentration: 3.098 ug/kg

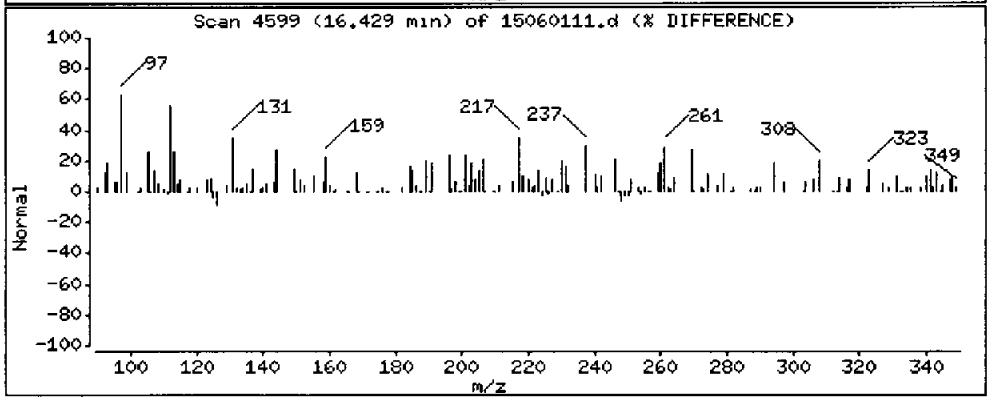












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

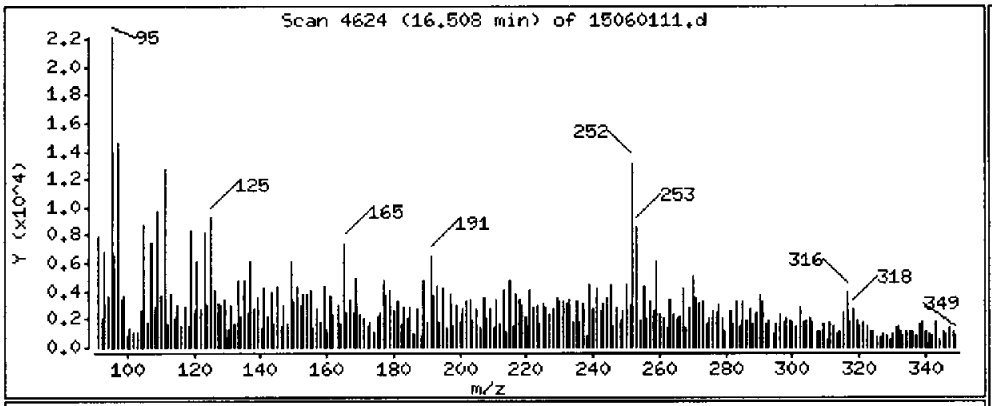
Operator: JZ

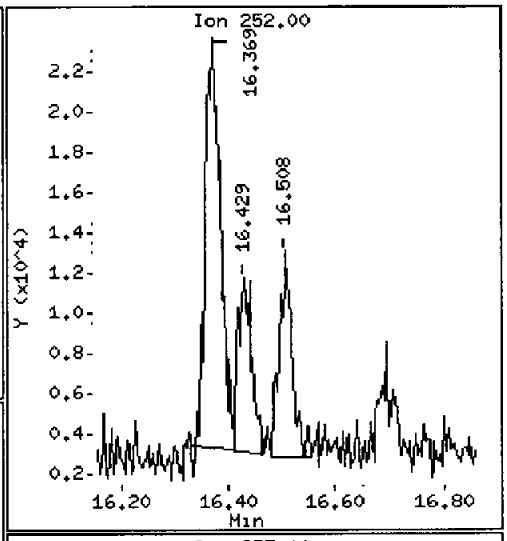
Column phase: ZB-35

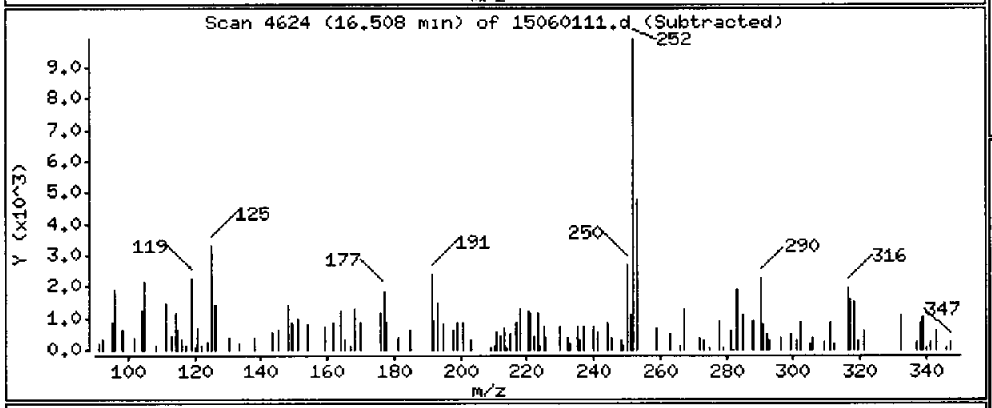
Column diameter: 0.25

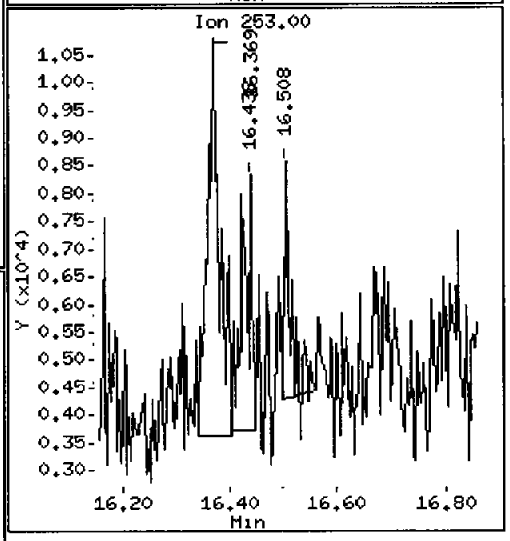
251 Benzo(j)fluoranthene

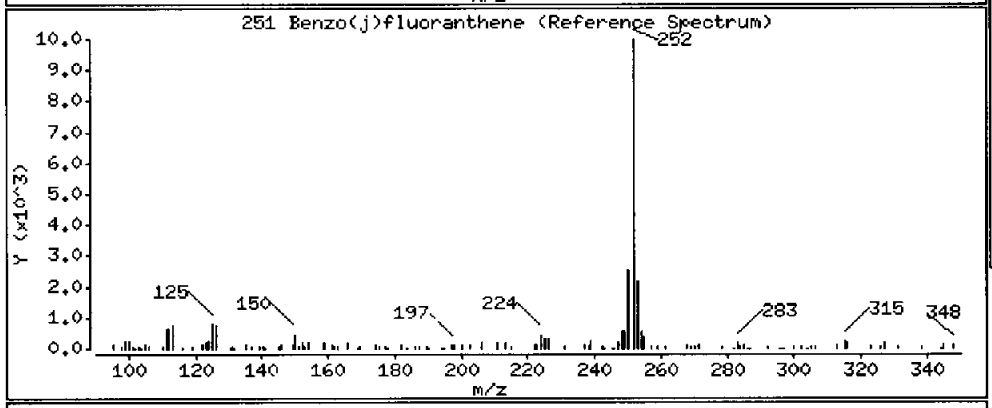
Concentration: 3.042 ug/kg

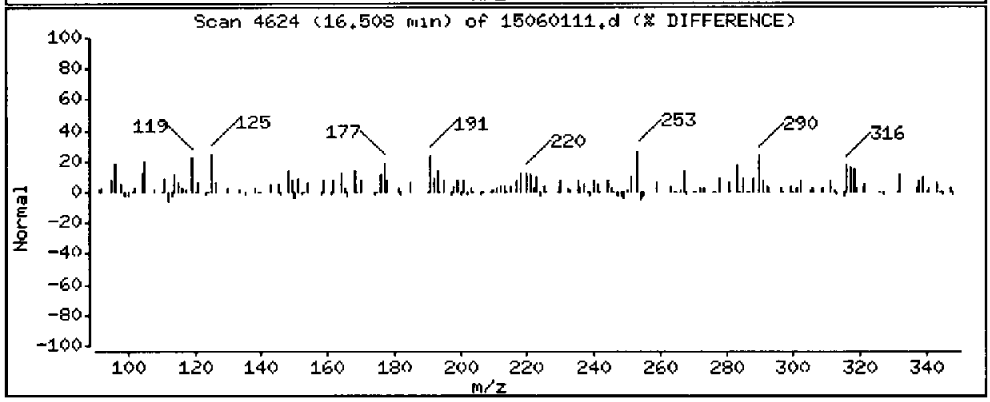












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

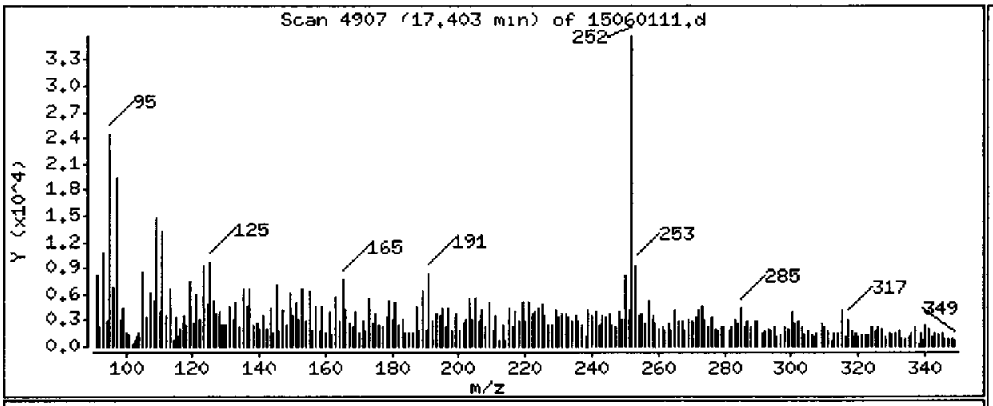
Operator: JZ

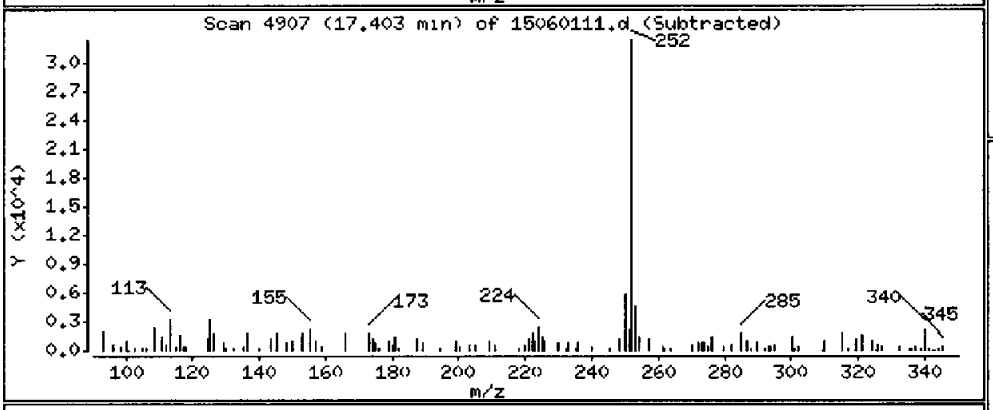
Column phase: ZB-35

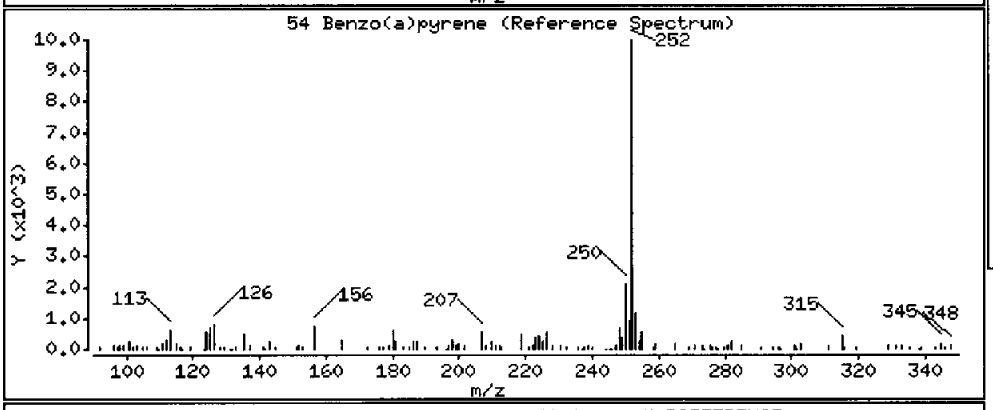
Column diameter: 0.25

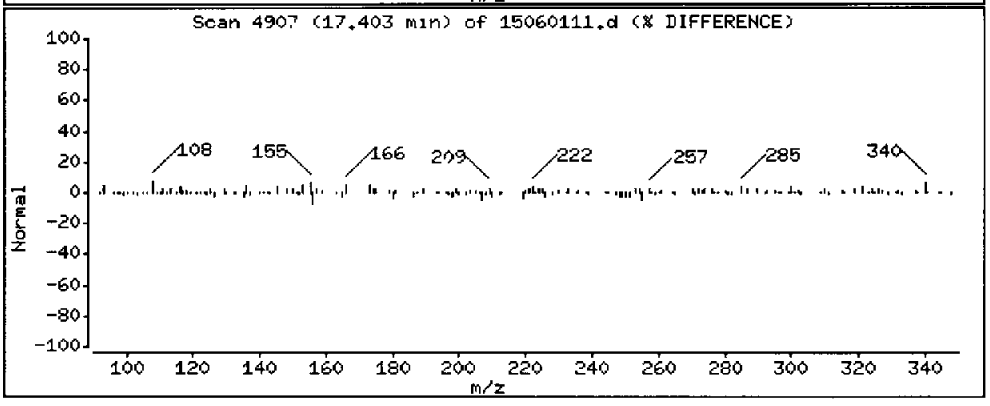
54 Benzo(a)pyrene

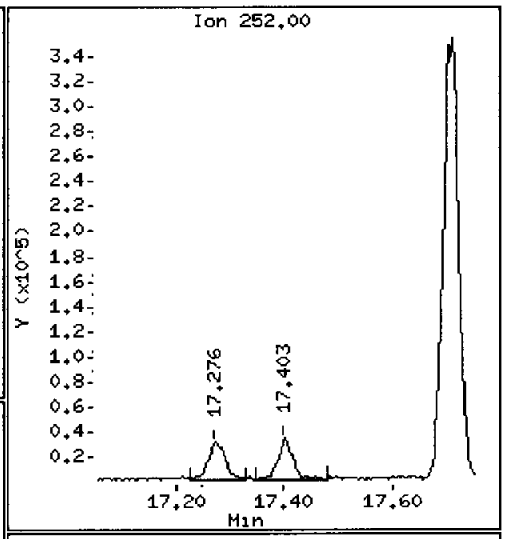
Concentration: 12.03 ug/kg

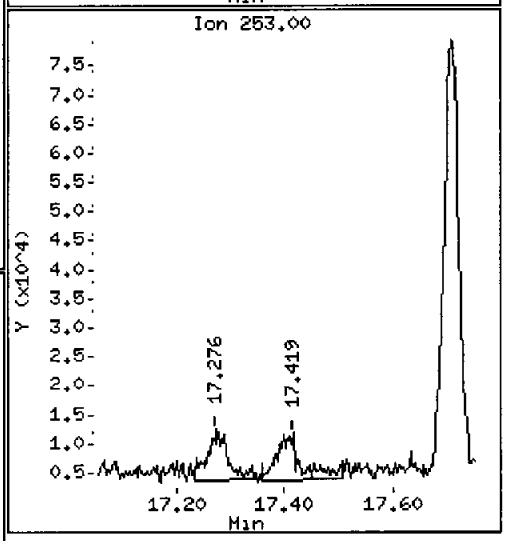












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

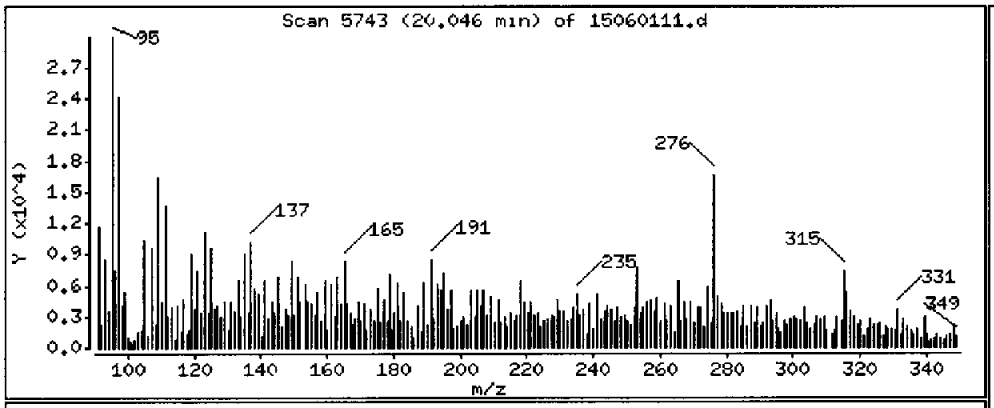
Operator: JZ

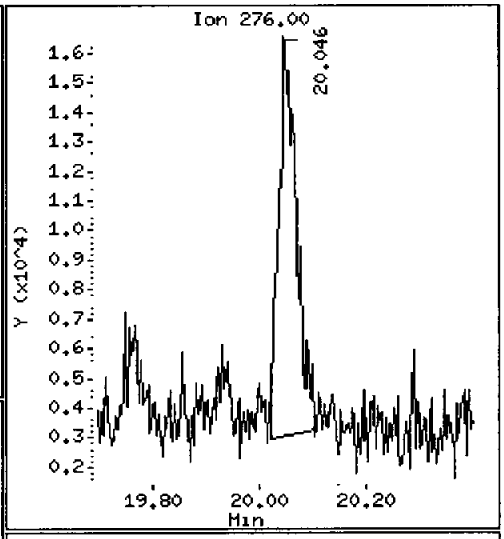
Column phase: ZB-35

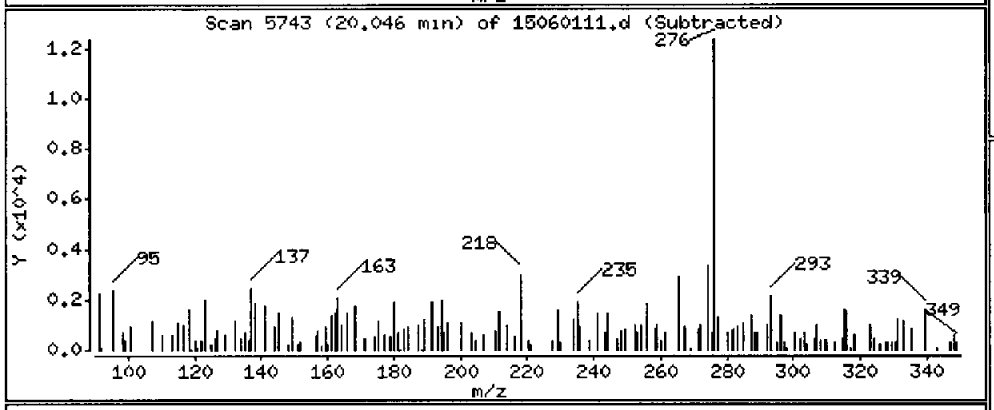
Column diameter: 0.25

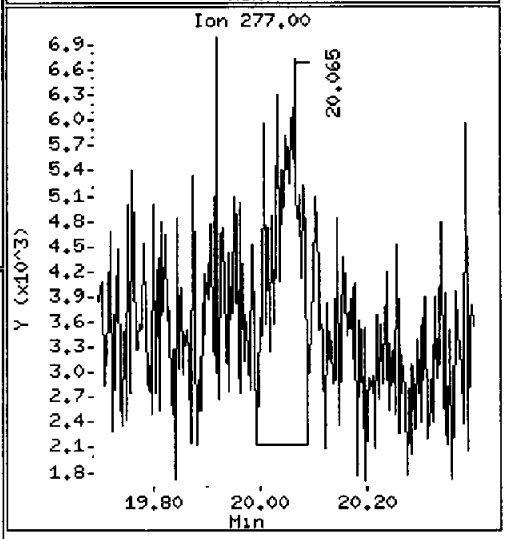
63 Indeno(1,2,3-cd)pyrene

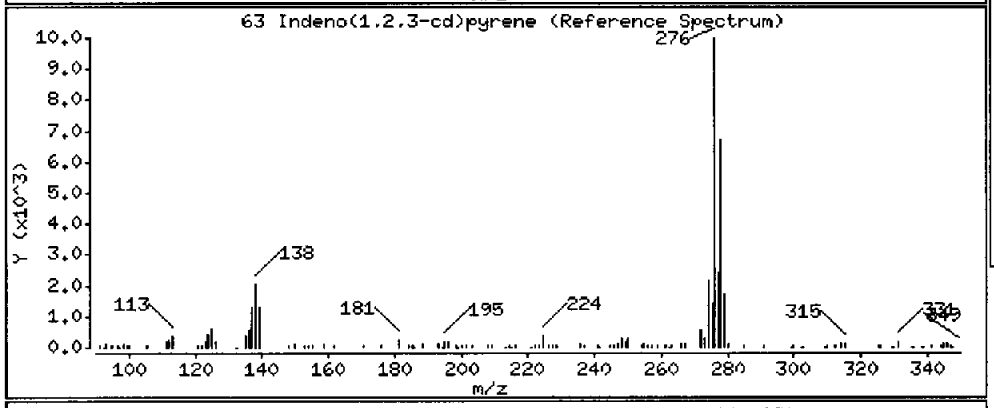
Concentration: 5.004 ug/kg

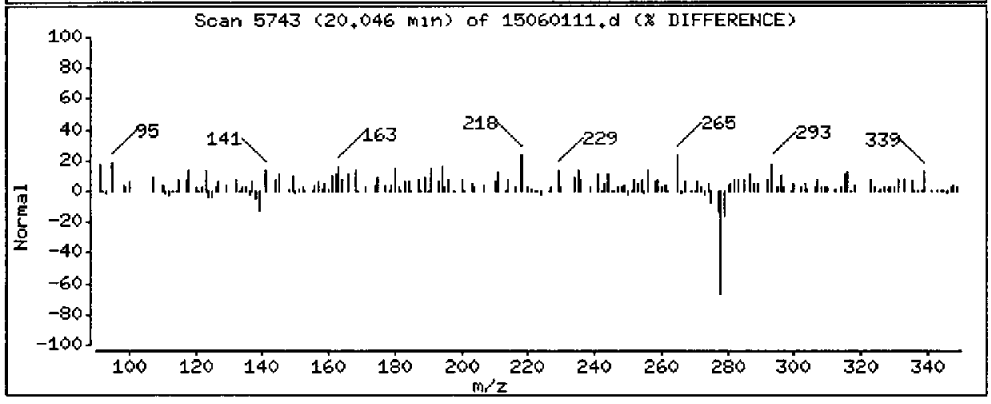












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9G

Volume Injected (uL): 1.0

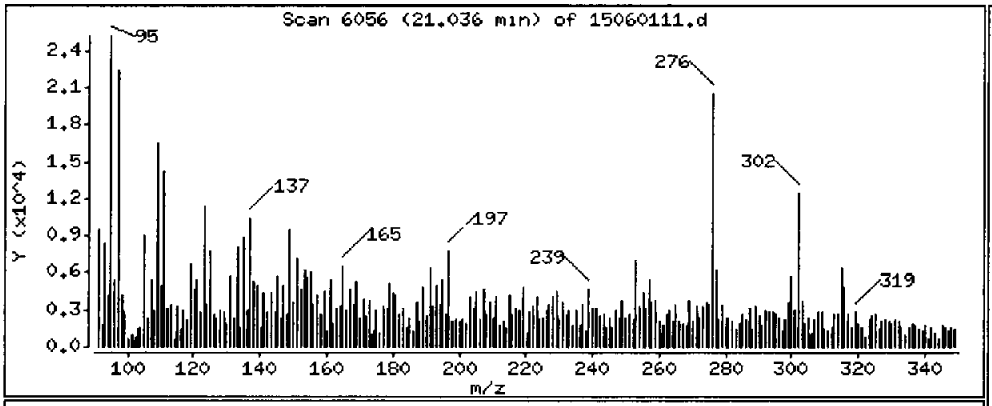
Operator: JZ

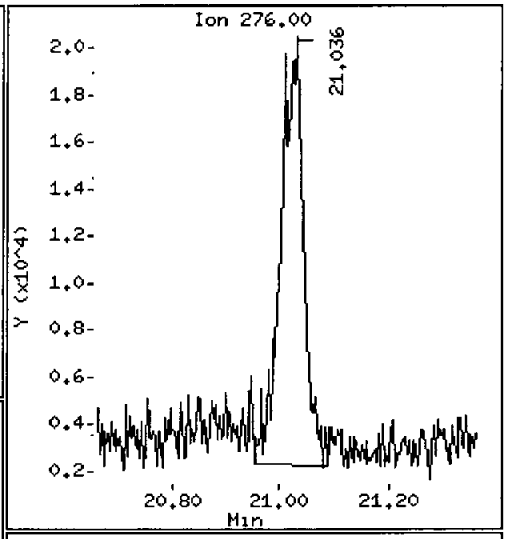
Column phase: ZB-35

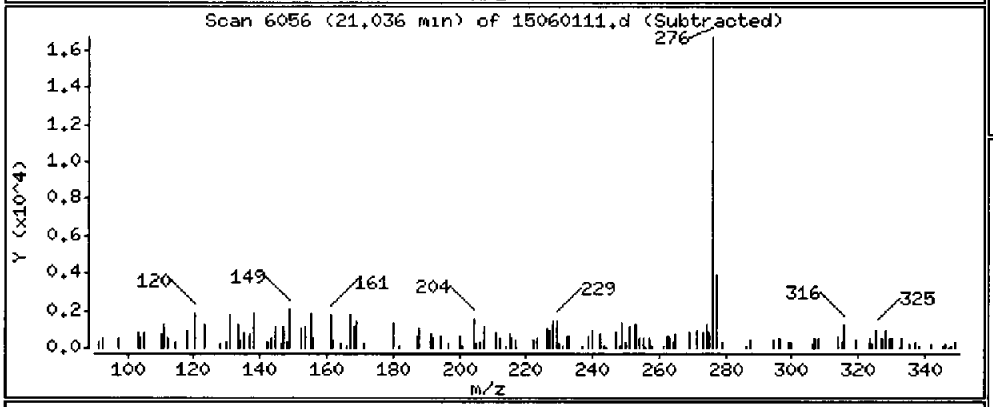
Column diameter: 0.25

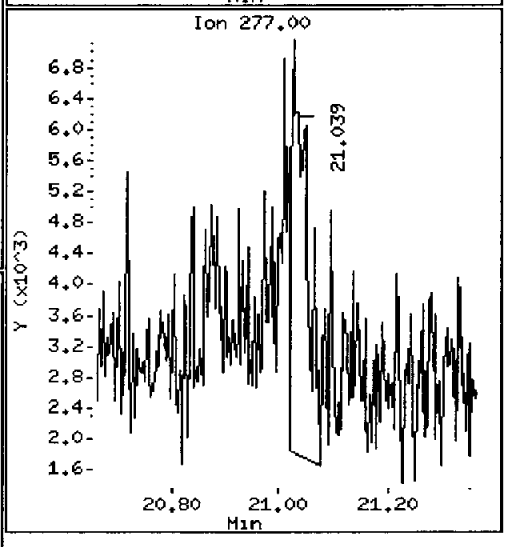
61 Benzo(g,h,i)perylene

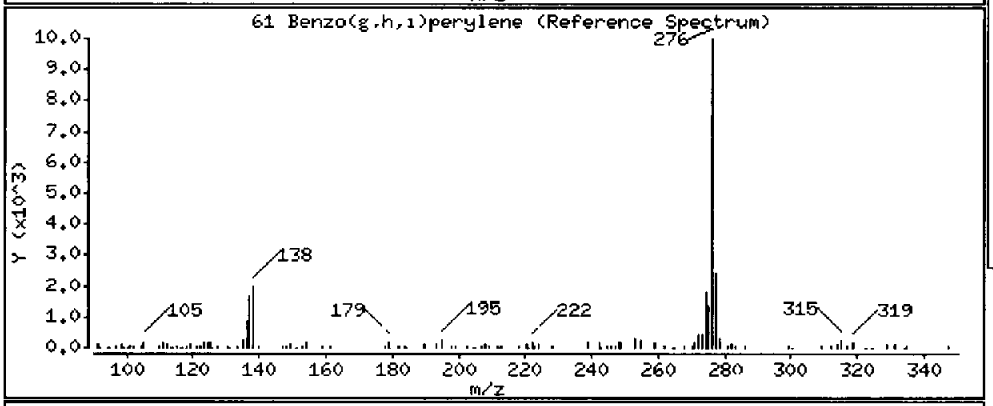
Concentration: 9.662 ug/kg

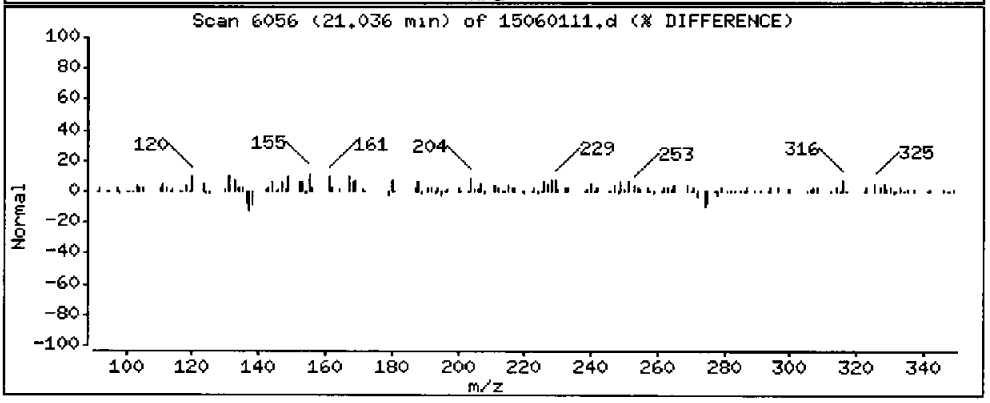












Data File: /chem3/nt8.1/20150601.b/15060111.d

Date : 01-JUN-2015 14:00

Client ID: SDP-03(23.5-24.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

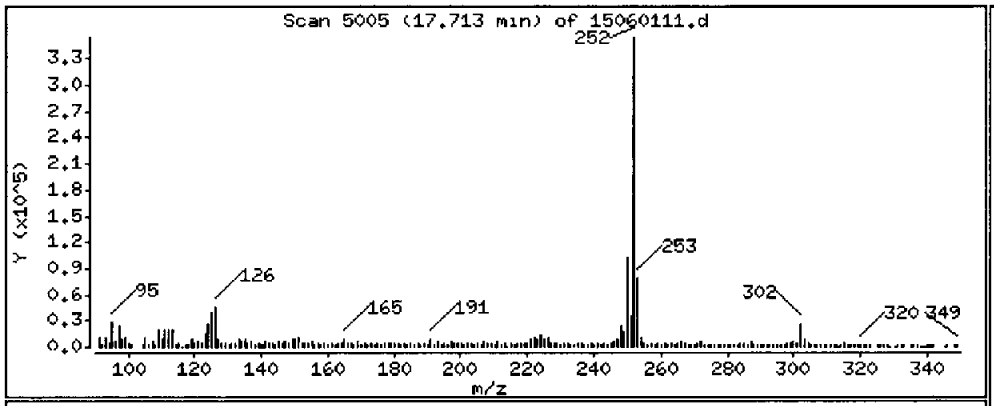
Operator: JZ

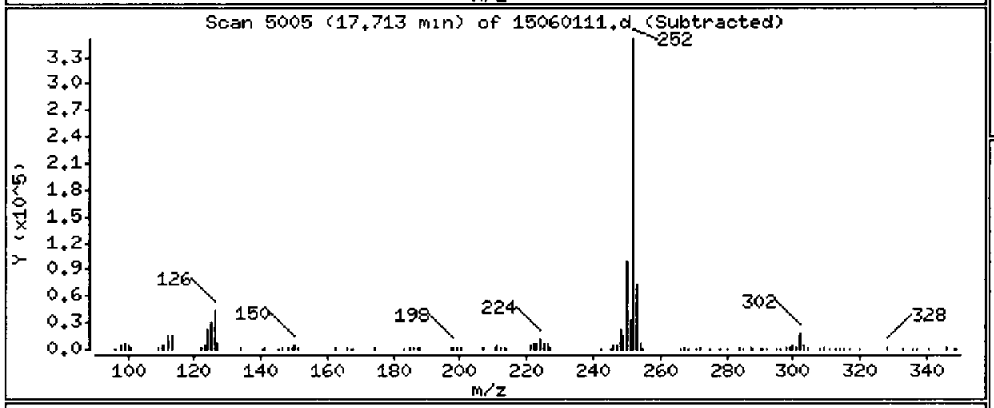
Column phase: ZB-35

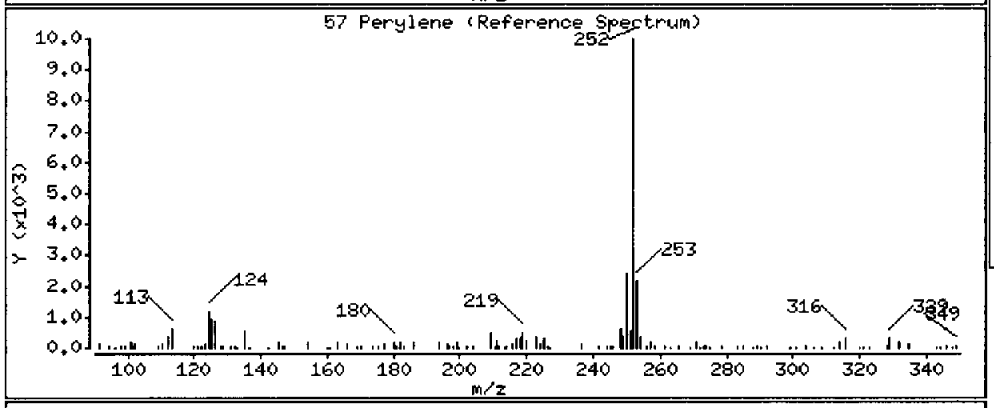
Column diameter: 0.25

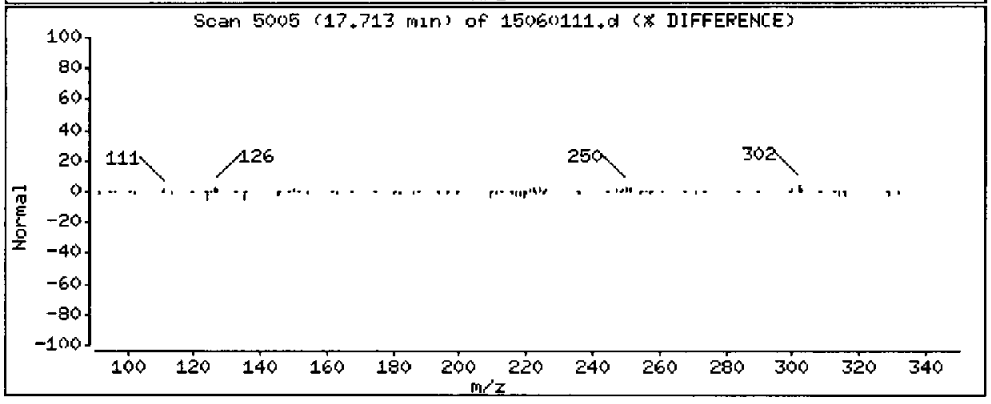
57 Perylene

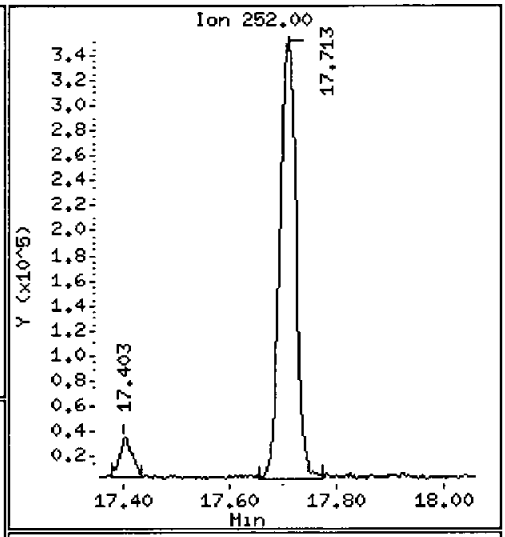
Concentration: 133.2 ug/kg

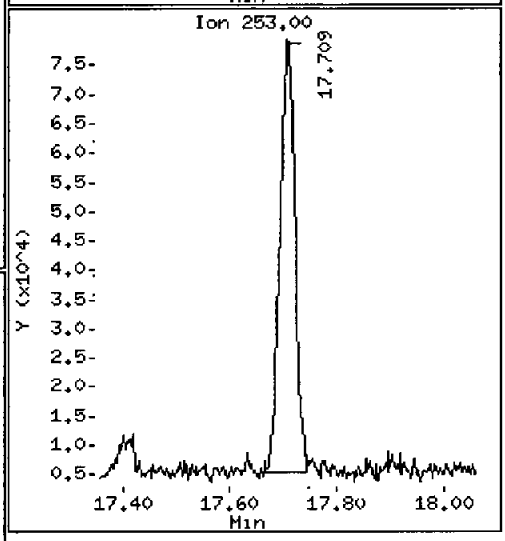












CO-ELUTION SUMMARY FOR FILE - 15060111.d

Lab ID: AGC9G, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC-00136

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060112.d
Lab Smp Id: AGC9H Client Smp ID: SDP-04(1.5-3.0)
Inj Date : 01-JUN-2015 14:25
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9H
Misc Info : 15-9438
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:06 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.00000	Weight of sample extracted (g)
M	9.70000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.733	4.739	(1.000)	429354	2.00000	
	7 Naphthalene	128	4.761	4.767	(1 006)	64734	0.31298	14.44
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	194916	1.48665	68.60
	14 2-Methylnaphthalene	141	5.507	5.510	(1 164)	43019	0.34882	16.10
	15 1-methylnaphthalene	141	5.703	5.703	(1.205)	18409	0.15360	7 088
	21 Acenaphthylene	152	6.895	6.892	(0.985)	13766	0.06837	3.155
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	275713	2.00000	
	23 Acenaphthene	153	7.050	7.050	(1 007)	7634	0.05698	2.629
	11 Dibenzofuran	168	7.199	7.202	(1 028)	32092	0.17320	7.992
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.023	9.020	(1.000)	485086	2.00000	
	30 Phenanthrene	178	9.058	9.055	(1.004)	256031	1.10704	51.08
	31 Anthracene	178	9.099	9.096	(1.008)	47066	0.22605	10.43
	36 Fluoranthene	202	10.775	10.769	(1.194)	633036	2.34027	108.0
$	253 Fluoranthene-d10	212	10.737	10.734	(1.190)	530995	2.22539	102.7

AGCS : 89457

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11 268	11.265	(0.816)	768174	2.43452	112.3
	46 Benzo(a)anthracene	228	13.694	13.684	(0.991)	372113	1.31062	60.48
*	47 Chrysene-d12	240	13 814	13.807	(1.000)	566025	2.00000	
	48 Chrysene	228	13 887	13.880	(1.005)	565233	1.98553	91.62
	51 Benzo(b)fluoranthene	252	16.384	16.369	(0.929)	463663	1.50287	69.35
	52 Benzo(k)fluoranthene	252	16 445	16.429	(0.932)	228344	0.74074	34.18
	251 Benzo(j)fluoranthene	252	16.517	16.505	(0.936)	226459	0.75286	34.74
	54 Benzo(a)pyrene	252	17.418	17.402	(0.987)	369928	1.34479	62.05
*	56 Perylene-d12	264	17 643	17.633	(1.000)	587485	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.068	20.046	(1.137)	374487	1.13343	52.30
$	60 Dibenzo(a,h)anthracene-d14	292	19 951	19.929	(1.131)	510298	2.28076	105.2
	62 Dibenzo(a,h)anthracene	278	20.049	20.033	(1.136)	89624	0.33304	15.37
	61 Benzo(g,h,i)perylene	276	21.045	21.010	(1.193)	353898	1.21769	56.19
	57 Perylene	252	17.719	17.706	(1.004)	142087	0.49757	22.96

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060112.d
Lab Smp Id: AGC9H
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-04(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	429354	25.14
22 Acenaphthene-d10	230598	115299	461196	275713	19.56
28 Phenanthrene-d10	373928	186964	747856	485086	29.73
47 Chrysene-d12	381262	190631	762524	566025	48.46
56 Perylene-d12	380825	190412	761650	587485	54.27

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.05
56 Perylene-d12	17.63	17.13	18.13	17.64	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

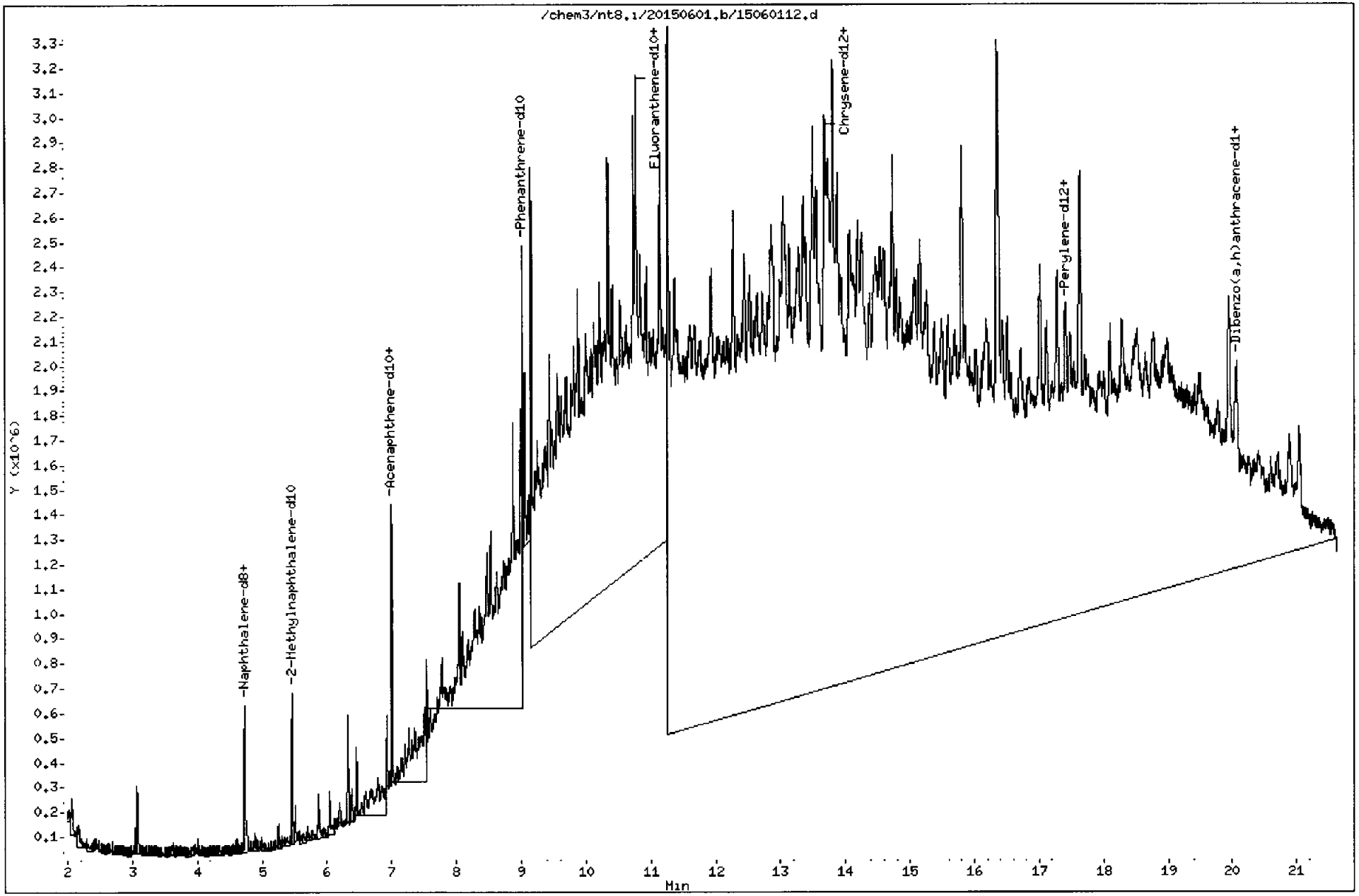
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9H
Client Smp ID: SDP-04(1.5-3.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	138.4	68.60	49.55	32-120
$ 253 Fluoranthene-d10	138.4	102.7	74.18	36-134
$ 60 Dibenzo(a,h)anthra	138.4	105.2	76.03	21-133

Data File: /chem3/nt8.i/20150601.b/15060112.d
Date : 01-JUN-2015 14:25
Client ID: SDP-04(1.5-3.0)
Sample Info: AGC9H
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

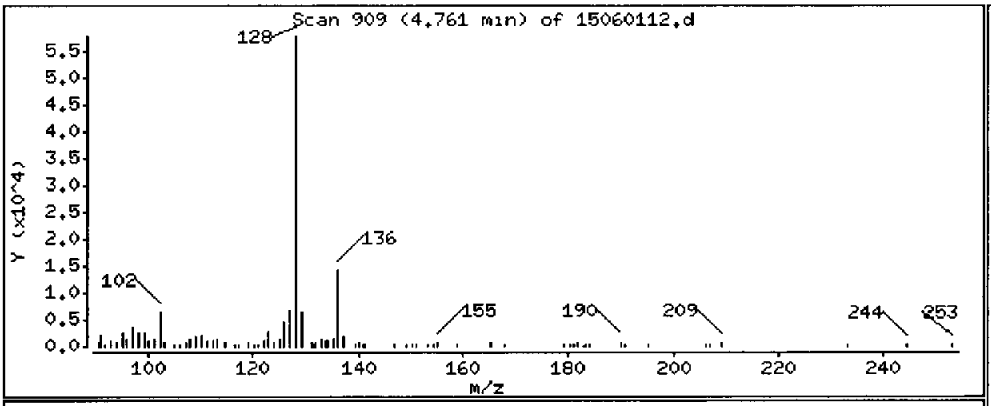
Operator: JZ

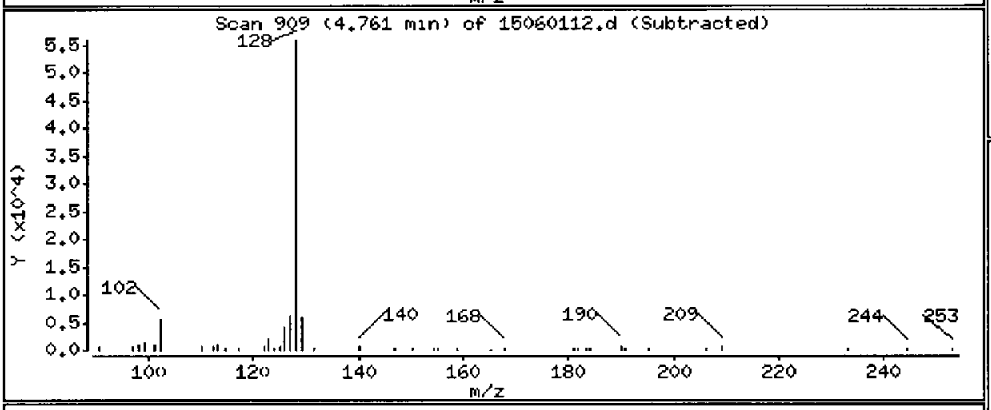
Column phase: ZB-35

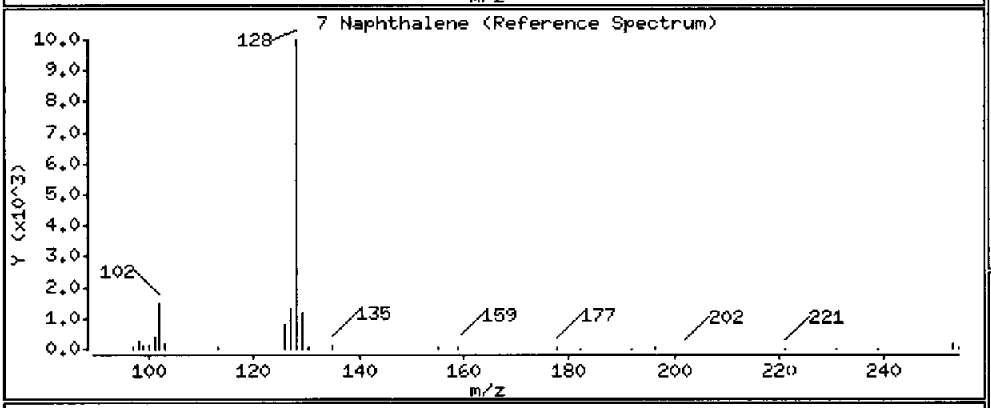
Column diameter: 0.25

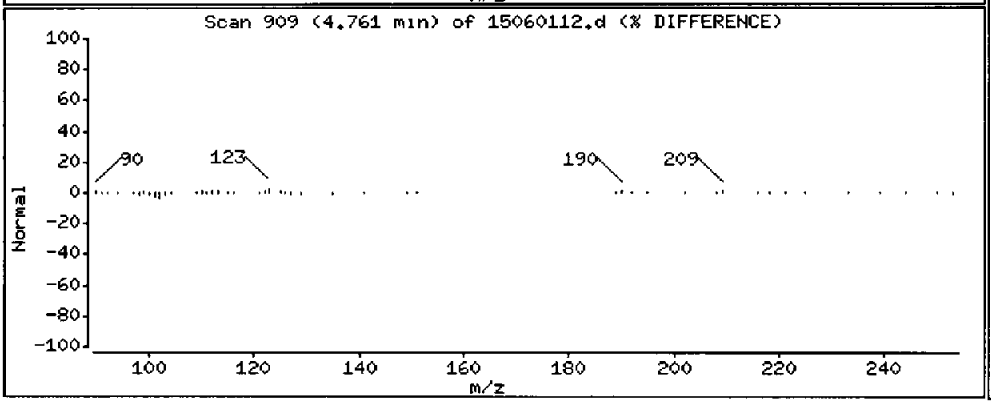
7 Naphthalene

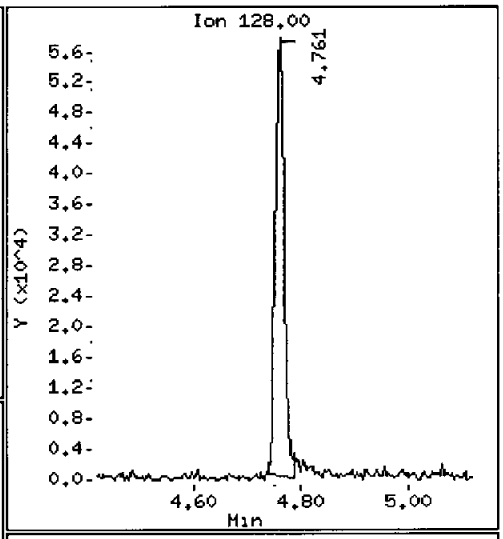
Concentration: 14.44 ug/kg

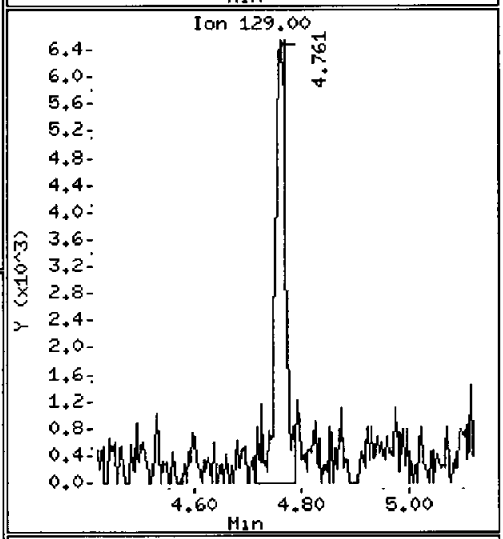


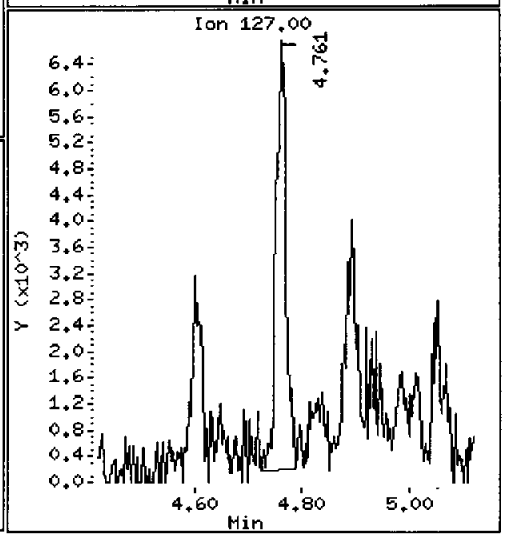












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

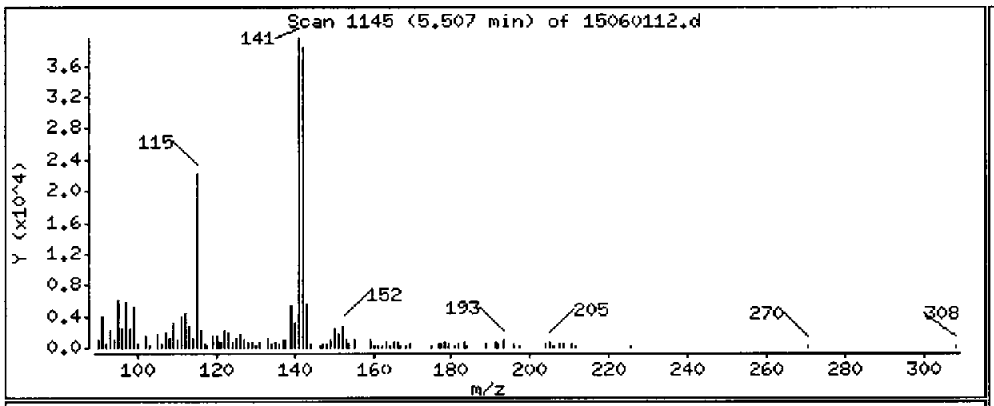
Operator: JZ

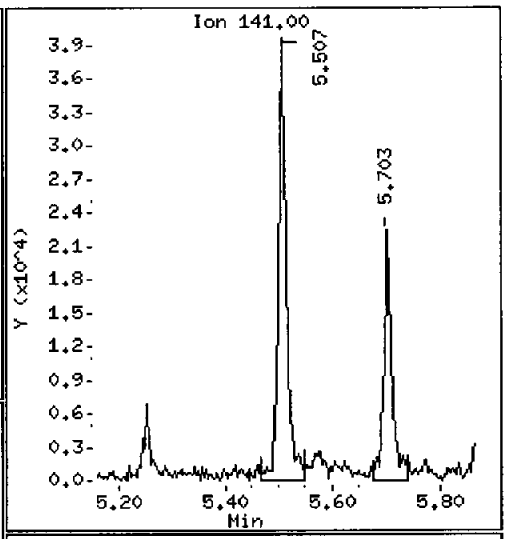
Column phase: ZB-35

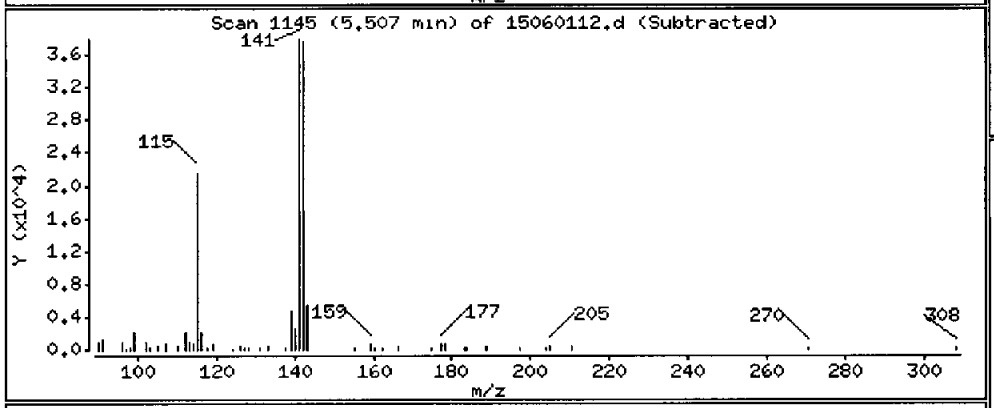
Column diameter: 0.25

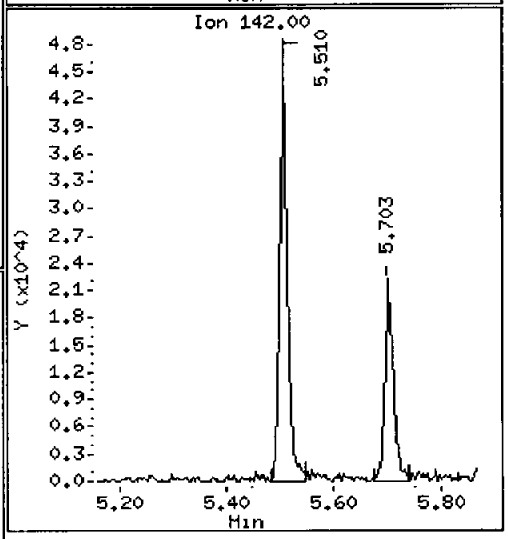
14 2-Methylnaphthalene

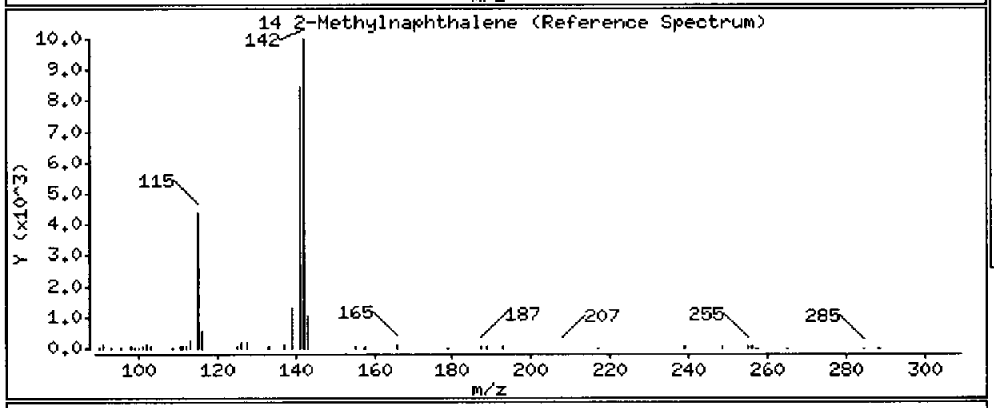
Concentration: 16.10 ug/kg

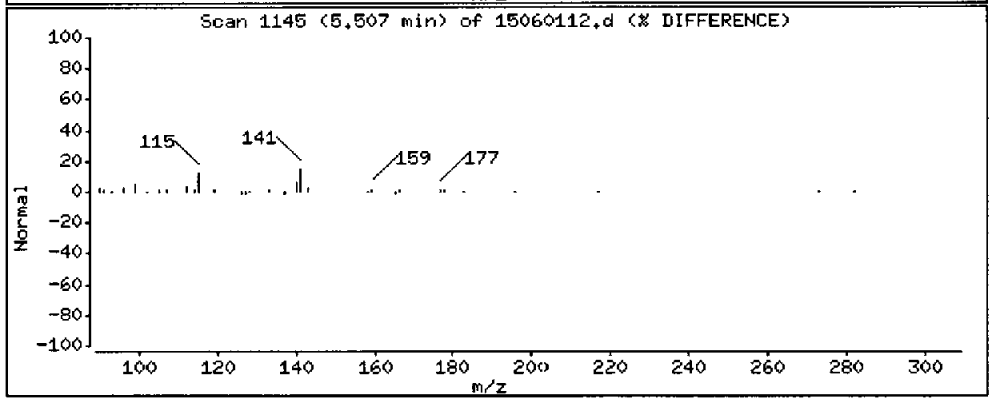












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

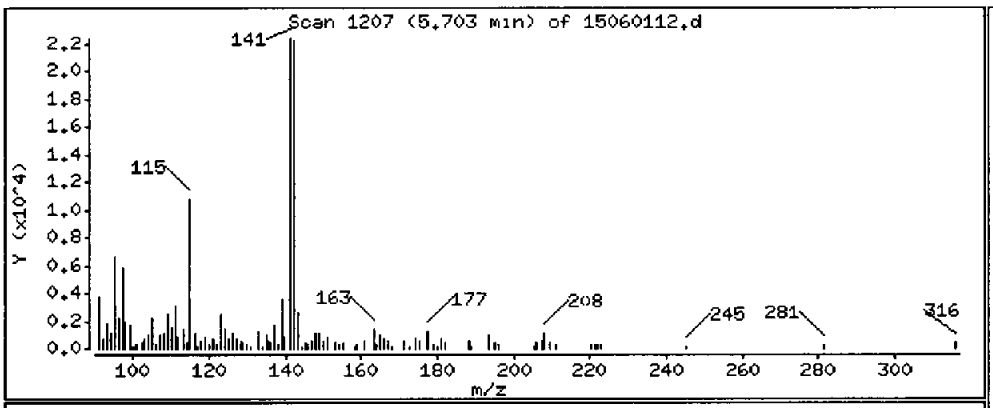
Operator: JZ

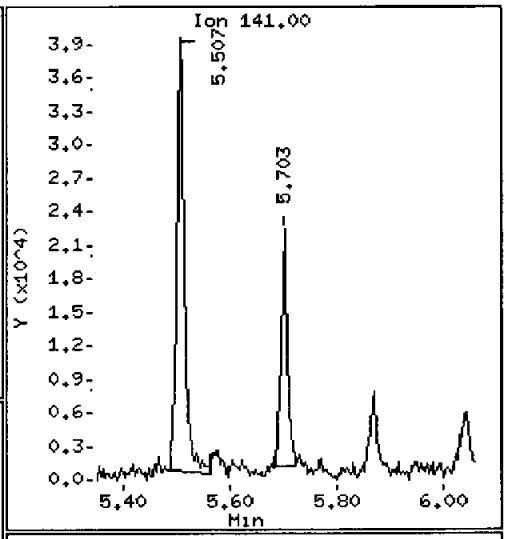
Column phase: ZB-35

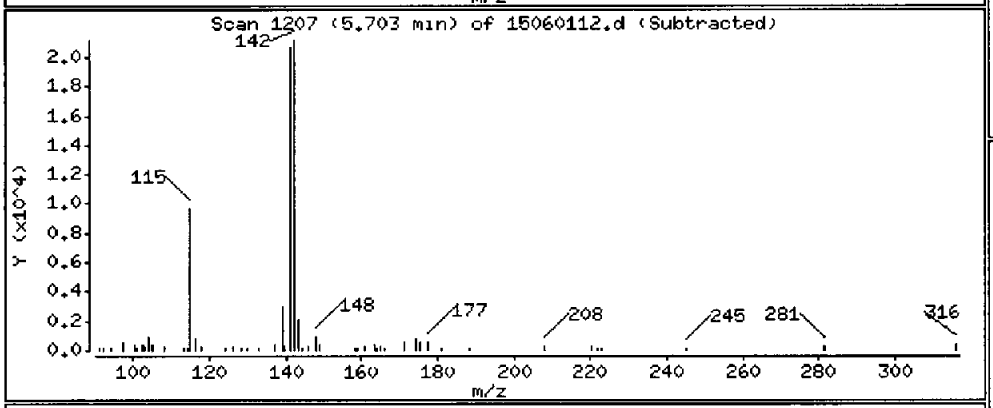
Column diameter: 0.25

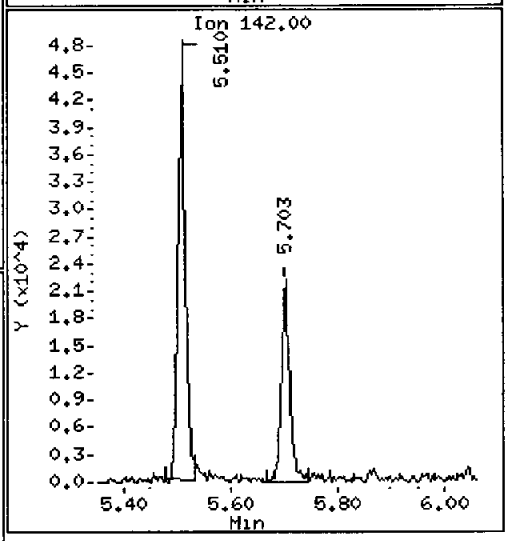
15 1-methylnaphthalene

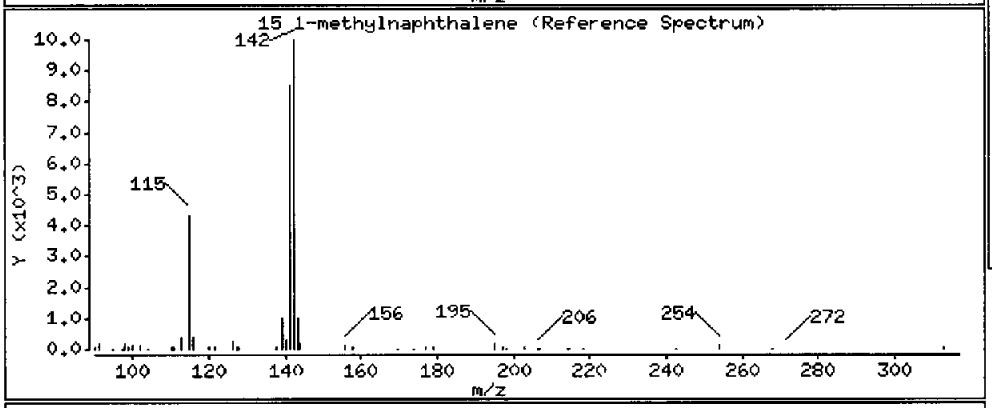
Concentration: 7.088 ug/kg

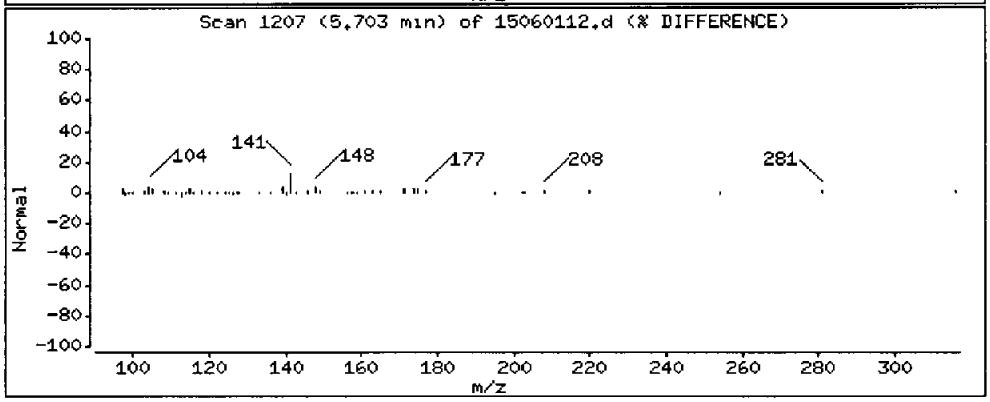












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

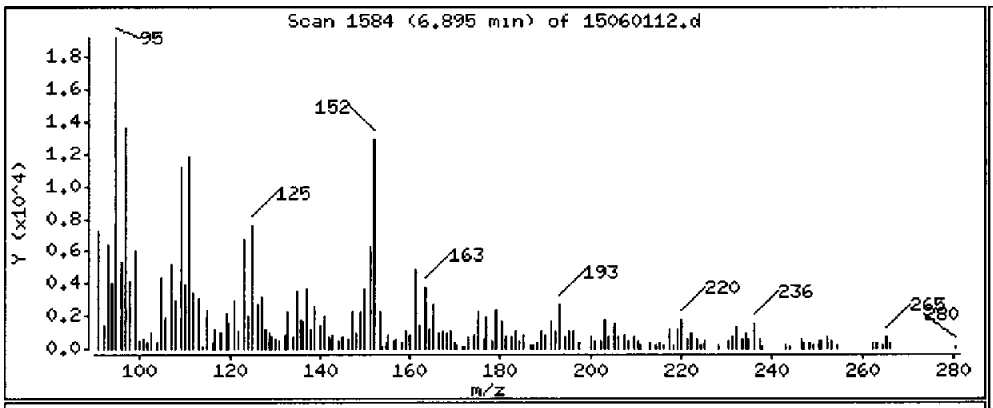
Operator: JZ

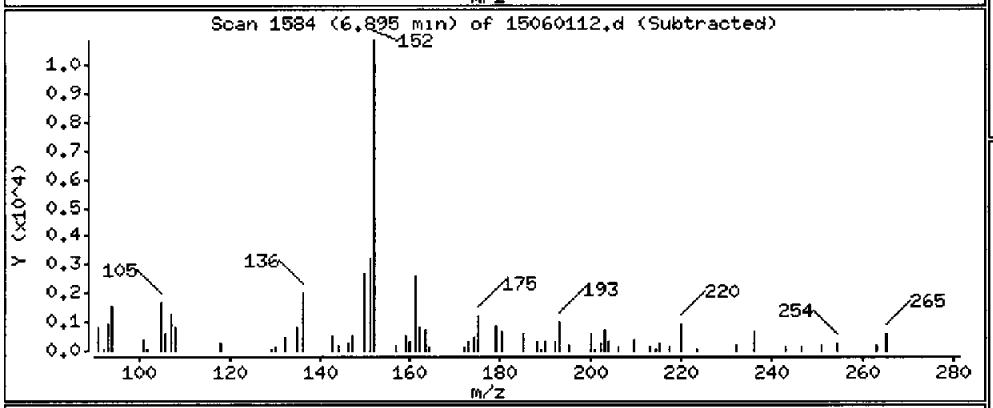
Column phase: ZB-35

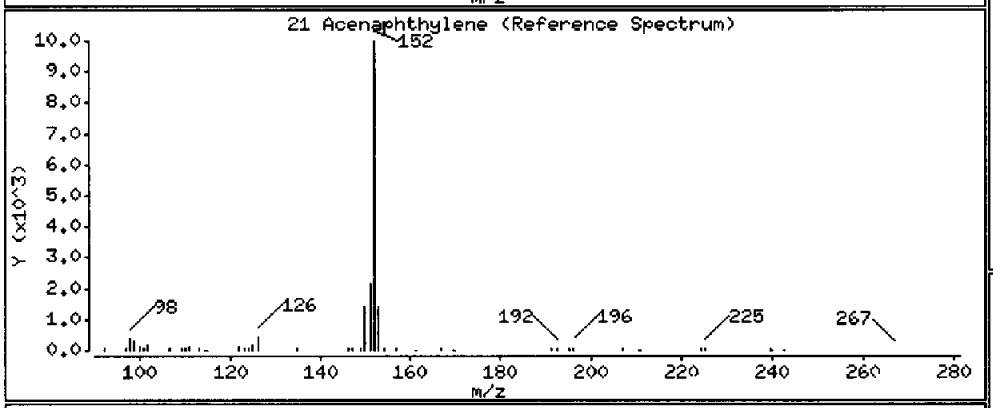
Column diameter: 0.25

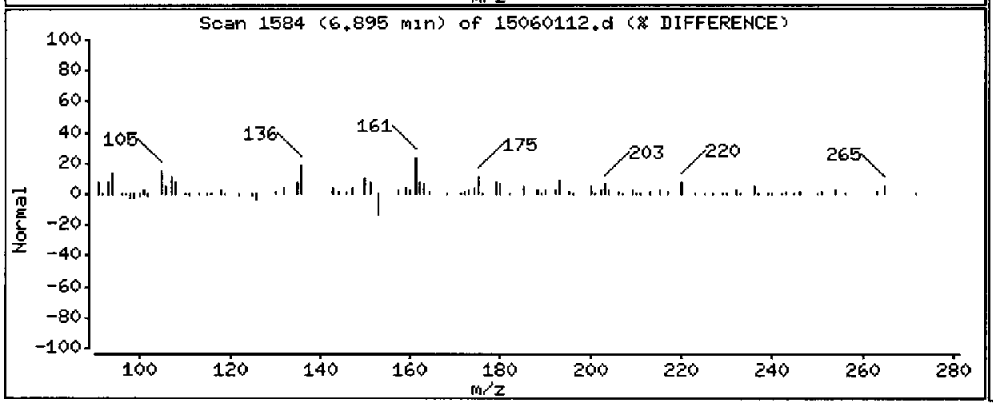
21 Acenaphthylene

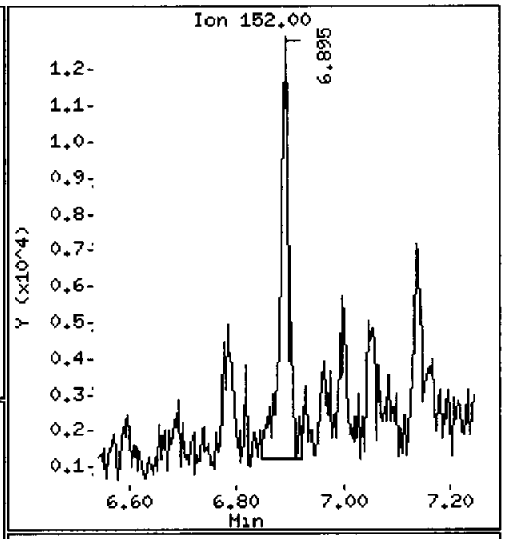
Concentration: 3.155 ug/kg

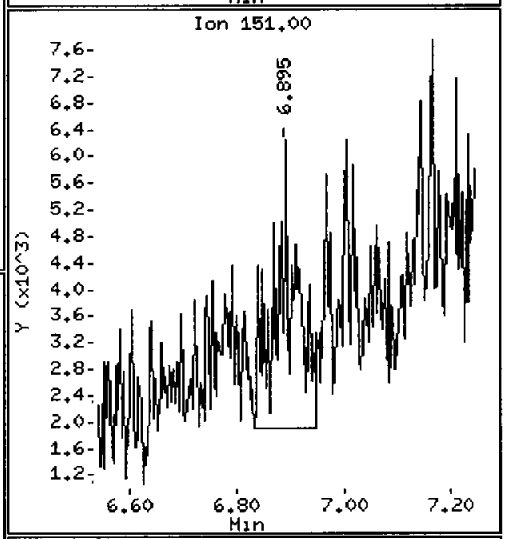


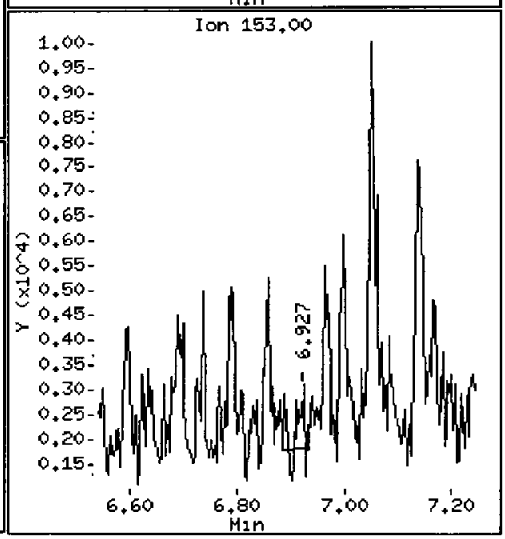












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

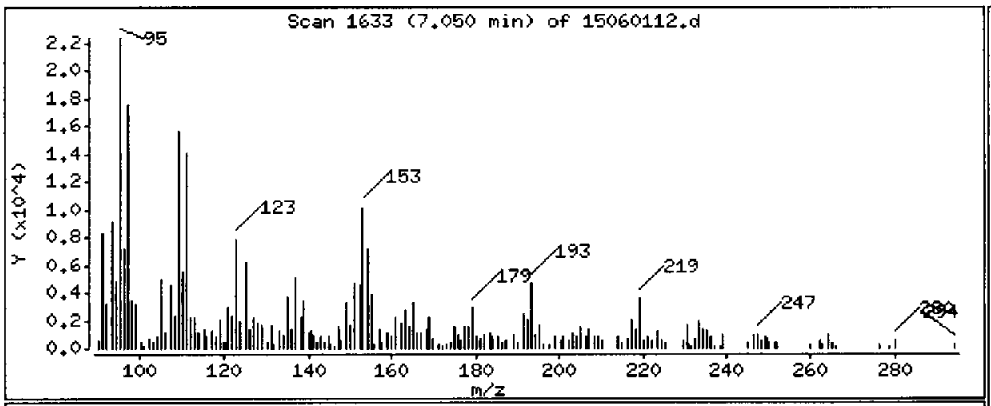
Operator: JZ

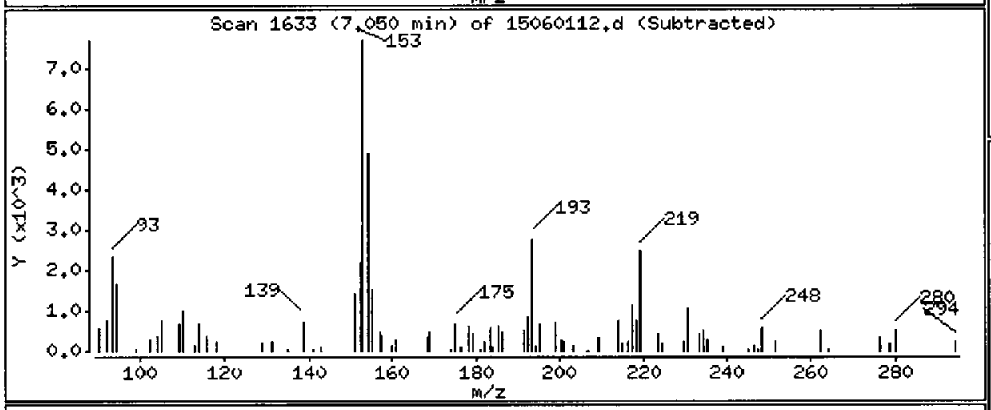
Column phase: ZB-35

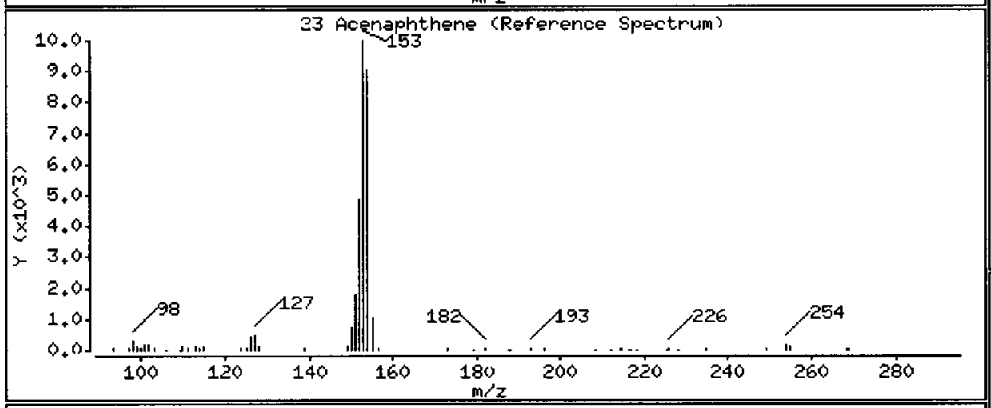
Column diameter: 0.25

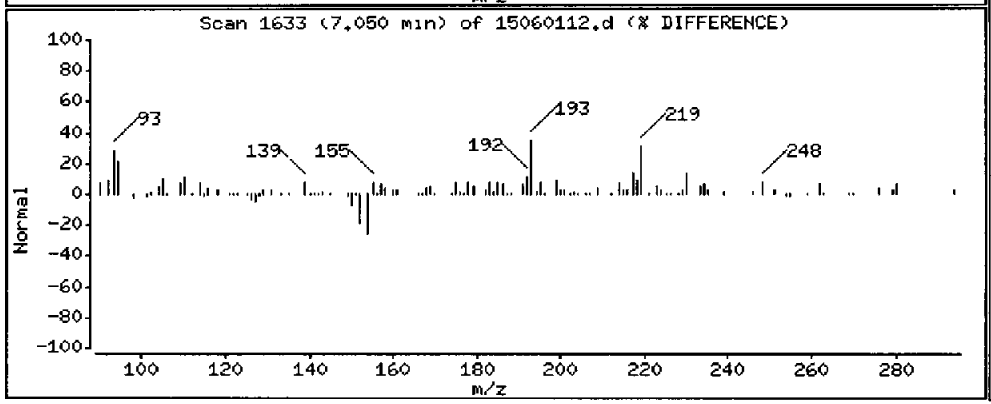
23 Acenaphthene

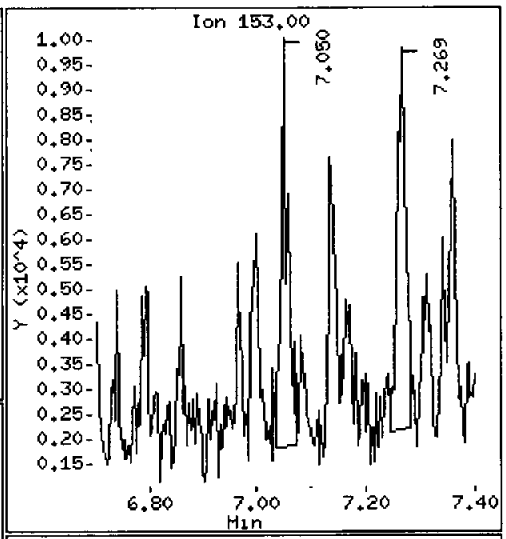
Concentration: 2.629 ug/kg

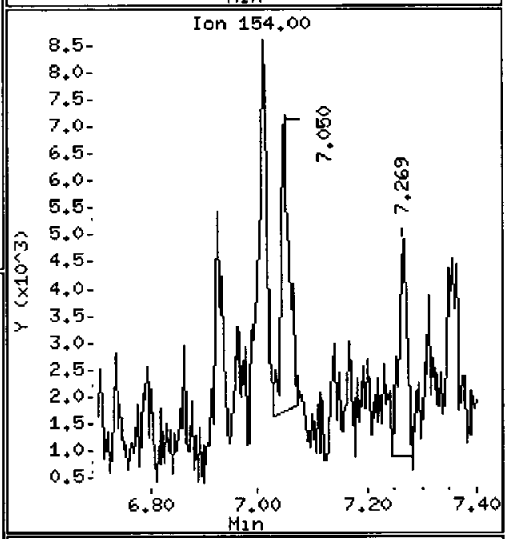


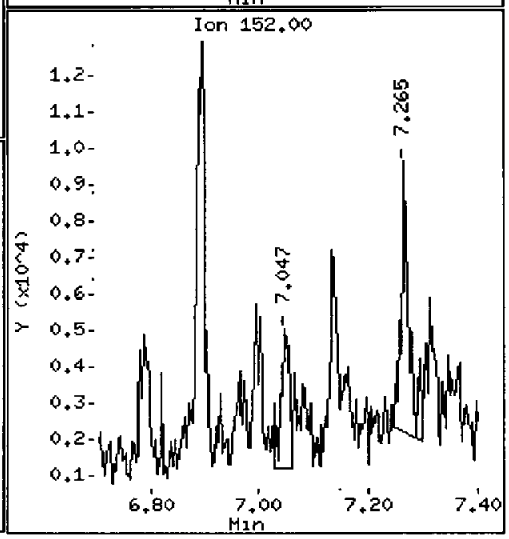












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

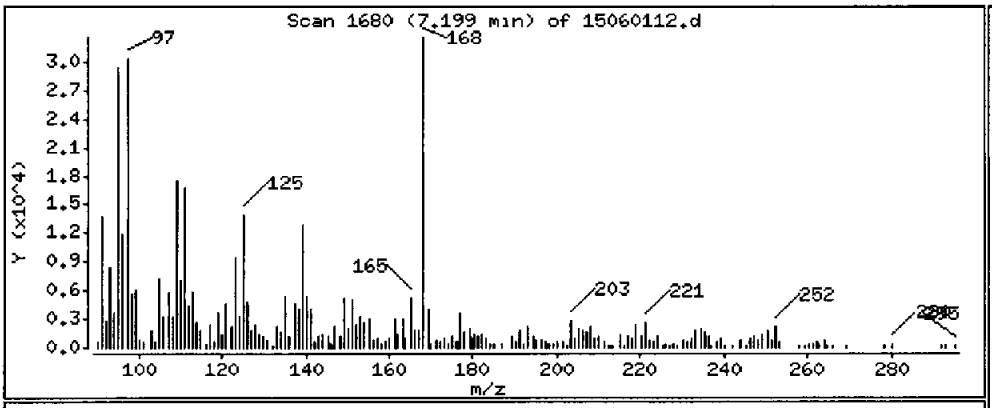
Operator: JZ

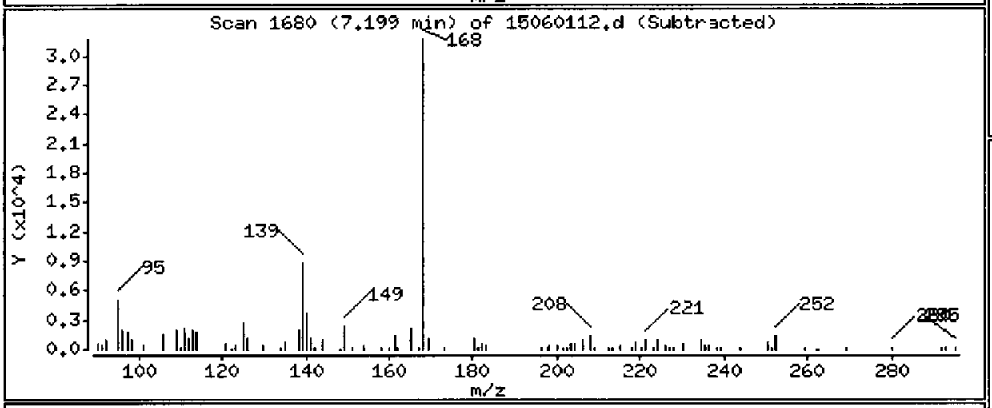
Column phase: ZB-35

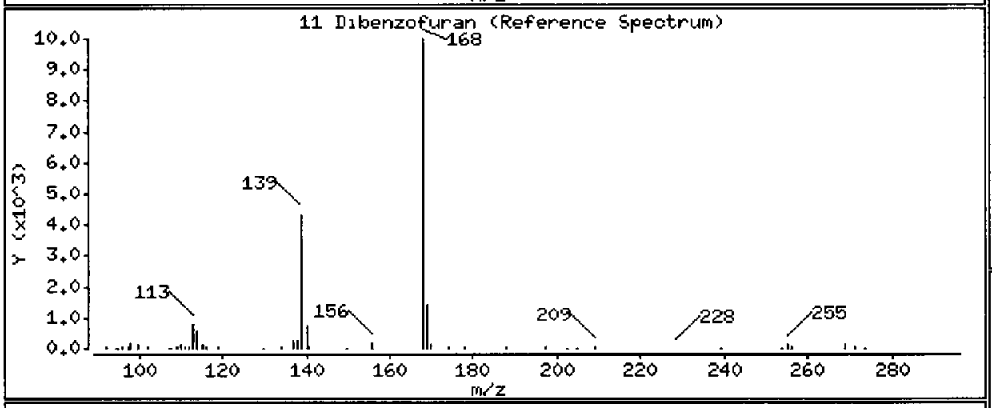
Column diameter: 0.25

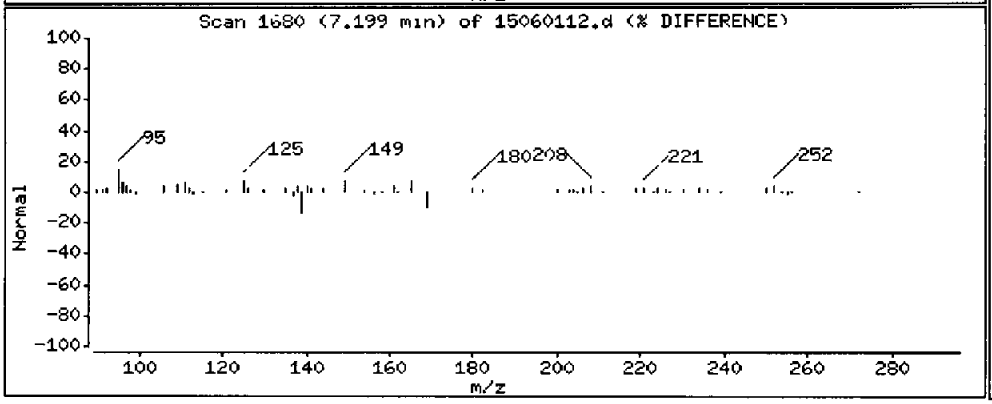
11 Dibenzofuran

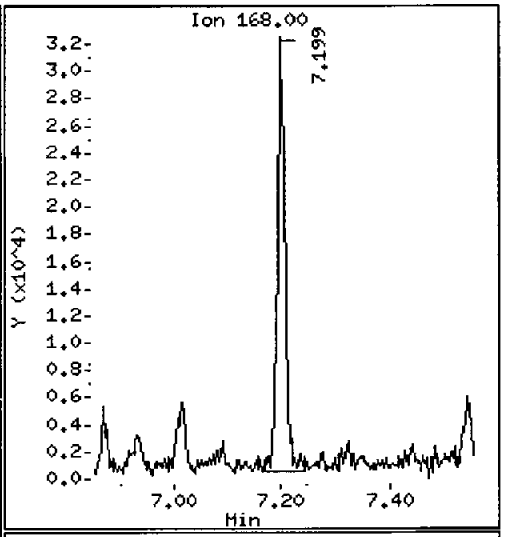
Concentration: 7.992 ug/kg

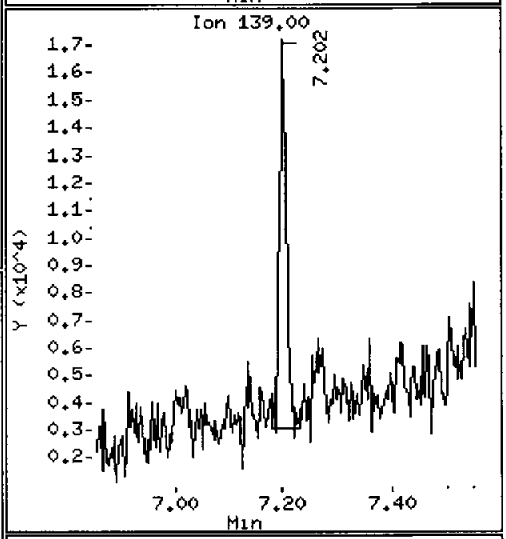


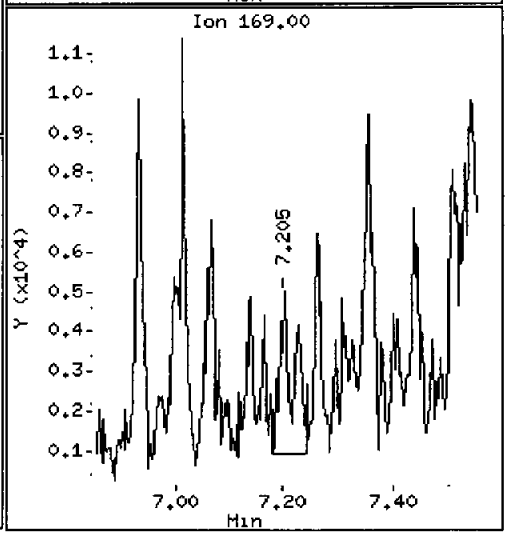












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

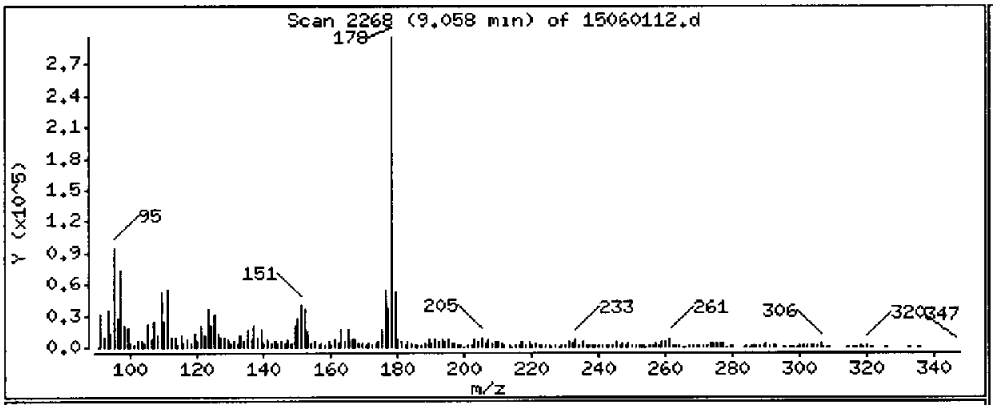
Operator: JZ

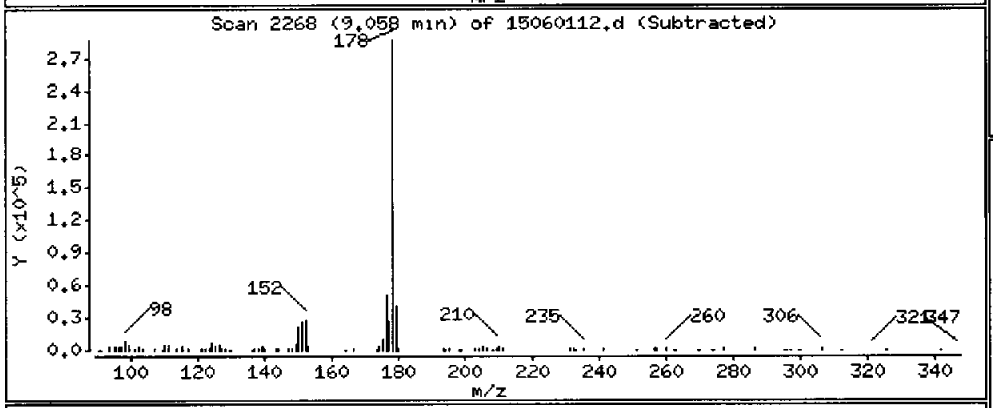
Column phase: ZB-35

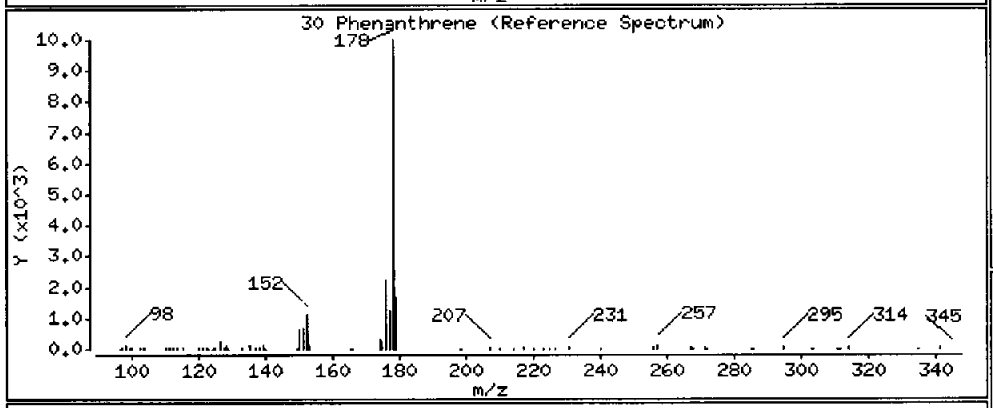
Column diameter: 0.25

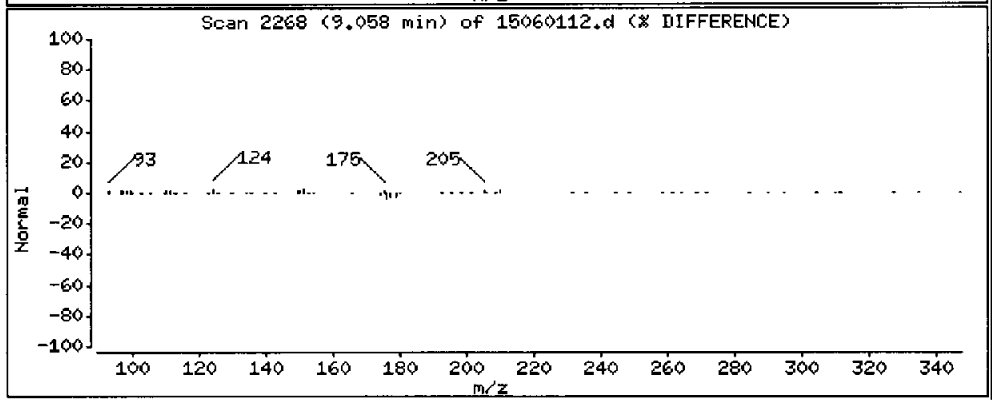
30 Phenanthrene

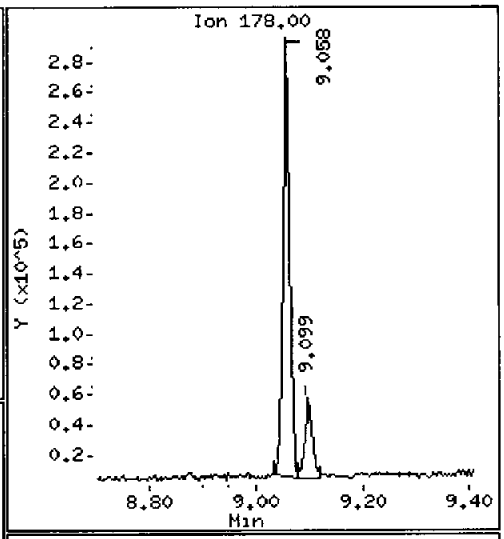
Concentration: 51.08 ug/kg

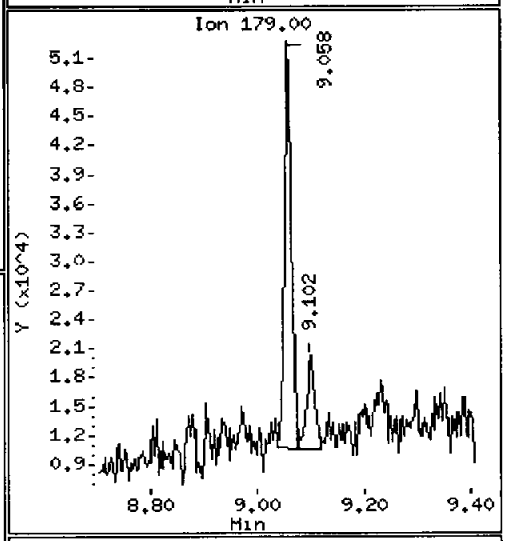


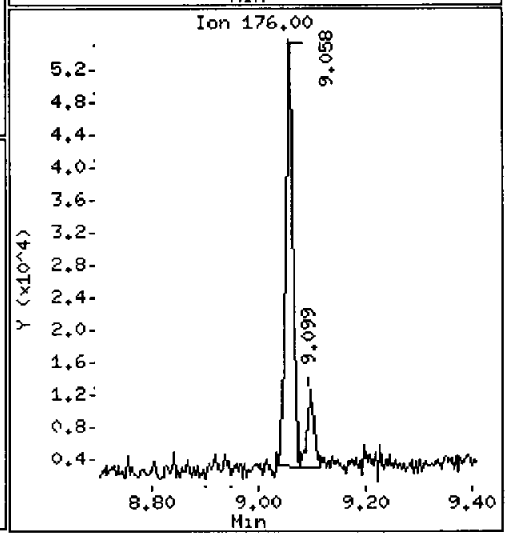












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

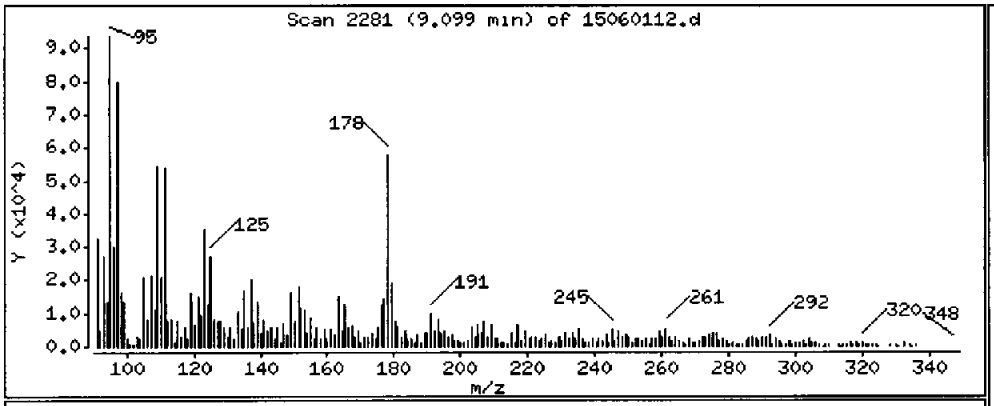
Operator: JZ

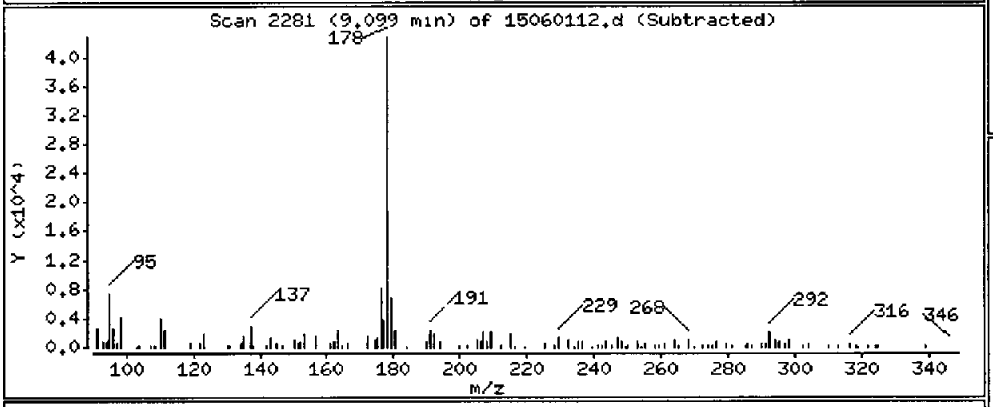
Column phase: ZB-35

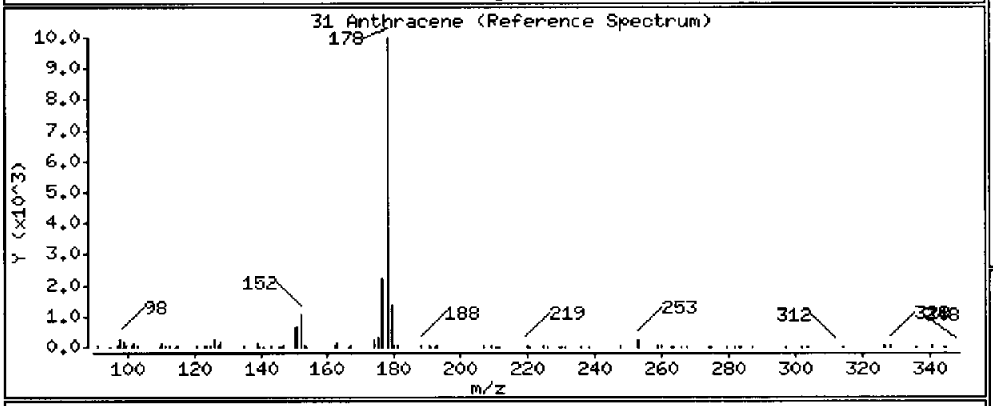
Column diameter: 0.25

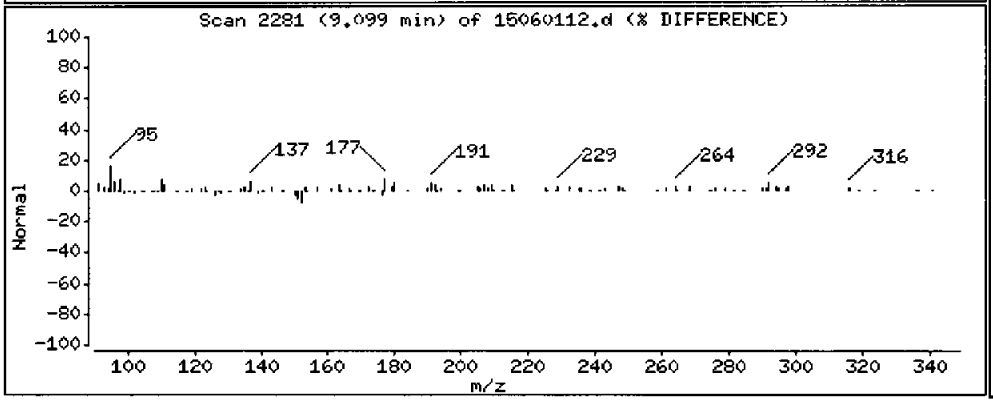
31 Anthracene

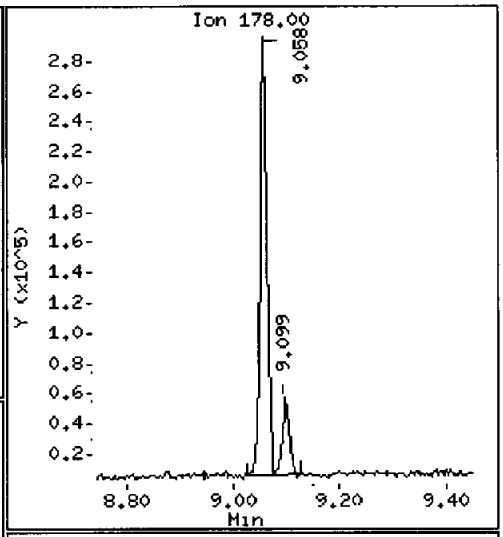
Concentration: 10.43 ug/kg

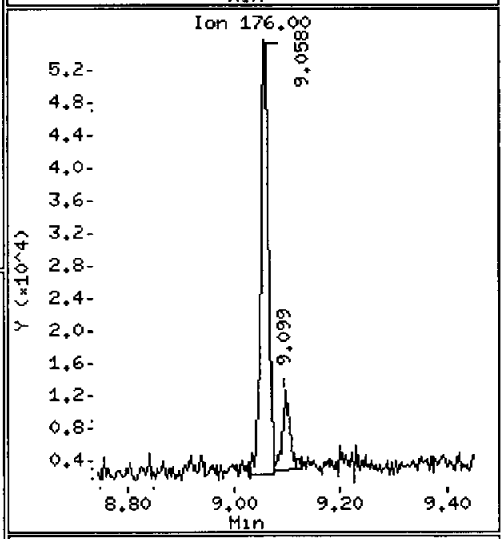


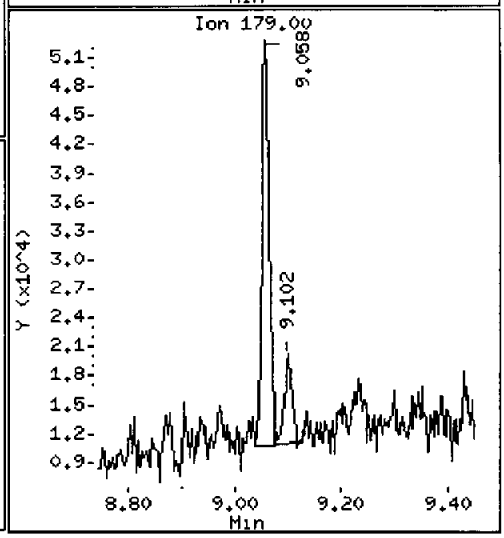












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

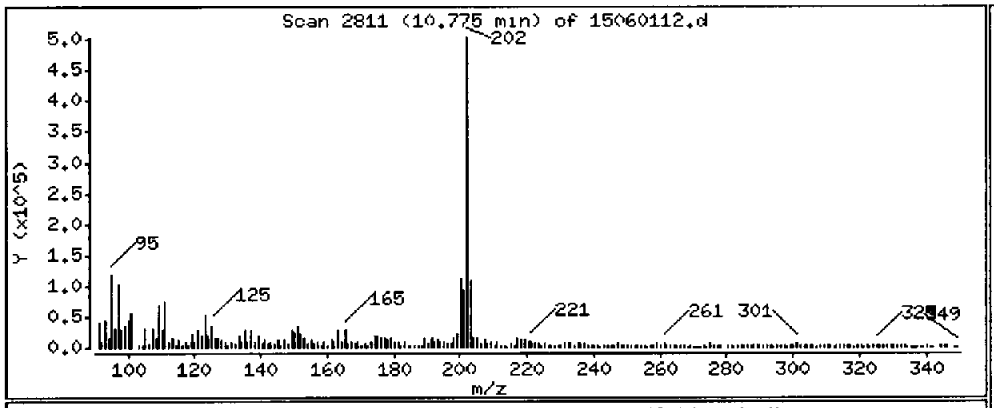
Operator: JZ

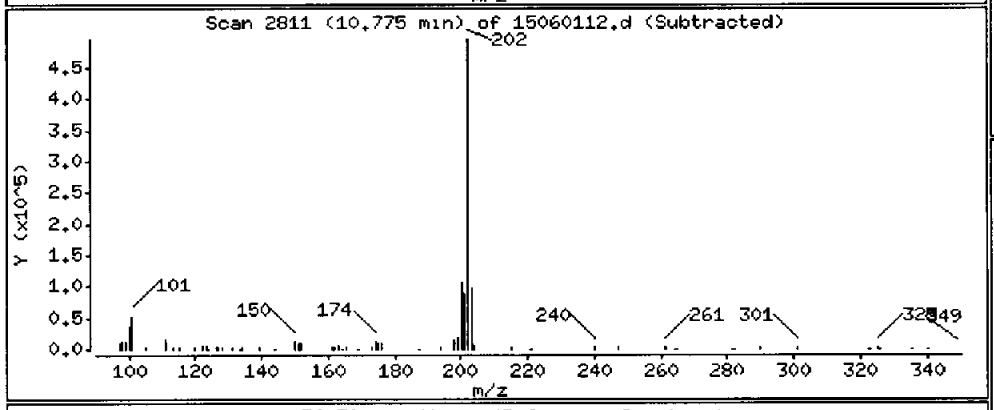
Column phase: ZB-35

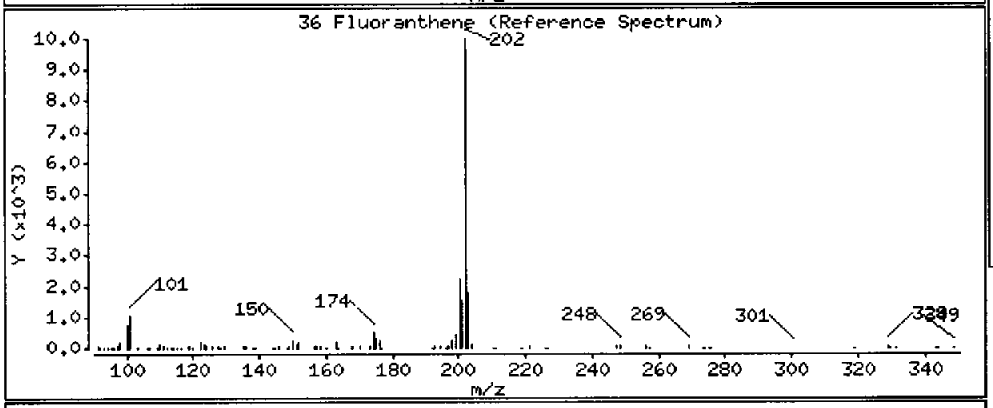
Column diameter: 0.25

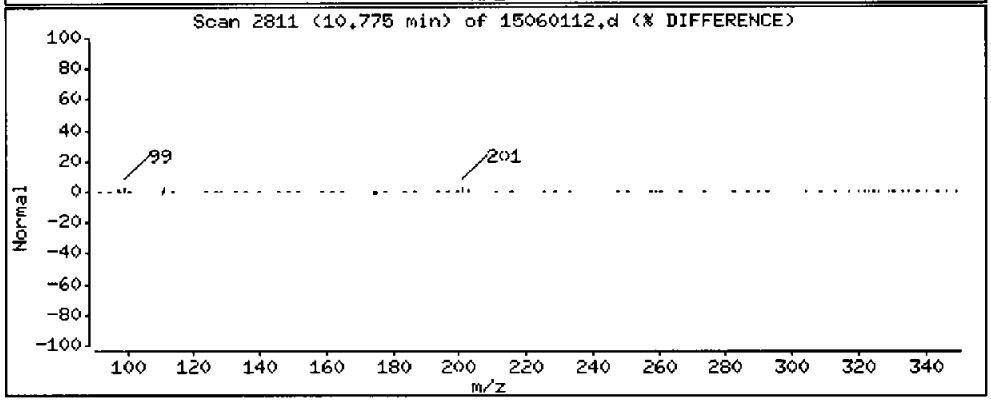
36 Fluoranthene

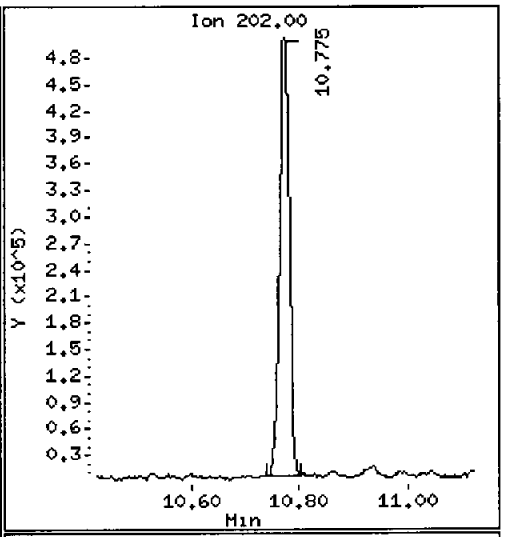
Concentration: 108.0 ug/kg

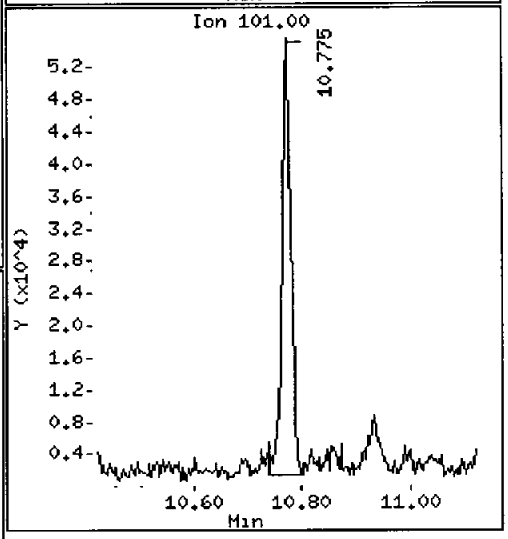












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

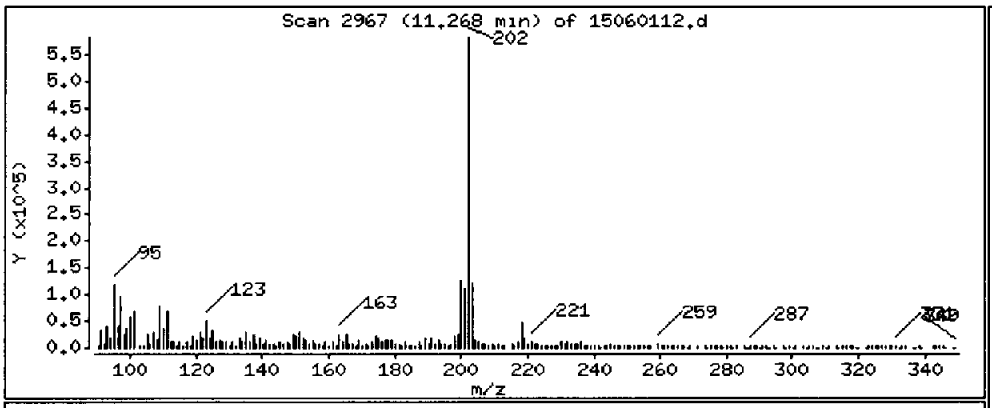
Operator: JZ

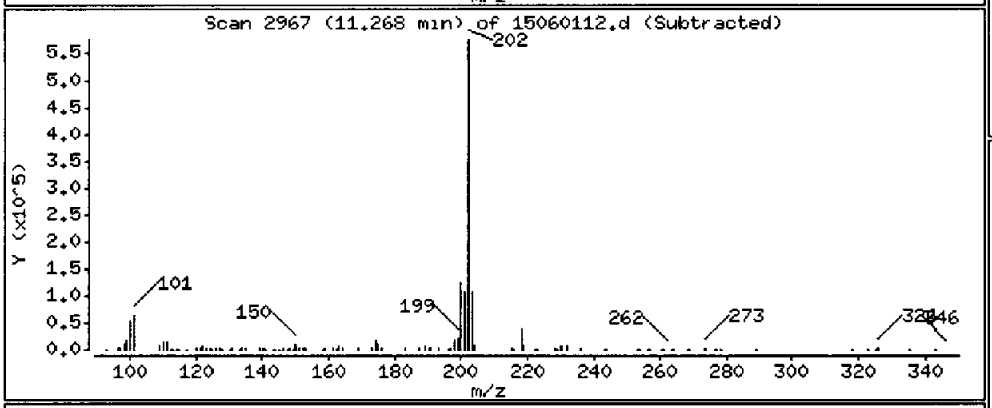
Column phase: ZB-35

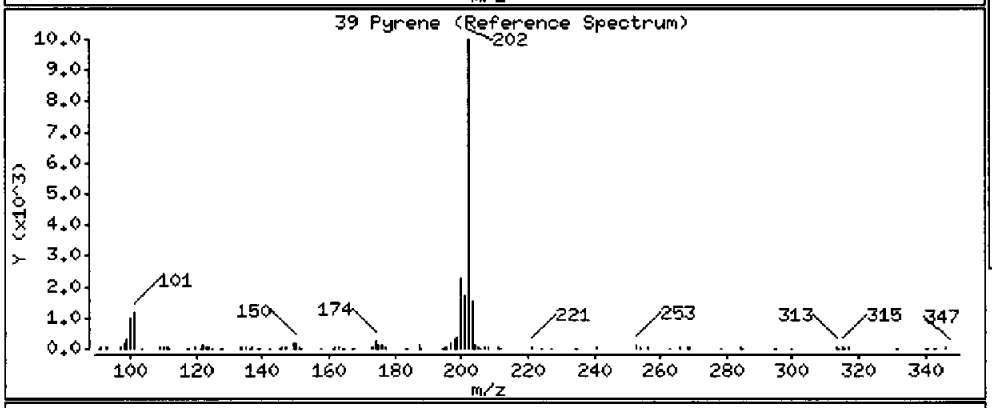
Column diameter: 0.25

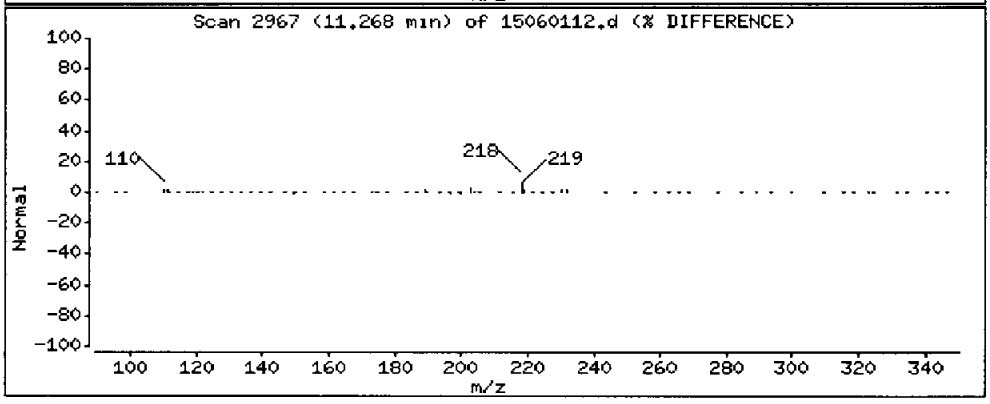
39 Pyrene

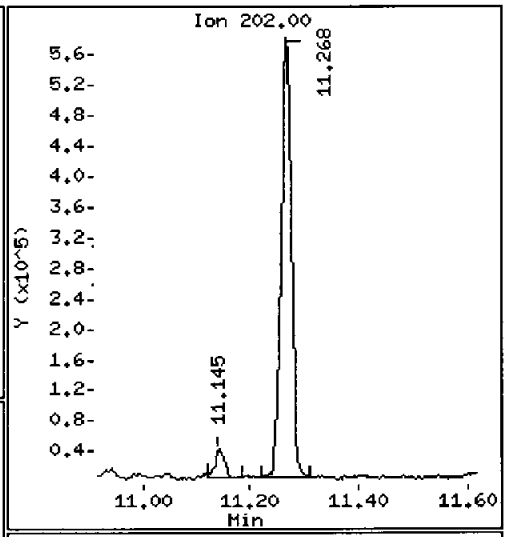
Concentration: 112.3 ug/kg

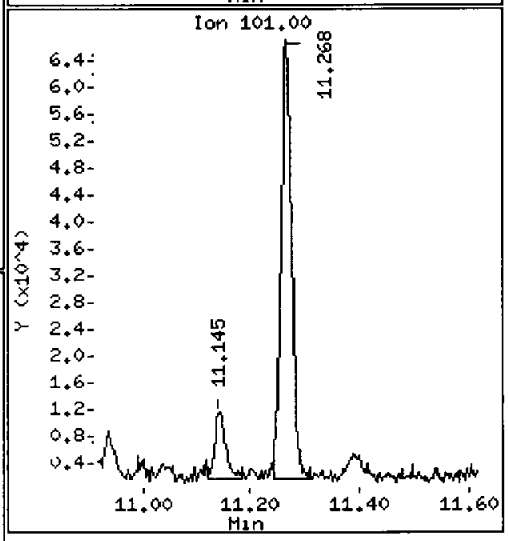












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

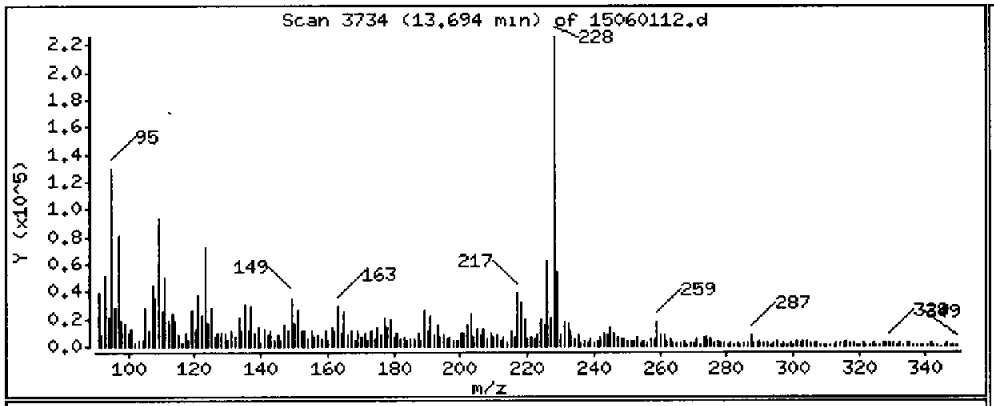
Operator: JZ

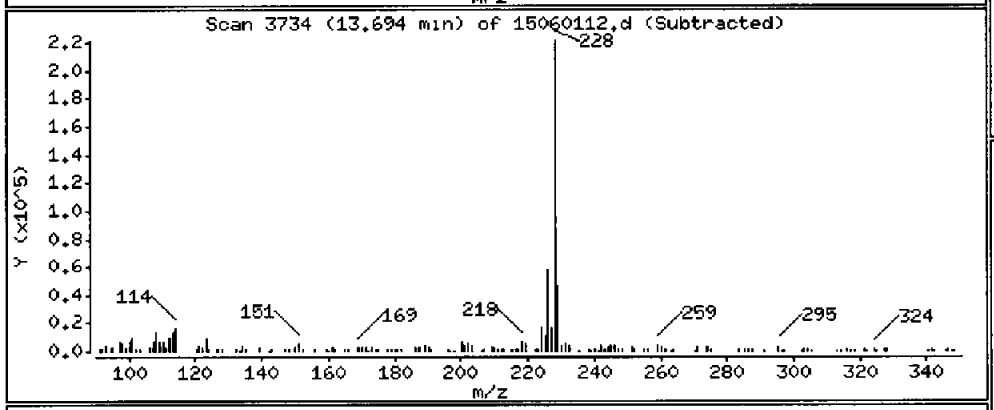
Column phase: ZB-35

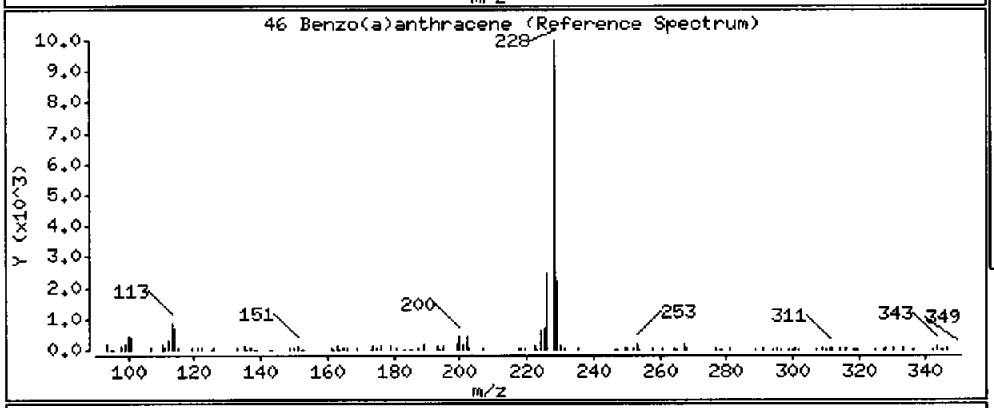
Column diameter: 0.25

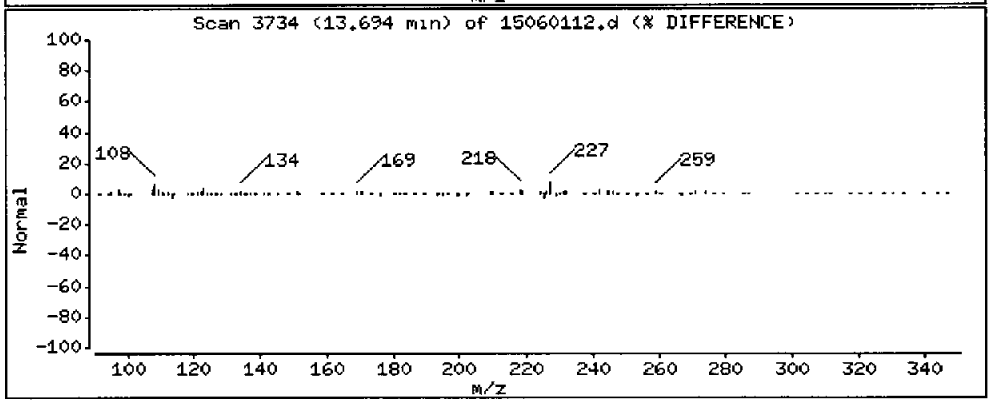
46 Benzo(a)anthracene

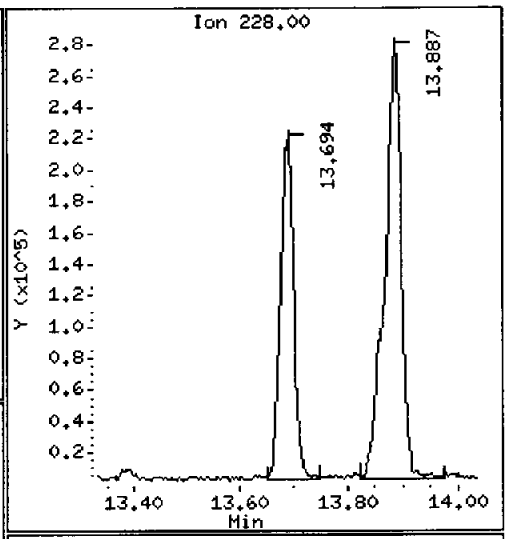
Concentration: 60.48 ug/kg

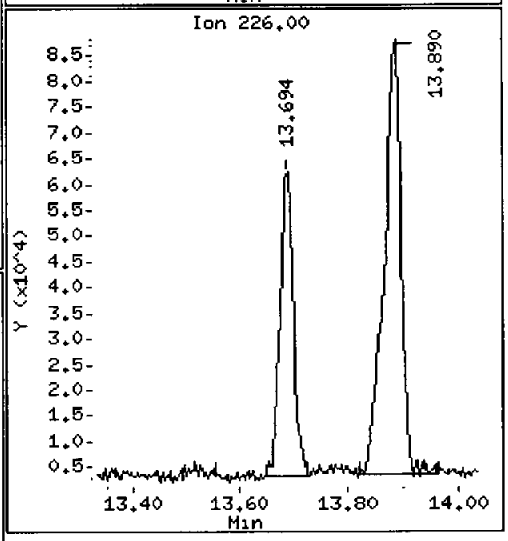












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

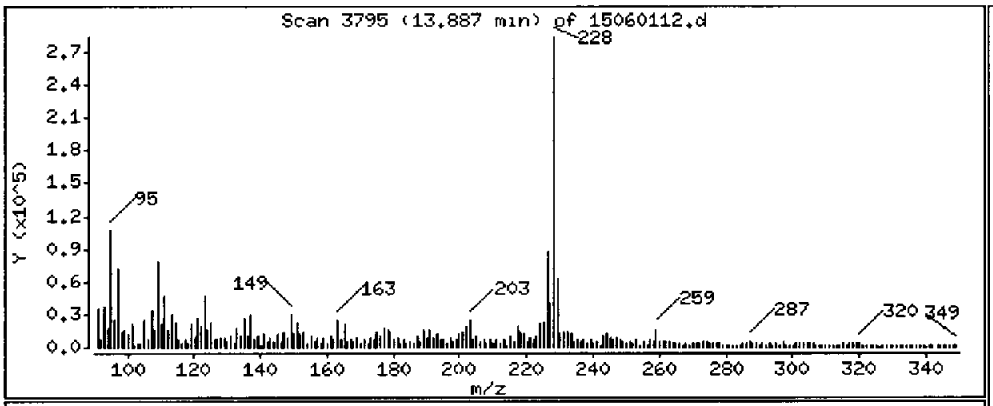
Operator: JZ

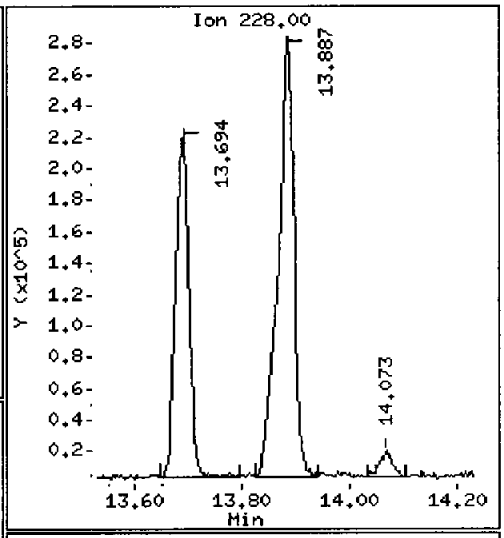
Column phase: ZB-35

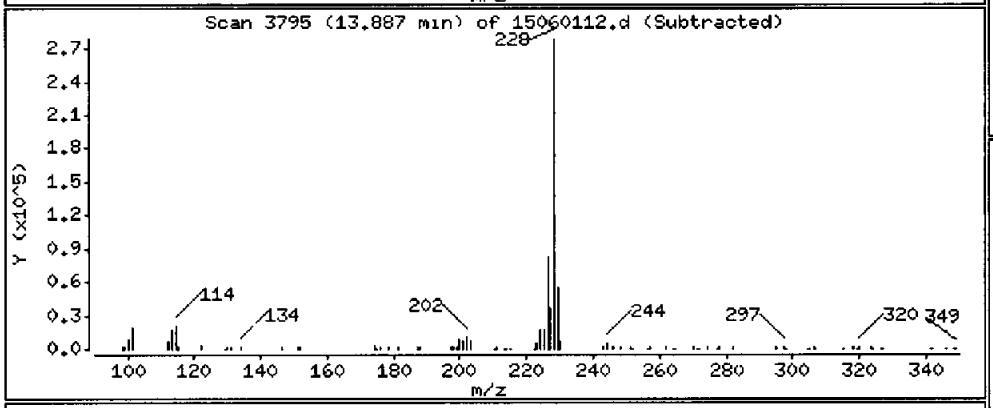
Column diameter: 0.25

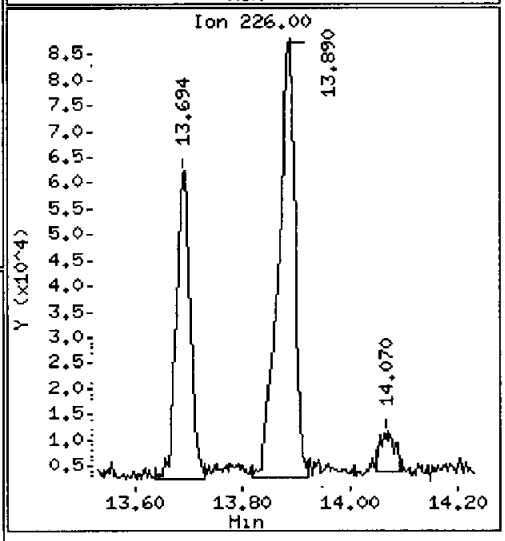
48 Chrysene

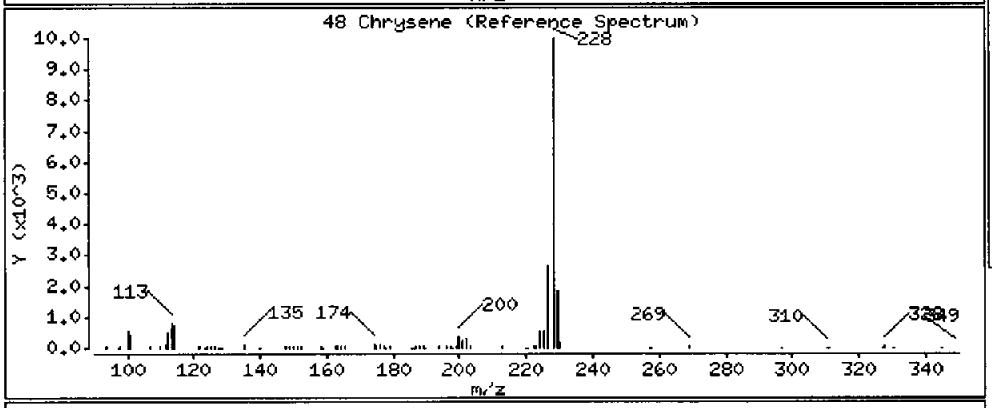
Concentration: 91.62 ug/kg

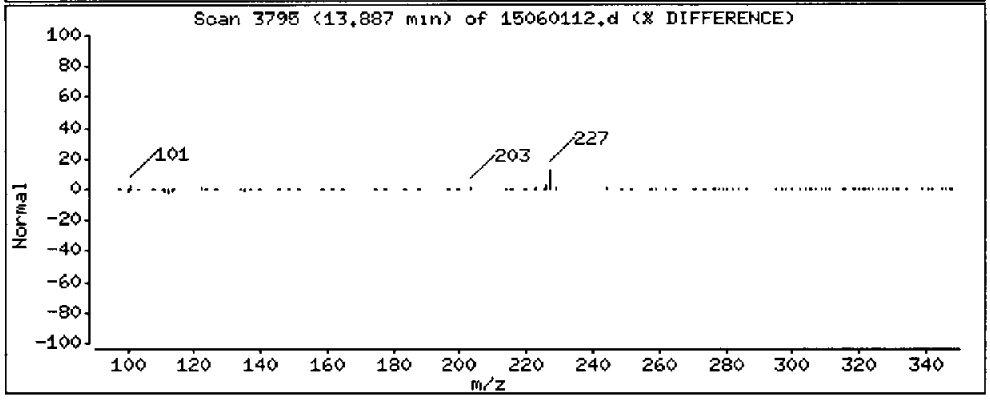












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

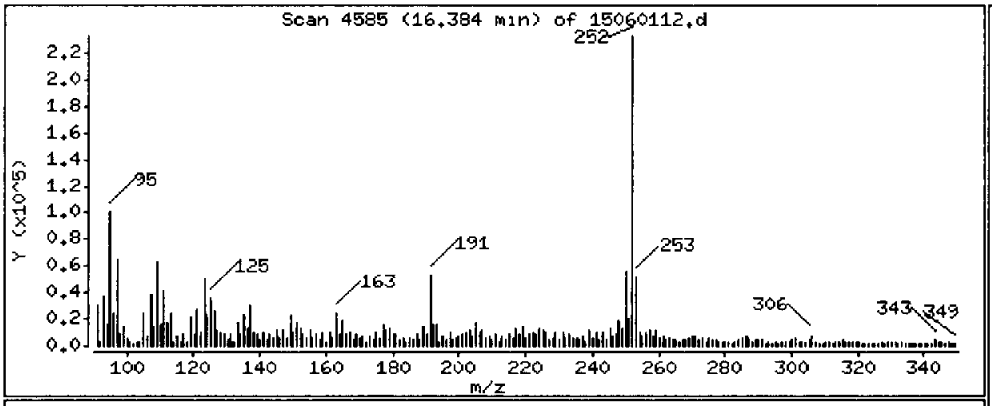
Operator: JZ

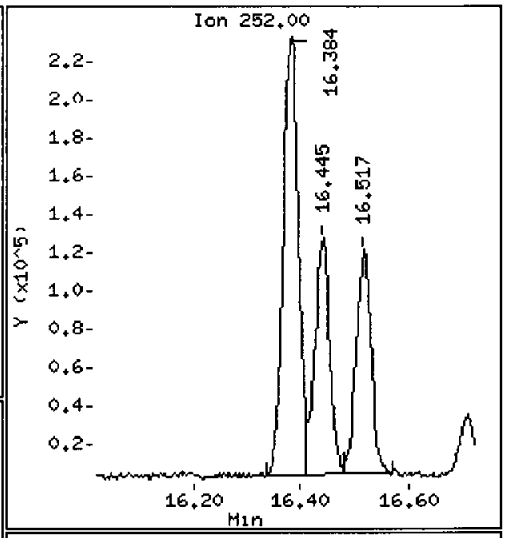
Column phase: ZB-35

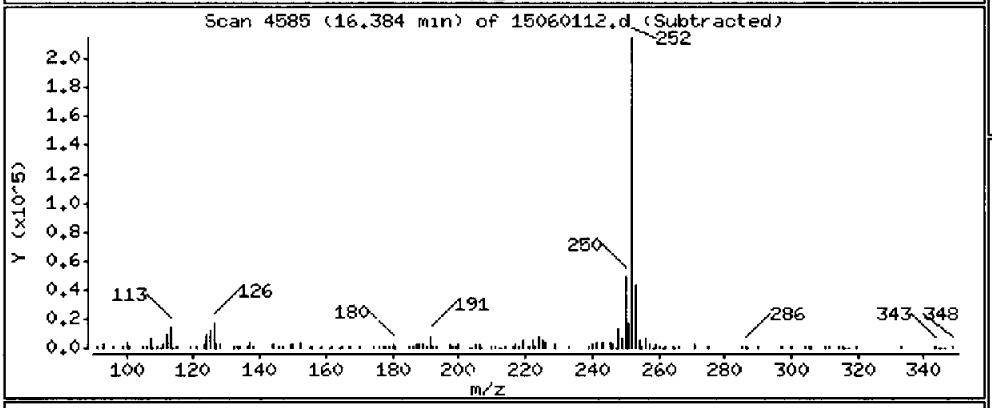
Column diameter: 0.25

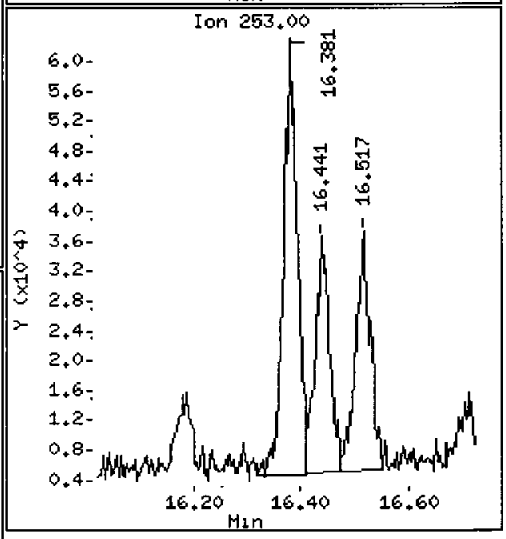
51 Benzo(b)fluoranthene

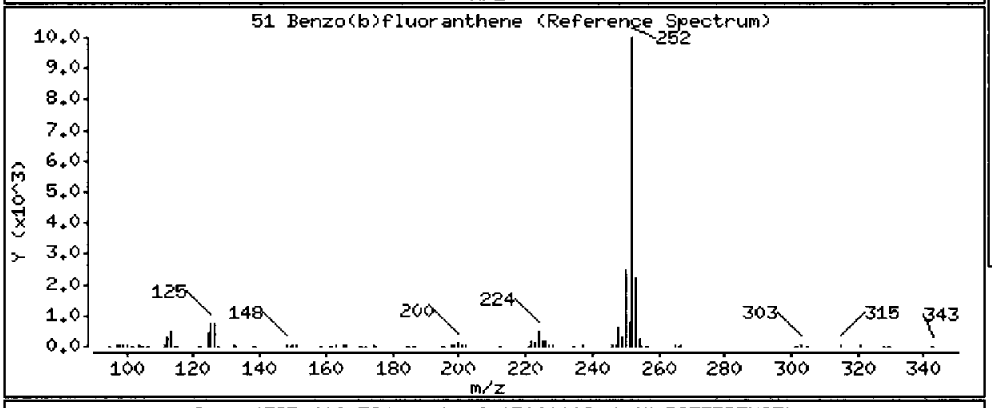
Concentration: 69.35 ug/kg

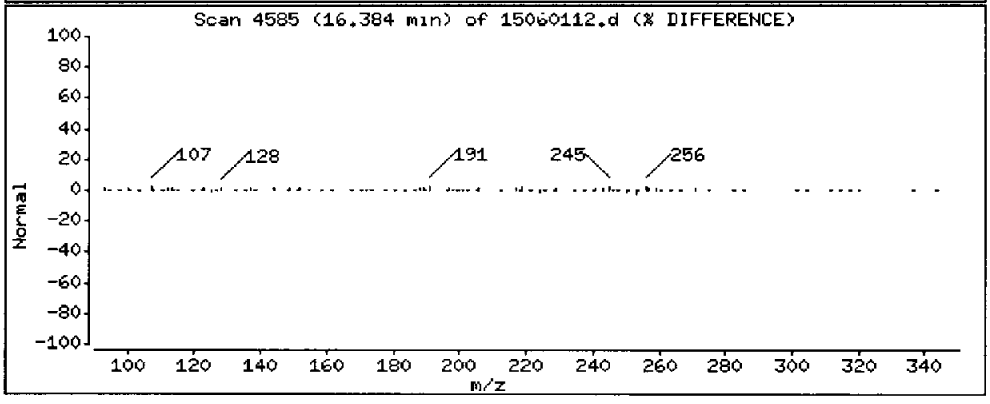












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

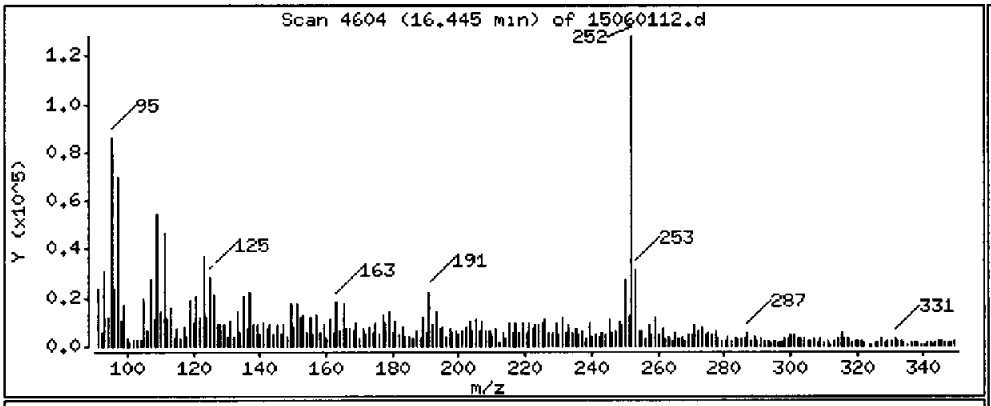
Operator: JZ

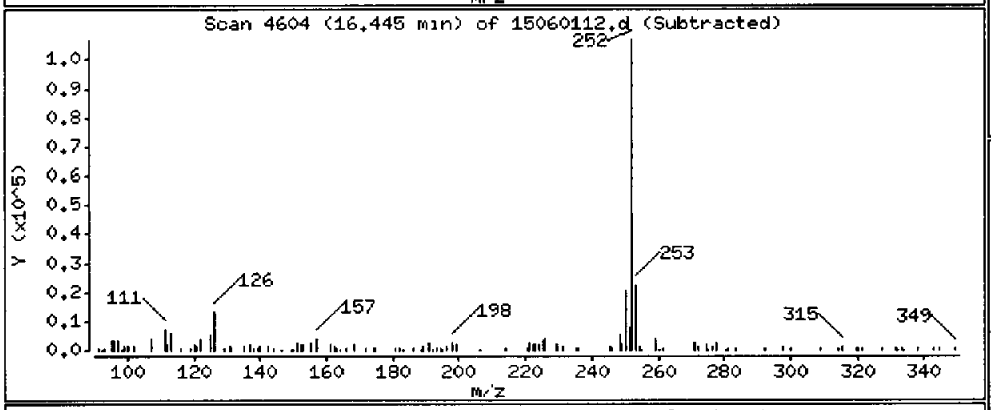
Column phase: ZB-35

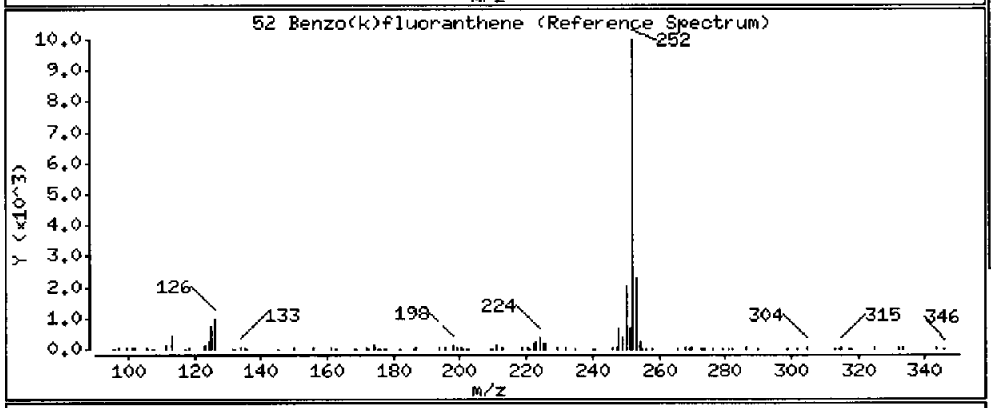
Column diameter: 0.25

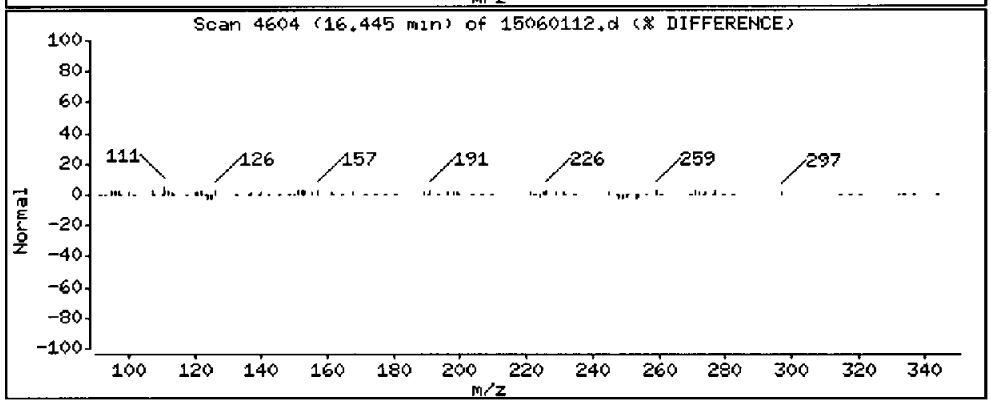
52 Benzo(k)fluoranthene

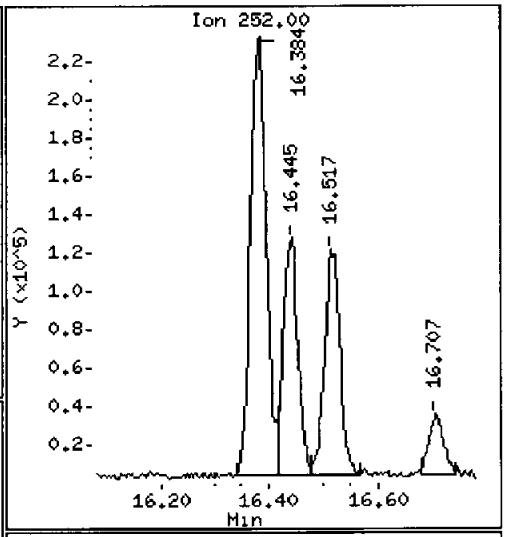
Concentration: 34.18 ug/kg

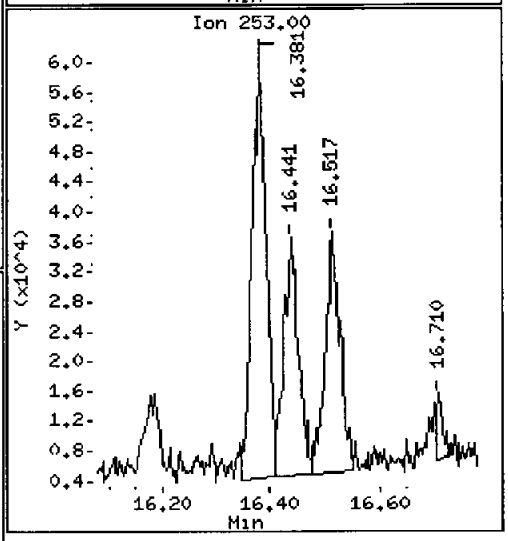












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

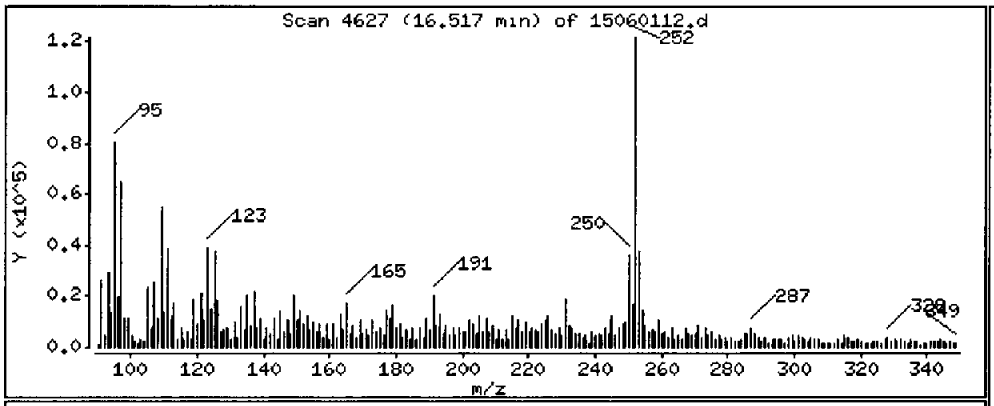
Operator: JZ

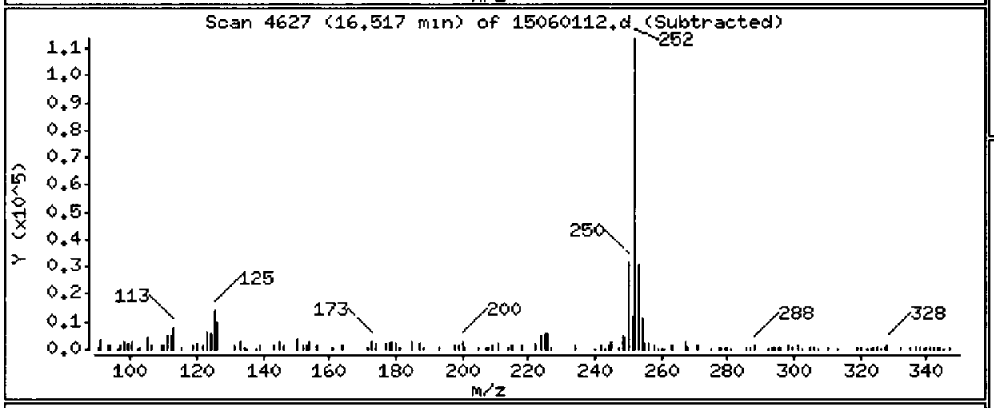
Column phase: ZB-35

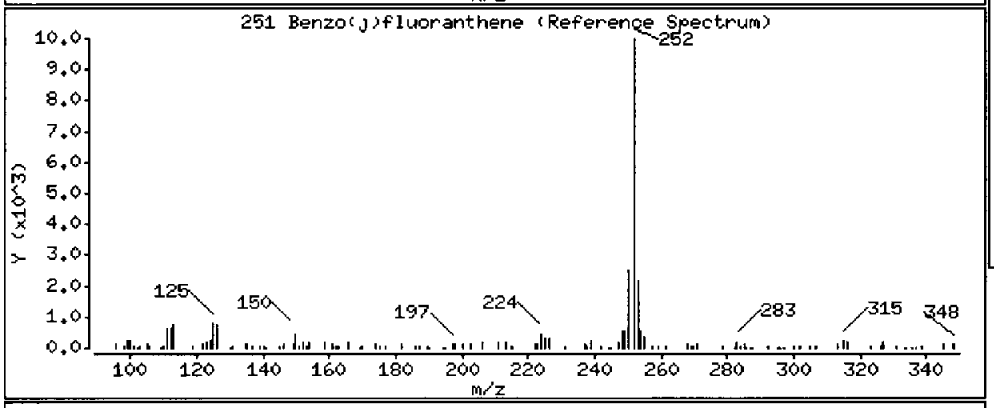
Column diameter: 0.25

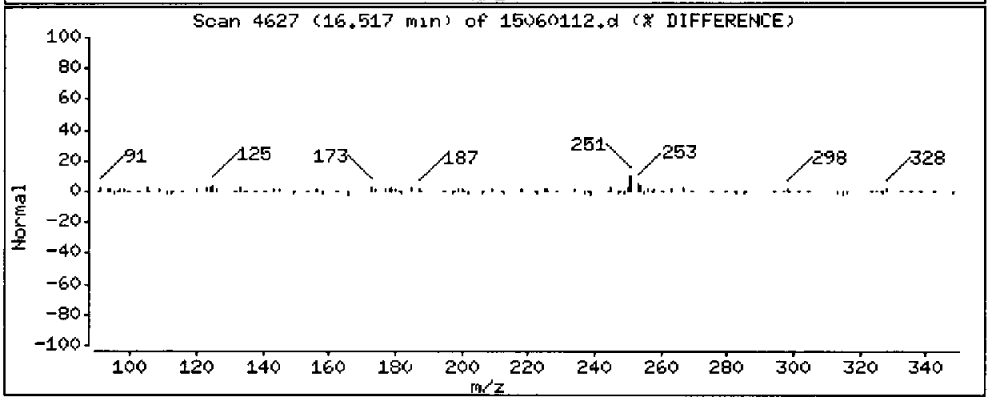
251 Benzo(j)fluoranthene

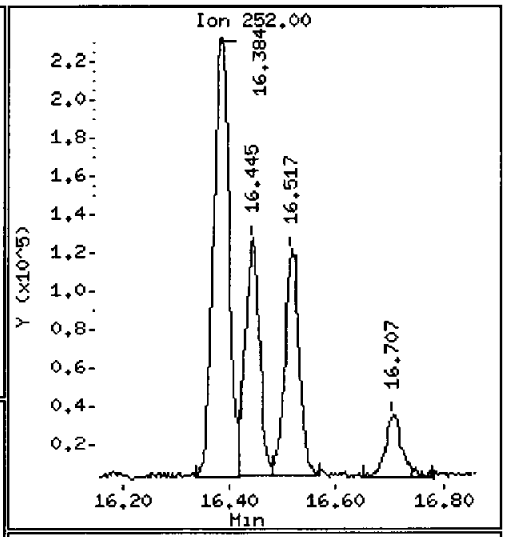
Concentration: 34.74 ug/kg

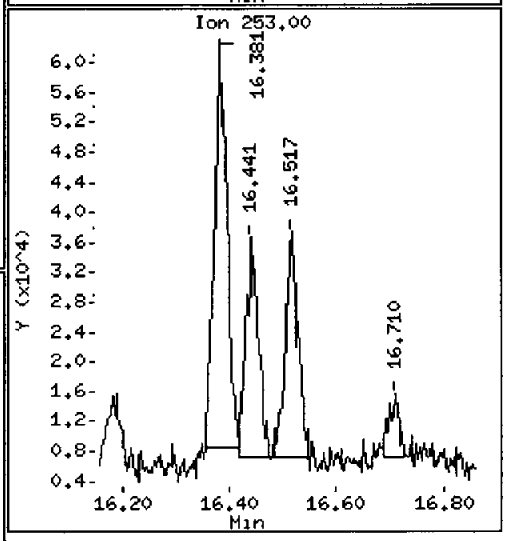












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

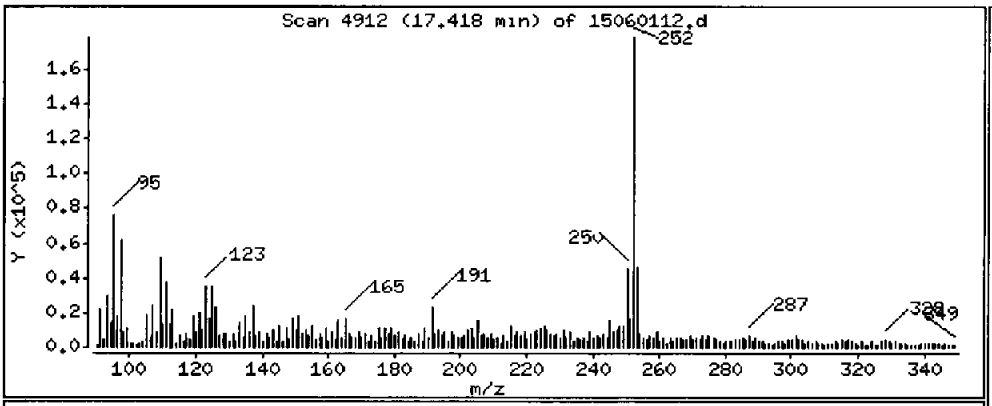
Operator: JZ

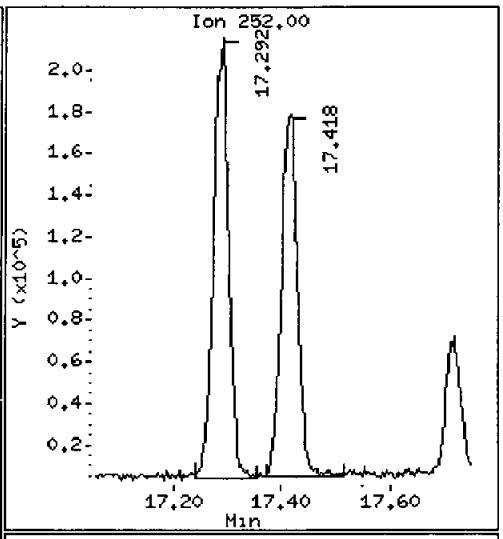
Column phase: ZB-35

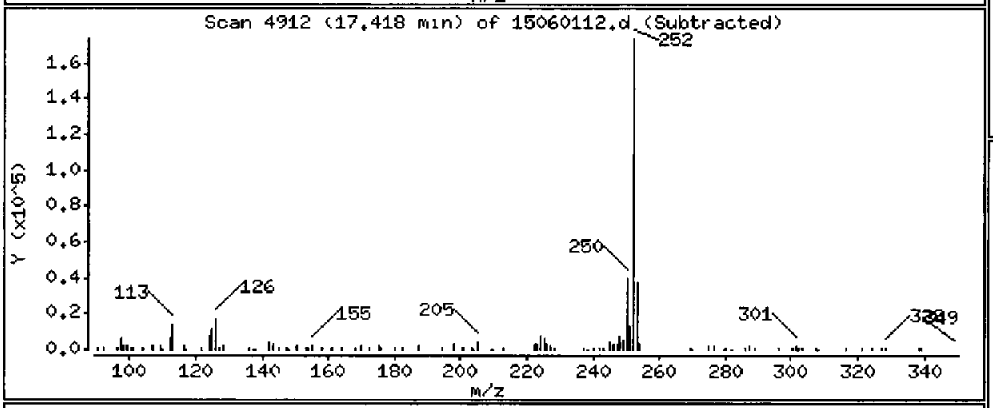
Column diameter: 0.25

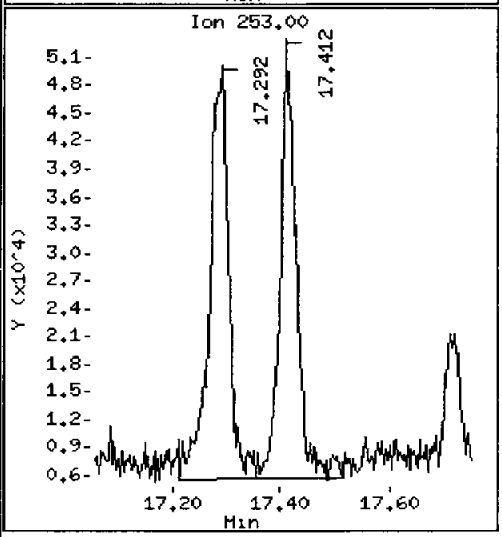
54 Benzo(a)pyrene

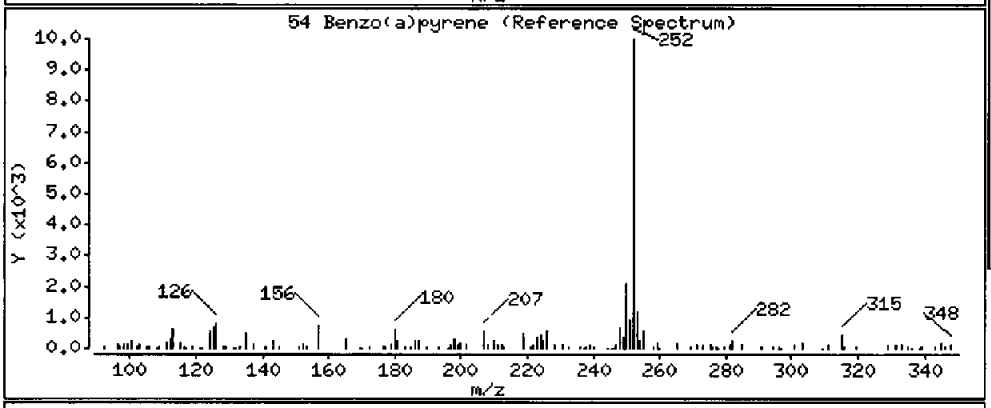
Concentration: 62.05 ug/kg

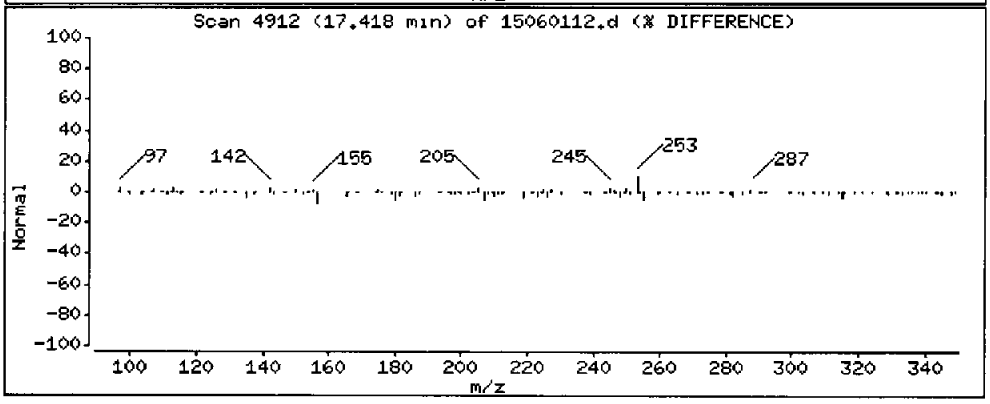












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

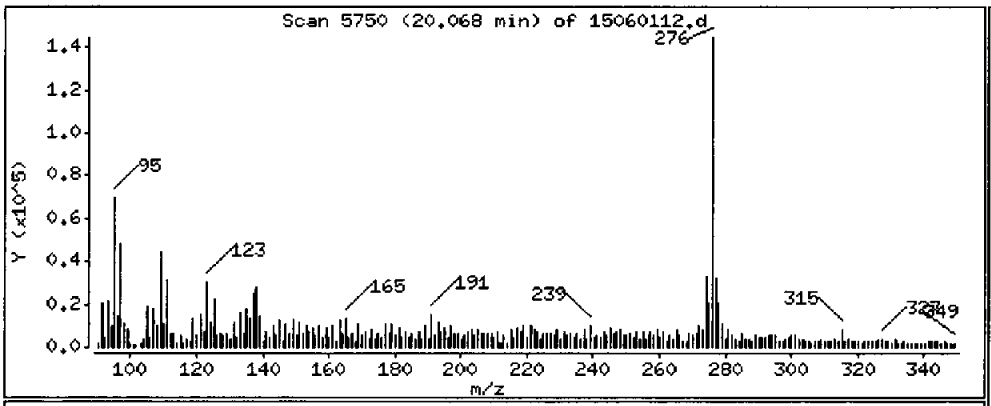
Operator: JZ

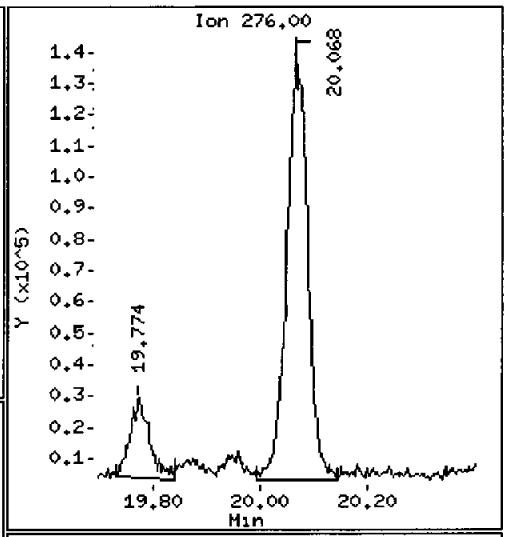
Column phase: ZB-35

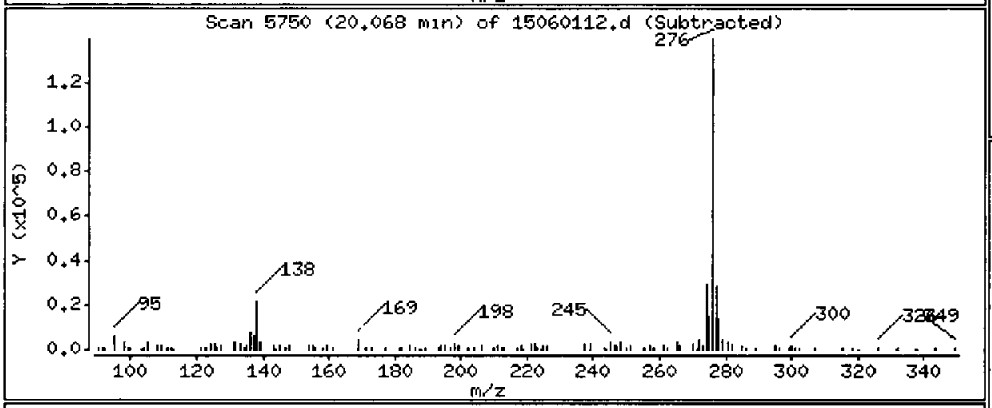
Column diameter: 0.25

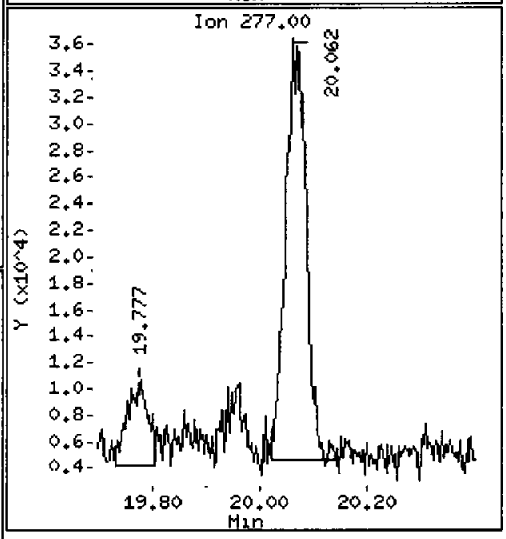
63 Indeno(1,2,3-cd)pyrene

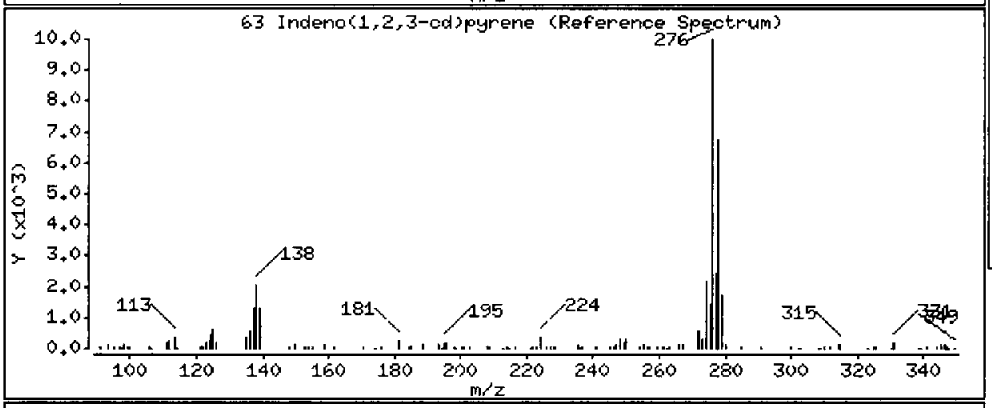
Concentration: 52.30 ug/kg

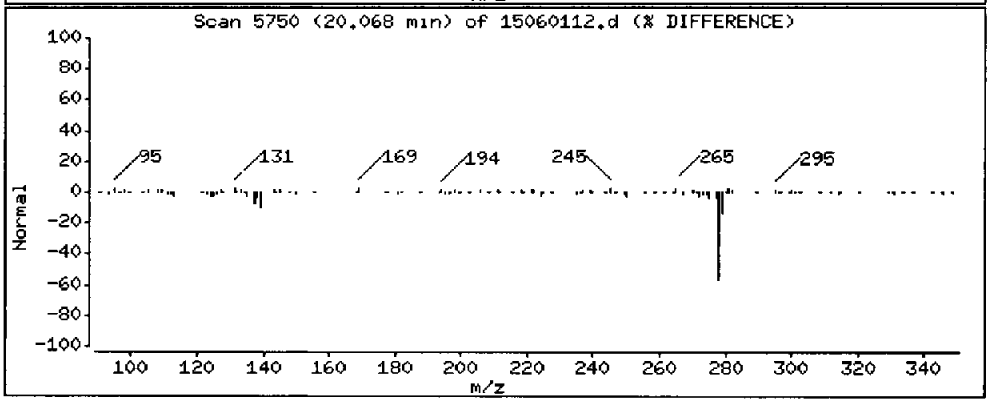












Data File: /chem3/nt8.i/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.i

Sample Info: AGC9H

Volume Injected (uL): 1.0

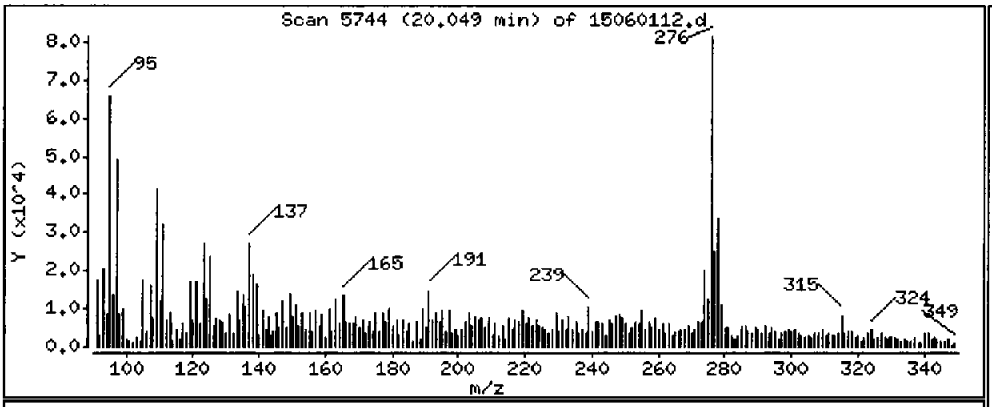
Operator: JZ

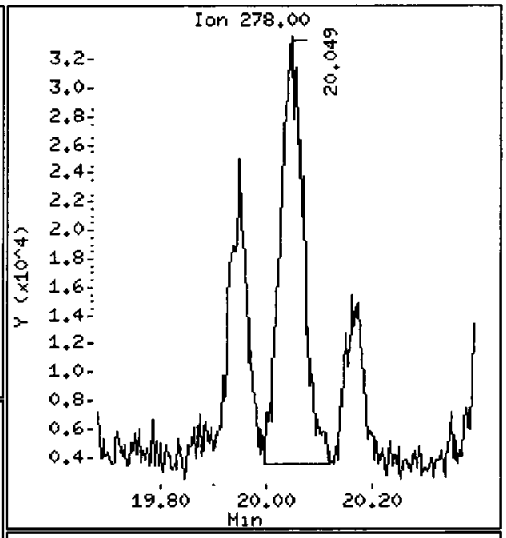
Column phase: ZB-35

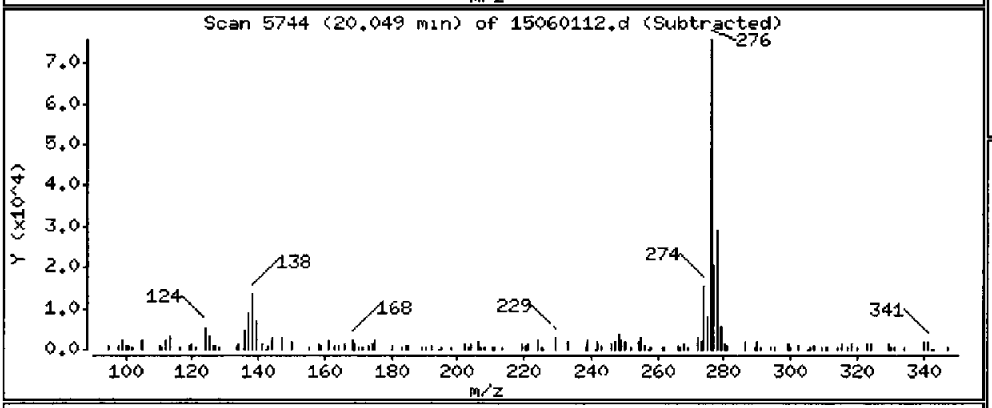
Column diameter: 0.25

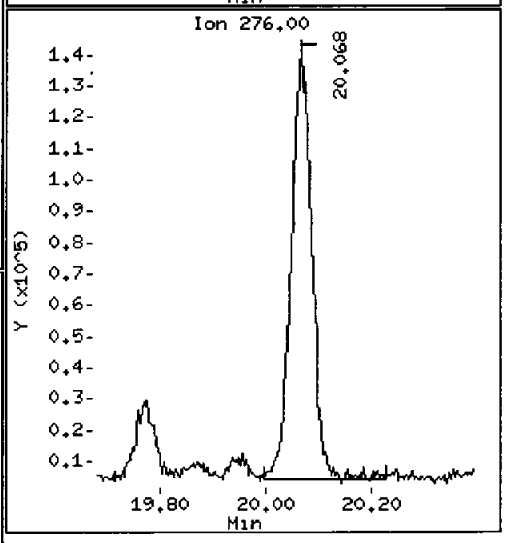
62 Dibenzo(a,h)anthracene

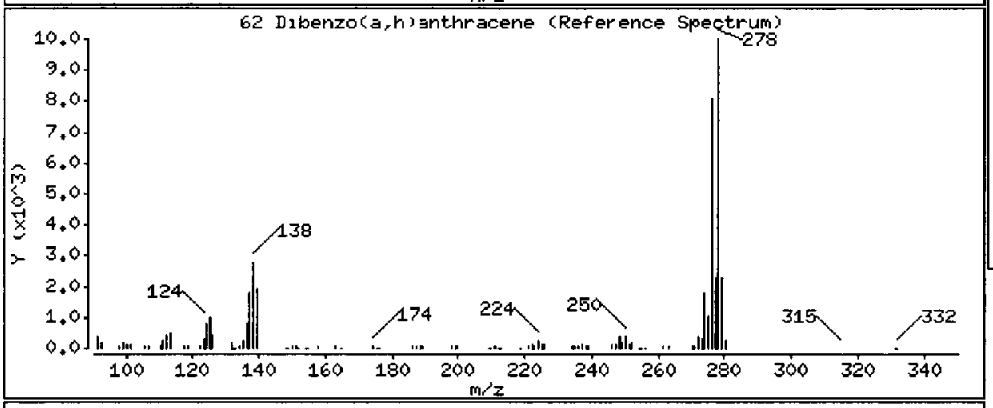
Concentration: 15.37 ug/kg

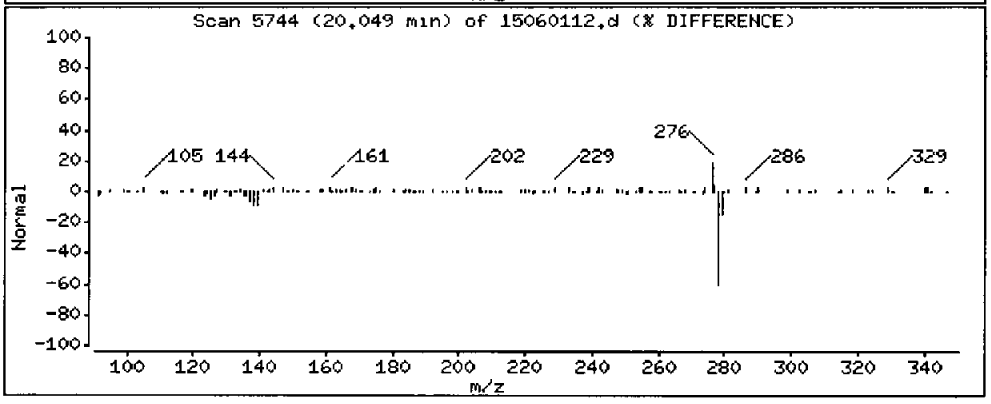












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

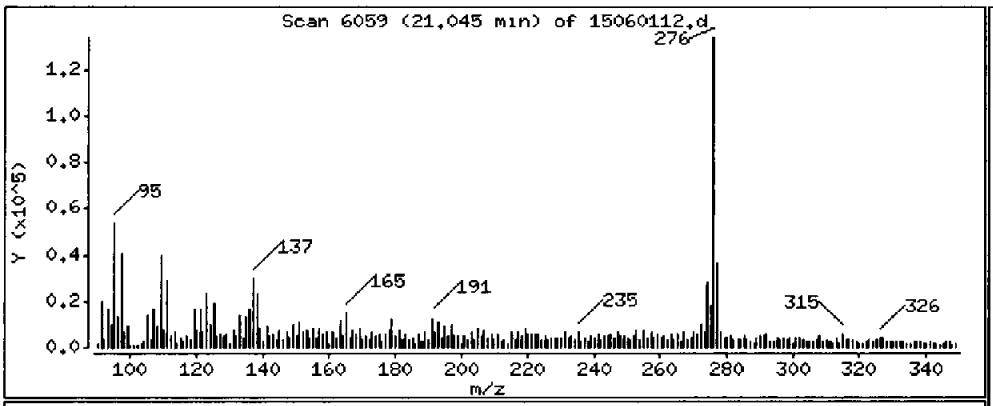
Operator: JZ

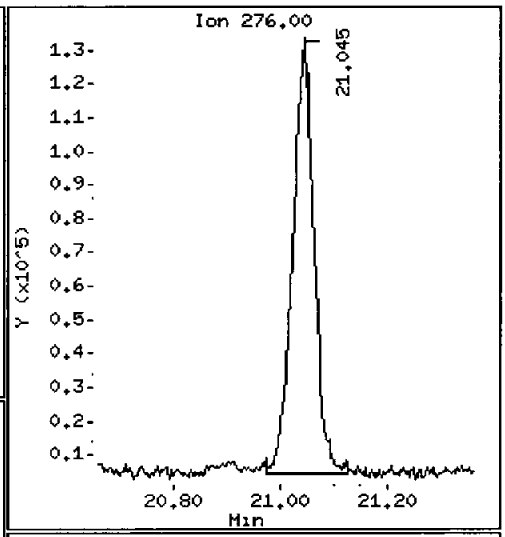
Column phase: ZB-35

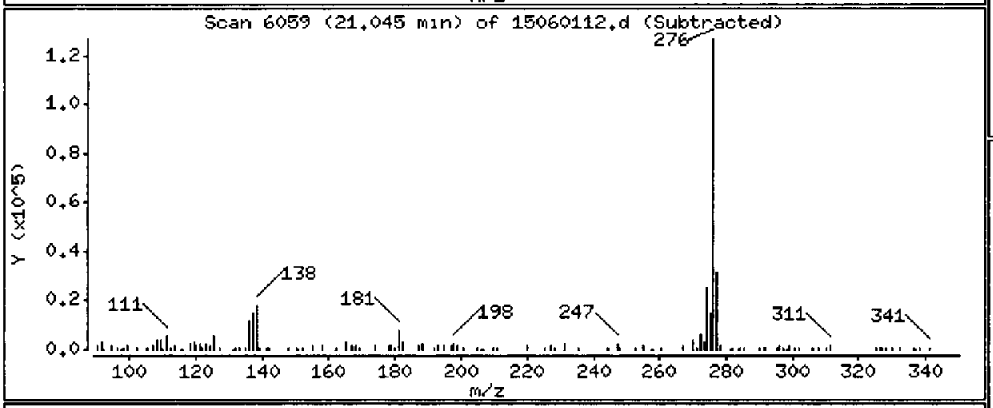
Column diameter: 0.25

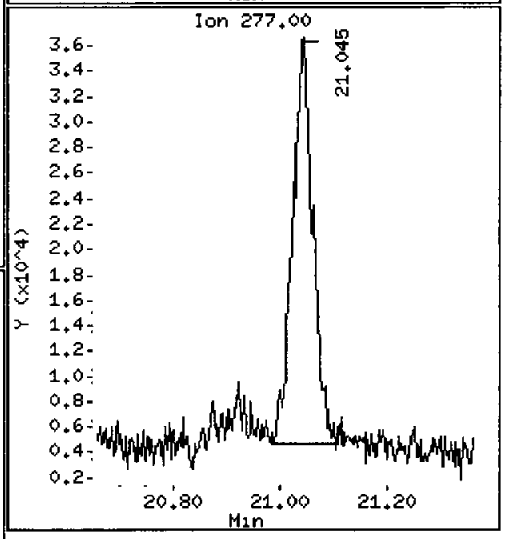
61 Benzo(g,h,i)perylene

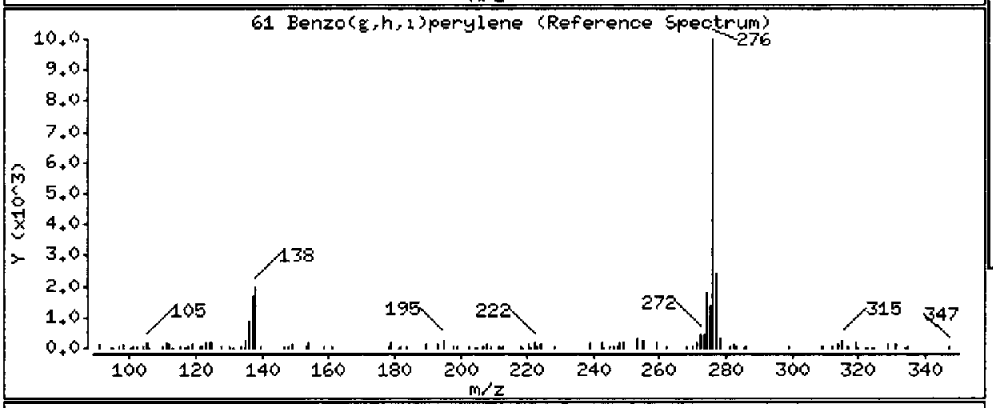
Concentration: 56.19 ug/kg

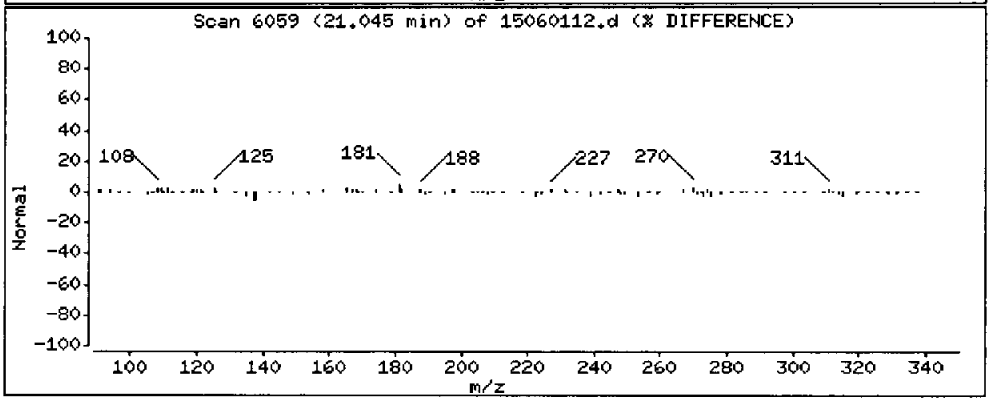












Data File: /chem3/nt8.1/20150601.b/15060112.d

Date : 01-JUN-2015 14:25

Client ID: SDP-04(1.5-3.0)

Instrument: nt8.1

Sample Info: AGC9H

Volume Injected (uL): 1.0

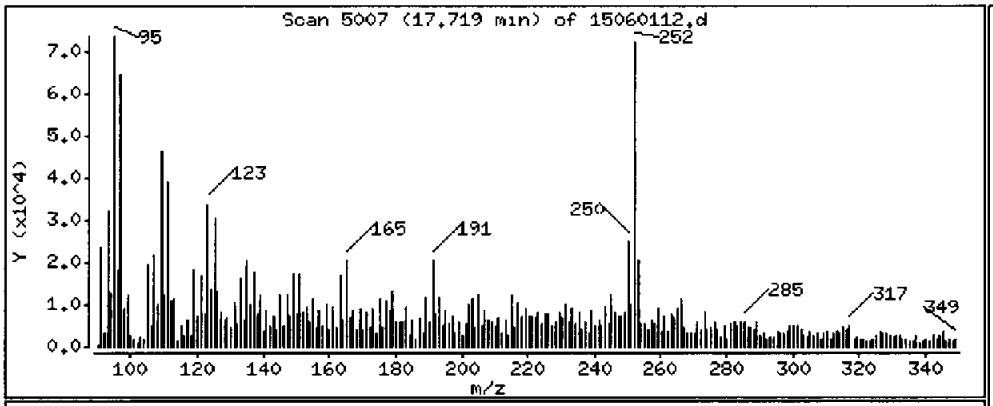
Operator: JZ

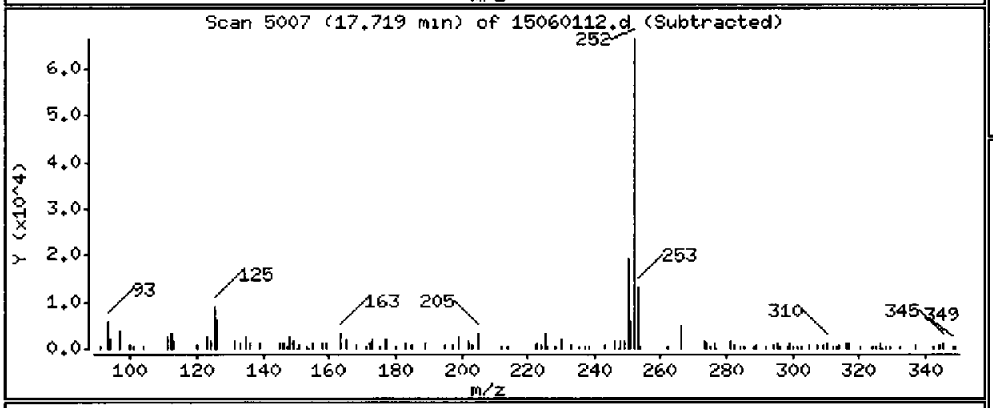
Column phase: ZB-35

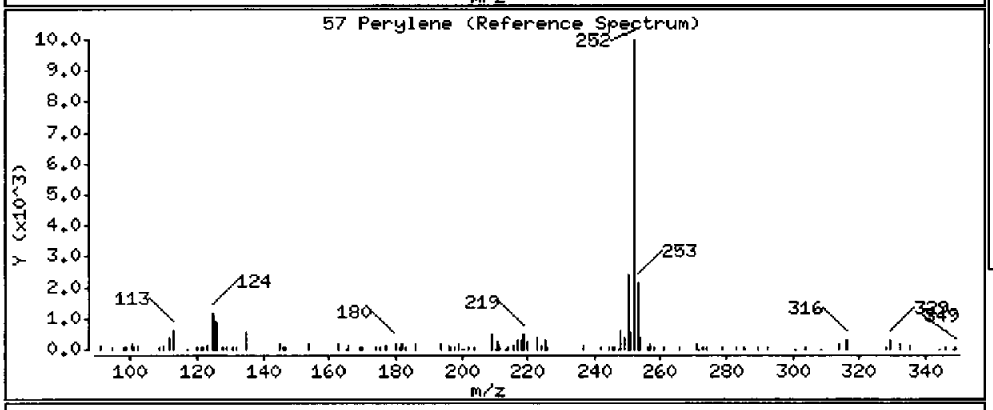
Column diameter: 0.25

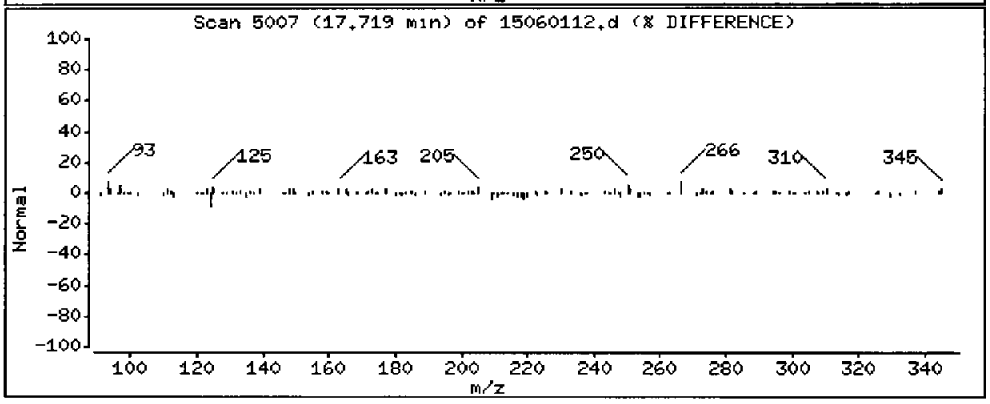
57 Perylene

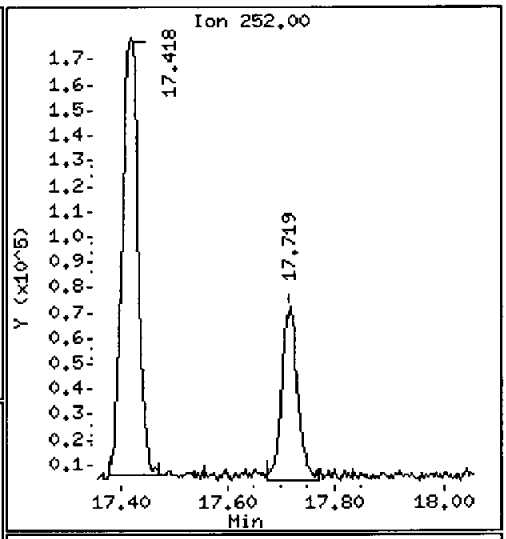
Concentration: 22.96 ug/kg

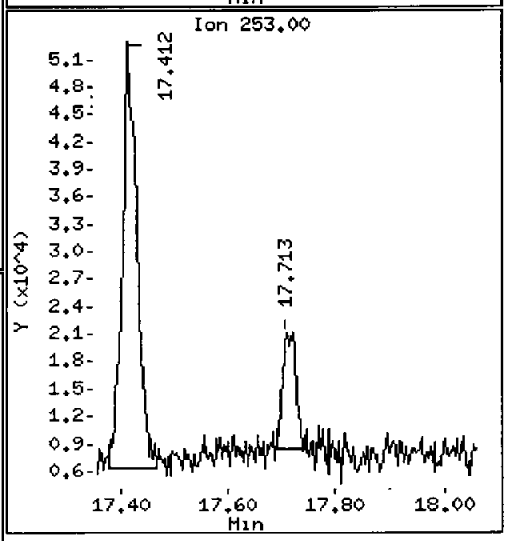












CO-ELUTION SUMMARY FOR FILE - 15060112.d

Lab ID: AGC9H, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060113.d
Lab Smp Id: AGC9HMS Client Smp ID: SDP-04(1.5-3.0) MS
Inj Date : 01-JUN-2015 14:51
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9HMS
Misc Info : 15-9438
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 13 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

6/6/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.08000	Weight of sample extracted (g)
M	9.70000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.733	4.739	(1.000)	410309	2.00000	
	7 Naphthalene	128	4.761	4.767	(1.006)	413368	2.09134	95.86
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	209266	1.67018	76.56
	14 2-Methylnaphthalene	141	5.510	5.510	(1.164)	257749	2.18693	100.2
	15 1-methylnaphthalene	141	5.703	5.703	(1.205)	221039	1.92989	88.46
	21 Acenaphthylene	152	6.892	6.892	(0.984)	389163	2.05610	94.25
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	259167	2.00000	
	23 Acenaphthene	153	7.050	7.050	(1.007)	262053	2.08082	95.38
	11 Dibenzofuran	168	7 202	7.202	(1.028)	398986	2.29075	105.0
	25 Fluorene	166	7.676	7.673	(1.096)	328168	2.33299	106.9
*	28 Phenanthrene-d10	188	9.027	9.020	(1.000)	456382	2.00000	
	30 Phenanthrene	178	9 061	9.055	(1.004)	988581	4.54333	208.3(R)
	31 Anthracene	178	9 102	9.096	(1.008)	581385	2.96785	136.0
	36 Fluoranthene	202	10 778	10 769	(1.194)	1733759	6.81265	312.3(R)
$	253 Fluoranthene-d10	212	10.740	10.734	(1.190)	560584	2.49716	114.5

AGC9_8815

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.275	11.265	(0.816)	1808197	5.74611	263.4(R)
	46 Benzo(a)anthracene	228	13.697	13 684	(0.991)	1286696	4.54413	208.3(R)
*	47 Chrysene-d12	240	13.820	13 807	(1.000)	564495	2.00000	
	48 Chrysene	228	13 893	13.880	(1.005)	1481537	5.21838	239.2(R)
	51 Benzo(b)fluoranthene	252	16 391	16.369	(0.928)	1400981	4.50426	206.5(R)
	52 Benzo(k)fluoranthene	252	16 454	16.429	(0.932)	1050002	3.37865	154.9
	251 Benzo(j)fluoranthene	252	16.527	16.505	(0.936)	863866	2.84870	130.6
	54 Benzo(a)pyrene	252	17 428	17.402	(0.987)	1250251	4.50825	206.6(R)
*	56 Perylene-d12	264	17.659	17.633	(1.000)	592274	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.087	20.046	(1.138)	1220396	3.66379	167.9(R)
$	60 Dibenzo(a,h)anthracene-d14	292	19.964	19.929	(1.131)	539419	2.39142	109.6
	62 Dibenzo(a,h)anthracene	278	20 071	20.033	(1.137)	726731	2.67869	122.8
	61 Benzo(g,h,i)perylene	276	21.064	21.010	(1.193)	1018784	3.47707	159.4
	57 Perylene	252	17.728	17.706	(1.004)	829765	2.88220	132.1

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060113.d
Lab Smp Id: AGC9HMS
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-04(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	410309	19.59
22 Acenaphthene-d10	230598	115299	461196	259167	12.39
28 Phenanthrene-d10	373928	186964	747856	456382	22.05
47 Chrysene-d12	381262	190631	762524	564495	48.06
56 Perylene-d12	380825	190412	761650	592274	55.52

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.09
56 Perylene-d12	17.63	17.13	18.13	17.66	0.14

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

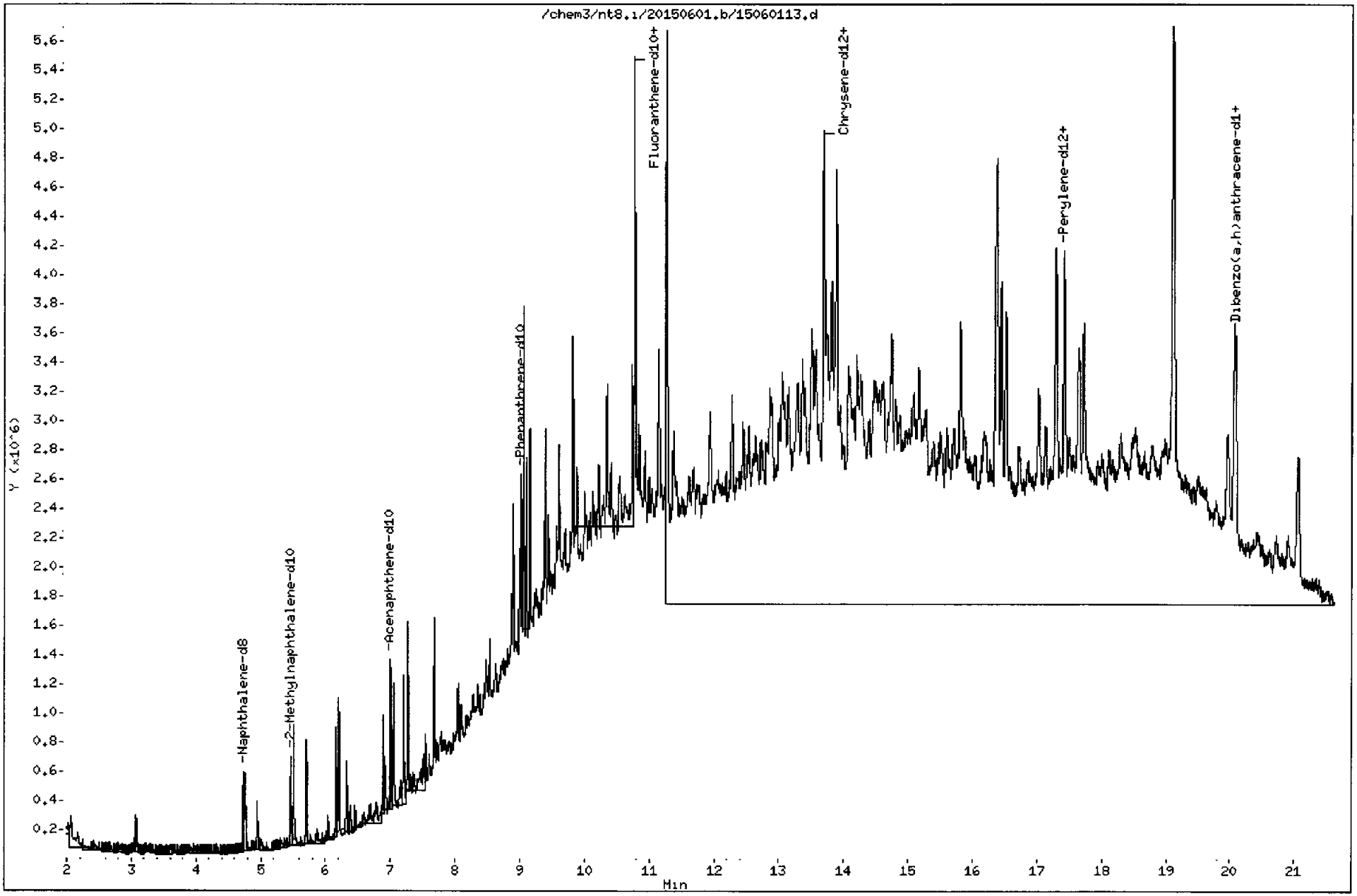
Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9HMS
Client Smp ID: SDP-04(1.5-3.0) MS
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: MS
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7 Naphthalene	137.5	95.86	69.71	36-120
14 2-Methylnaphthalen	137.5	100.2	72.90	35-120
15 1-methylnaphthalen	137.5	88.46	64.33	39-120
21 Acenaphthylene	137.5	94.25	68.54	35-120
23 Acenaphthene	137.5	95.38	69.36	39-120
11 Dibenzofuran	137.5	105.0	76.36	38-120
25 Fluorene	137.5	106.9	77.77	41-120
30 Phenanthrene	137.5	208.3	151.44*	46-120
31 Anthracene	137.5	136.0	98.93	36-120
36 Fluoranthene	137.5	312.3	227.09*	46-120
39 Pyrene	137.5	263.4	191.54*	49-120
46 Benzo(a)anthracene	137.5	208.3	151.47*	42-120
48 Chrysene	137.5	239.2	173.95*	48-120
51 Benzo(b)fluoranthe	137.5	206.5	150.14*	35-127
52 Benzo(k)fluoranthe	137.5	154.9	112.62	37-129
251 Benzo(j)fluoranthe	137.5	130.6	94.96	40-120
54 Benzo(a)pyrene	137.5	206.6	150.27*	36-120
63 Indeno(1,2,3-cd)py	137.5	167.9	122.13*	40-120
62 Dibenzo(a,h)anthra	137.5	122.8	89.29	38-120
61 Benzo(g,h,i)peryle	137.5	159.4	115.90	38-120
57 Perylene	137.5	132.1	96.07	44-120

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	137.5	76.56	55.67	32-120
$ 253 Fluoranthene-d10	137.5	114.5	83.24	36-134
$ 60 Dibenzo(a,h)anthra	137.5	109.6	79.71	21-133

Data File: /chem3/nt8.1/20150601.b/15060113.d
Date : 01-JUN-2015 14:51
Client ID: SDP-04(1.5-3.0) MS
Sample Info: AGC9HMS
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15060113.d

Lab ID: AGC9HMS, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-201

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060114.d
Lab Smp Id: AGC9HMSD Client Smp ID: SDP-04(1.5-3.0) MSD
Inj Date : 01-JUN-2015 15:17
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9HMSD
Misc Info : 15-9438
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 14 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.16000	Weight of sample extracted (g)
M	9.70000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.736	4 739	(1.000)	411517	2 00000	
	7 Naphthalene	128	4.764	4.767	(1 006)	366904	1 85082	84.28
$	12 2-Methylnaphthalene-d10	152	5.466	5.463	(1.154)	195619	1 55667	70.88
	14 2-Methylnaphthalene	141	5.510	5.510	(1.164)	229339	1.94017	88.35
	15 1-methylnaphthalene	141	5.706	5.703	(1.205)	206951	1.80158	82.04
	21 Acenaphthylene	152	6 895	6.892	(0.985)	364492	1.88099	85.65
*	22 Acenaphthene-d10	164	7 003	7.000	(1.000)	265334	2.00000	
	23 Acenaphthene	153	7 053	7.050	(1.007)	246746	1.91374	87.14
	11 Dibenzofuran	168	7 205	7.202	(1.029)	377801	2.11870	96.48
	25 Fluorene	166	7.679	7.673	(1.097)	303797	2.10953	96.06
*	28 Phenanthrene-d10	188	9.026	9.020	(1.000)	470262	2.00000	
	30 Phenanthrene	178	9.061	9.055	(1.004)	733335	3.27079	148.9
	31 Anthracene	178	9.102	9.096	(1.008)	515707	2.55488	116.3
	36 Fluoranthene	202	10.781	10.769	(1.194)	1238998	4.72484	215.1(R)
$	253 Fluoranthene-d10	212	10.740	10.734	(1.190)	517421	2.23686	101.9

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.275	11.265	(0.816)	1383126	4 49321	204.6(R)
	46 Benzo(a)anthracene	228	13.697	13.684	(0.991)	1000580	3.61239	164.5(R)
*	47 Chrysene-d12	240	13.820	13.807	(1.000)	552196	2 00000	
	48 Chrysene	228	13.893	13.880	(1.005)	1145097	4.12318	187 8(R)
	51 Benzo(b)fluoranthene	252	16.391	16.369	(0.929)	1150823	3 79788	172.9
	52 Benzo(k)fluoranthene	252	16.451	16.429	(0.932)	882074	2.91339	132.7
	251 Benzo(j)fluoranthene	252	16.523	16.505	(0.936)	712421	2.41145	109.8
	54 Benzo(a)pyrene	252	17.425	17.402	(0.987)	963882	3 56759	162 5
*	56 Perylene-d12	264	17.652	17.633	(1.000)	577008	2 00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.081	20.046	(1.138)	1047641	3 22837	147.0
$	60 Dibenzo(a,h)anthracene-d14	292	19 961	19.929	(1.131)	493819	2.24719	102.3
	62 Dibenzo(a,h)anthracene	278	20.065	20.033	(1 137)	669862	2.53440	115.4
	61 Benzo(g,h,i)perylene	276	21.061	21.010	(1.193)	917864	3.21552	146.4
	57 Perylene	252	17.731	17.706	(1.004)	710783	2.53424	115.4

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060114.d
Lab Smp Id: AGC9HMSD
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-04(1.5-3.0)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	411517	19.94
22 Acenaphthene-d10	230598	115299	461196	265334	15.06
28 Phenanthrene-d10	373928	186964	747856	470262	25.76
47 Chrysene-d12	381262	190631	762524	552196	44.83
56 Perylene-d12	380825	190412	761650	577008	51.52

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	-0.07
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.09
56 Perylene-d12	17.63	17.13	18.13	17.65	0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

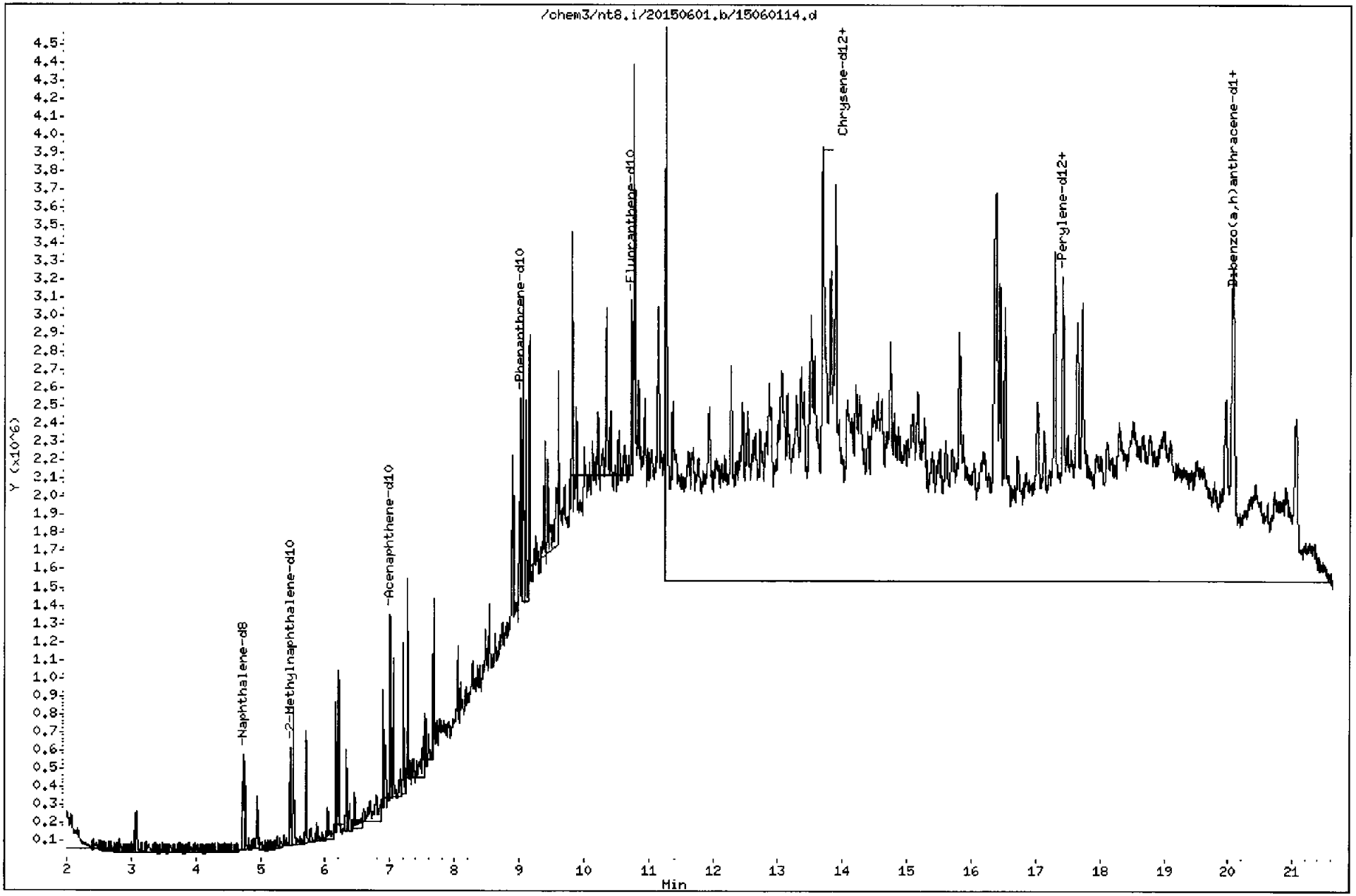
Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9HMSD
Client Smp ID: SDP-04(1.5-3.0) MSD
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: MS
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

SPIKE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
7 Naphthalene	136.6	84.28	61.69	36-120
14 2-Methylnaphthalen	136.6	88.35	64.67	35-120
15 1-methylnaphthalen	136.6	82.04	60.05	39-120
21 Acenaphthylene	136.6	85.65	62.70	35-120
23 Acenaphthene	136.6	87.14	63.79	39-120
11 Dibenzofuran	136.6	96.48	70.62	38-120
25 Fluorene	136.6	96.06	70.32	41-120
30 Phenanthrene	136.6	148.9	109.03	46-120
31 Anthracene	136.6	116.3	85.16	36-120
36 Fluoranthene	136.6	215.1	157.49*	46-120
39 Pyrene	136.6	204.6	149.77*	49-120
46 Benzo(a)anthracene	136.6	164.5	120.41*	42-120
48 Chrysene	136.6	187.8	137.44*	48-120
51 Benzo(b)fluoranthe	136.6	172.9	126.60	35-127
52 Benzo(k)fluoranthe	136.6	132.7	97.11	37-129
251 Benzo(j)fluoranthe	136.6	109.8	80.38	40-120
54 Benzo(a)pyrene	136.6	162.5	118.92	36-120
63 Indeno(1,2,3-cd)py	136.6	147.0	107.61	40-120
62 Dibenzo(a,h)anthra	136.6	115.4	84.48	38-120
61 Benzo(g,h,i)peryle	136.6	146.4	107.18	38-120
57 Perylene	136.6	115.4	84.47	44-120

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	136.6	70.88	51.89	32-120
$ 253 Fluoranthene-d10	136.6	101.9	74.56	36-134
$ 60 Dibenzo(a,h)anthra	136.6	102.3	74.91	21-133

Data File: /chem3/nt8.i/20150601.b/15060114.d
Date : 01-JUN-2015 15:17
Client ID: SDP-04(1.5-3.0) MSD
Sample Info: AGC9HMSD
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15060114.d

Lab ID: AGC9HMSD, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060115.d
Lab Smp Id: AGC9I Client Smp ID: SDP-04(10.5-12.0)
Inj Date : 01-JUN-2015 15:42
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9I
Misc Info : 15-9439
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:39 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	12.18000	Weight of sample extracted (g)
M	14.20000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.736	4.739	(1.000)	437898	2 00000	
	7 Naphthalene	128	4.767	4.767	(1.007)	363878	1.72497	82.53
$	12 2-Methylnaphthalene-d10	152	5.466	5.463	(1.154)	185079	1.38407	66.22
	14 2-Methylnaphthalene	141	5.514	5.510	(1.164)	120105	0.95486	45.69
	15 1-methylnaphthalene	141	5.707	5.703	(1.205)	70185	0.57418	27.47
	21 Acenaphthylene	152	6.895	6.892	(0.985)	21693	0 10820	5.177
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	274531	2 00000	
	23 Acenaphthene	153	7.054	7 050	(1.007)	10606	0.07951	3.804
	11 Dibenzofuran	168	7.205	7.202	(1.029)	102000	0.55285	26.45
	25 Fluorene	166	7.680	7.673	(1.097)	15170	0.10182	4.871
*	28 Phenanthrene-d10	188	9.030	9.020	(1.000)	531995	2.00000	
	30 Phenanthrene	178	9.065	9.055	(1.004)	535526	2.11137	101.0
	31 Anthracene	178	9.106	9.096	(1.008)	74955	0.32825	15.70
	36 Fluoranthene	202	10.788	10.769	(1.195)	722741	2.43631	116.6
$	253 Fluoranthene-d10	212	10.750	10.734	(1.190)	537355	2.05347	98.25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.284	11.265	(0.815)	827186	2.35710	112.8
	46 Benzo(a)anthracene	228	13.716	13.684	(0.991)	254655	0.80644	38.58
*	47 Chrysene-d12	240	13.839	13.807	(1.000)	629526	2.00000	
	48 Chrysene	228	13 909	13.880	(1.005)	567669	1.79294	85.78
	51 Benzo(b)fluoranthene	252	16.410	16.369	(0.929)	306784	0.93655	44.81
	52 Benzo(k)fluoranthene	252	16.464	16.429	(0.932)	136091	0.41581	19.89
	251 Benzo(j)fluoranthene	252	16.543	16.505	(0.936)	132904	0 41615	19.91
	54 Benzo(a)pyrene	252	17.441	17.402	(0.987)	186108	0 63721	30.49
*	56 Perylene-d12	264	17.668	17.633	(1.000)	623755	2 00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.090	20.046	(1.137)	179371	0.51132	24.46
$	60 Dibenzo(a,h)anthracene-d14	292	19.970	19.929	(1.130)	335958	1.41424	67.66
	62 Dibenzo(a,h)anthracene	278	20.065	20.033	(1.136)	44743	0.15660	7.492
	61 Benzo(g,h,i)perylene	276	21.055	21.010	(1.192)	198434	0.64307	30.77
	57 Perylene	252	17.741	17.706	(1.004)	78701	0.25957	12.42

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060115.d
Lab Smp Id: AGC9I
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9439

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-04(10.5-12.0
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	437898	27.63
22 Acenaphthene-d10	230598	115299	461196	274531	19.05
28 Phenanthrene-d10	373928	186964	747856	531995	42.27
47 Chrysene-d12	381262	190631	762524	629526	65.12
56 Perylene-d12	380825	190412	761650	623755	63.79

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	-0.06
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.11
47 Chrysene-d12	13.81	13.31	14.31	13.84	0.23
56 Perylene-d12	17.63	17.13	18.13	17.67	0.20

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

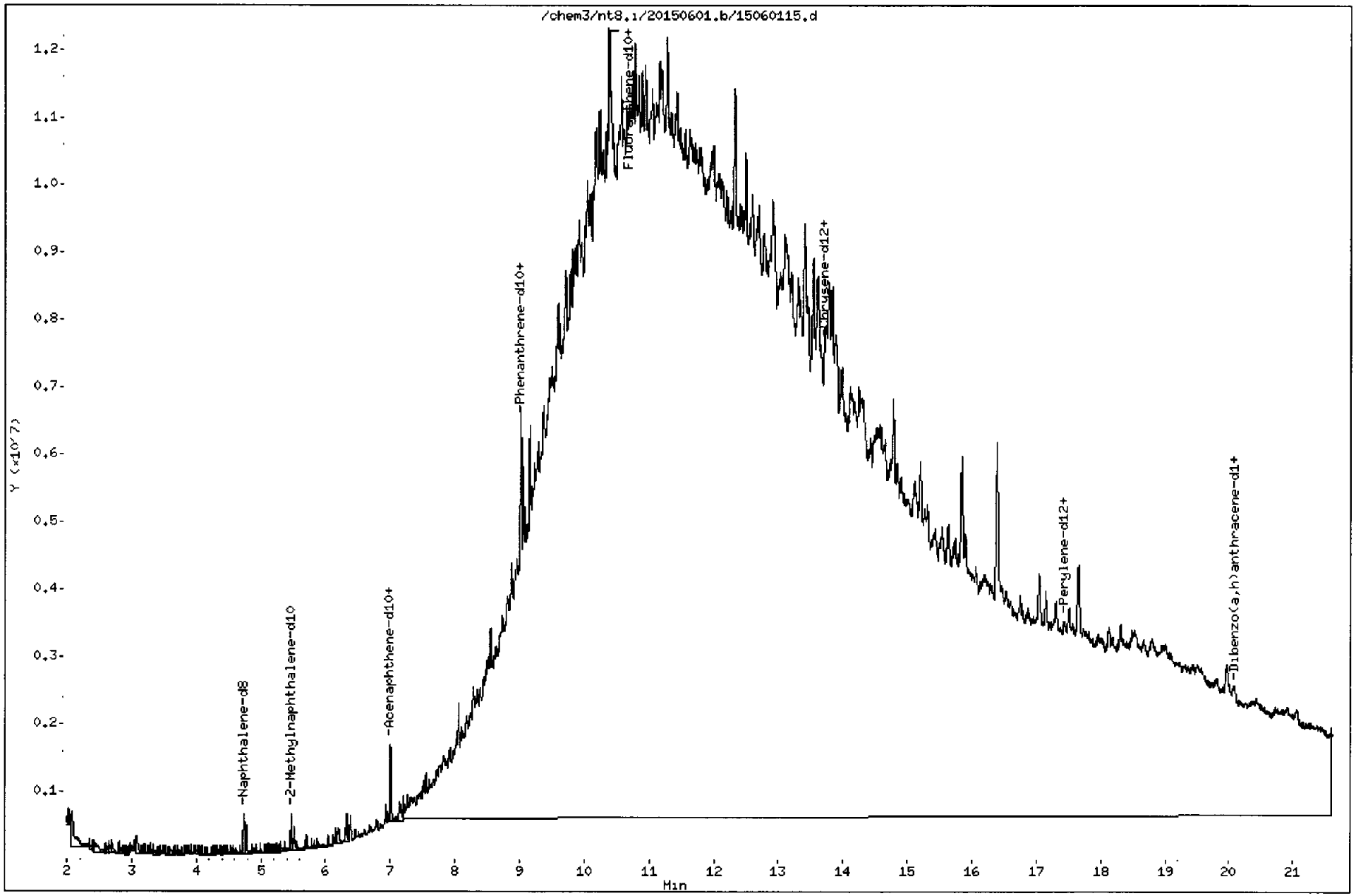
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9I
Client Smp ID: SDP-04(10.5-12.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9439

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	143.5	66.22	46.14	32-120
$ 253 Fluoranthene-d10	143.5	98.25	68.45	36-134
$ 60 Dibenzo(a,h)anthra	143.5	67.66	47.14	21-133

Data File: /chem3/nt8.1/20150601.b/15060115.d
Date : 01-JUN-2015 15:42
Client ID: SDP-04(10.5-12.0)
Sample Info: AGC9I
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

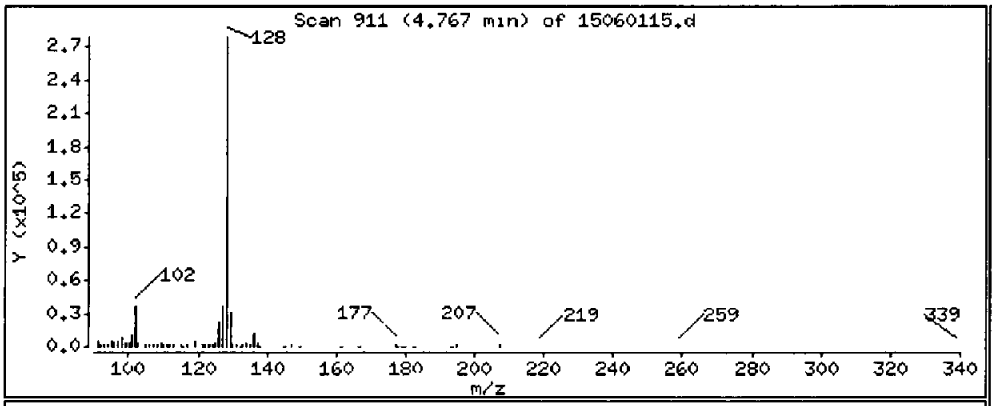
Operator: JZ

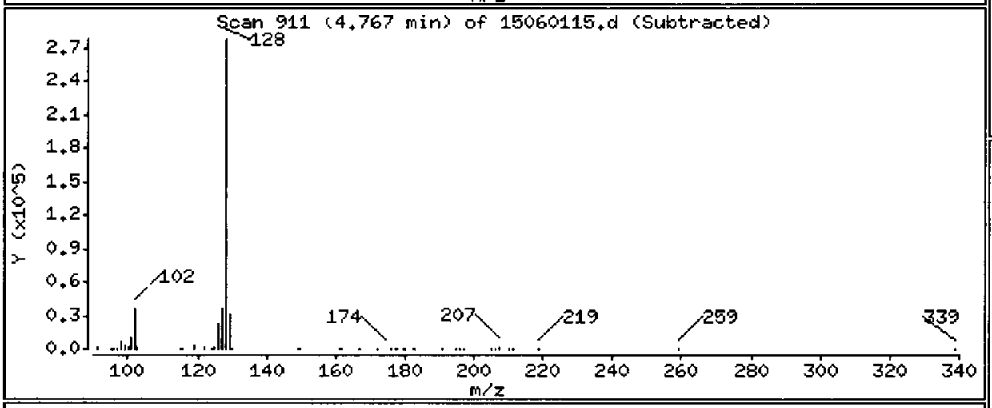
Column phase: ZB-35

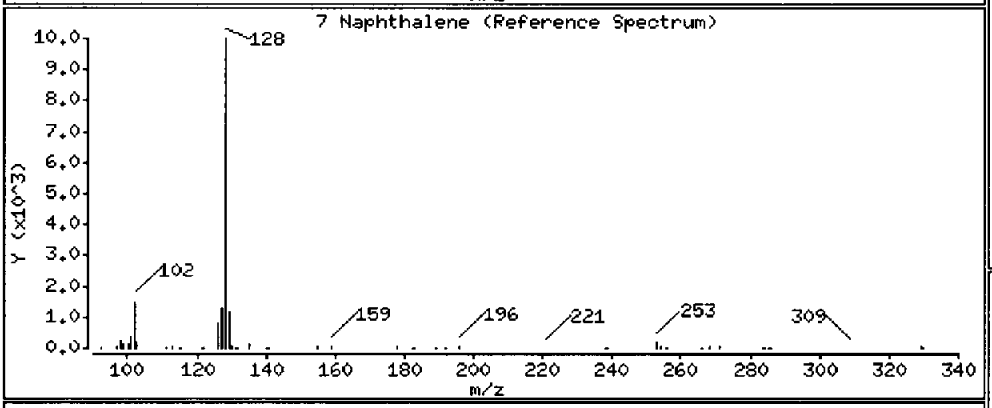
Column diameter: 0.25

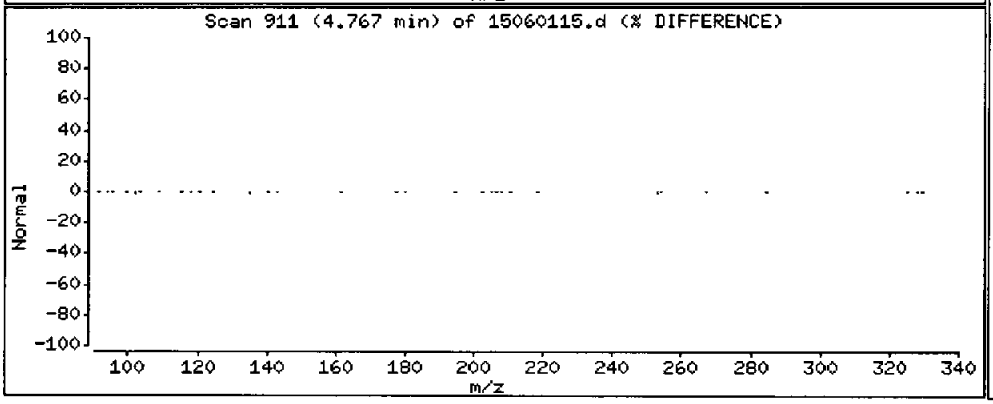
7 Naphthalene

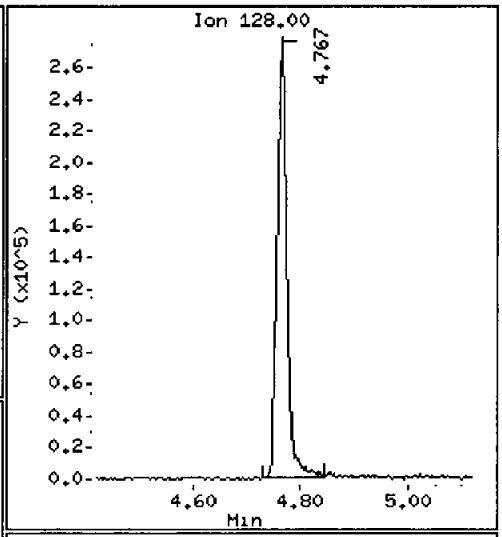
Concentration: 82.53 ug/kg

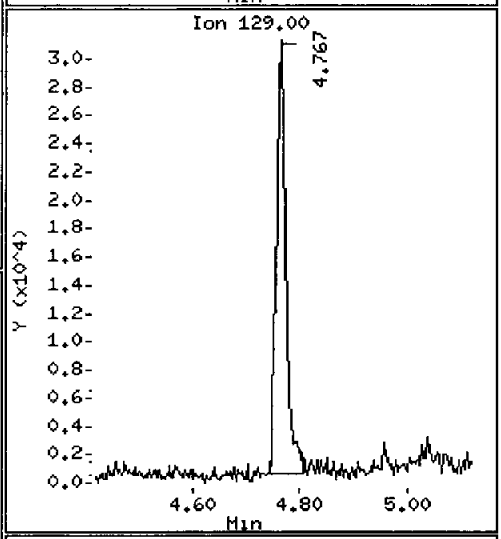


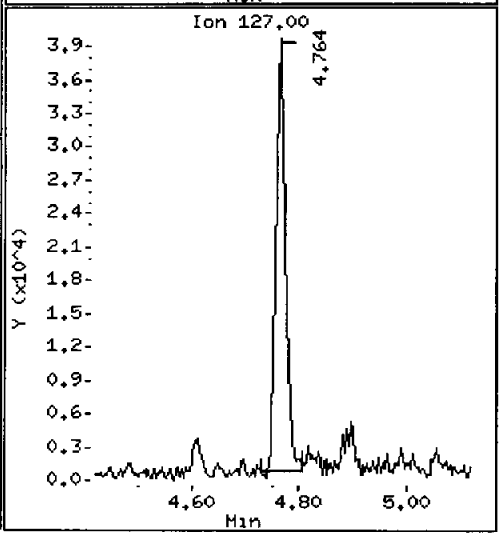












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

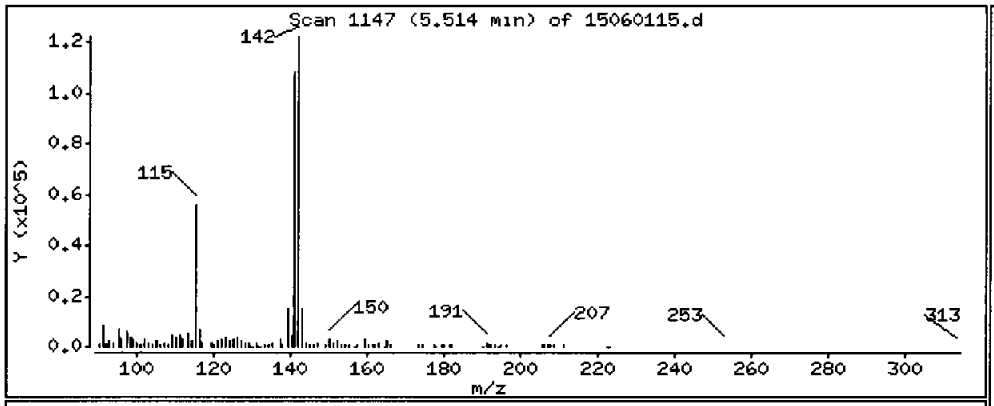
Operator: JZ

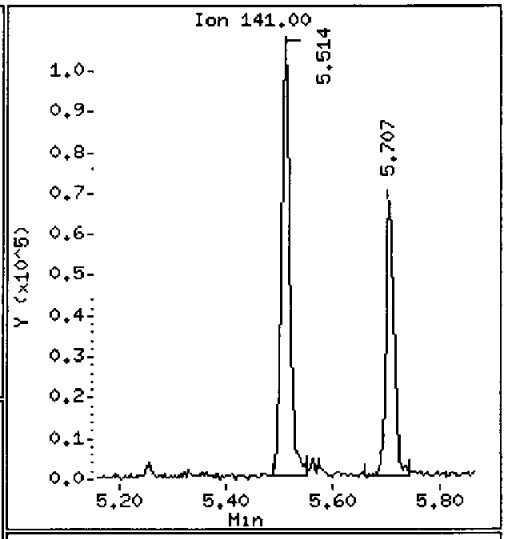
Column phase: ZB-35

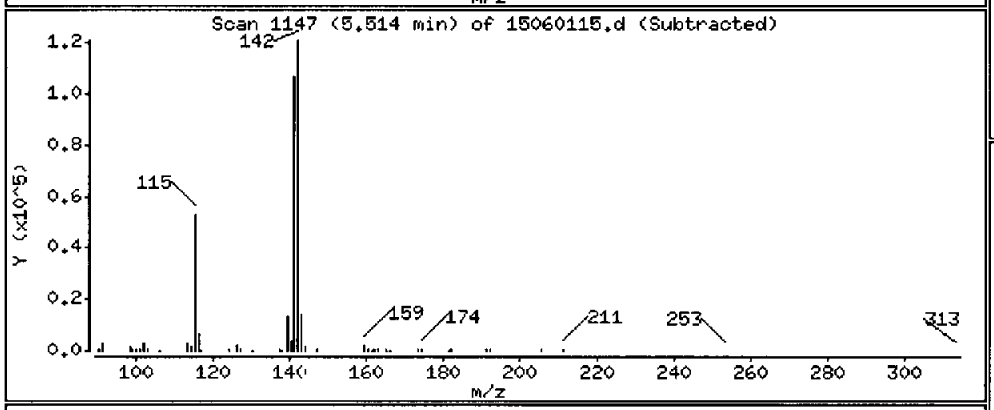
Column diameter: 0.25

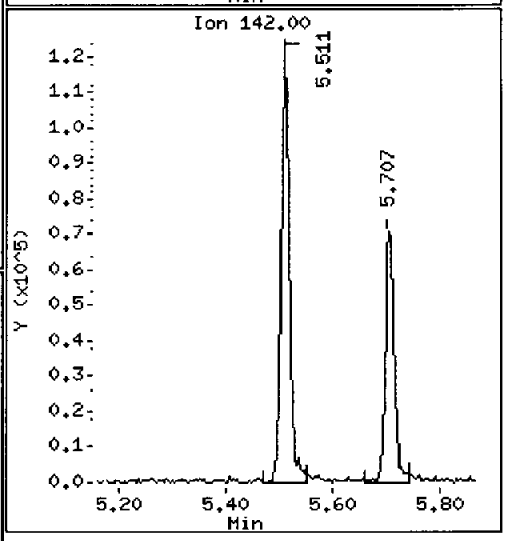
14 2-Methylnaphthalene

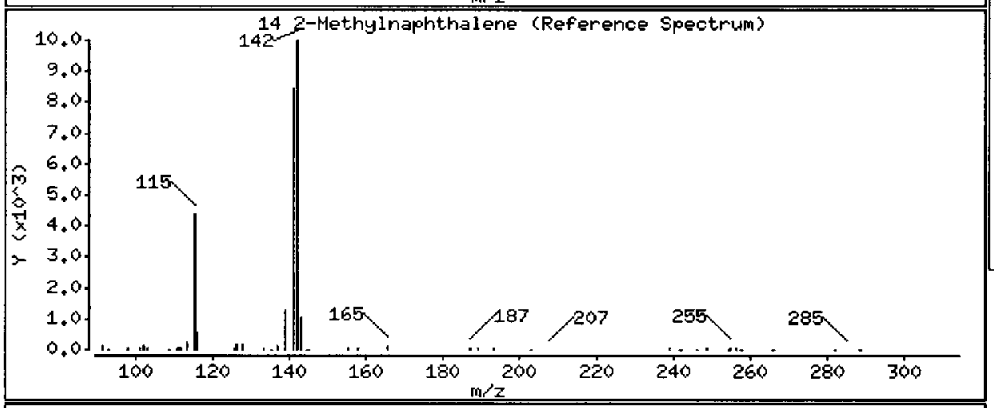
Concentration: 45.69 ug/kg

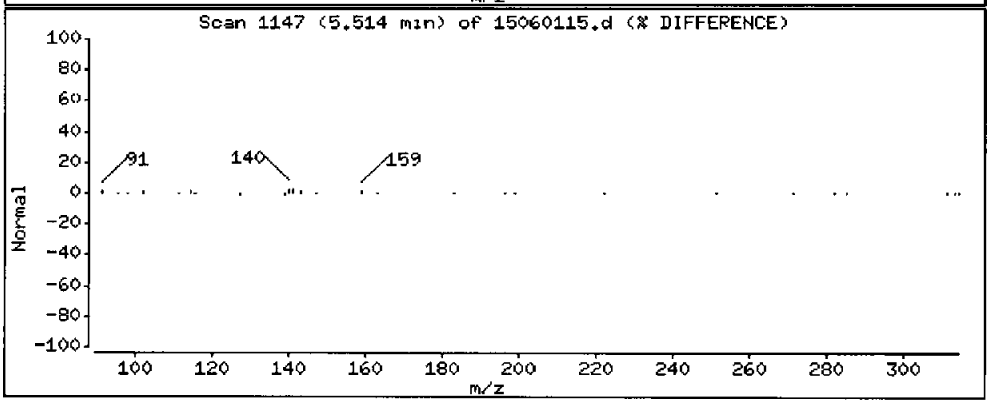












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

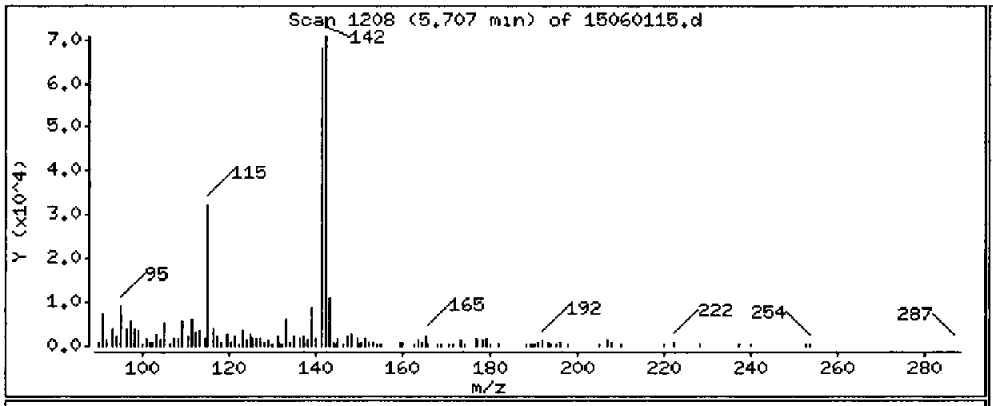
Operator: JZ

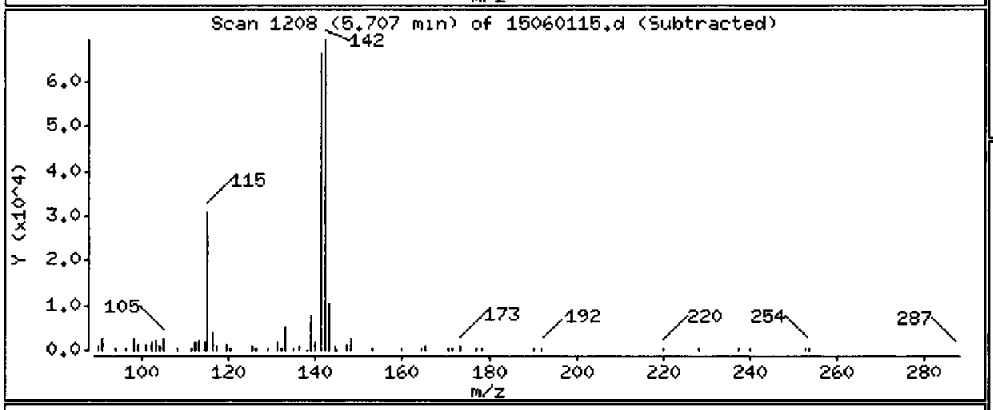
Column phase: ZB-35

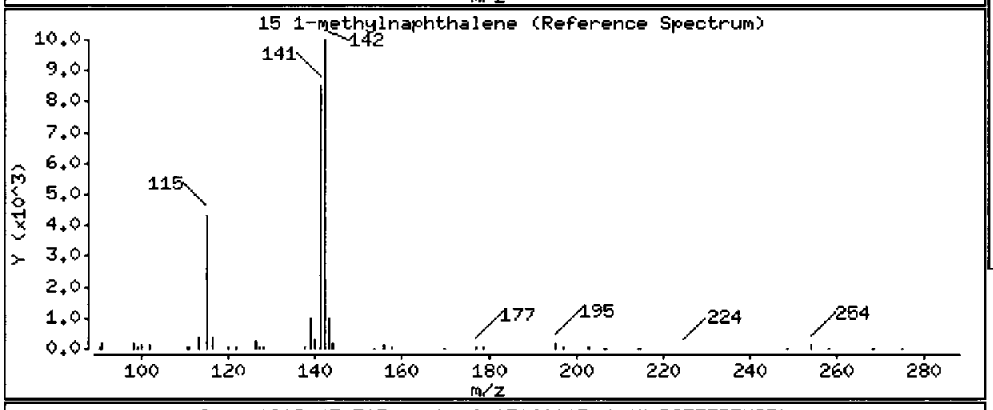
Column diameter: 0.25

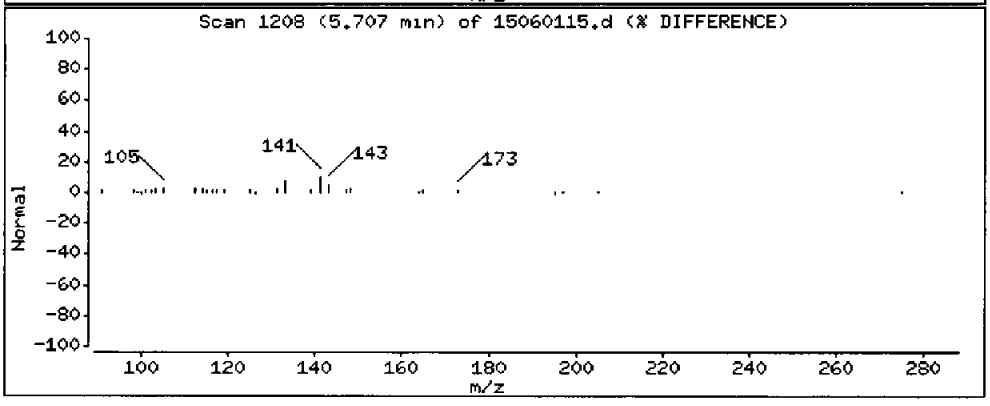
15 1-methylnaphthalene

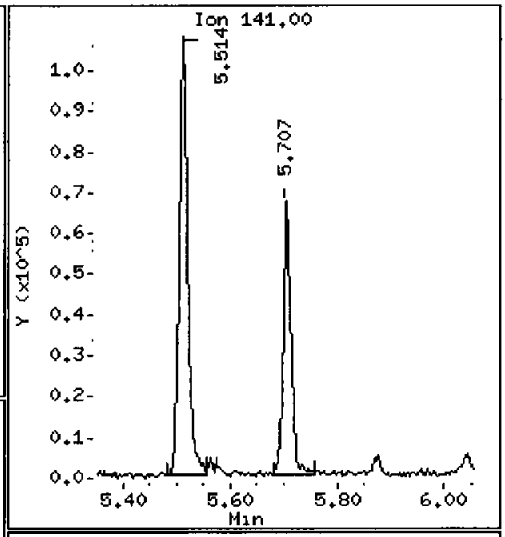
Concentration: 27.47 ug/kg

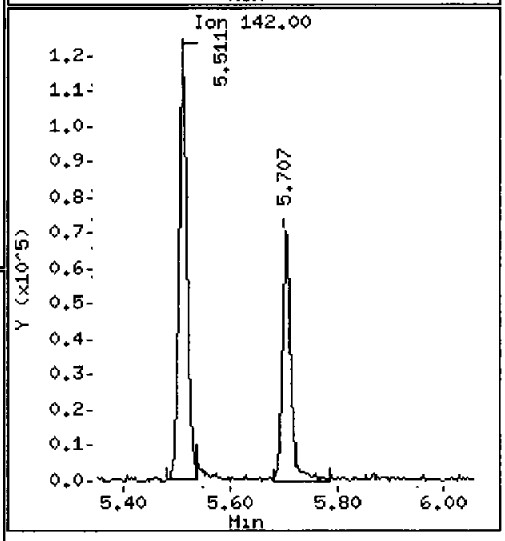












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

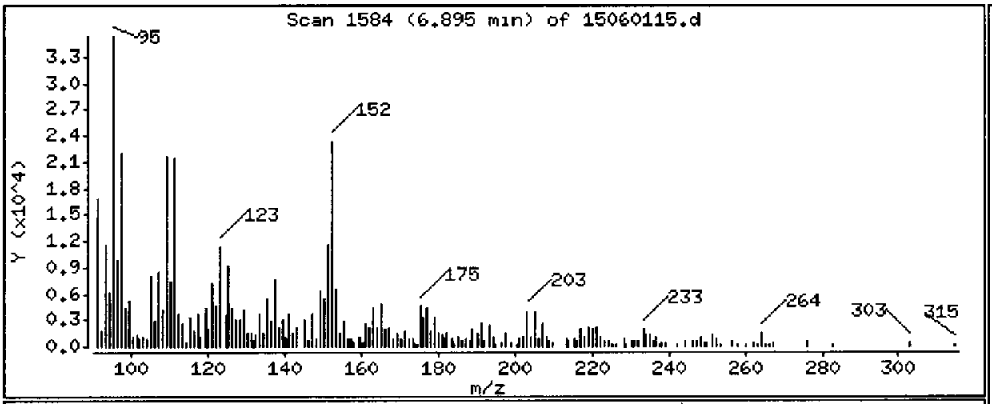
Operator: JZ

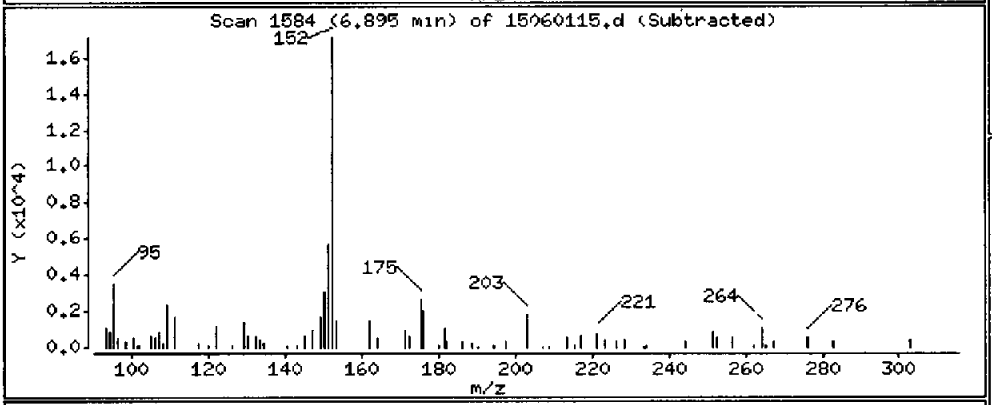
Column phase: ZB-35

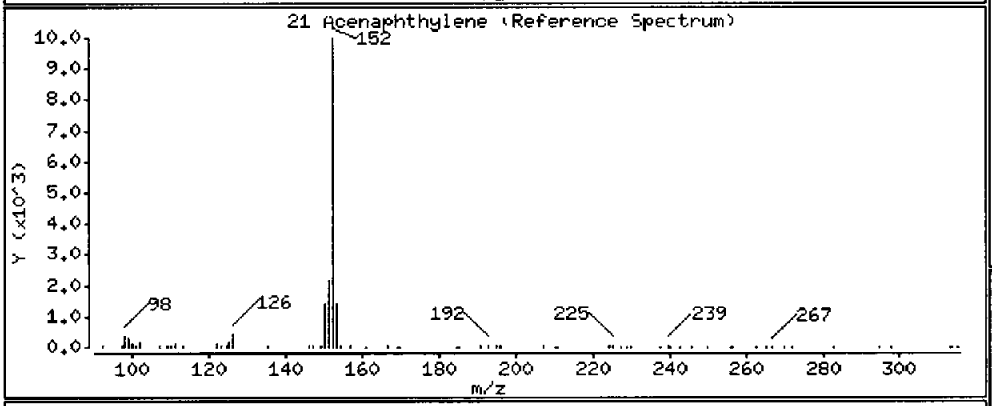
Column diameter: 0.25

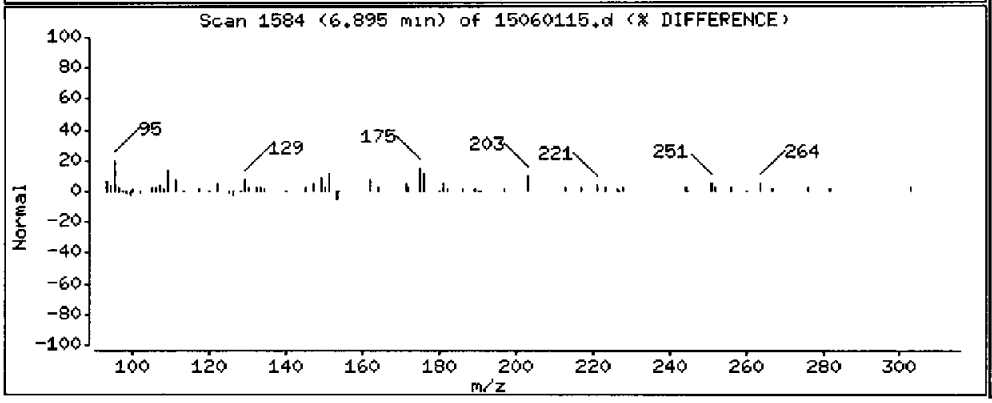
21 Acenaphthylene

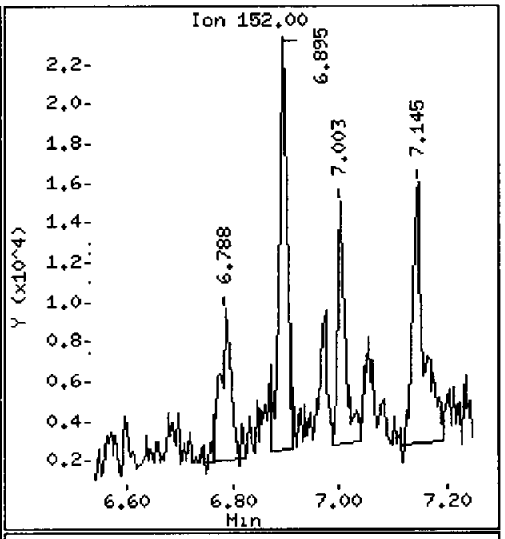
Concentration: 5.177 ug/kg

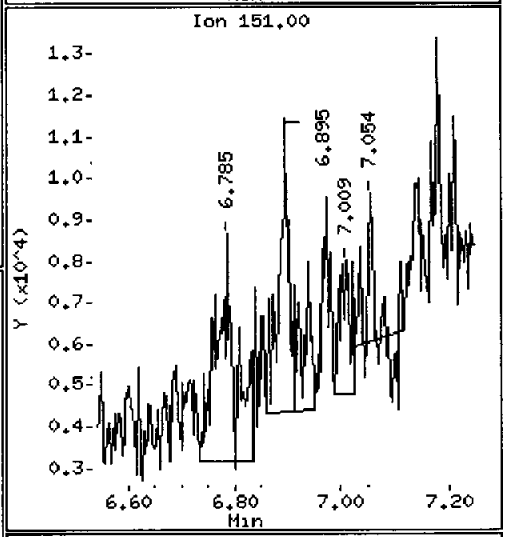


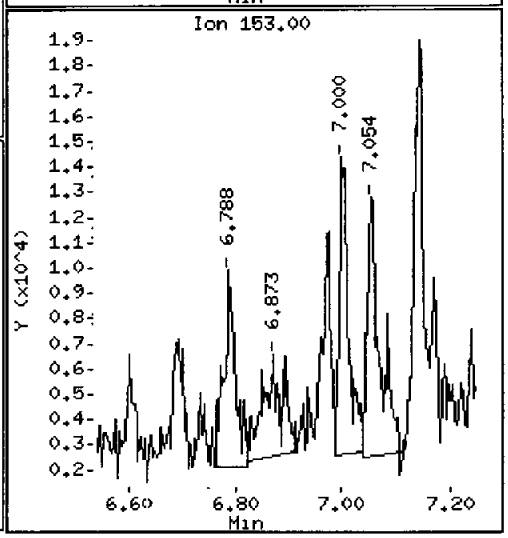












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

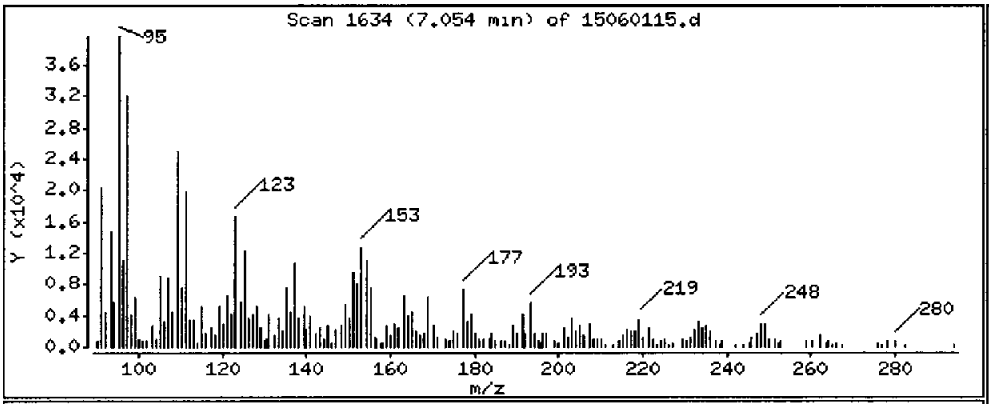
Operator: JZ

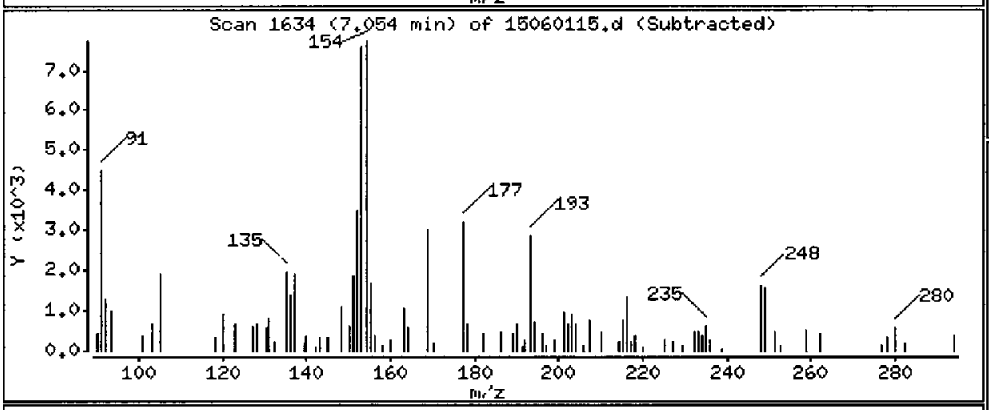
Column phase: ZB-35

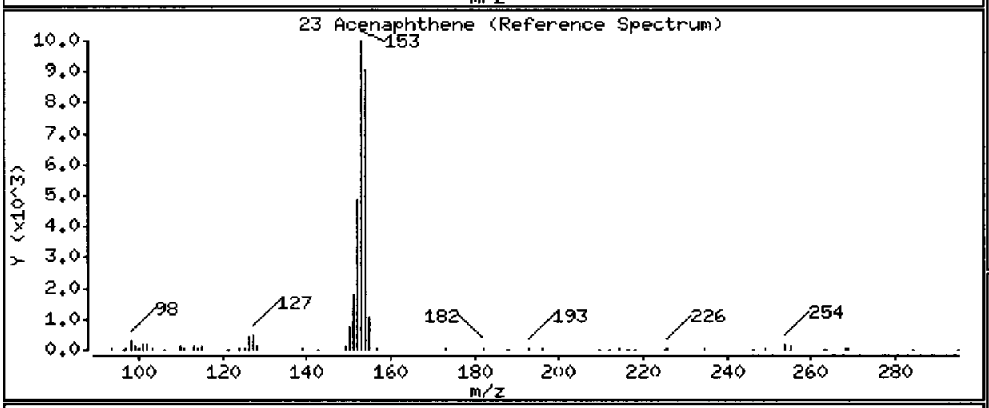
Column diameter: 0.25

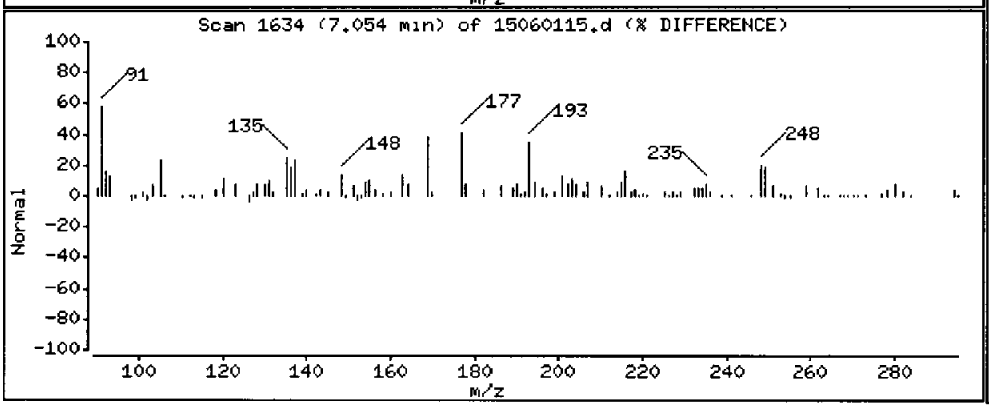
23 Acenaphthene

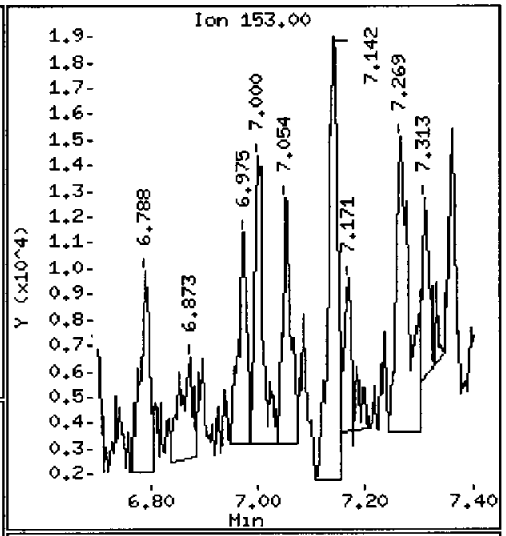
Concentration: 3.804 ug/kg

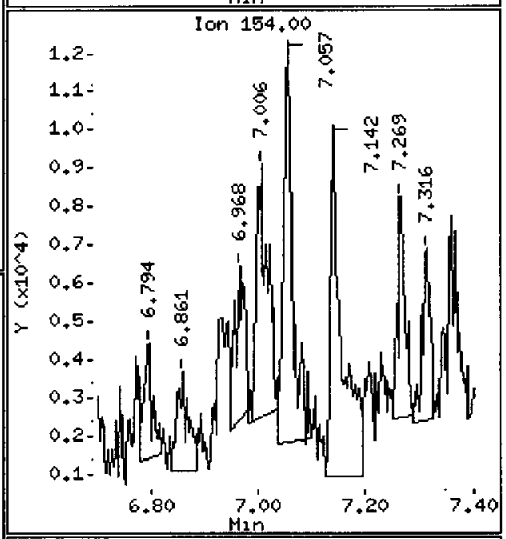


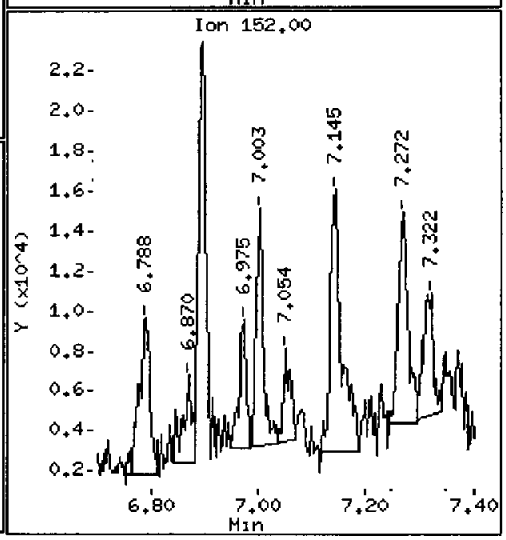












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

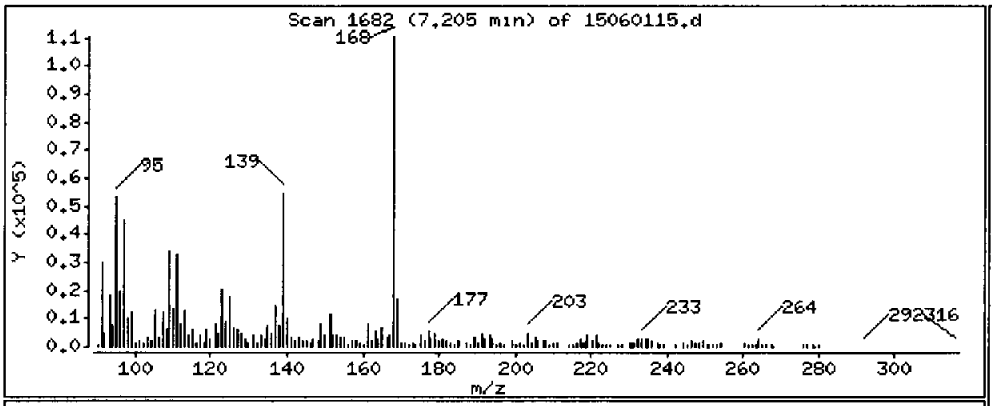
Operator: JZ

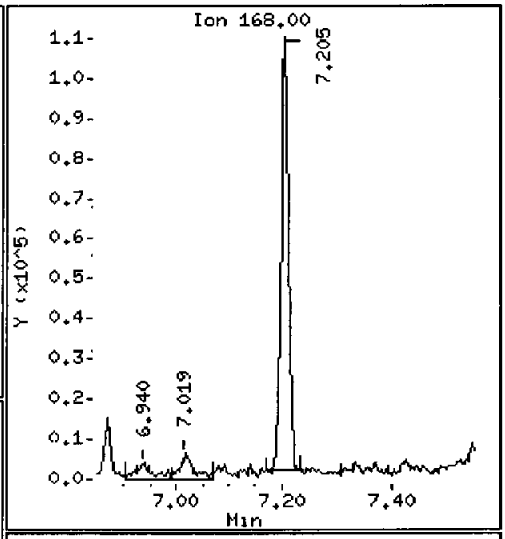
Column phase: ZB-35

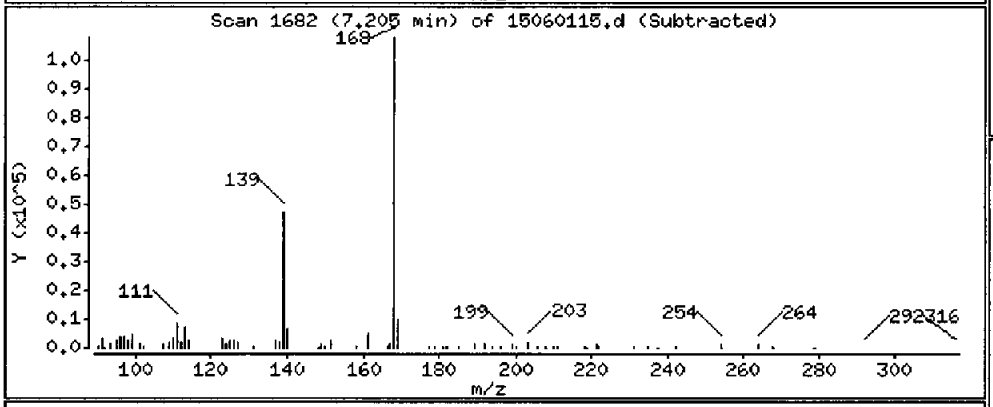
Column diameter: 0.25

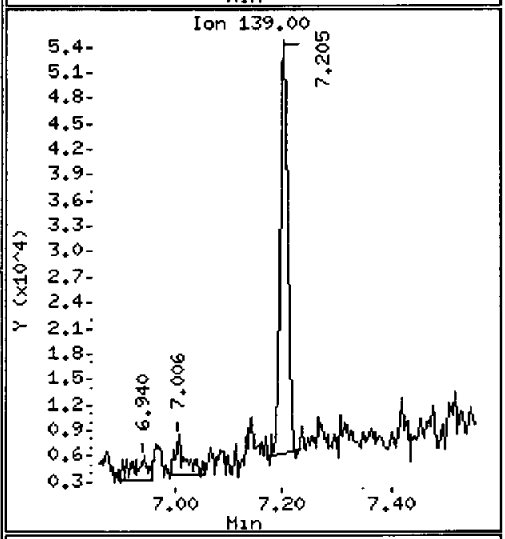
11 Dibenzofuran

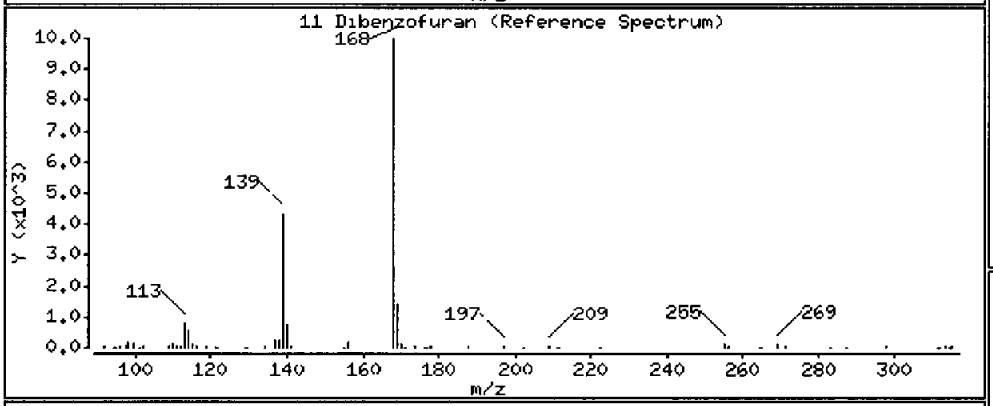
Concentration: 26.45 ug/kg

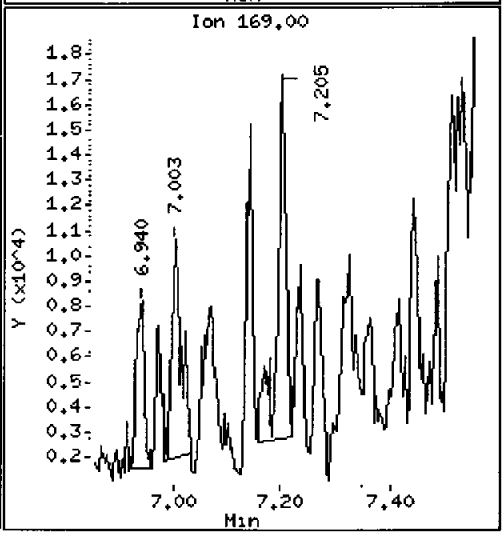


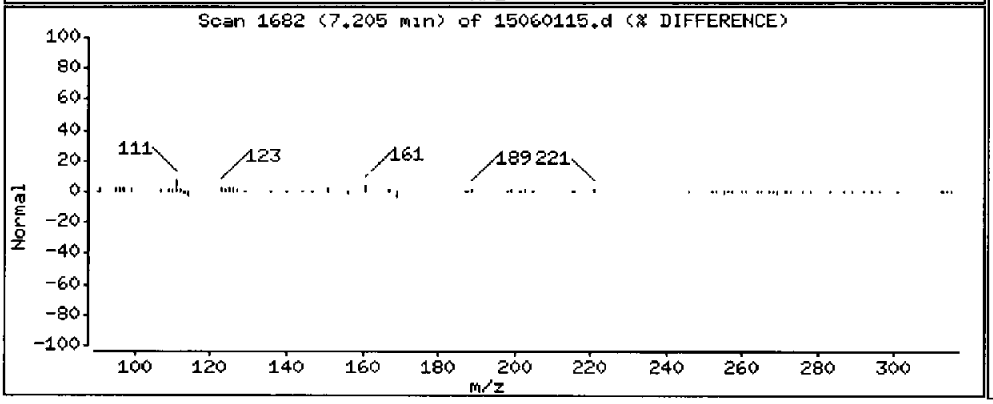












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

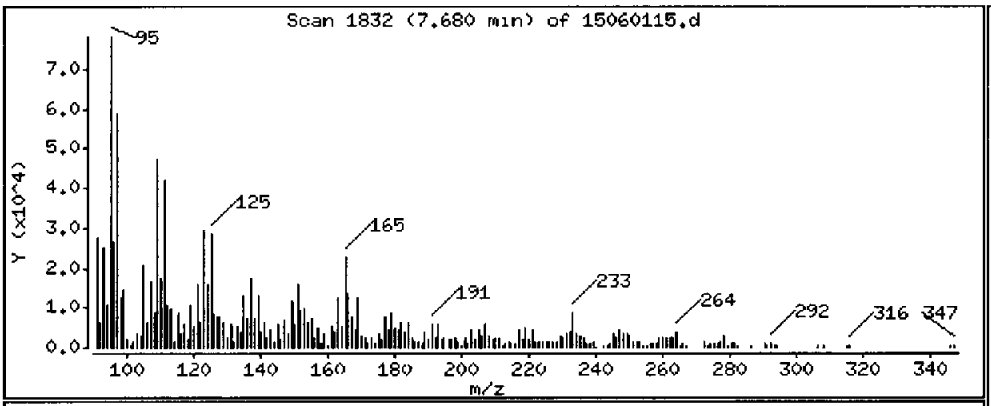
Operator: JZ

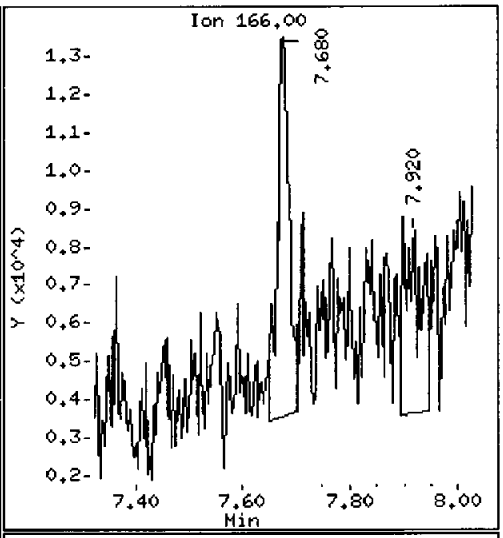
Column phase: ZB-35

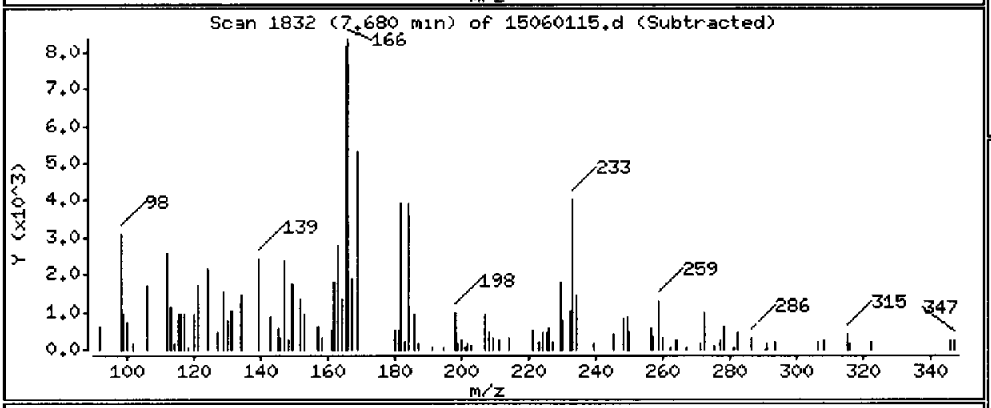
Column diameter: 0.25

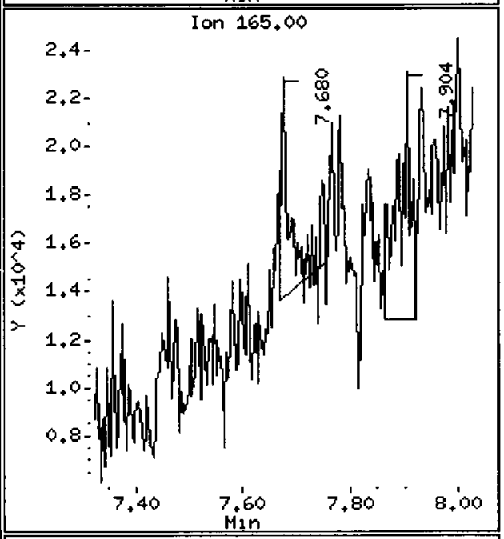
25 Fluorene

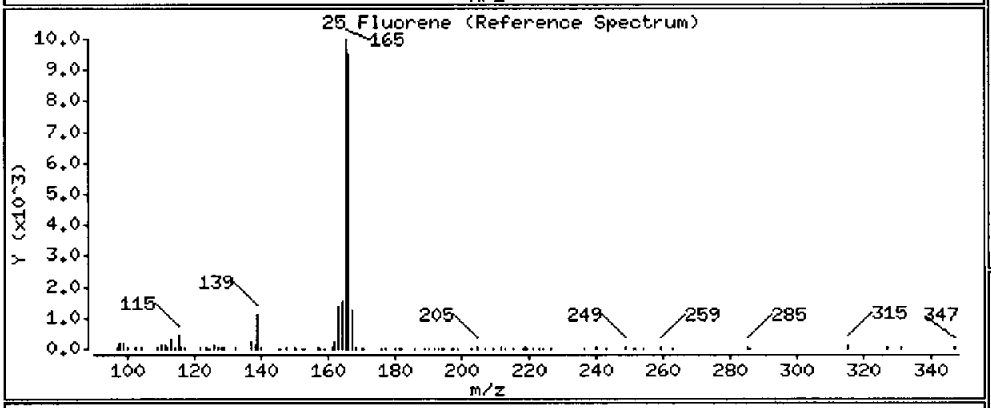
Concentration: 4.871 ug/kg

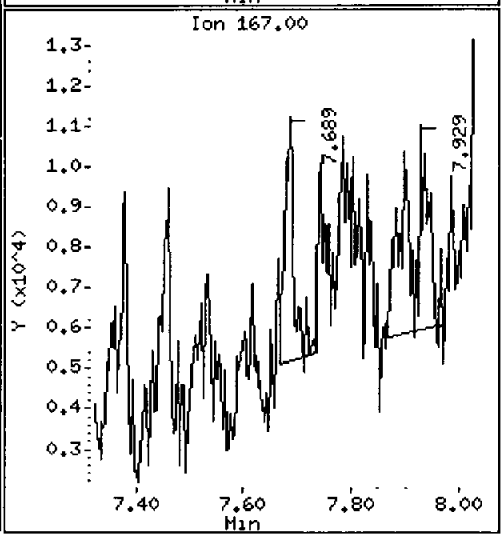


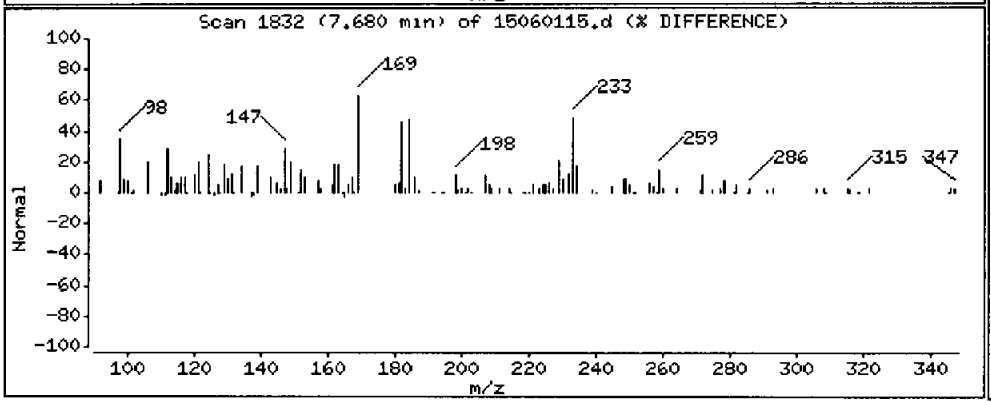












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

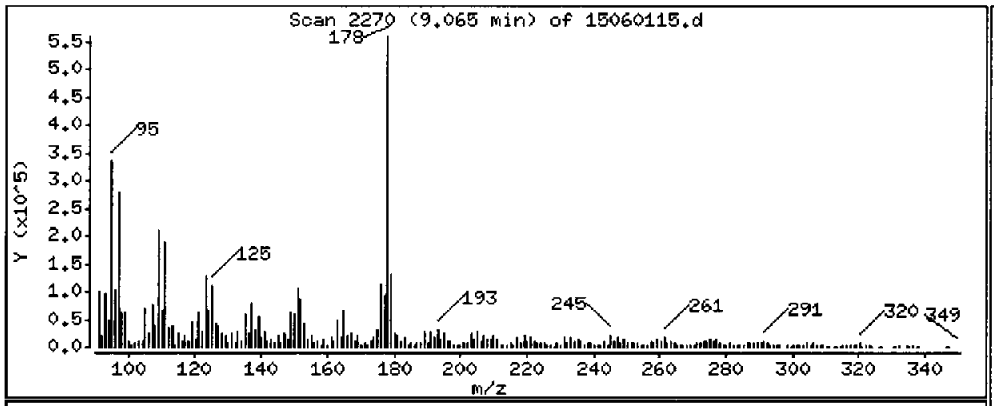
Operator: JZ

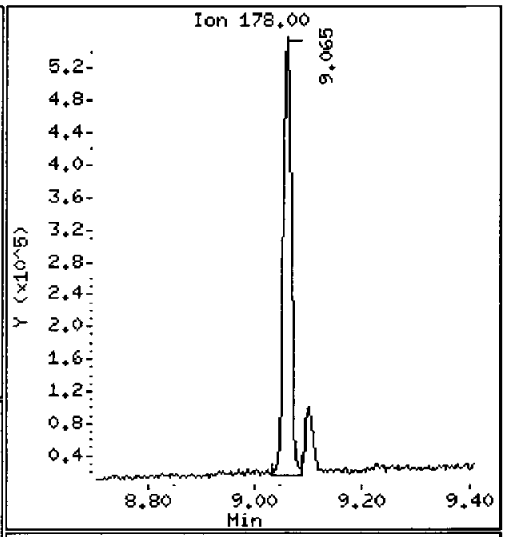
Column phase: ZB-35

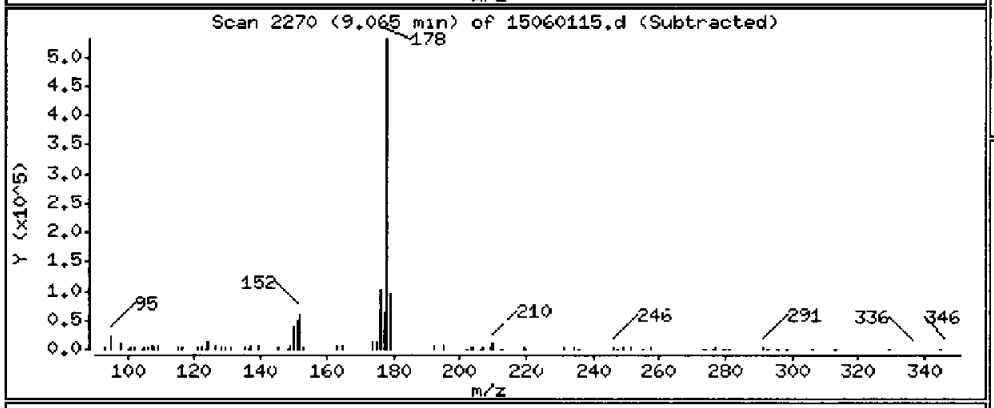
Column diameter: 0.25

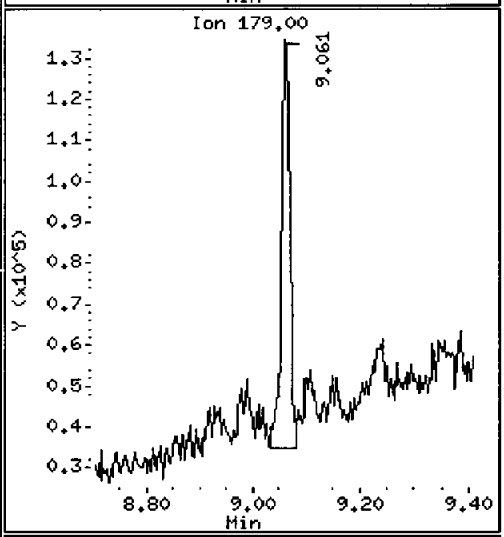
30 Phenanthrene

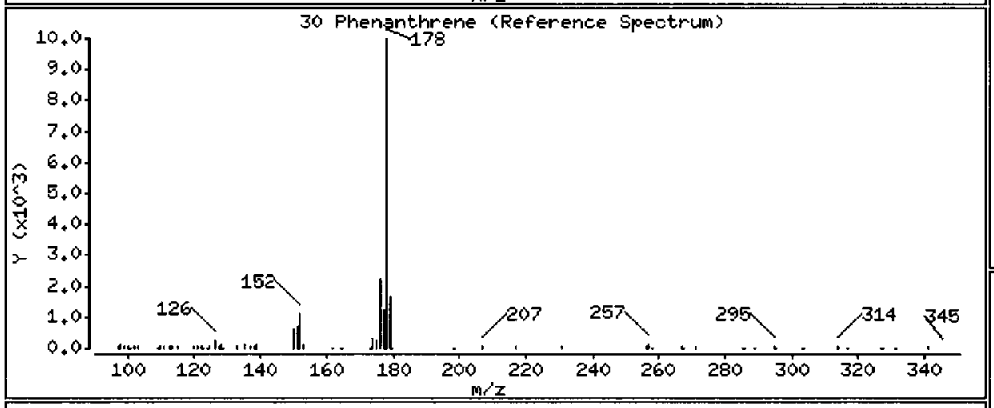
Concentration: 101.0 ug/kg

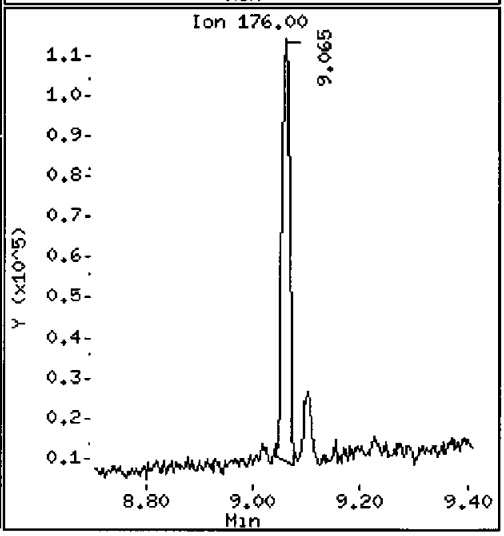


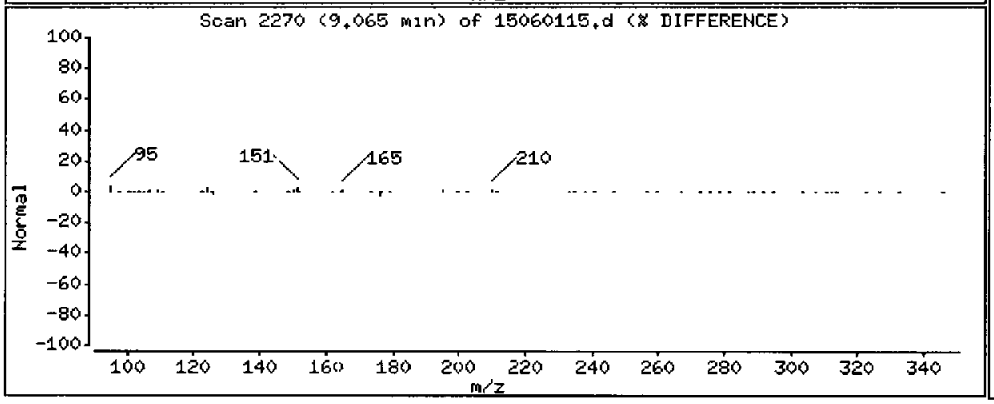












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

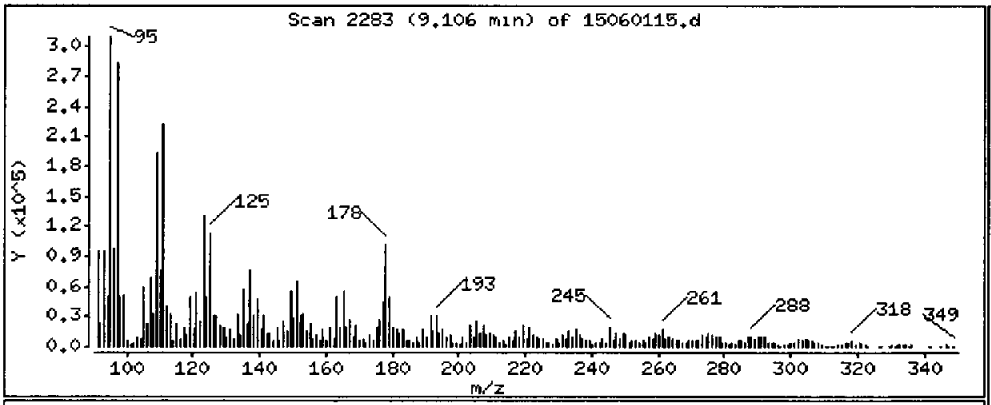
Operator: JZ

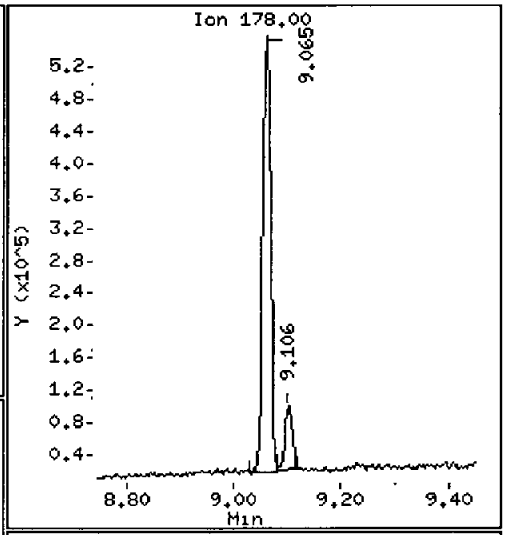
Column phase: ZB-35

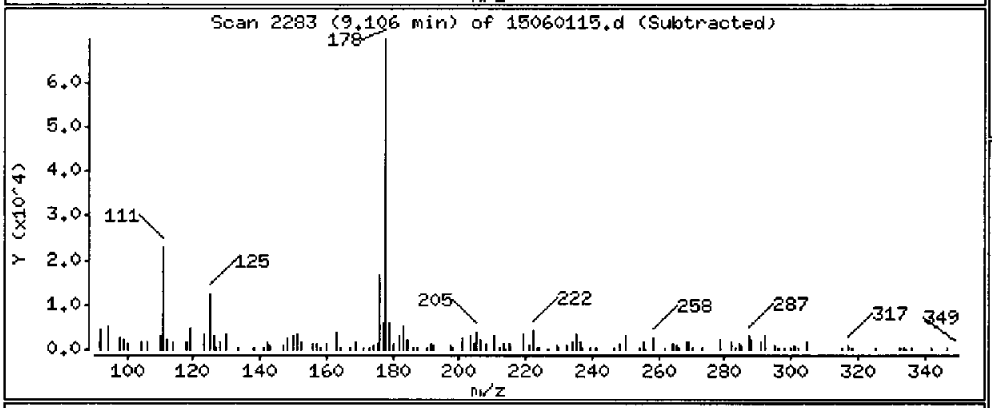
Column diameter: 0.25

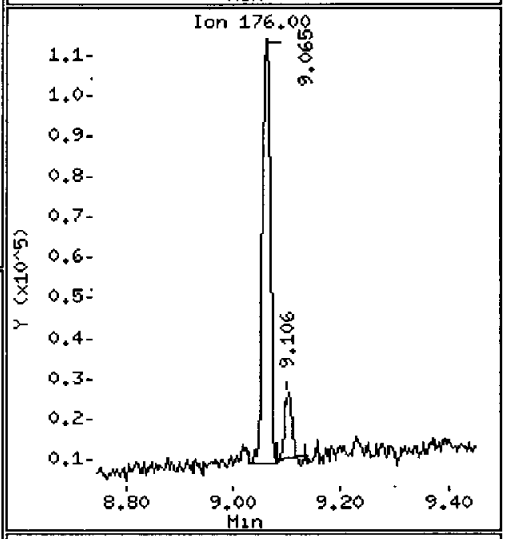
31 Anthracene

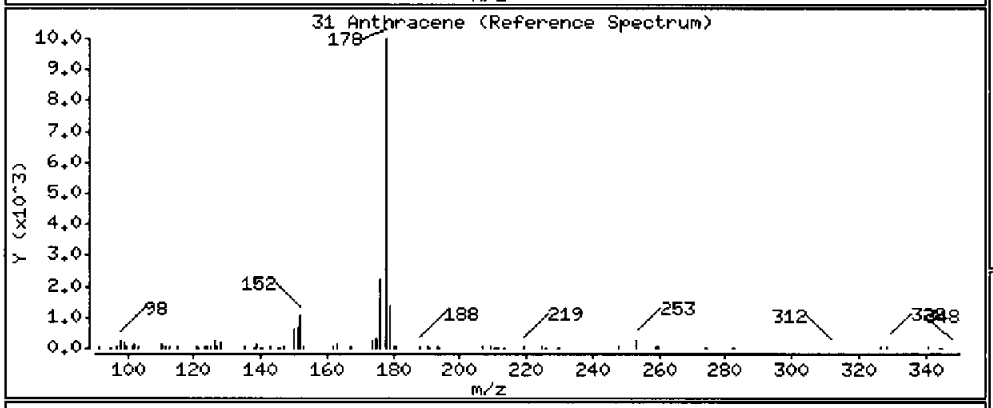
Concentration: 15.70 ug/kg

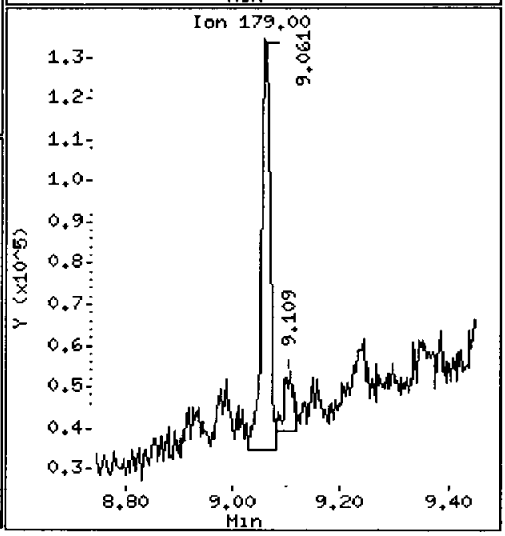


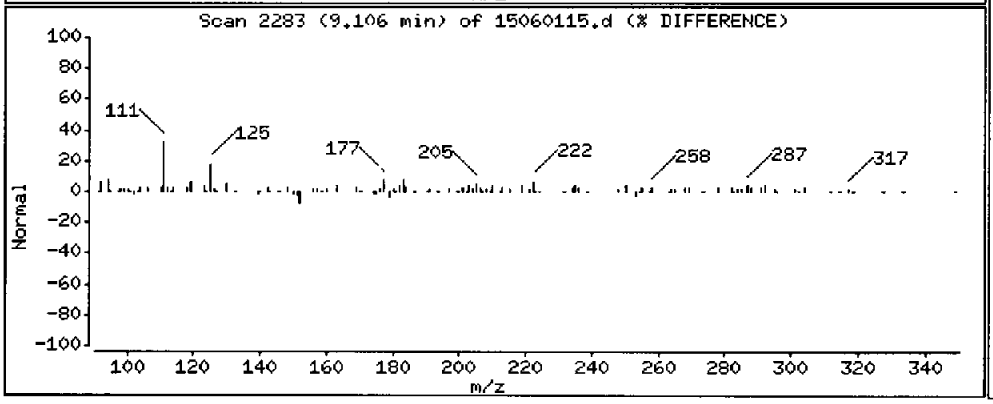












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

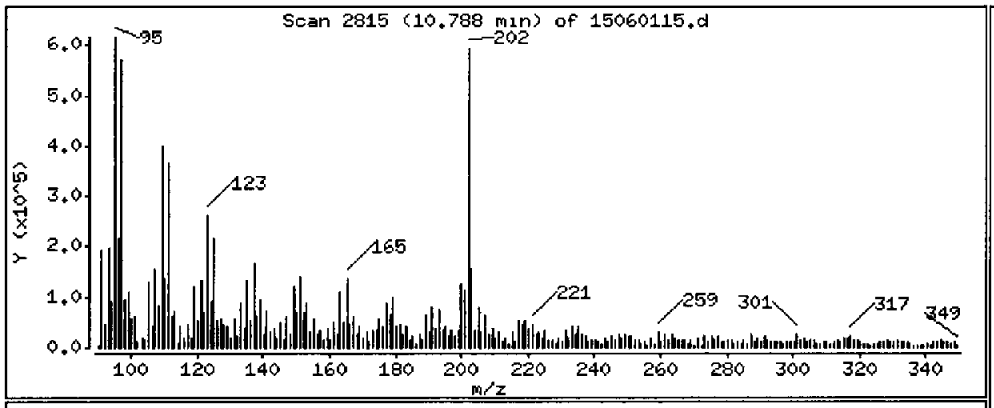
Operator: JZ

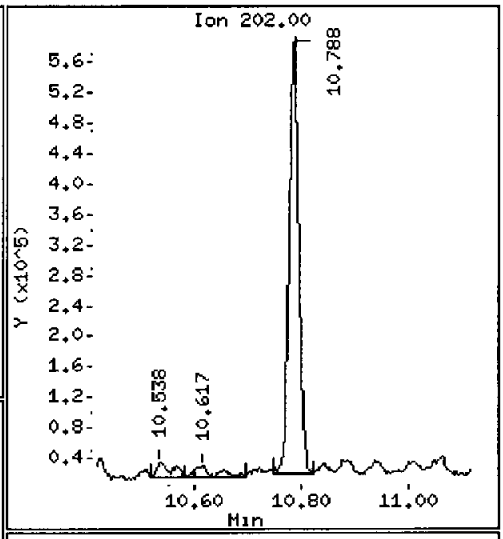
Column phase: ZB-35

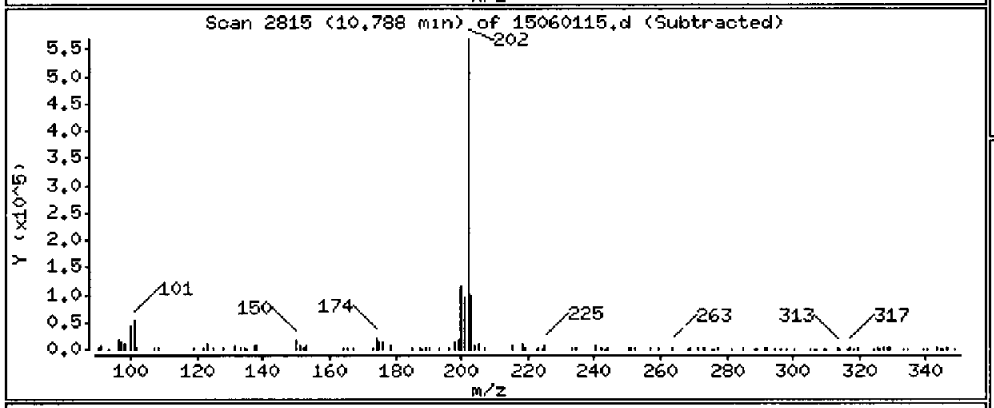
Column diameter: 0.25

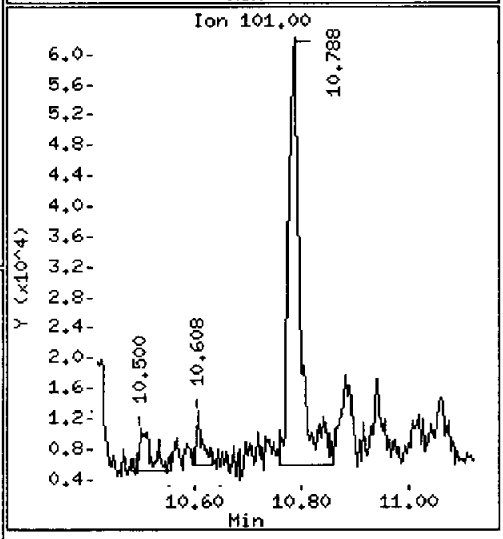
36 Fluoranthene

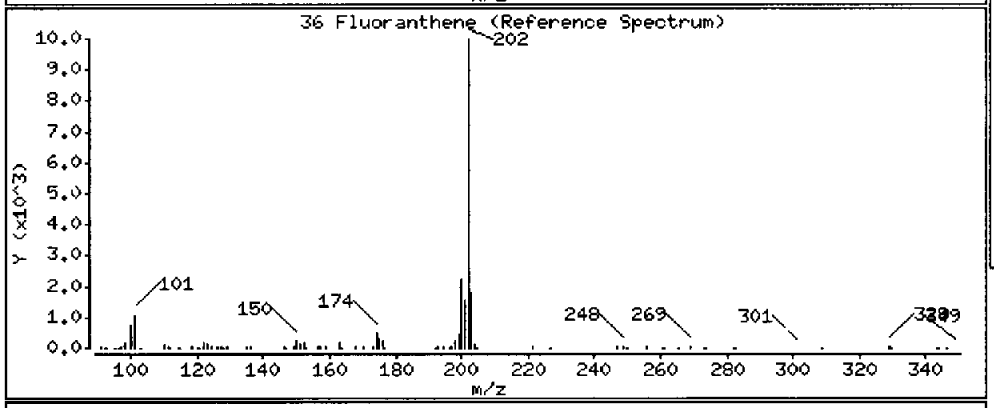
Concentration: 116.6 ug/kg

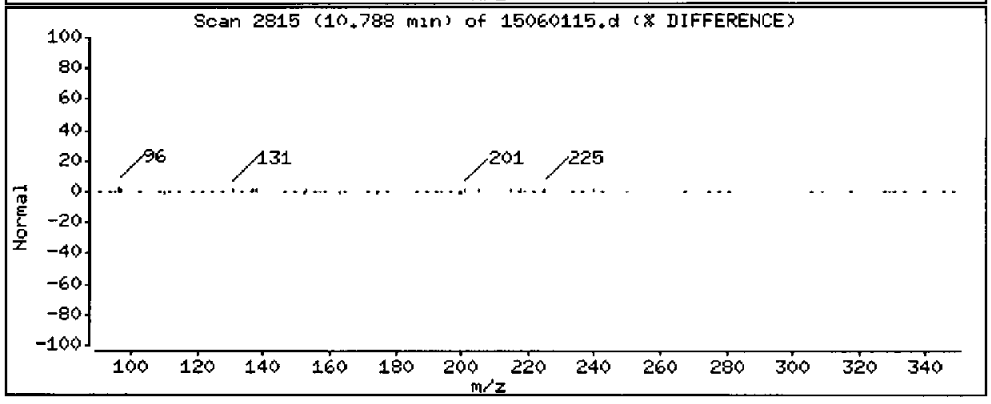












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

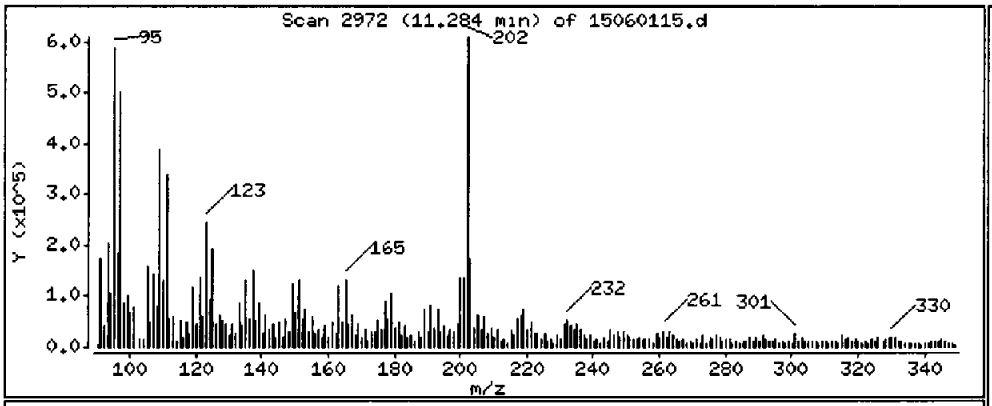
Operator: JZ

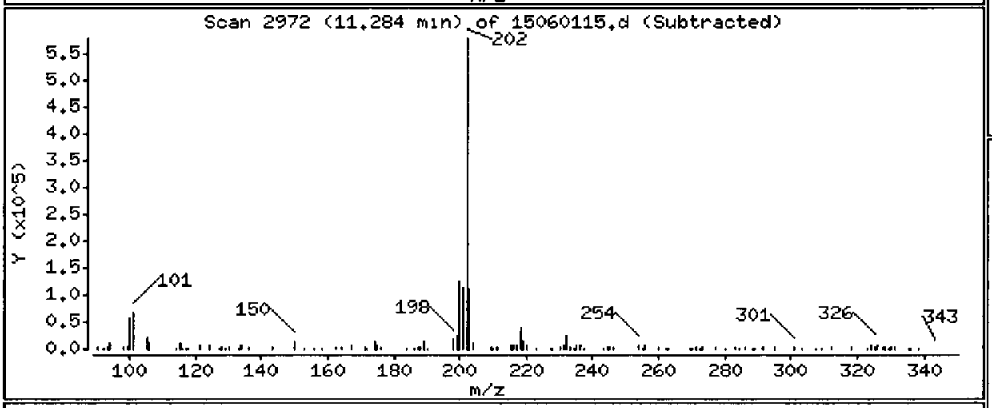
Column phase: ZB-35

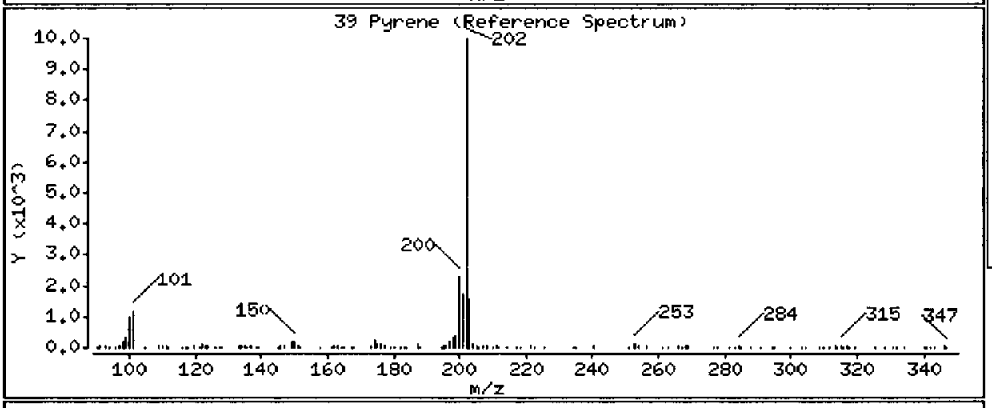
Column diameter: 0.25

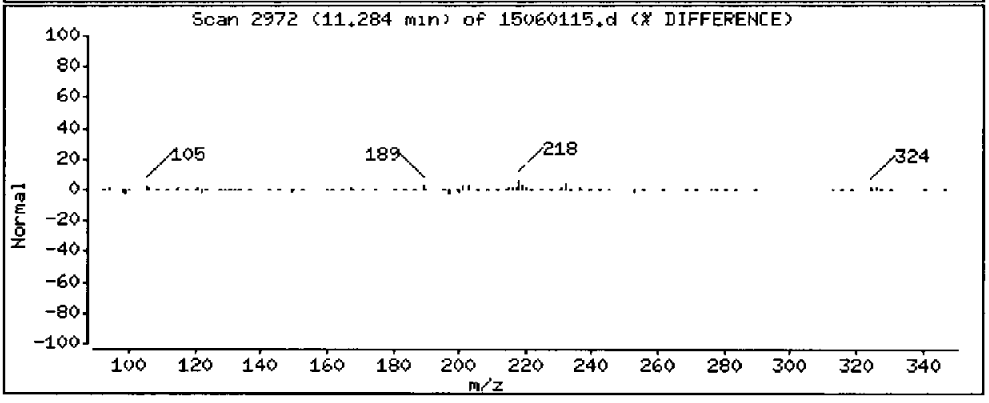
39 Pyrene

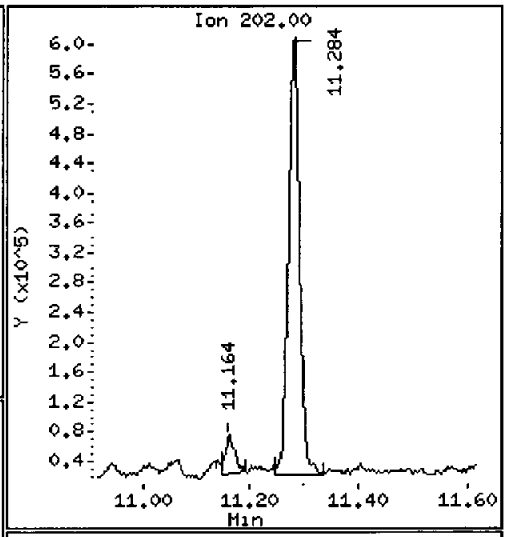
Concentration: 112.8 ug/kg

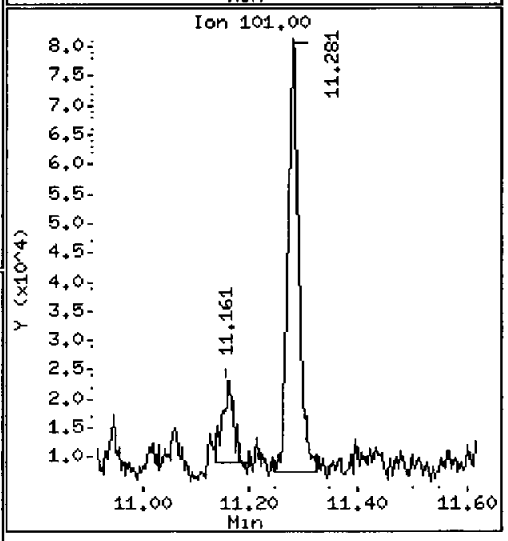












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

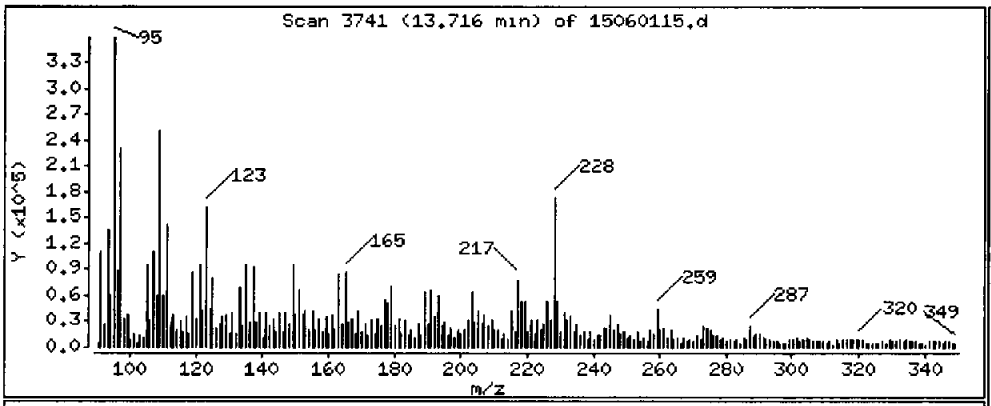
Operator: JZ

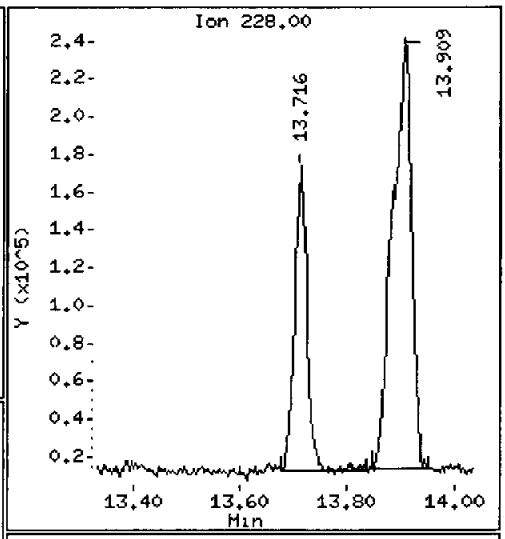
Column phase: ZB-35

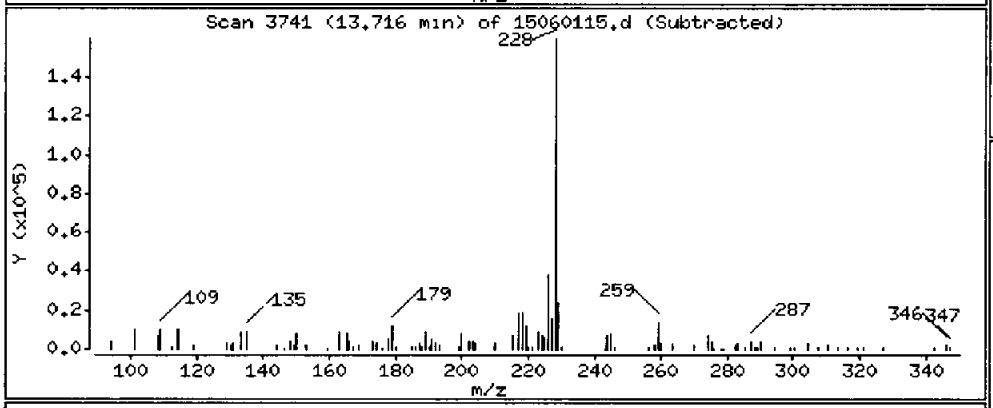
Column diameter: 0.25

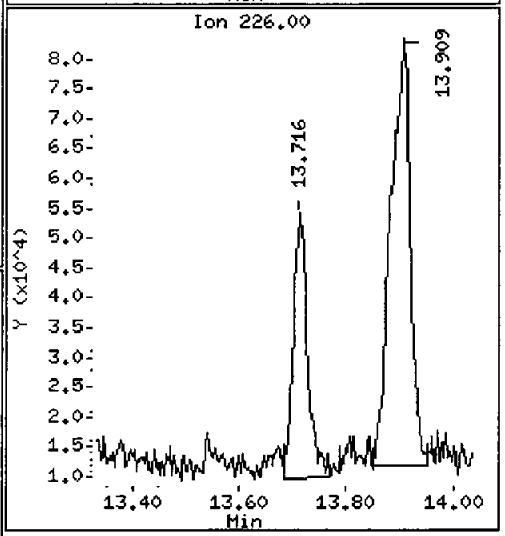
46 Benzo(a)anthracene

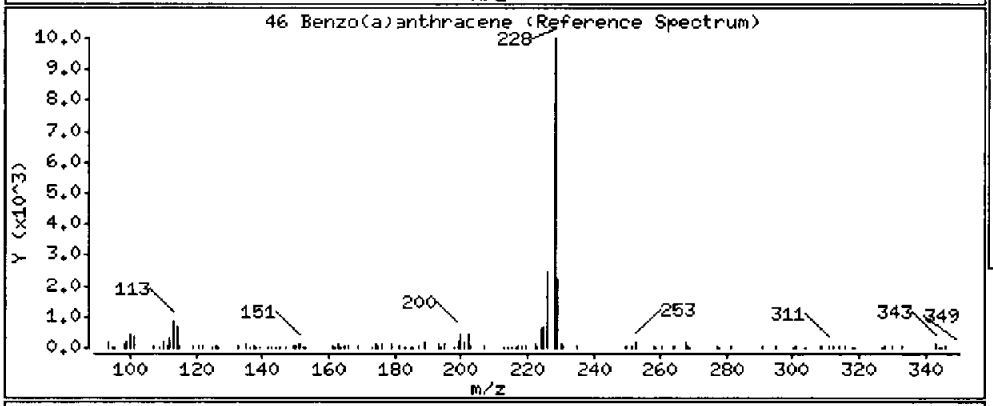
Concentration: 38.58 ug/kg

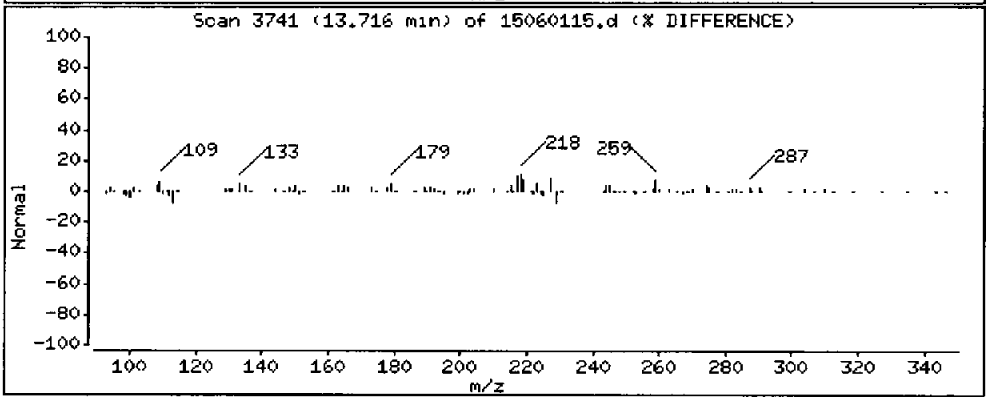












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

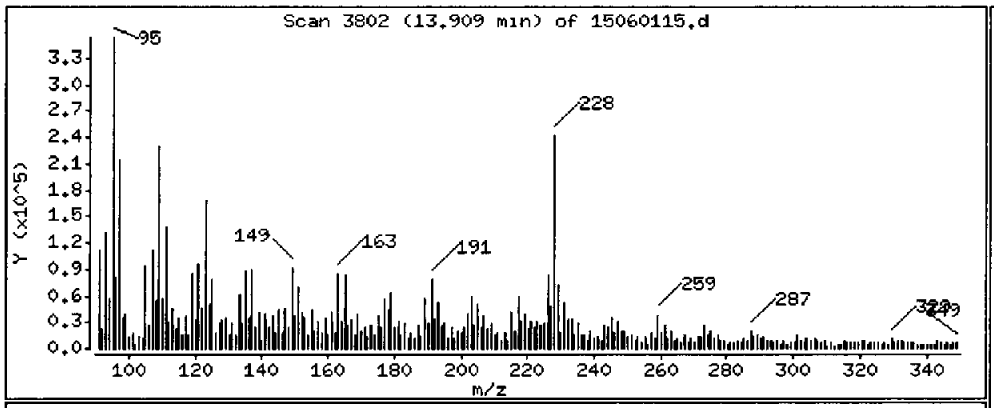
Operator: JZ

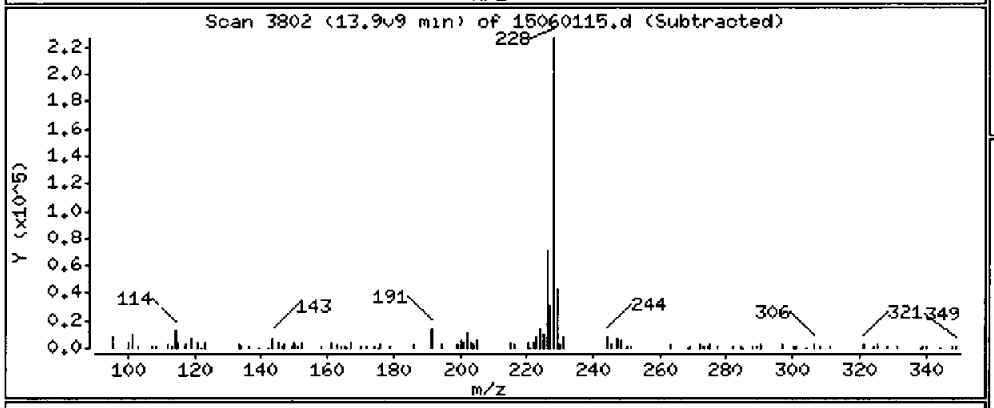
Column phase: ZB-35

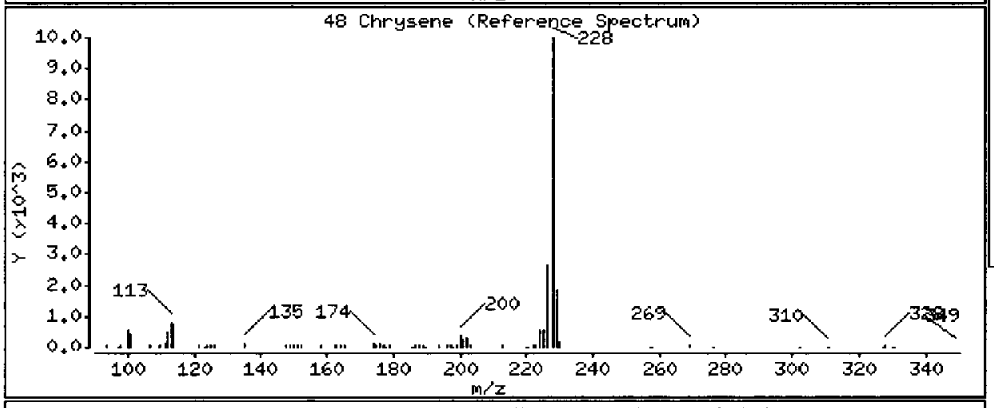
Column diameter: 0.25

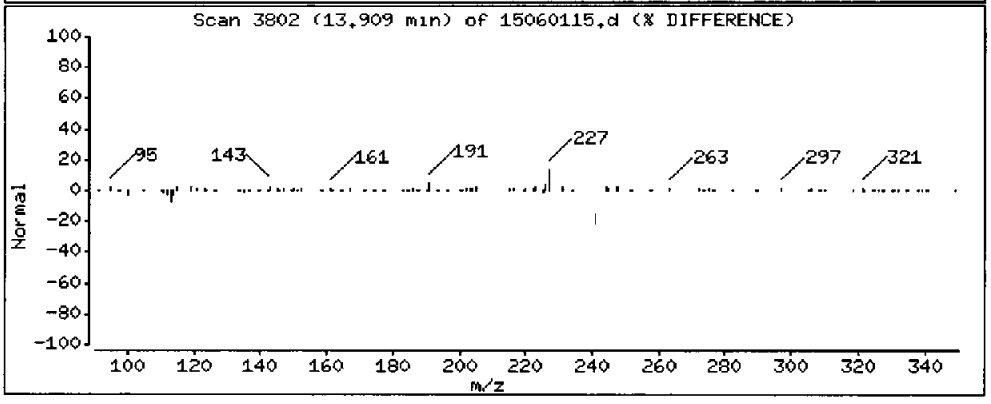
48 Chrysene

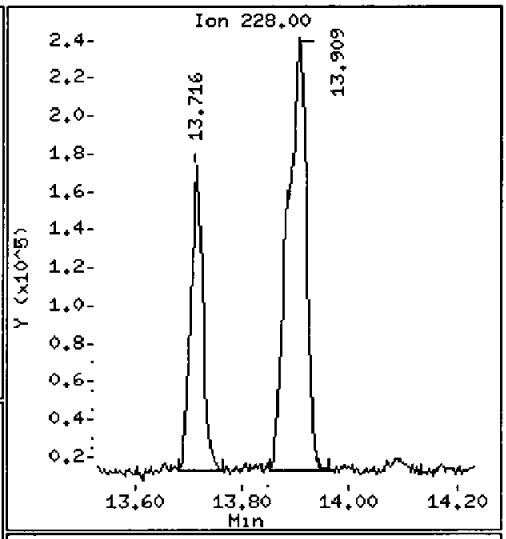
Concentration: 85.78 ug/kg

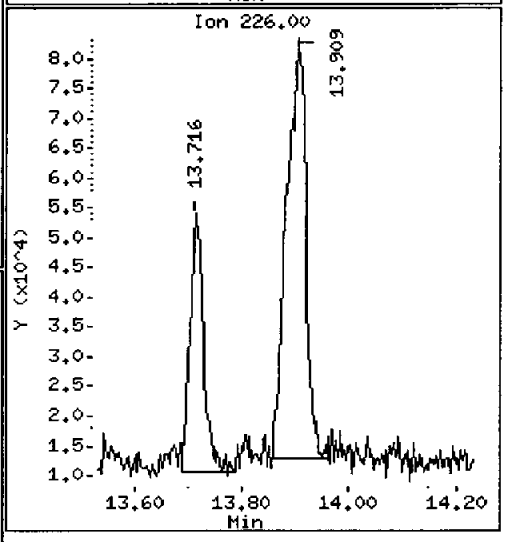












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

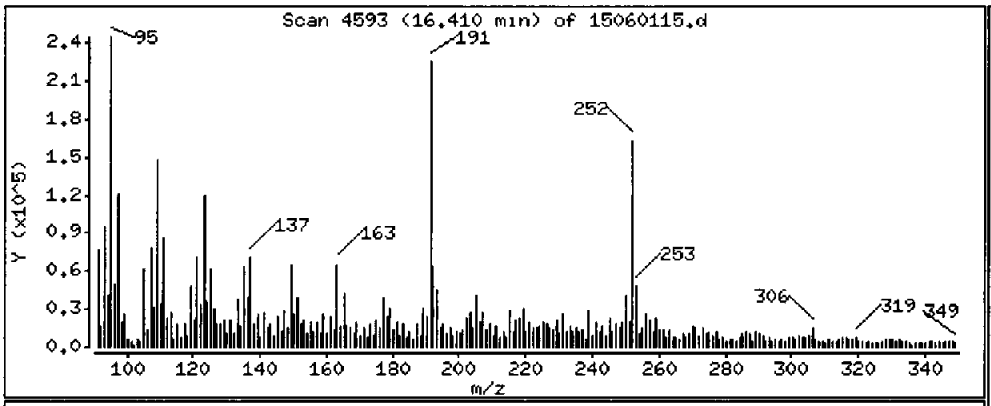
Operator: JZ

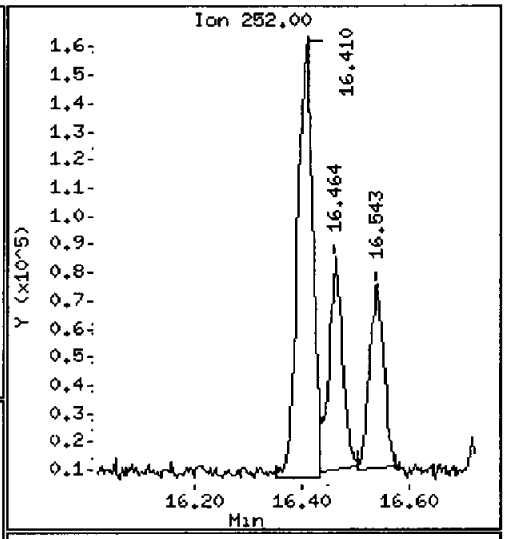
Column phase: ZB-35

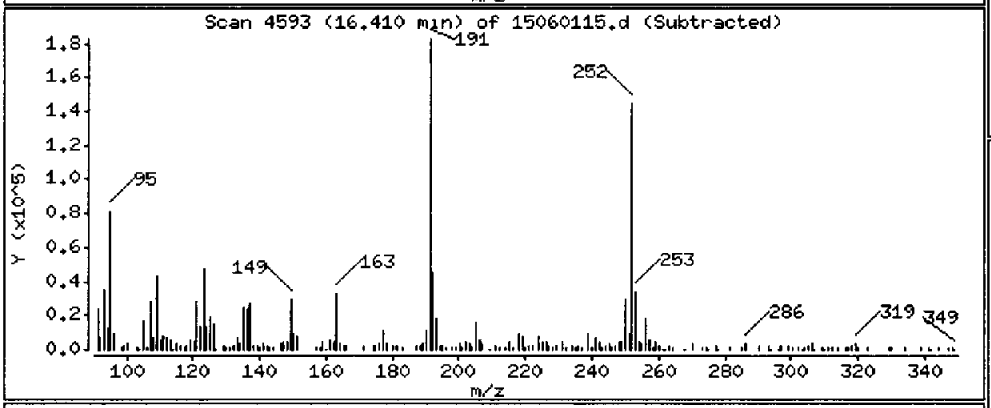
Column diameter: 0.25

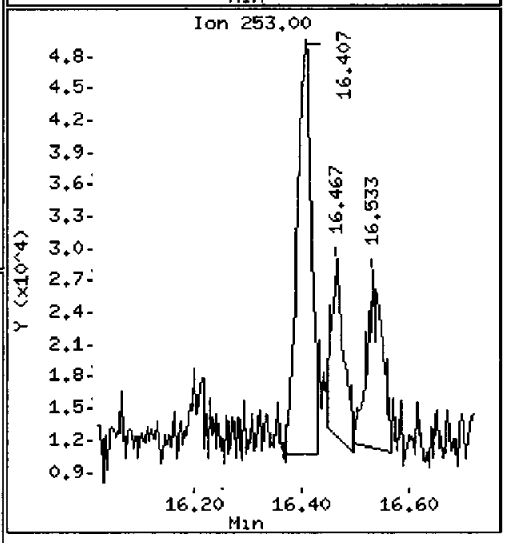
51 Benzo(b)fluoranthene

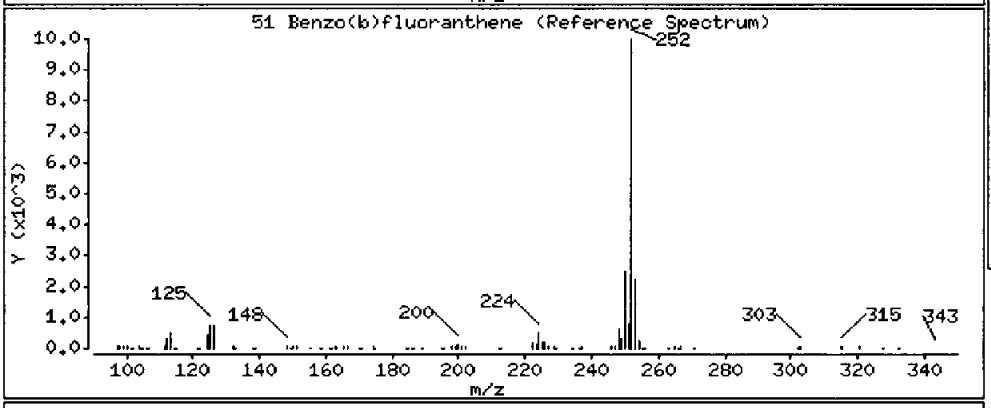
Concentration: 44.81 ug/kg

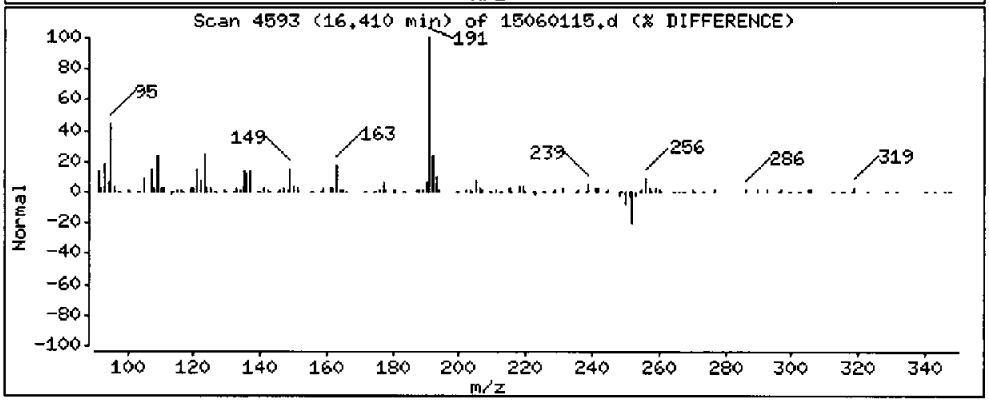












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

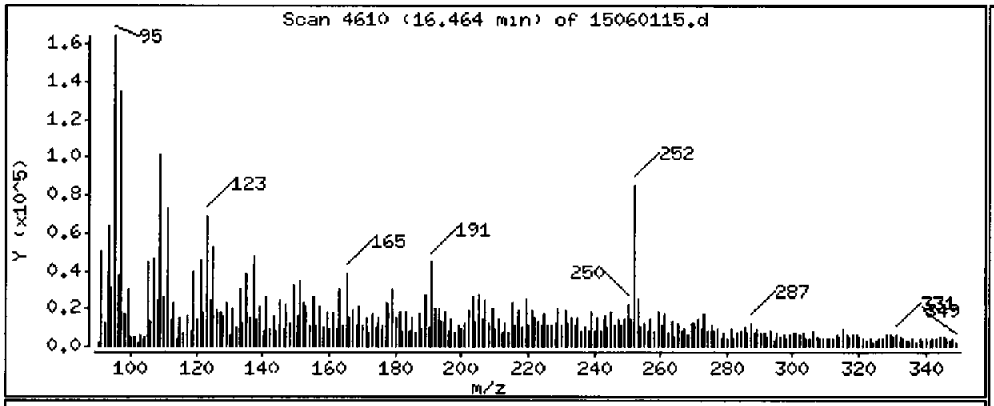
Operator: JZ

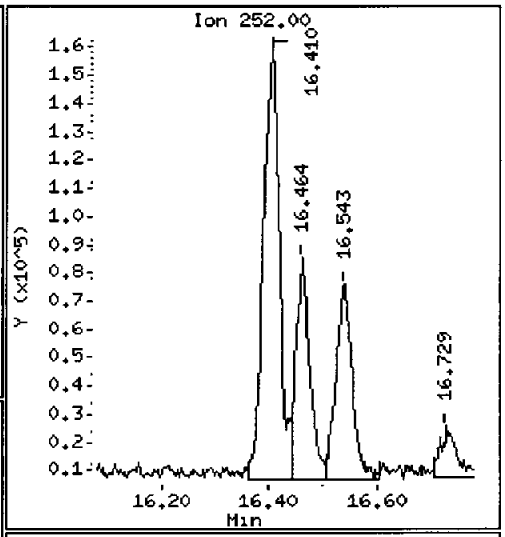
Column phase: ZB-35

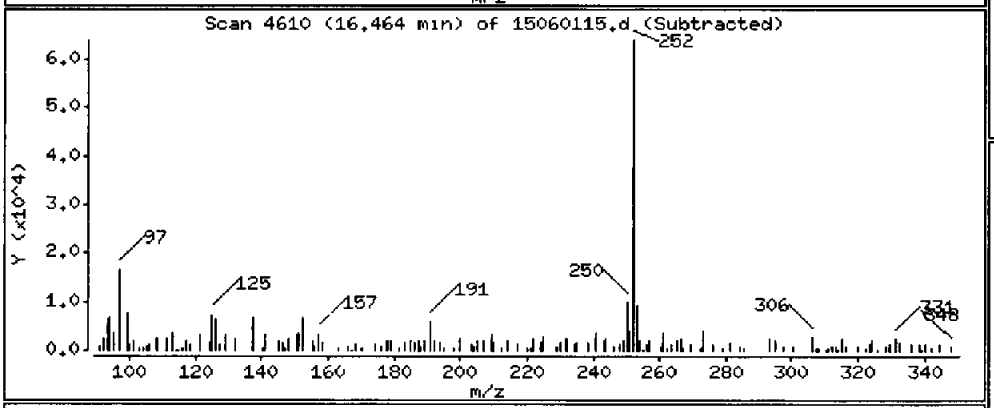
Column diameter: 0.25

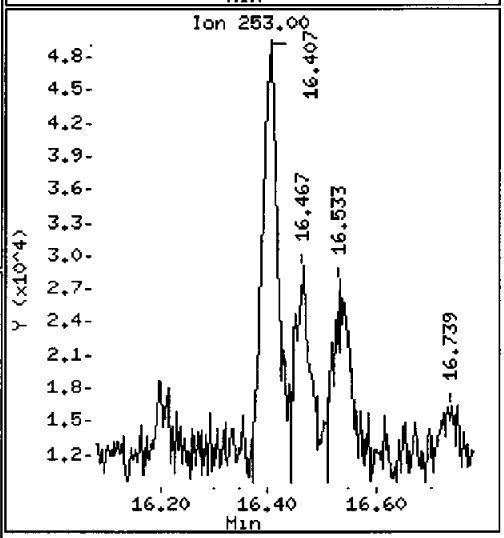
52 Benzo(k)fluoranthene

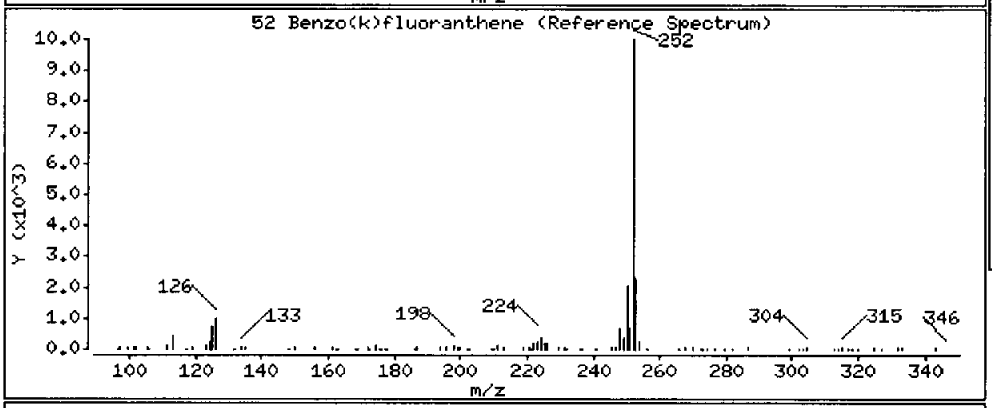
Concentration: 19.89 ug/kg

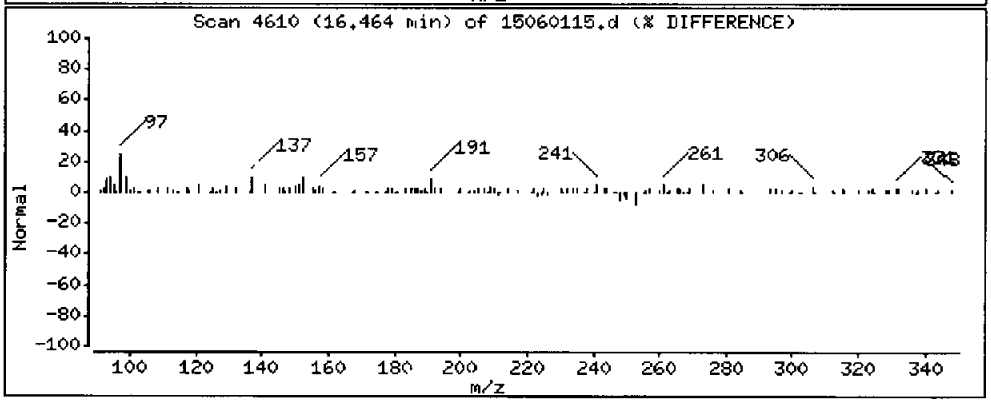












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

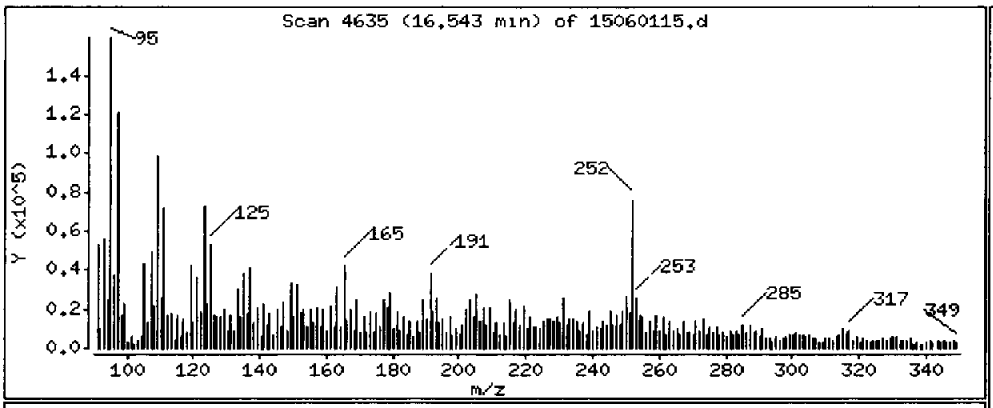
Operator: JZ

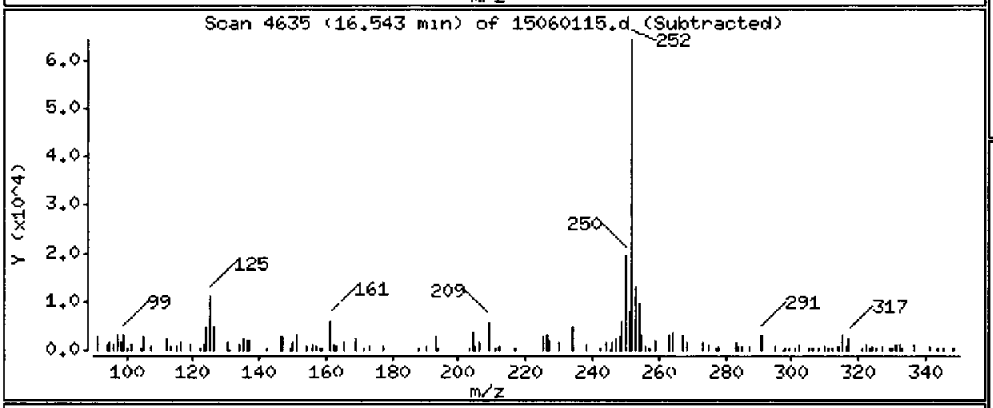
Column phase: ZB-35

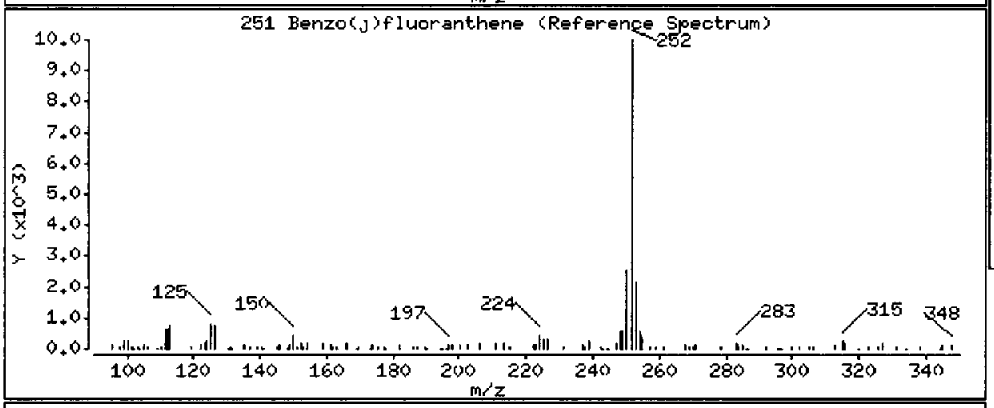
Column diameter: 0.25

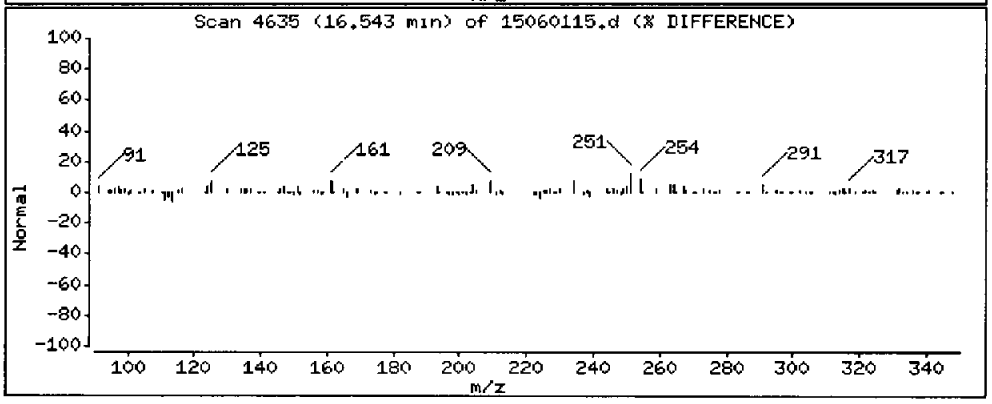
251 Benzo(j)fluoranthene

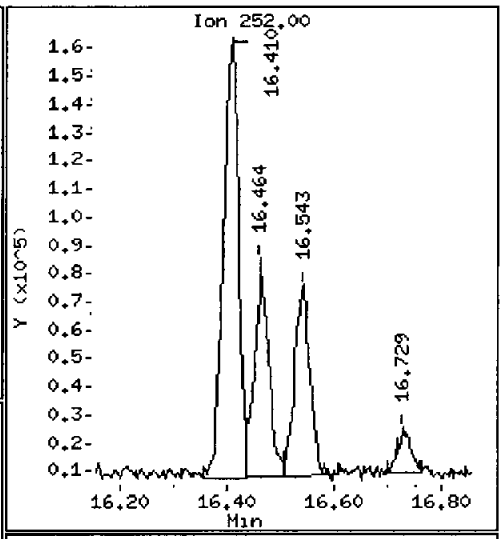
Concentration: 19.91 ug/kg

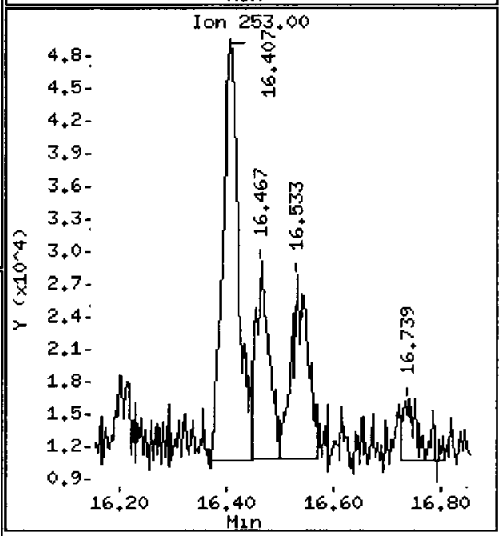












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

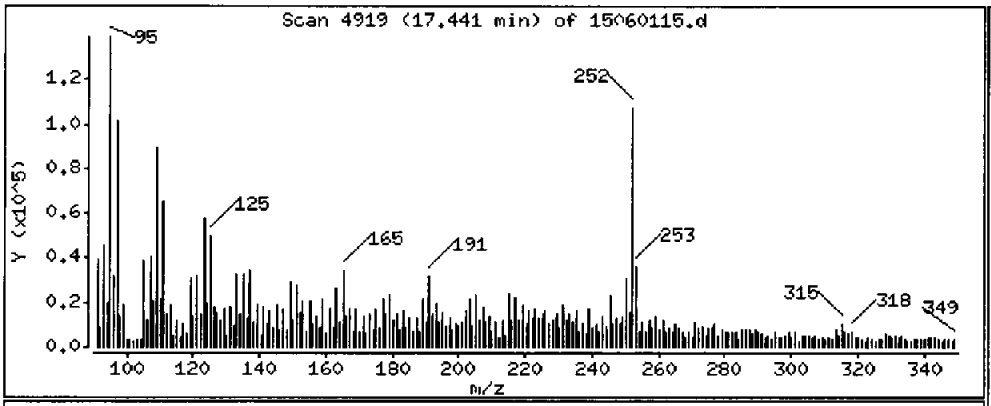
Operator: JZ

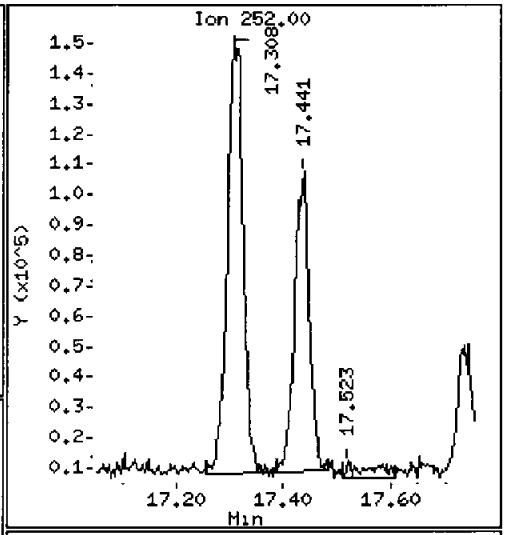
Column phase: ZB-35

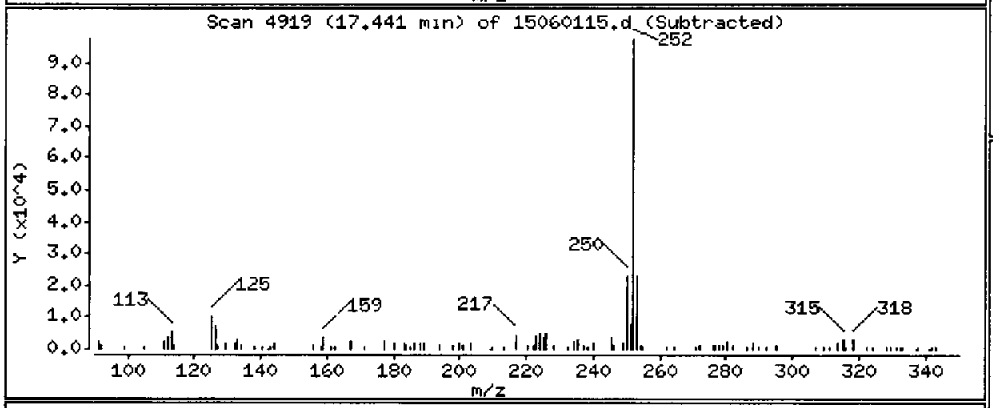
Column diameter: 0.25

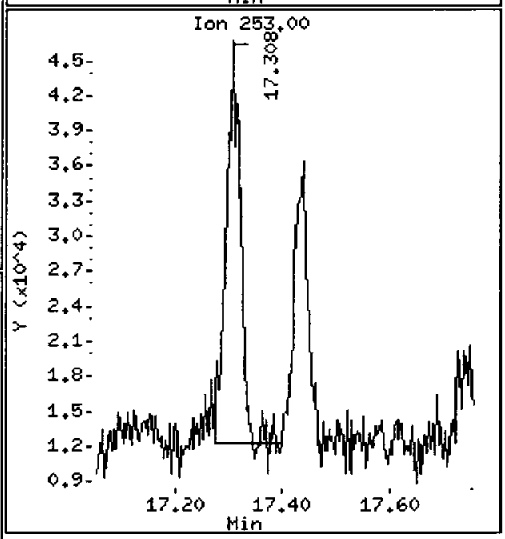
54 Benzo(a)pyrene

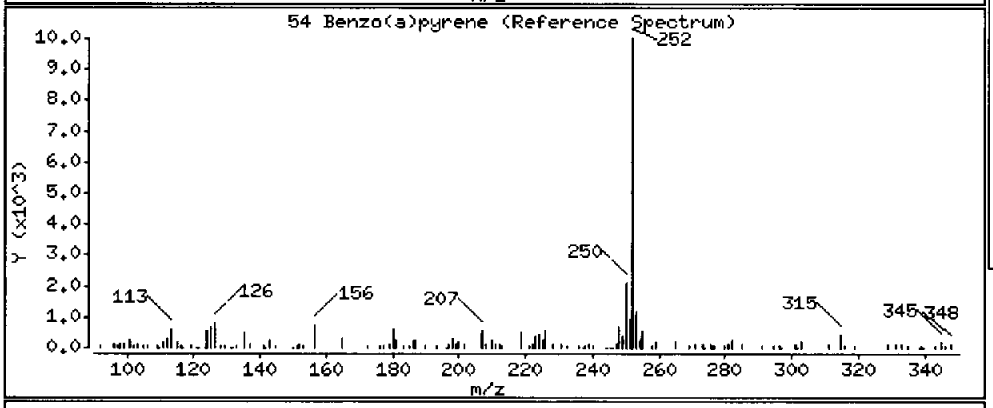
Concentration: 30.49 ug/kg

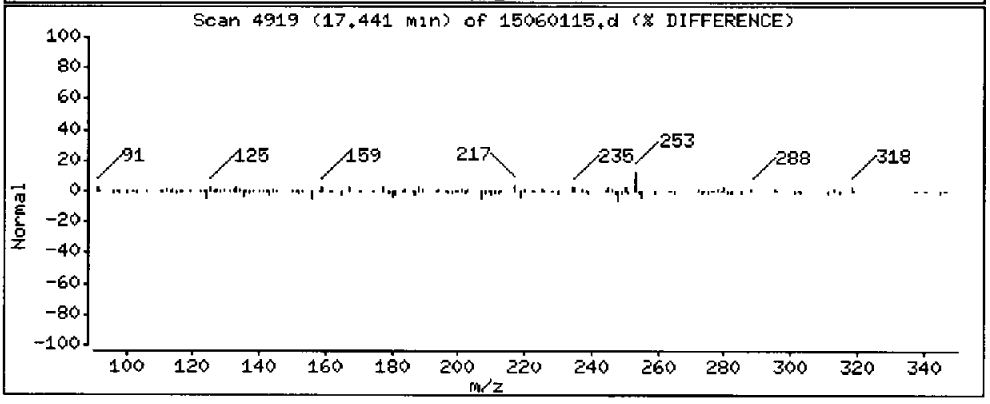












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

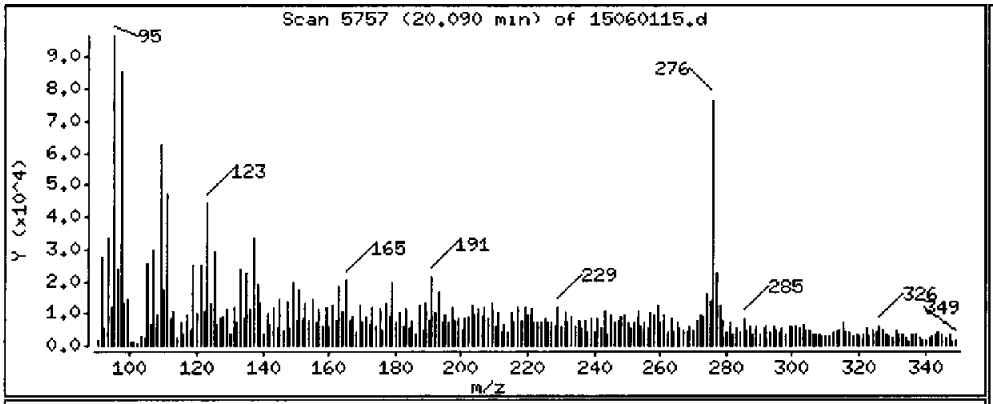
Operator: JZ

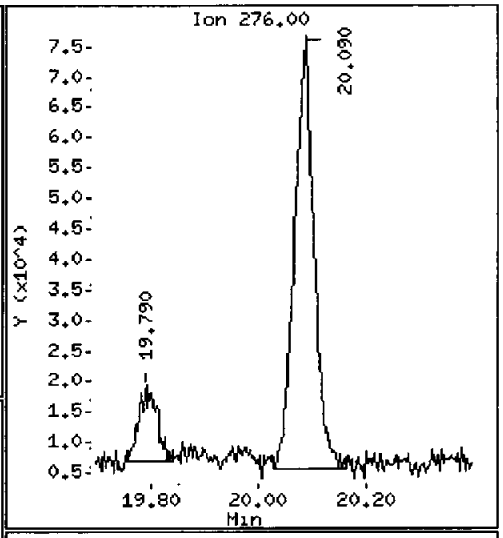
Column phase: ZB-35

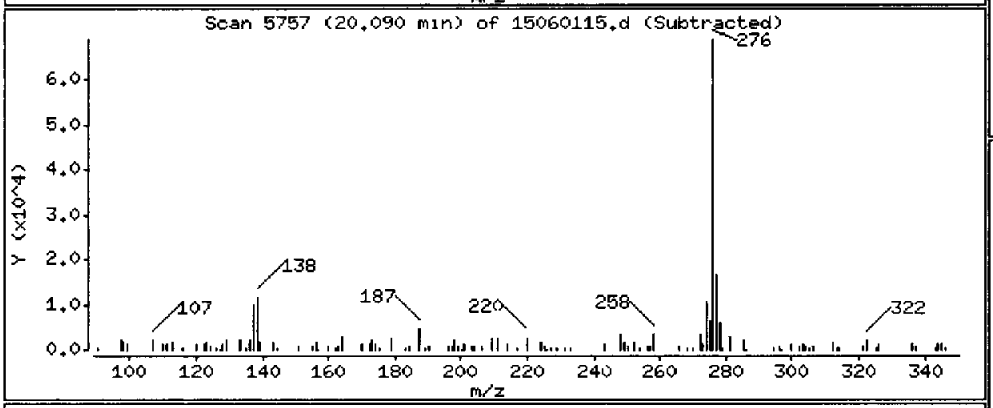
Column diameter: 0.25

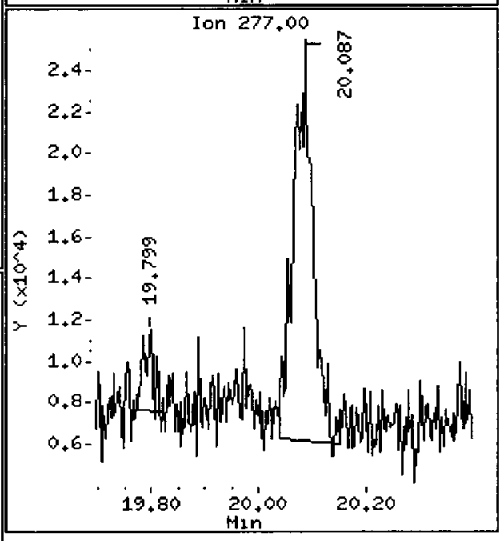
63 Indeno(1,2,3-cd)pyrene

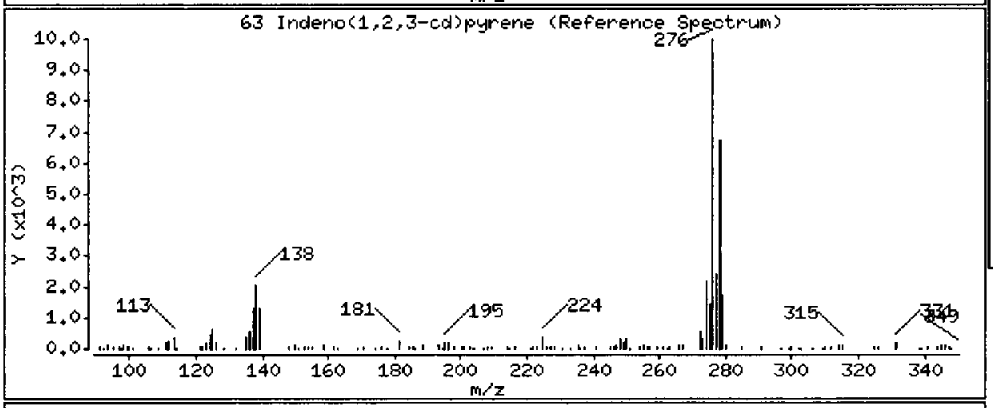
Concentration: 24.46 ug/kg

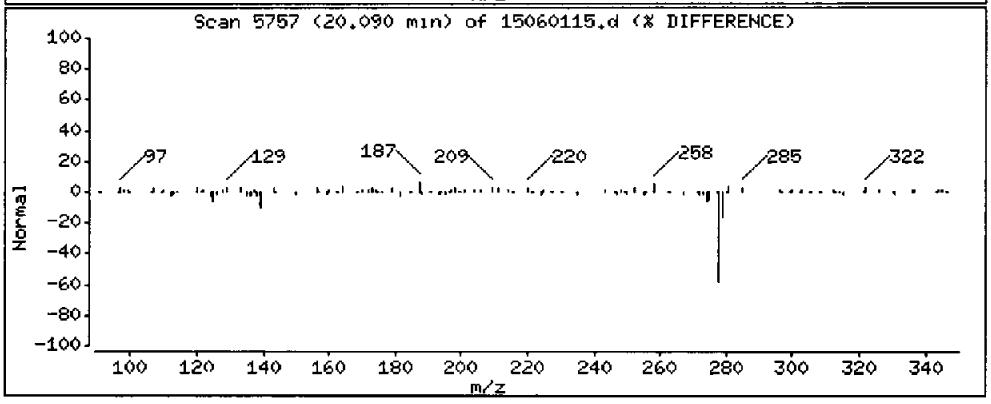












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

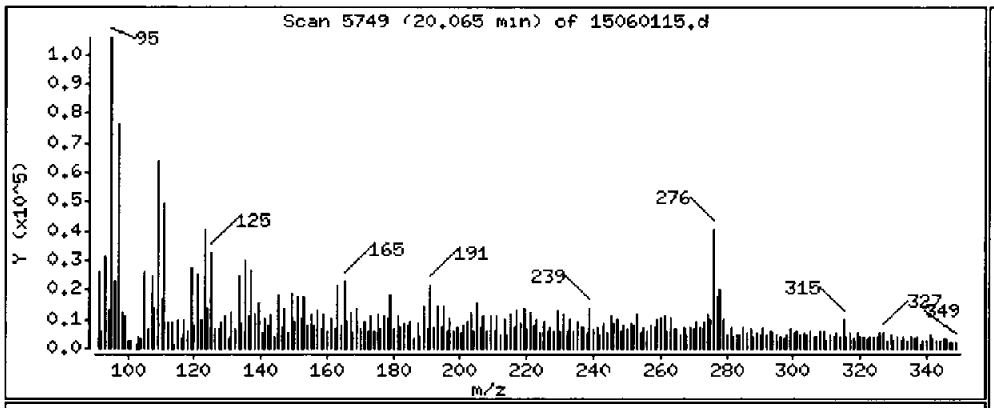
Operator: JZ

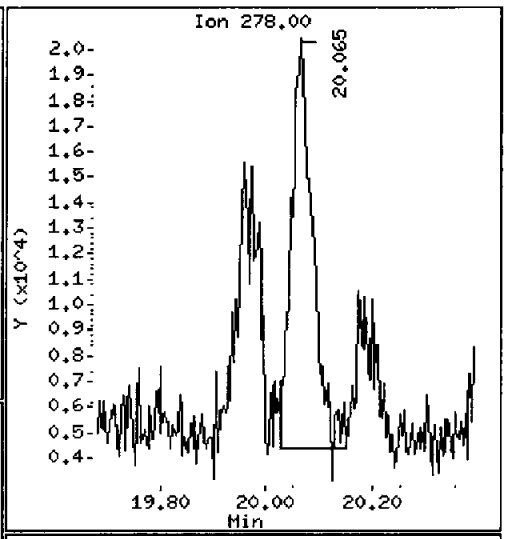
Column phase: ZB-35

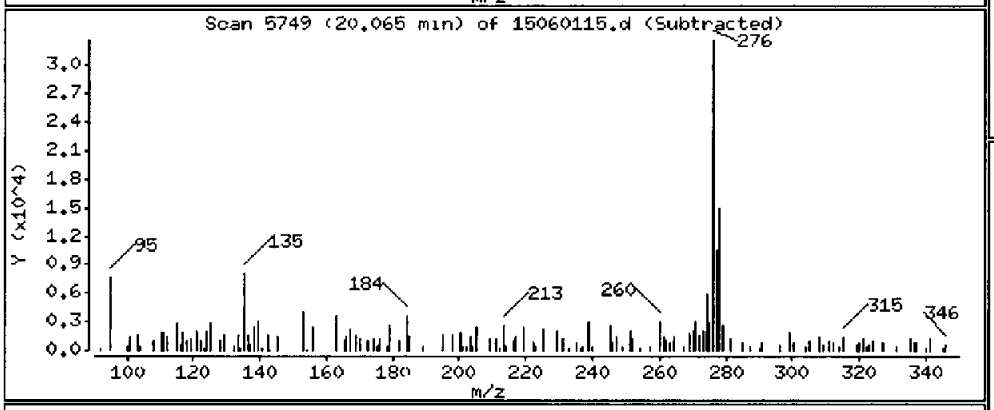
Column diameter: 0.25

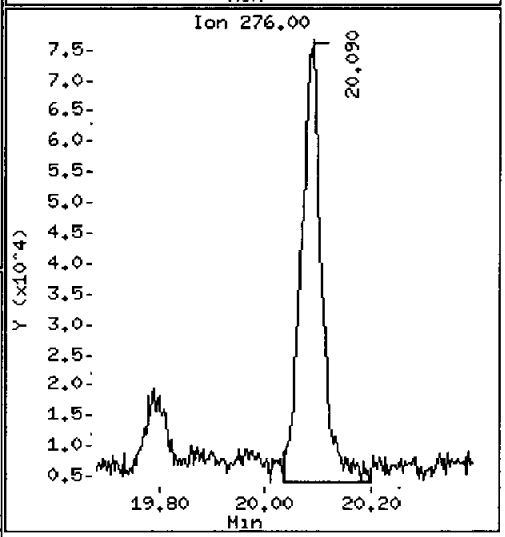
62 Dibenzo(a,h)anthracene

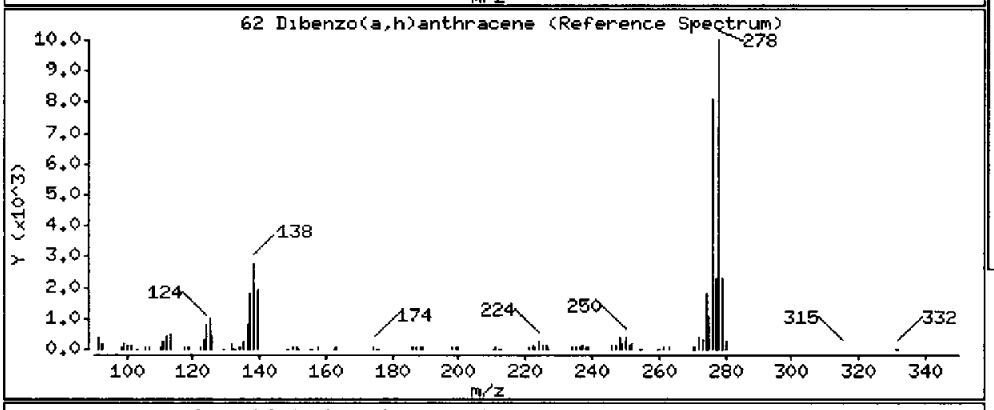
Concentration: 7.492 ug/kg

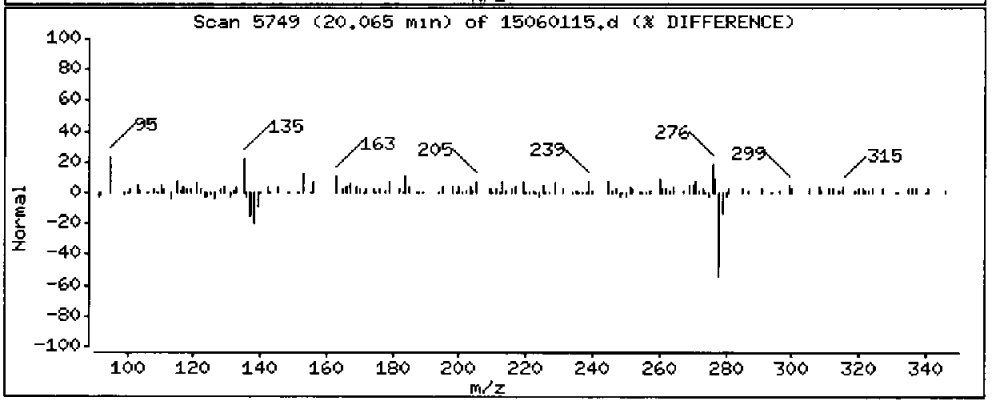












Data File: /chem3/nt8.i/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.i

Sample Info: AGC9I

Volume Injected (uL): 1.0

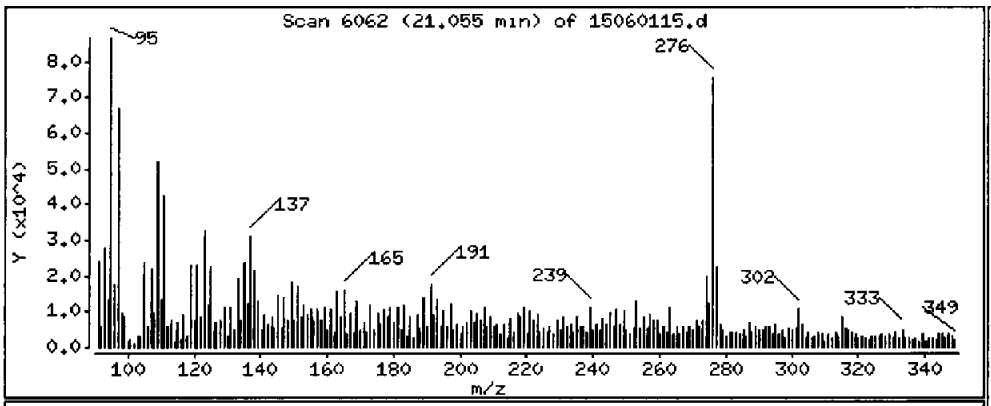
Operator: JZ

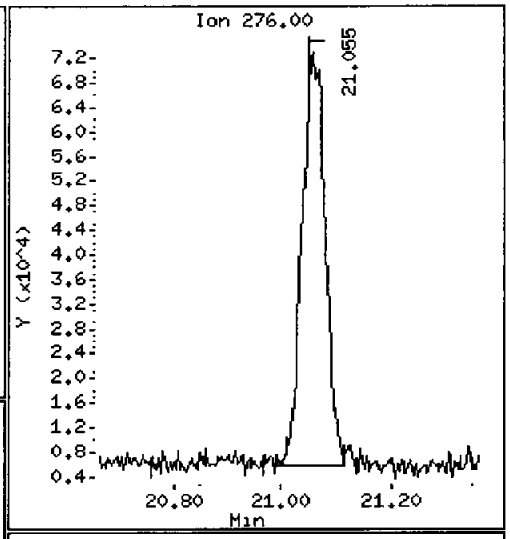
Column phase: ZB-35

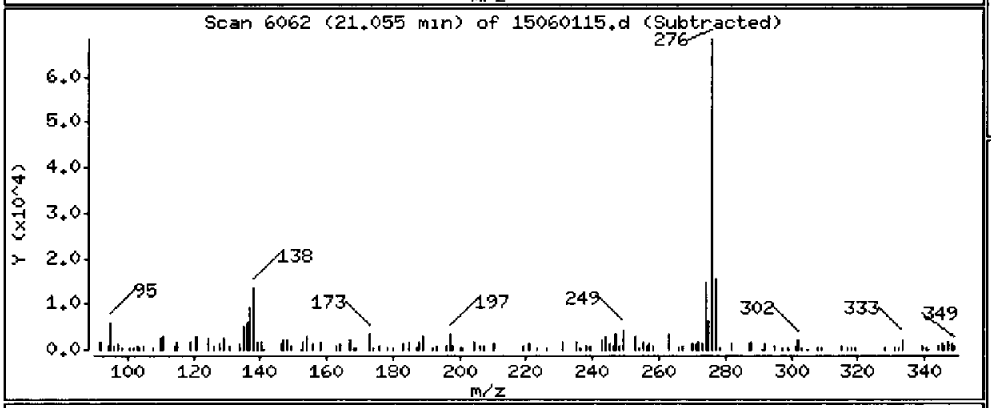
Column diameter: 0.25

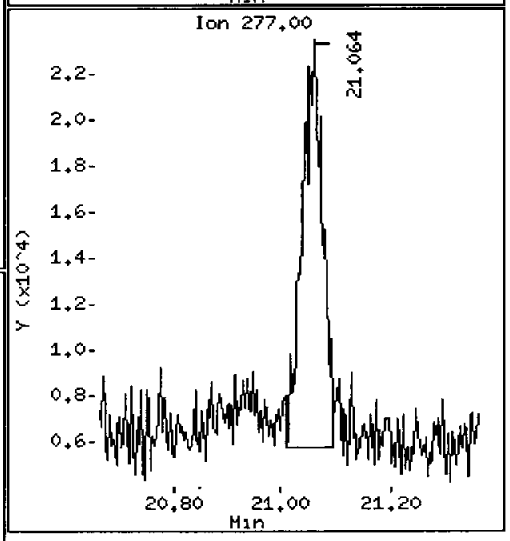
61 Benzo(g,h,i)perylene

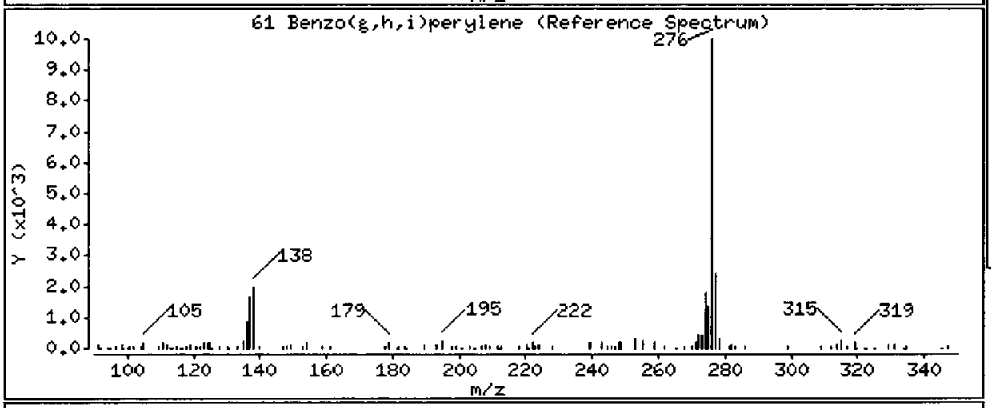
Concentration: 30.77 ug/kg

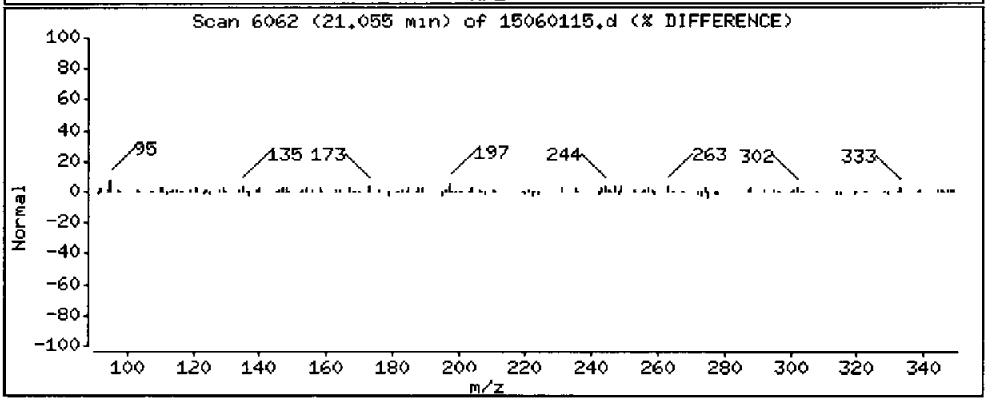












Data File: /chem3/nt8.1/20150601.b/15060115.d

Date : 01-JUN-2015 15:42

Client ID: SDP-04(10.5-12.0)

Instrument: nt8.1

Sample Info: AGC9I

Volume Injected (uL): 1.0

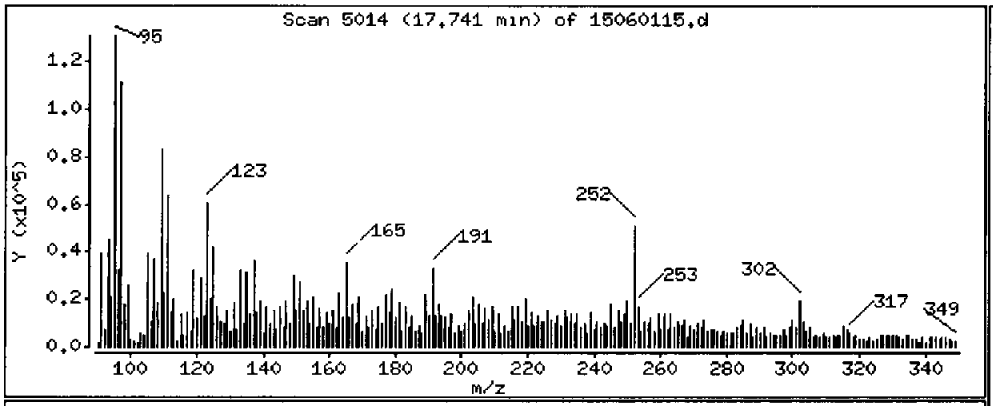
Operator: JZ

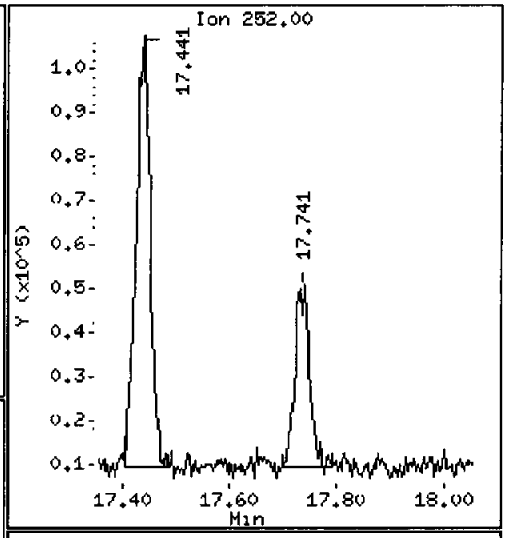
Column phase: ZB-35

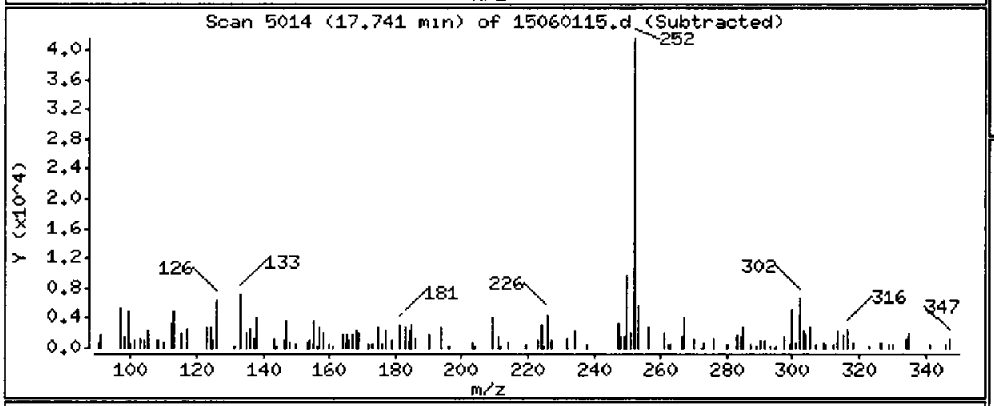
Column diameter: 0.25

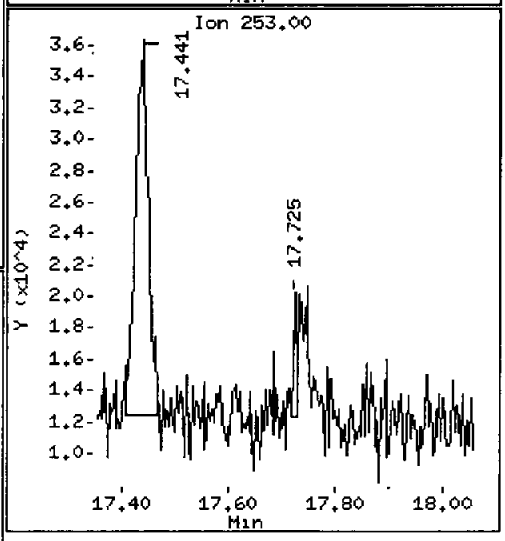
57 Perylene

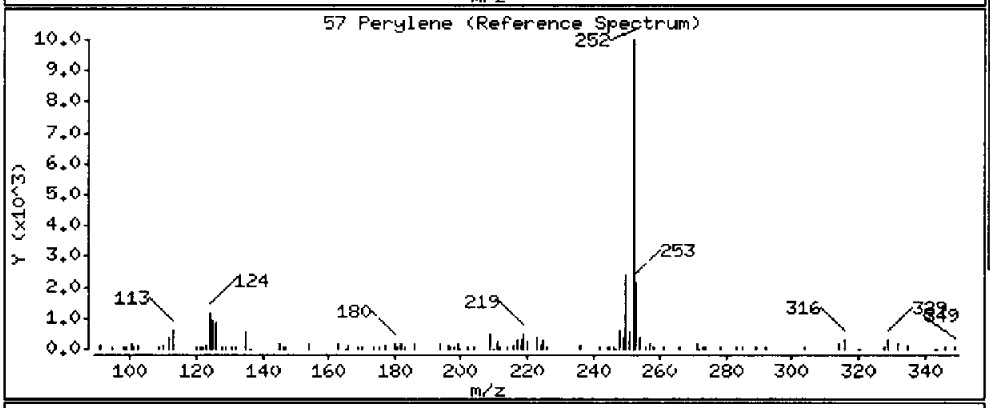
Concentration: 12.42 ug/kg

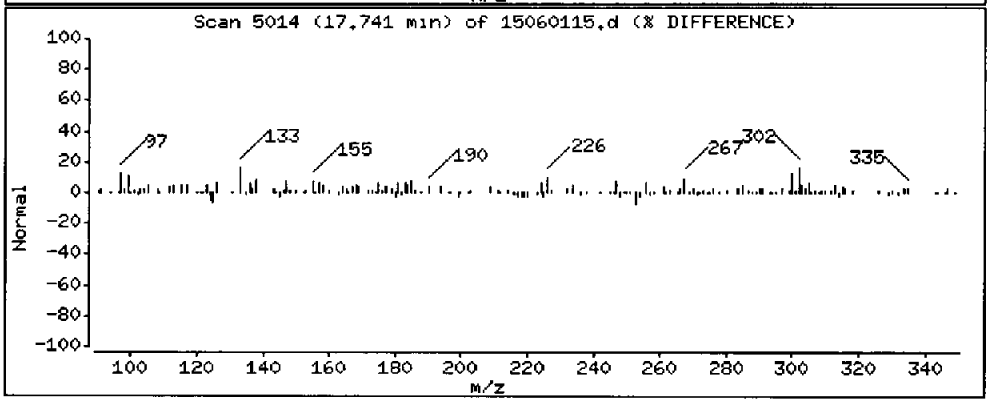












CO-ELUTION SUMMARY FOR FILE - 15060115.d

Lab ID: AGC9I, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060116.d
Lab Smp Id: AGC9J Client Smp ID: SDP-05(6.5-7.5)
Inj Date : 01-JUN-2015 16:08
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9J
Misc Info : 15-9440
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:39 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	13.14000	Weight of sample extracted (g)
M	19.00000	% Moisture

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
* 6 Naphthalene-d8	136	4.733	4.739	(1.000)	454624	2.00000	
7 Naphthalene	128	4.761	4.767	(1.006)	45828	0.20926	9.830
$ 12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	186829	1.34576	63.22
14 2-Methylnaphthalene	141	5.510	5.510	(1.164)	15883	0.12163	5.714
15 1-methylnaphthalene	141	5.706	5.703	(1.206)	11857	0.09343	4.389
21 Acenaphthylene	152	Compound Not Detected.					
* 22 Acenaphthene-d10	164	7.006	7.000	(1.000)	281096	2.00000	
23 Acenaphthene	153	Compound Not Detected.					
11 Dibenzofuran	168	7.205	7.202	(1.028)	22983	0.12166	5.715
25 Fluorene	166	Compound Not Detected					
* 28 Phenanthrene-d10	188	9.026	9.020	(1.000)	482592	2.00000	
30 Phenanthrene	178	9.061	9.055	(1.004)	106701	0.46375	21.79
31 Anthracene	178	9.102	9.096	(1.008)	14636	0.07066	3.319
36 Fluoranthene	202	10.775	10.769	(1.194)	127808	0.47494	22.31
$ 253 Fluoranthene-d10	212	10.740	10.734	(1.190)	490714	2.06720	97.11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.268	11.265	(0.816)	126798	0.42360	19.90
	46 Benzo(a)anthracene	228	13.684	13.684	(0.991)	63859	0.23709	11.14
*	47 Chrysene-d12	240	13.807	13.807	(1.000)	536965	2.00000	
	48 Chrysene	228	13.883	13.880	(1.005)	137271	0.50830	23.88
	51 Benzo(b)fluoranthene	252	16.378	16.369	(0.928)	128764	0.41584	19.54
	52 Benzo(k)fluoranthene	252	16.441	16.429	(0.932)	47314	0.15293	7.184
	251 Benzo(j)fluoranthene	252	16.514	16.505	(0.936)	51047	0.16909	7.943
	54 Benzo(a)pyrene	252	17.406	17.402	(0.987)	132431	0.47967	22.53
*	56 Perylene-d12	264	17.643	17.633	(1.000)	589640	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.068	20 046	(1.137)	352246	1.06222	49.90
$	60 Dibenzo(a,h)anthracene-d14	292	19.948	19.929	(1.131)	458042	2.03972	95.82
	62 Dibenzo(a,h)anthracene	278	20.046	20.033	(1.136)	36653	0.13571	6.375
	61 Benzo(g,h,i)perylene	276	21.042	21.010	(1.193)	863722	2 96102	139.1
	57 Perylene	252	17.716	17.706	(1.004)	126956	0.44295	20.81

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060116.d
Lab Smp Id: AGC9J
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9440

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-05(6.5-7.5)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	454624	32.51
22 Acenaphthene-d10	230598	115299	461196	281096	21.90
28 Phenanthrene-d10	373928	186964	747856	482592	29.06
47 Chrysene-d12	381262	190631	762524	536965	40.84
56 Perylene-d12	380825	190412	761650	589640	54.83

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.01	0.09
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.64	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

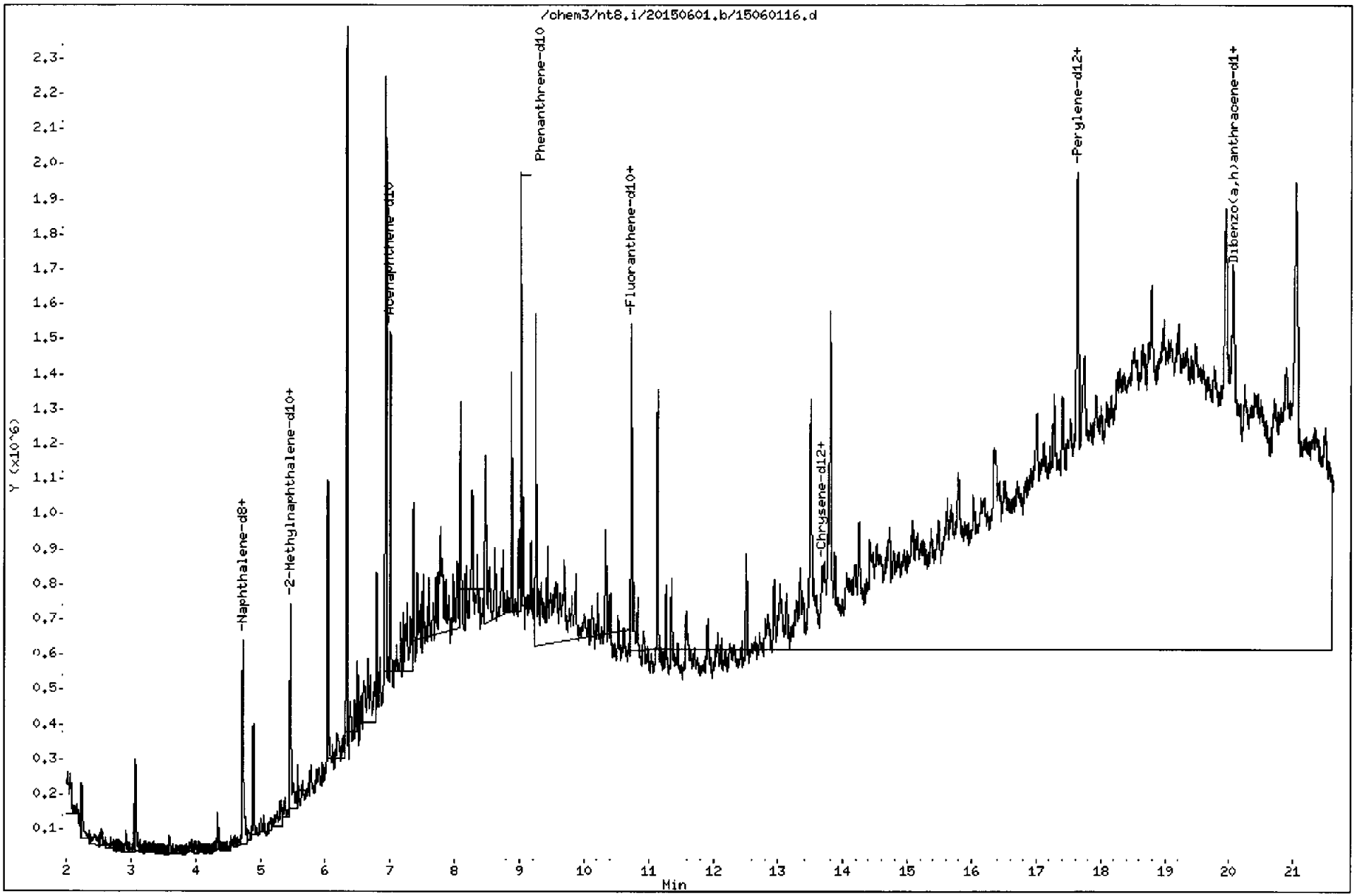
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9J
Client Smp ID: SDP-05(6.5-7.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9440

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	140.9	63.22	44.86	32-120
$ 253 Fluoranthene-d10	140.9	97.11	68.91	36-134
$ 60 Dibenzo(a,h)anthra	140.9	95.82	67.99	21-133

Data File: /chem3/nt8.i/20150601.b/15060116.d
Date : 01-JUN-2015 16:08
Client ID: SDP-05(6.5-7.5)
Sample Info: AGC9J
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

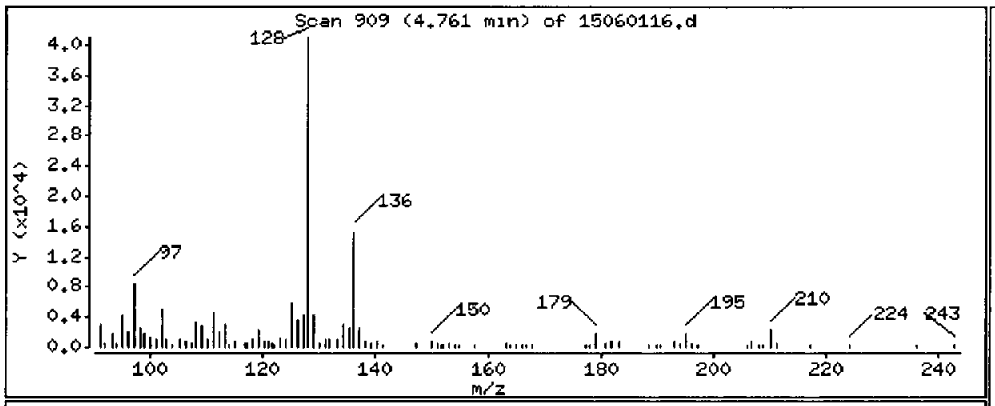
Operator: JZ

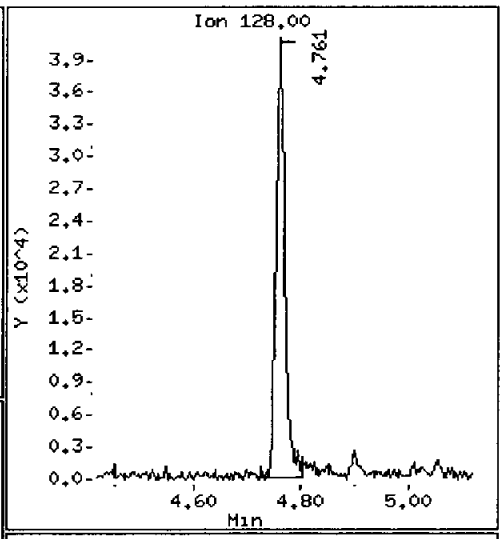
Column phase: ZB-35

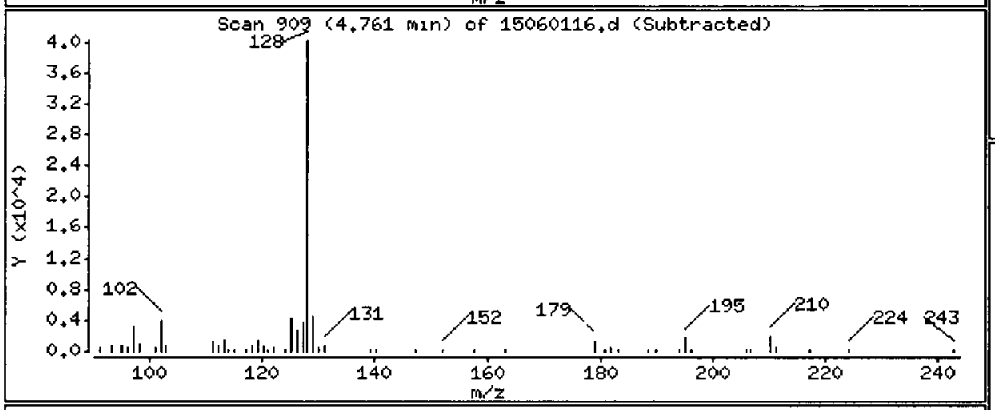
Column diameter: 0.25

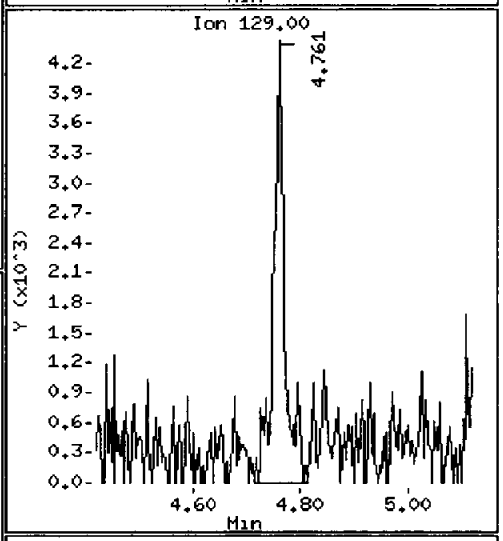
7 Naphthalene

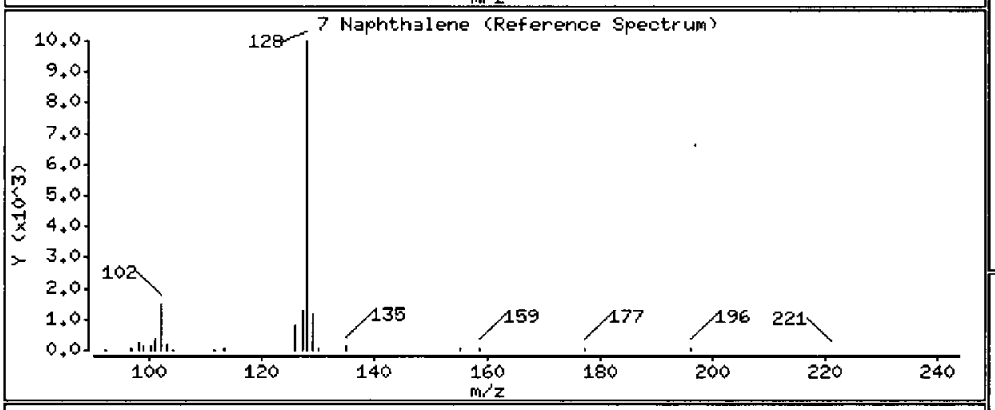
Concentration: 9.830 ug/kg

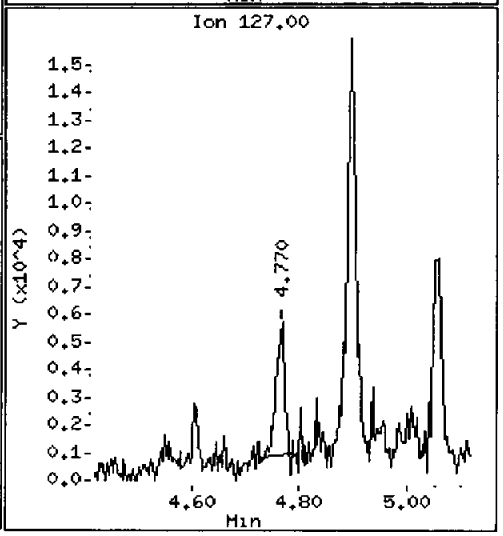


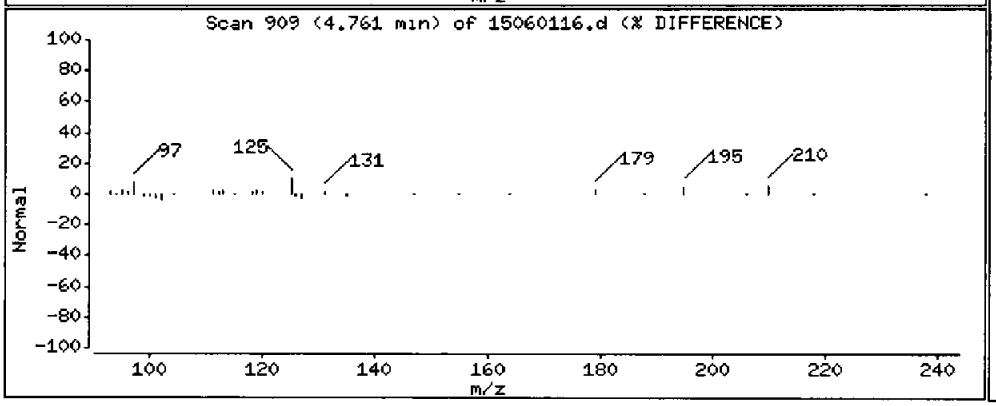












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

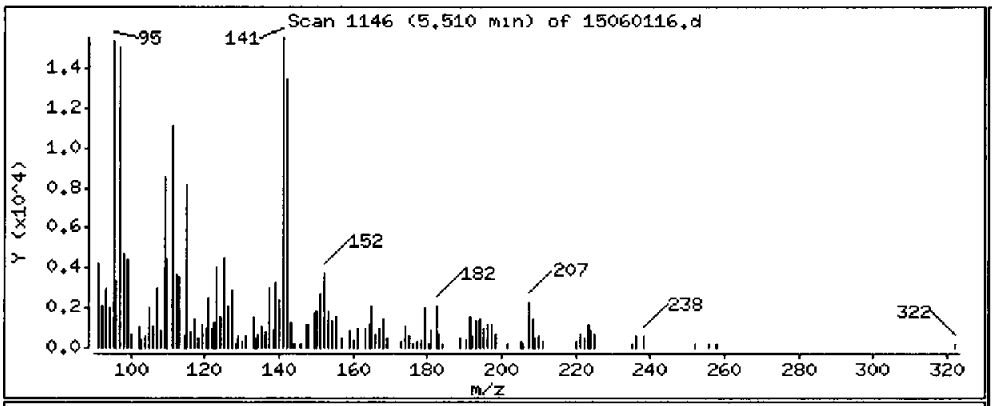
Operator: JZ

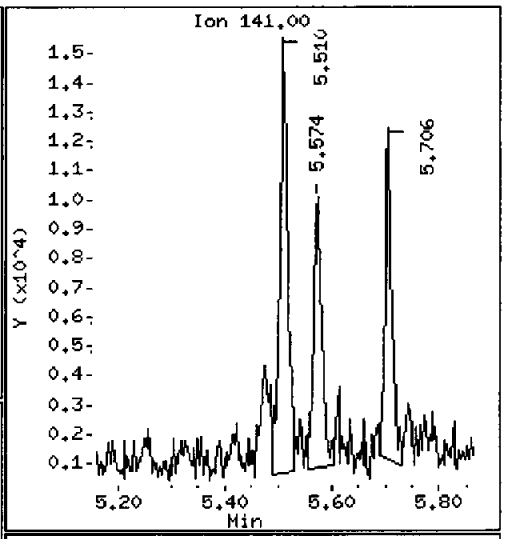
Column phase: ZB-35

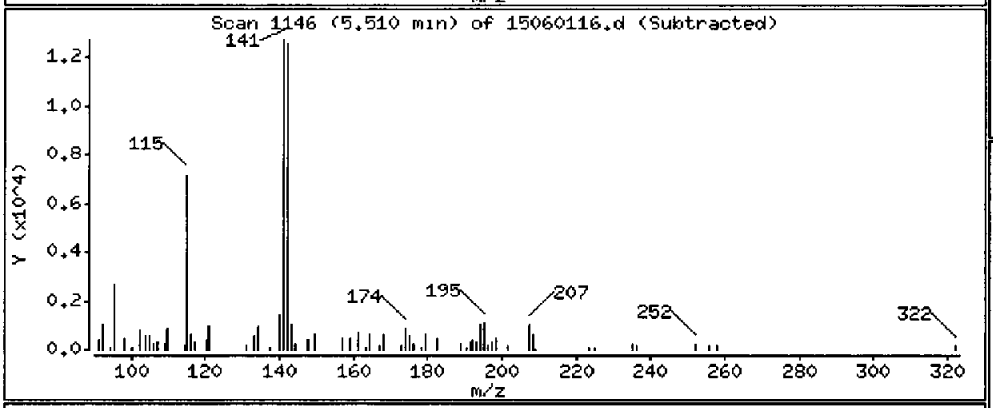
Column diameter: 0.25

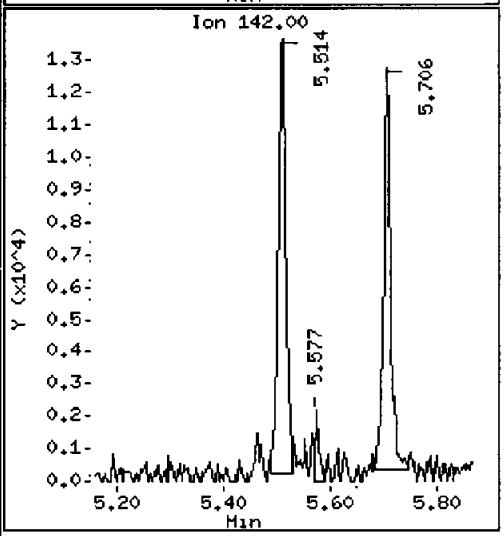
14 2-Methylnaphthalene

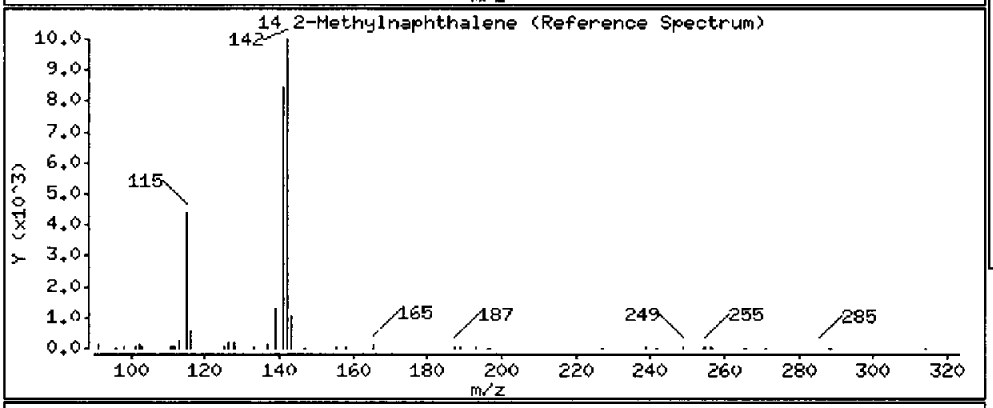
Concentration: 5.714 ug/kg

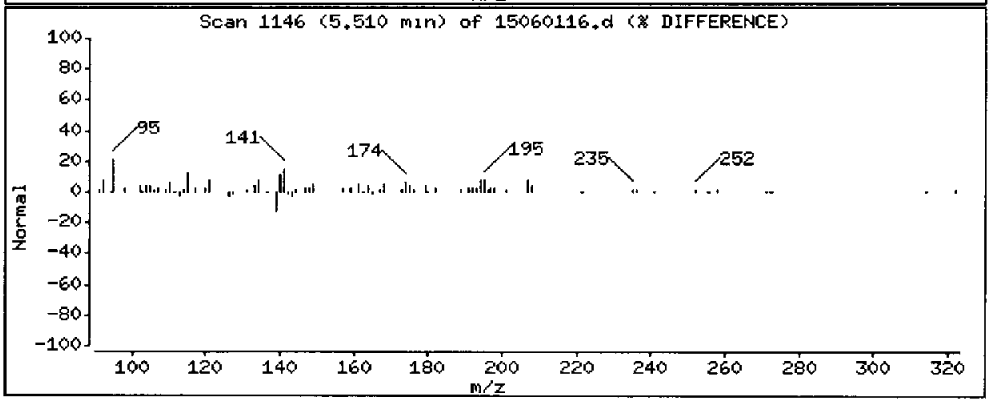












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

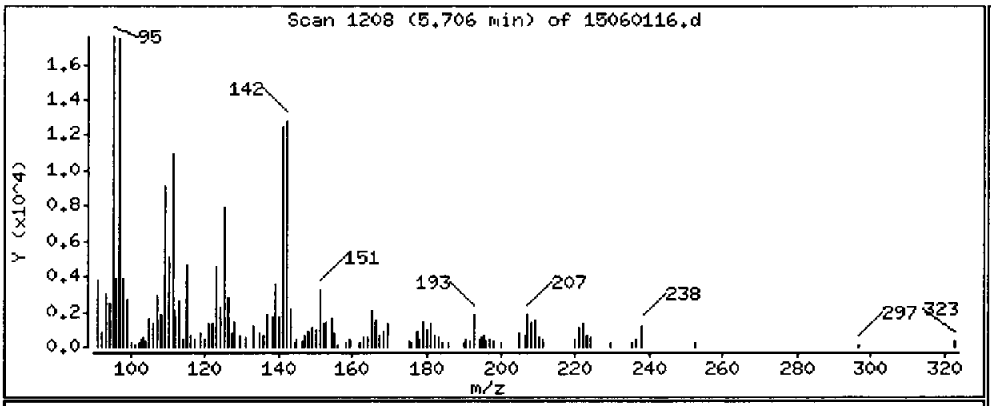
Operator: JZ

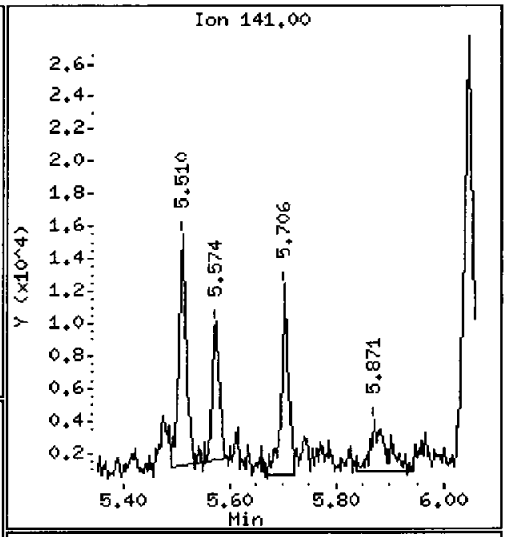
Column phase: ZB-35

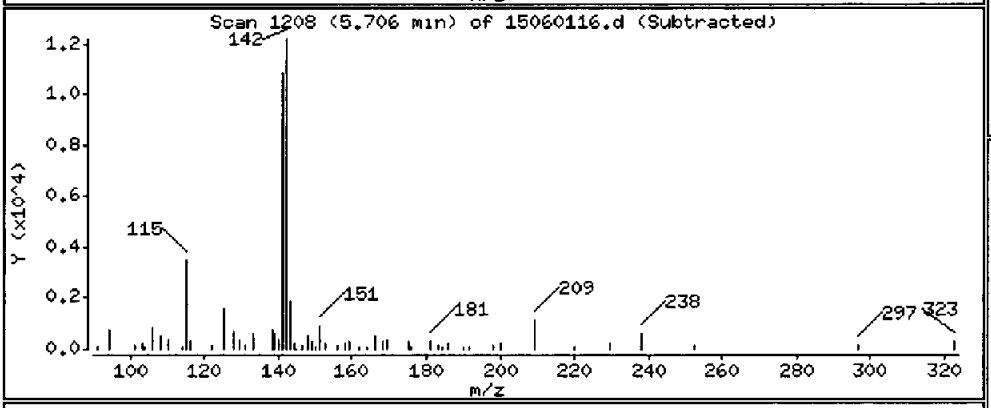
Column diameter: 0.25

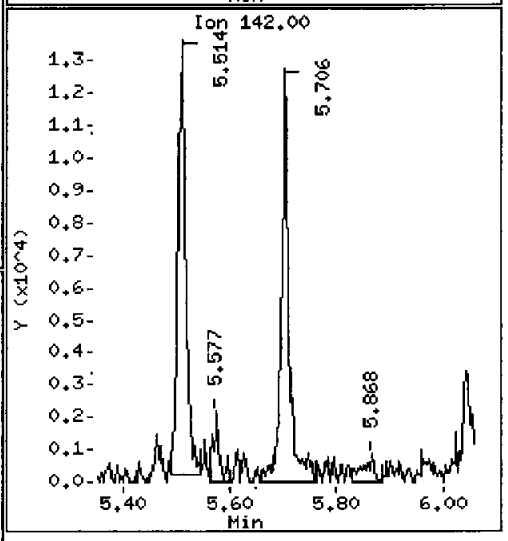
15 1-methylnaphthalene

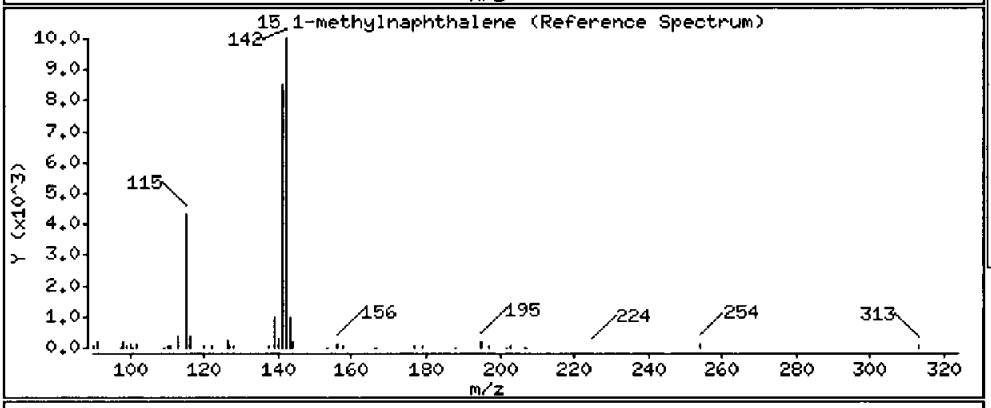
Concentration: 4.389 ug/kg

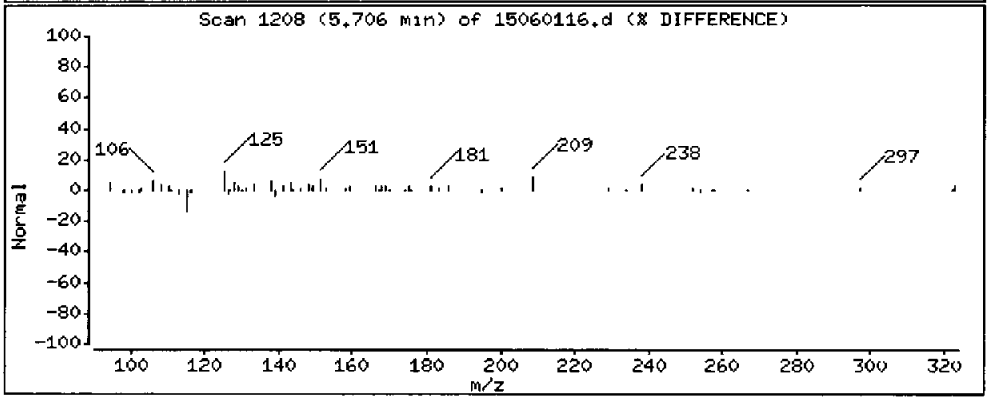












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

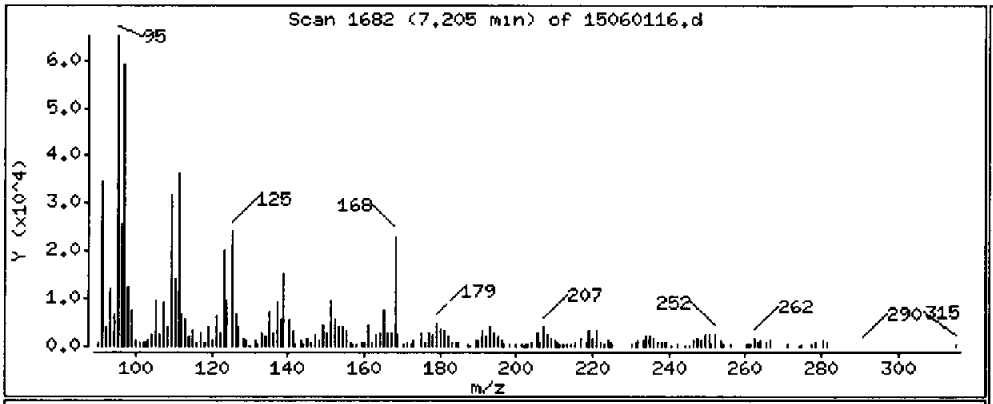
Operator: JZ

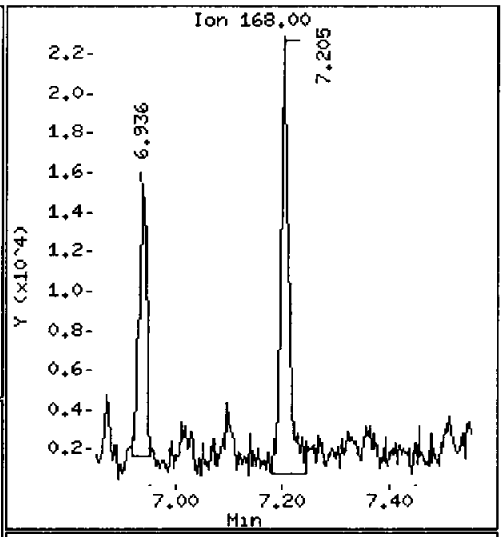
Column phase: ZB-35

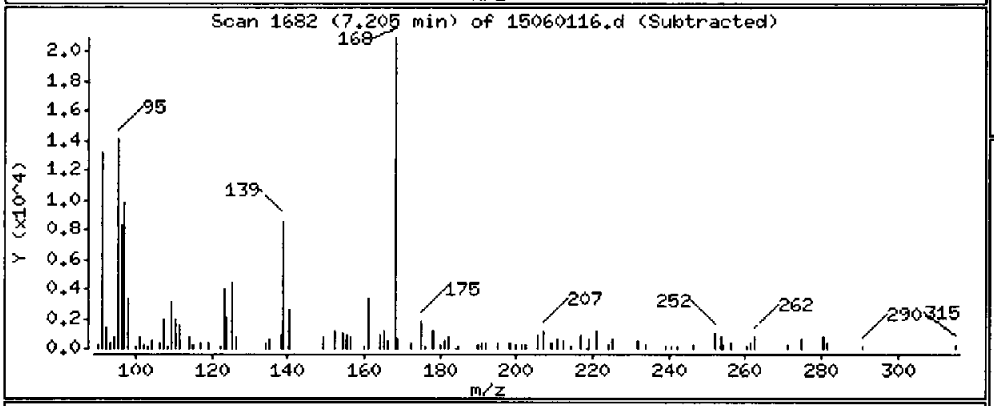
Column diameter: 0.25

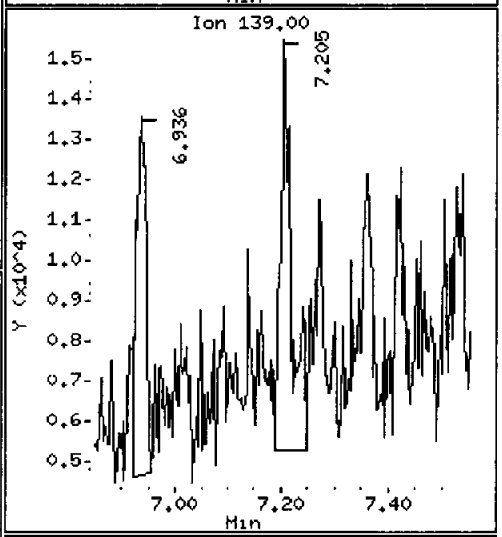
11 Dibenzofuran

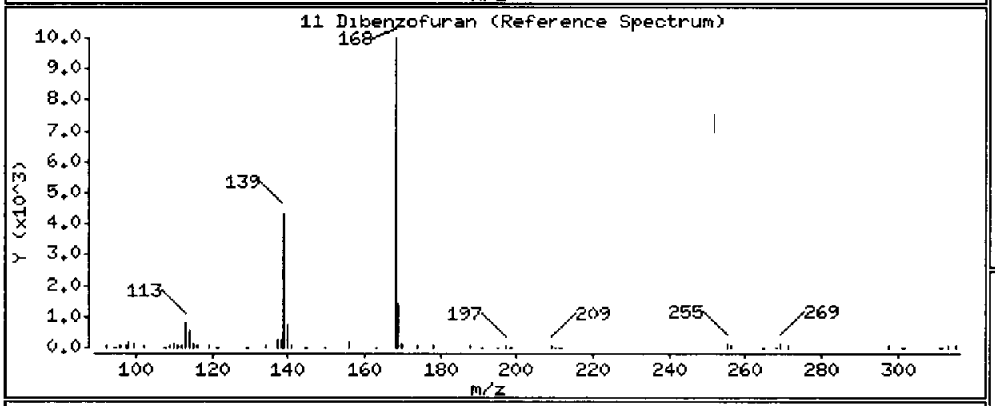
Concentration: 5.715 ug/kg

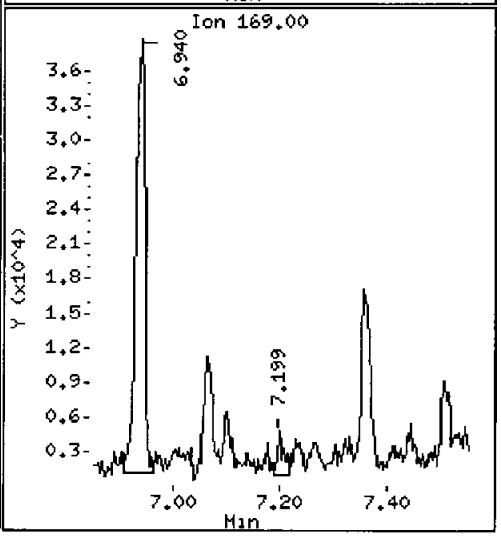


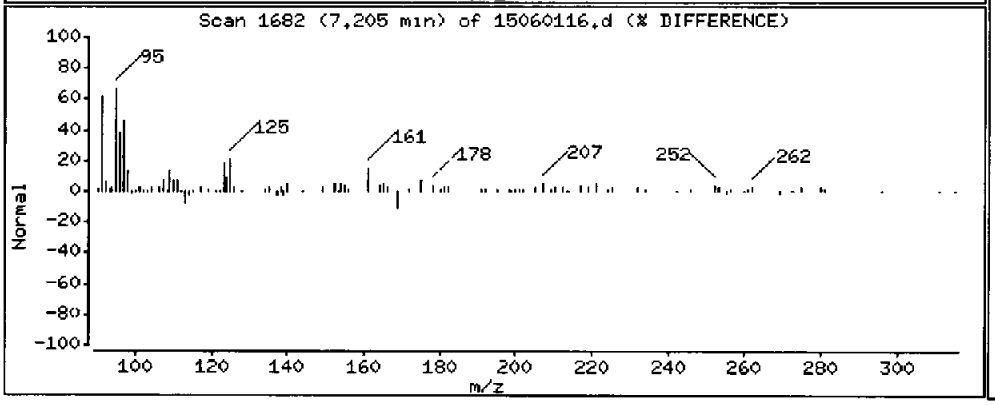












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

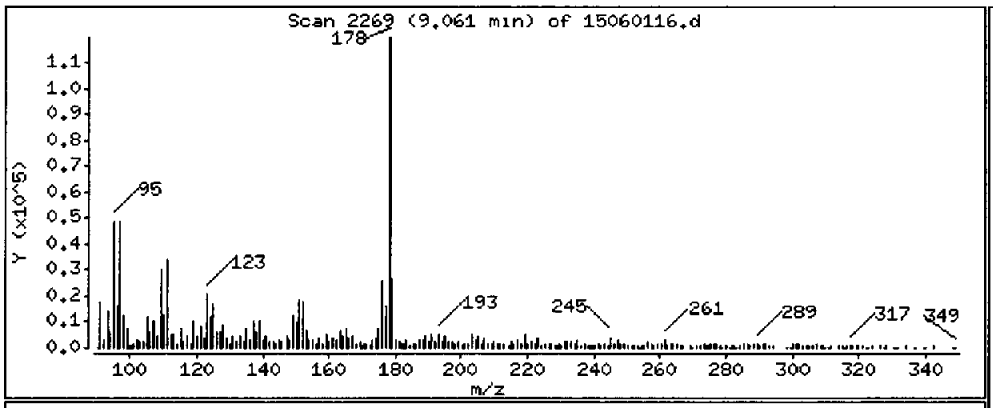
Operator: JZ

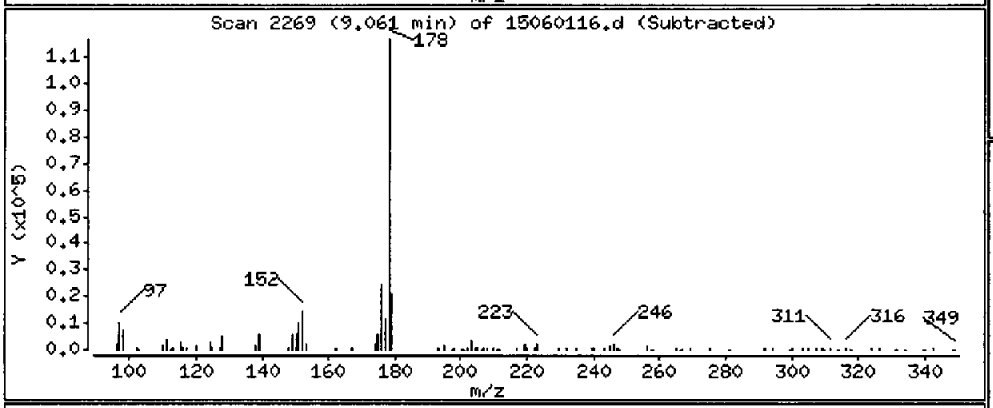
Column phase: ZB-35

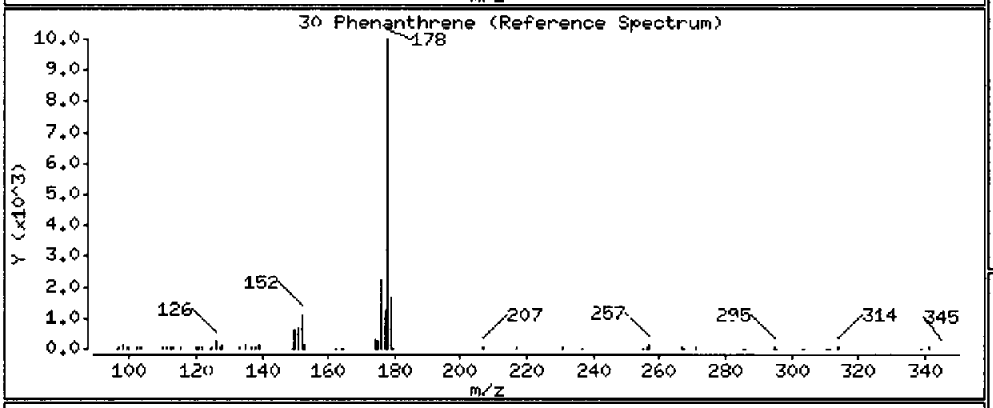
Column diameter: 0.25

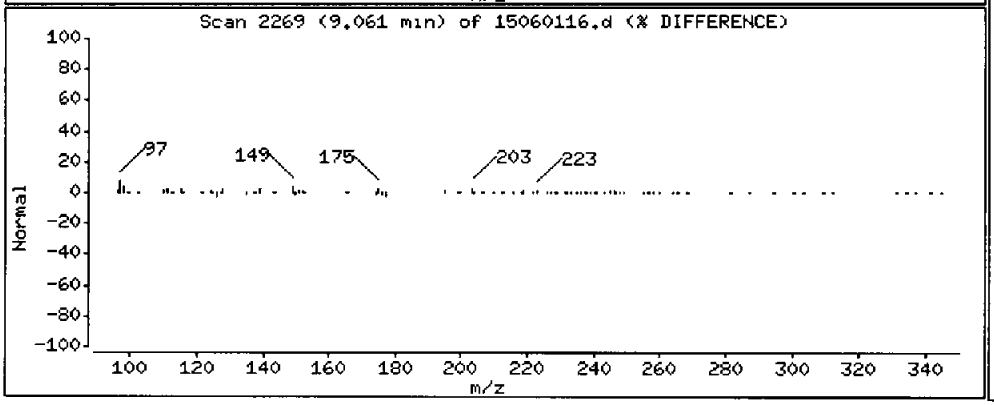
30 Phenanthrene

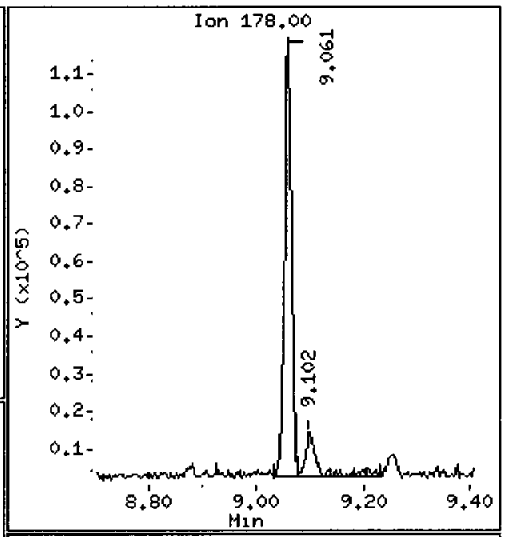
Concentration: 21.79 ug/kg

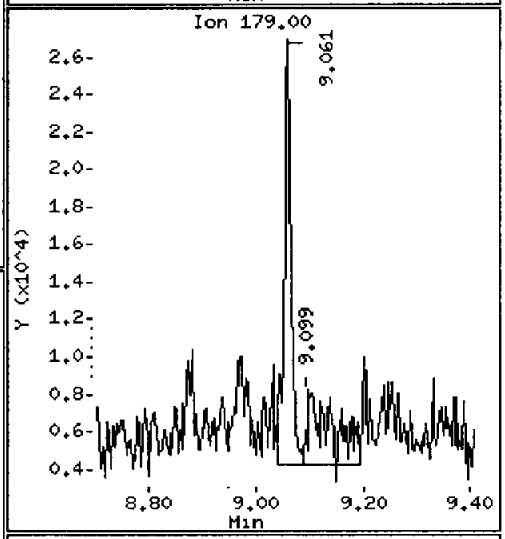


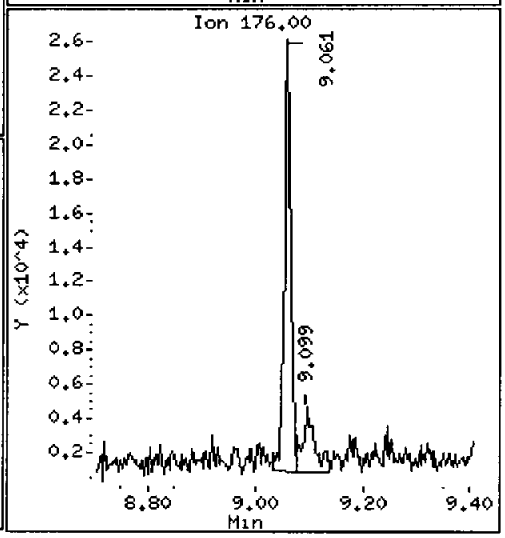












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

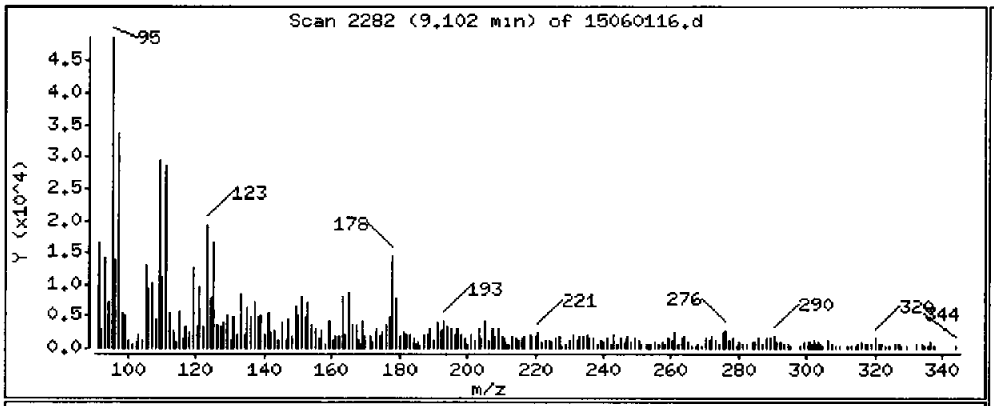
Operator: JZ

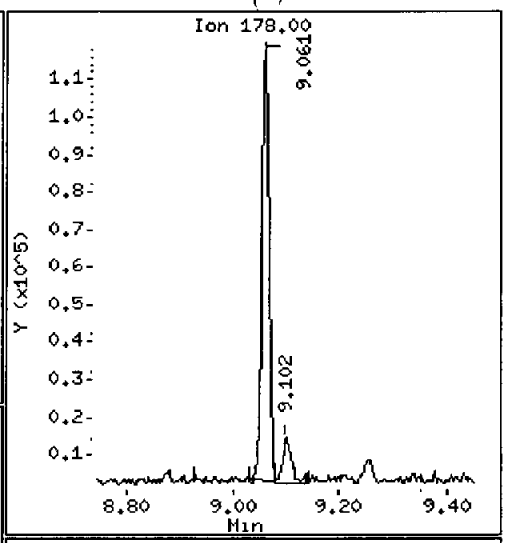
Column phase: ZB-35

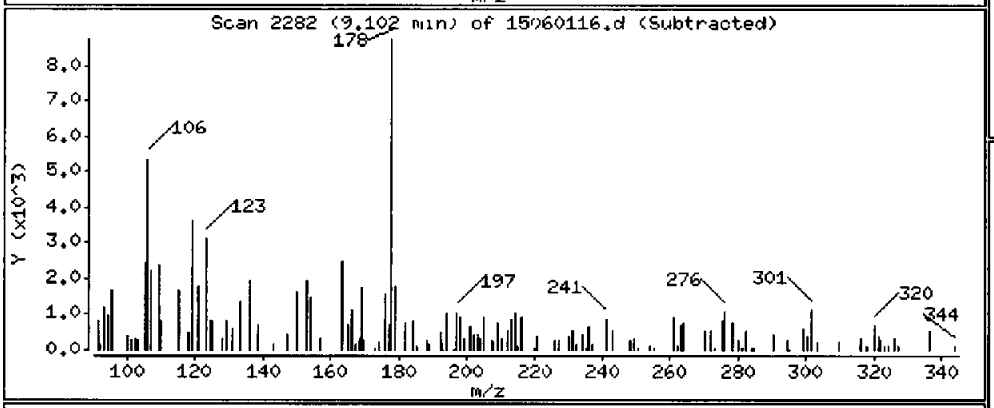
Column diameter: 0.25

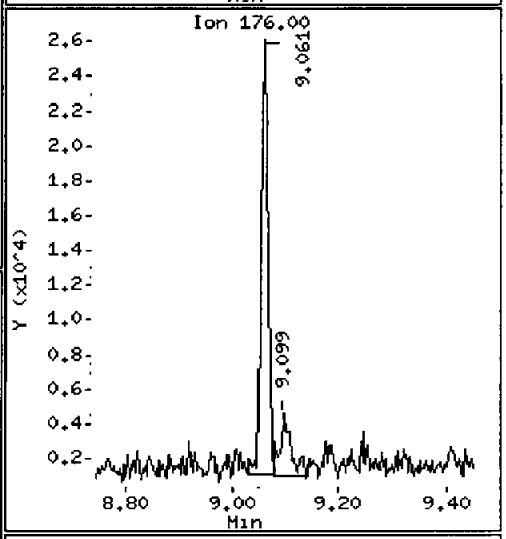
31 Anthracene

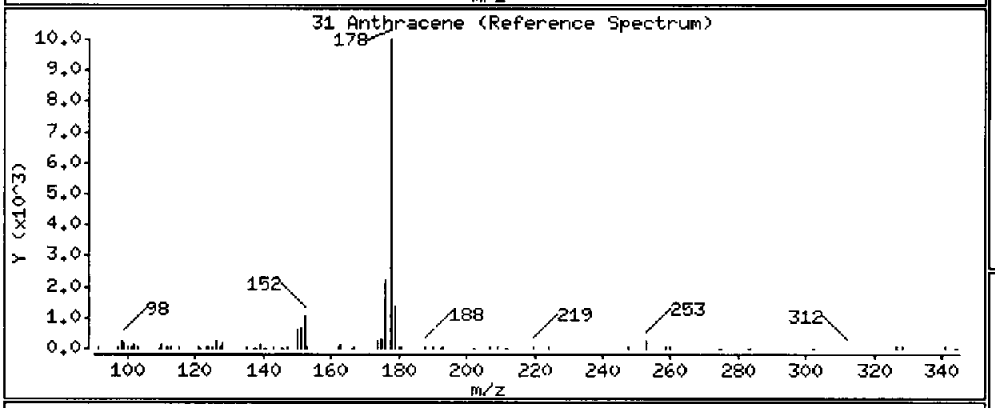
Concentration: 3.319 ug/kg

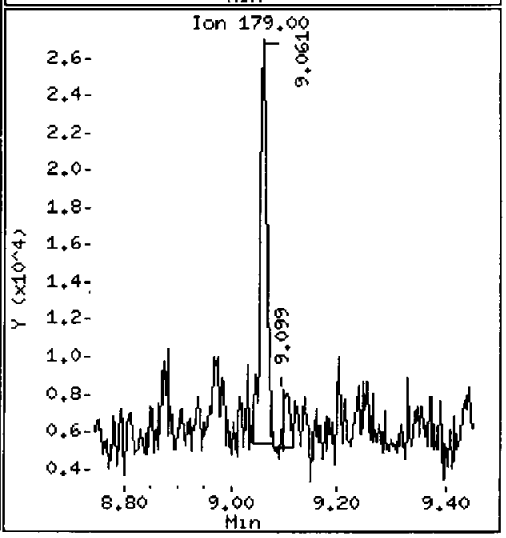


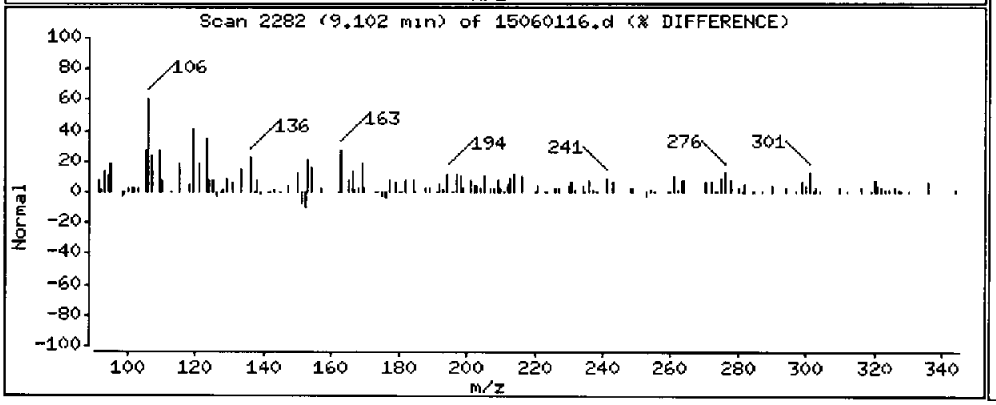












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

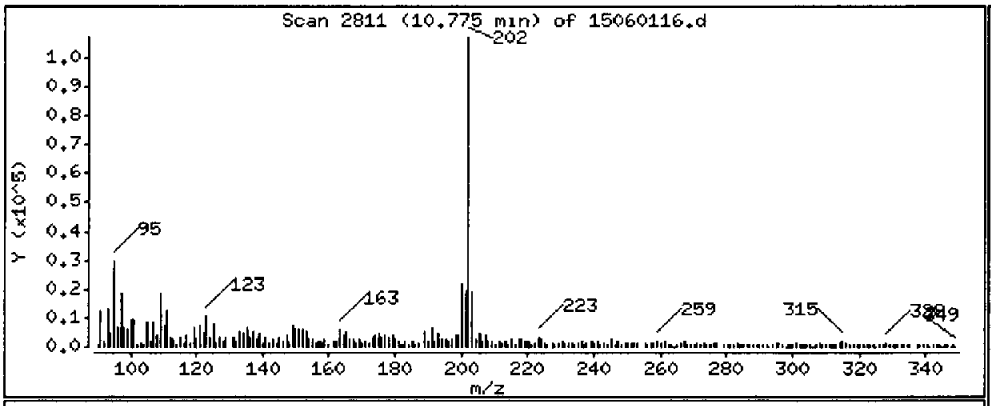
Operator: JZ

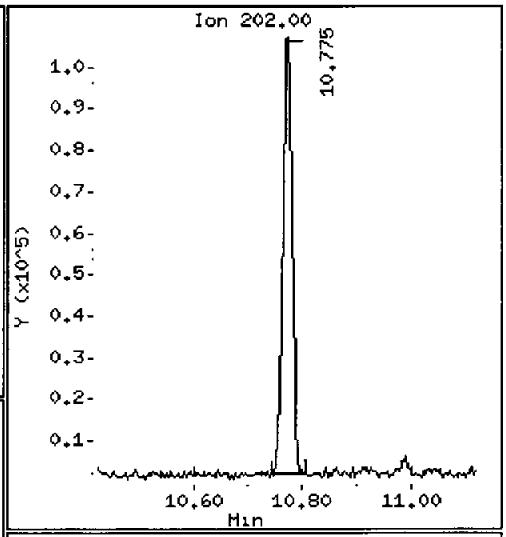
Column phase: ZB-35

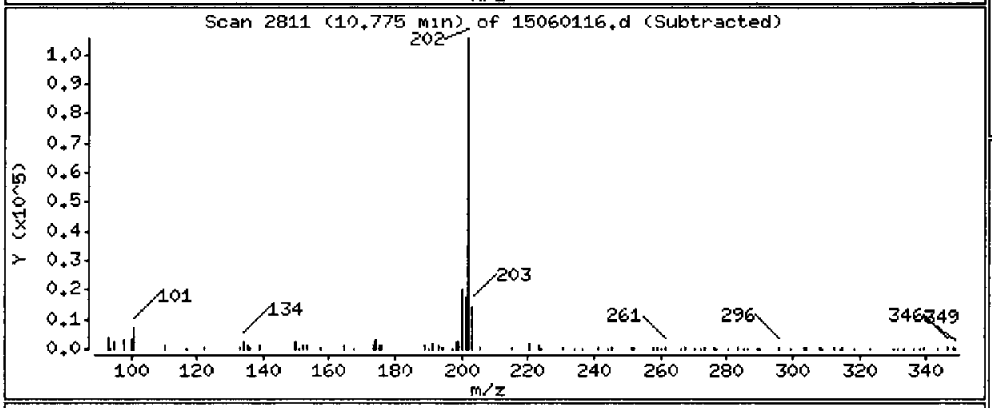
Column diameter: 0.25

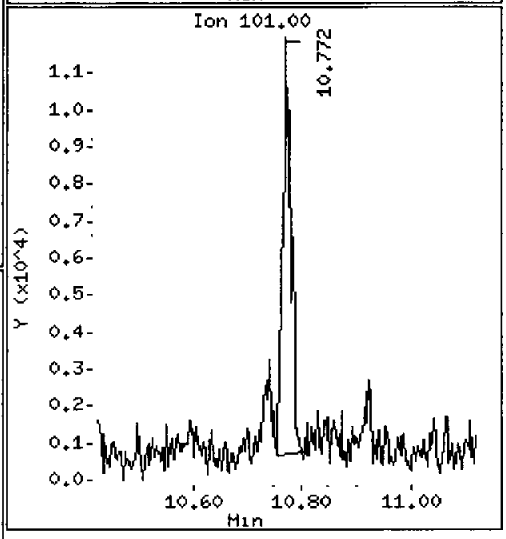
36 Fluoranthene

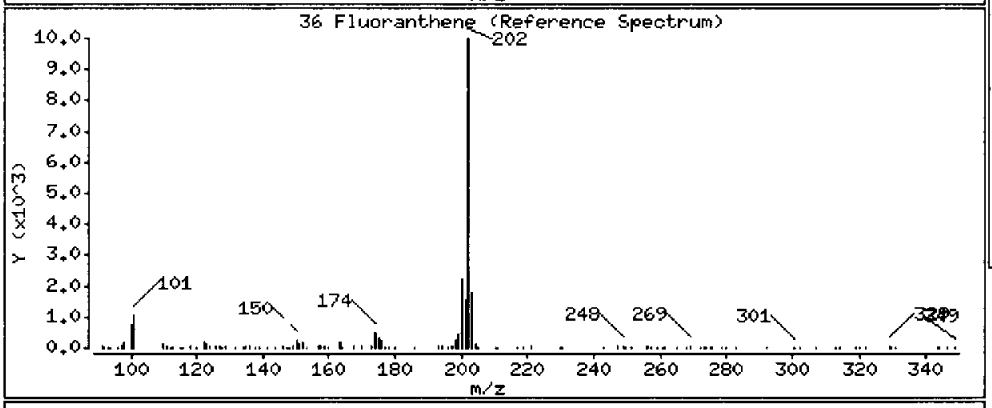
Concentration: 22.31 ug/kg

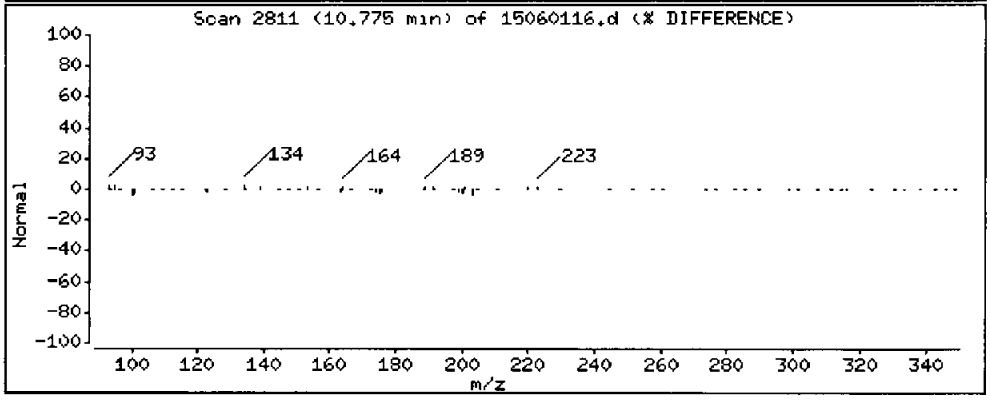












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

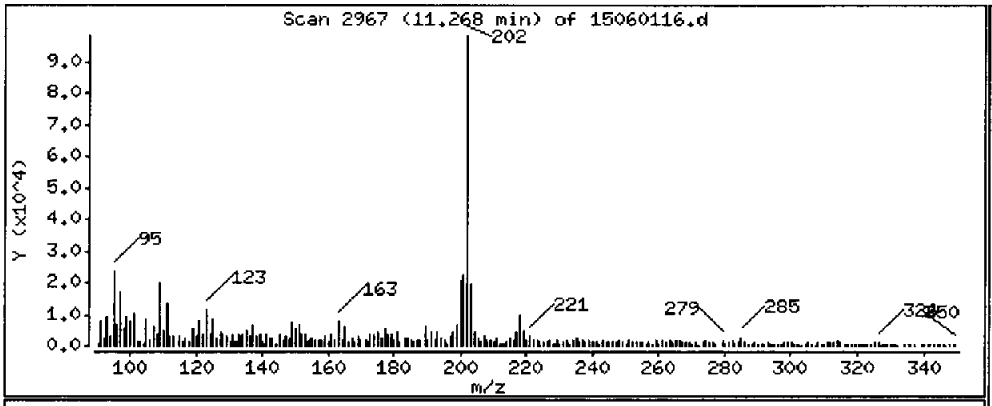
Operator: JZ

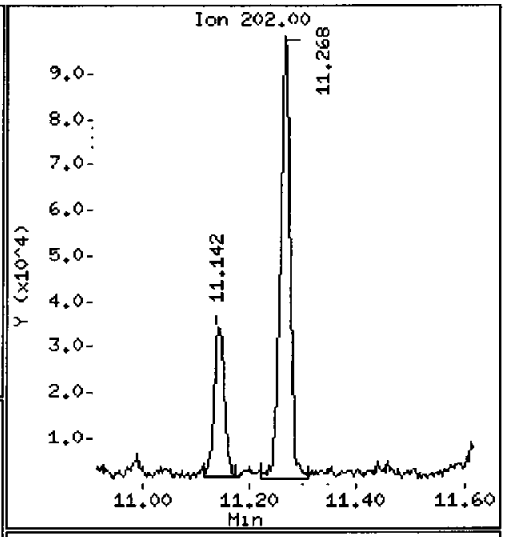
Column phase: ZB-35

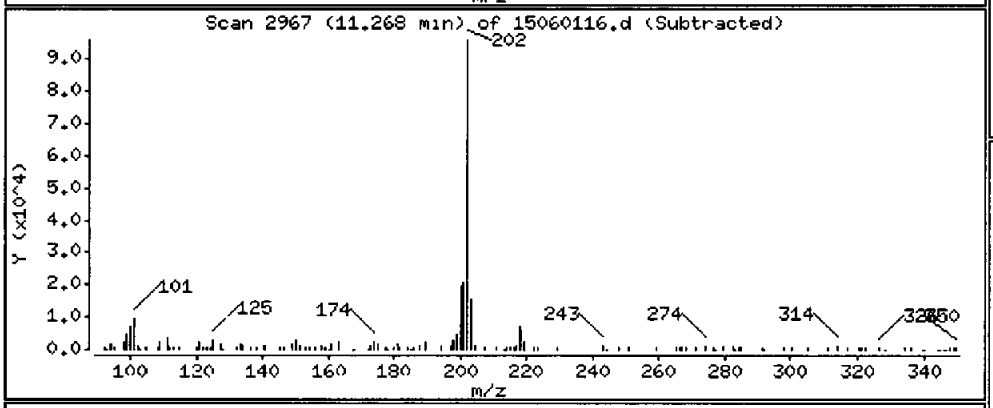
Column diameter: 0.25

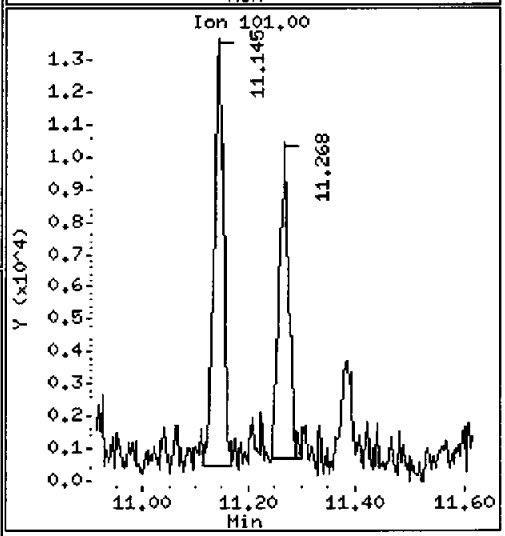
39 Pyrene

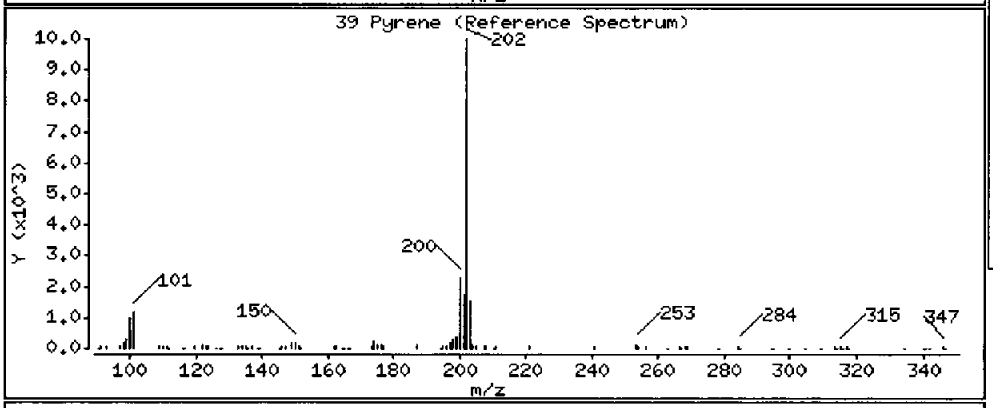
Concentration: 19.90 ug/kg

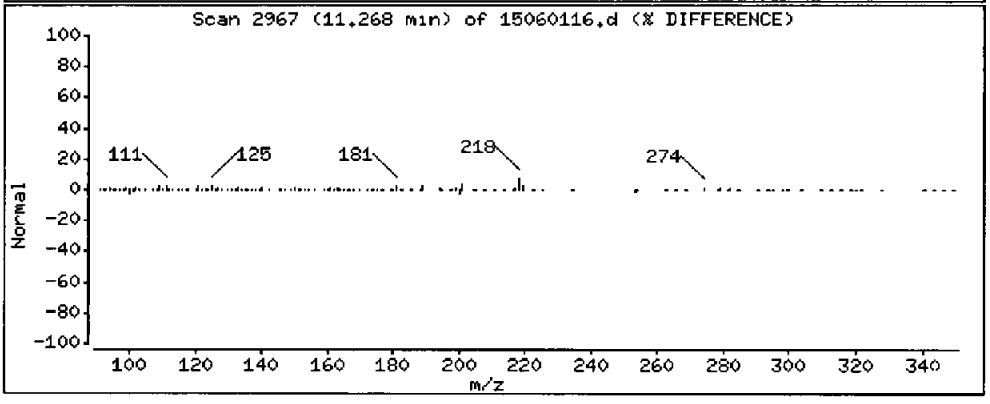












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

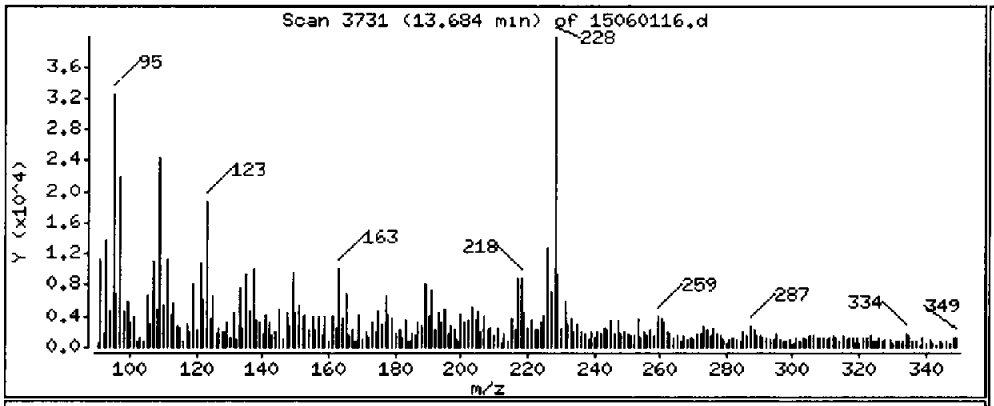
Operator: JZ

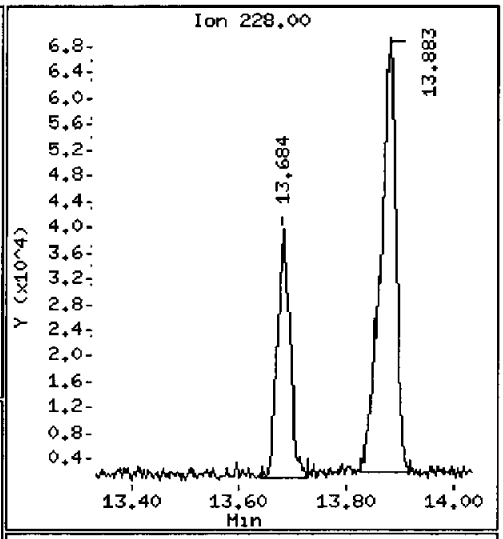
Column phase: ZB-35

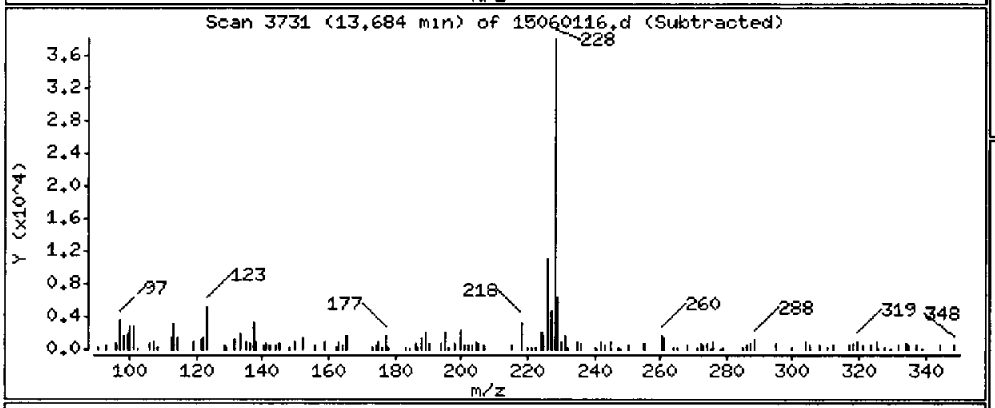
Column diameter: 0.25

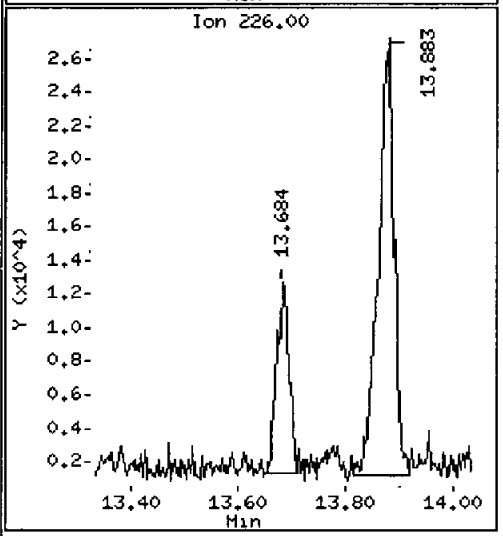
46 Benzo(a)anthracene

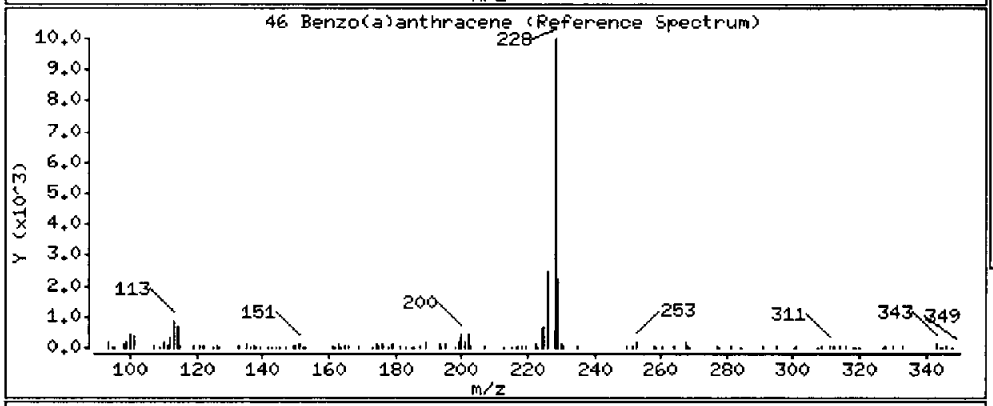
Concentration: 11.14 ug/kg

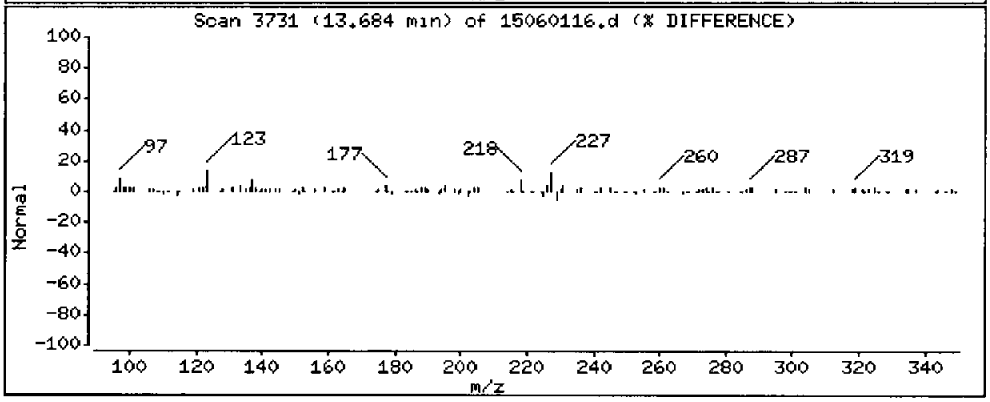












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

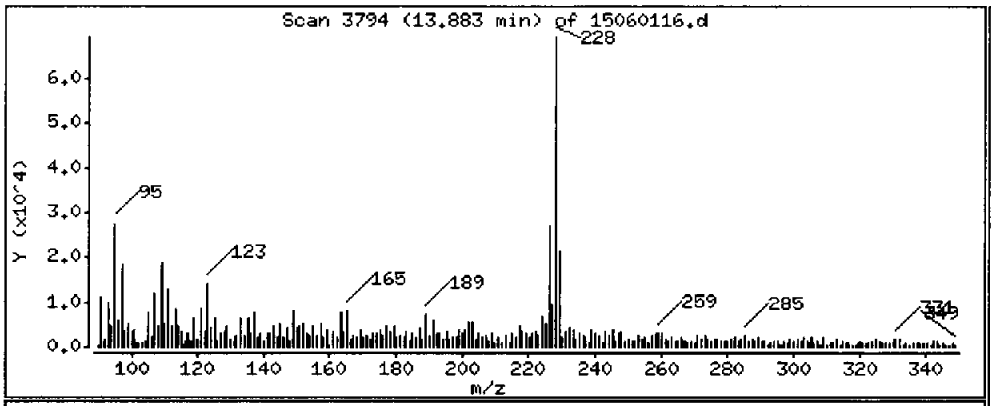
Operator: JZ

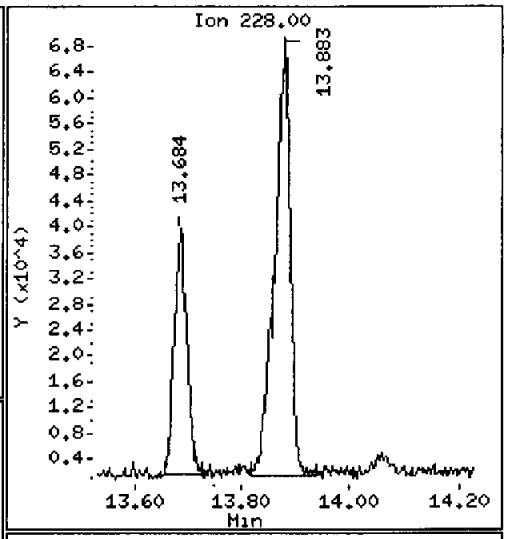
Column phase: ZB-35

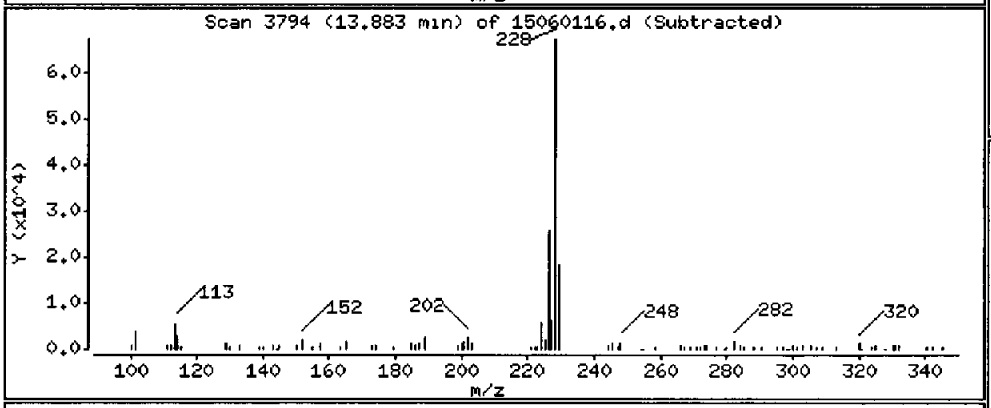
Column diameter: 0.25

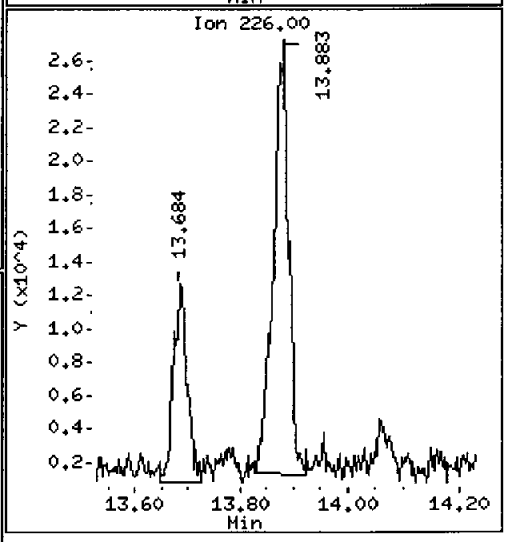
48 Chrysene

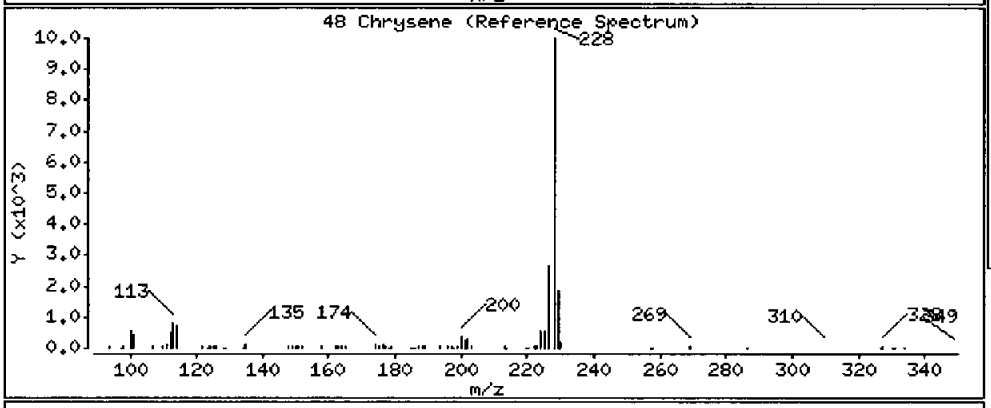
Concentration: 23.88 ug/kg

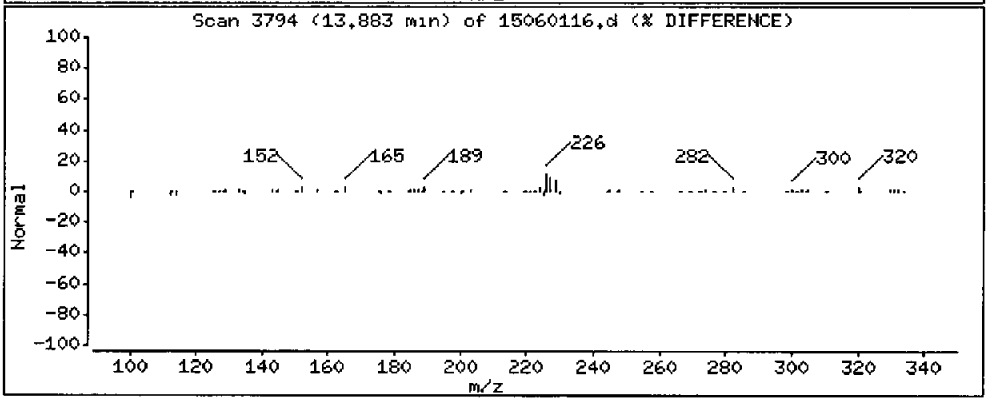












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

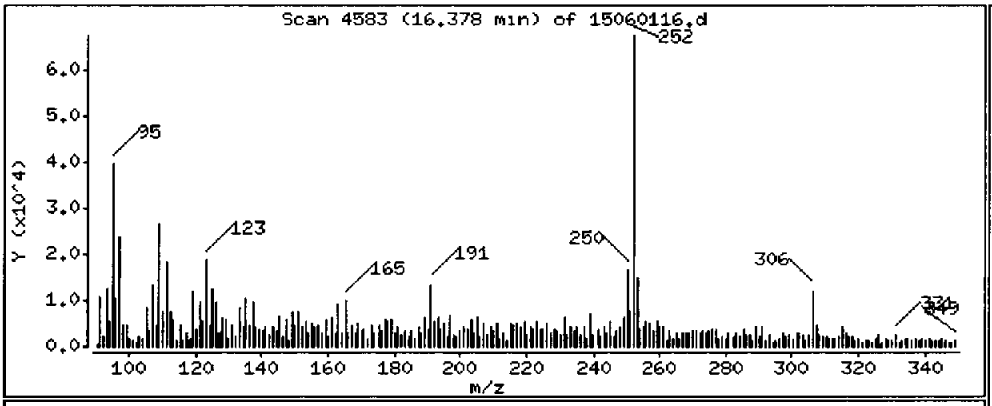
Operator: JZ

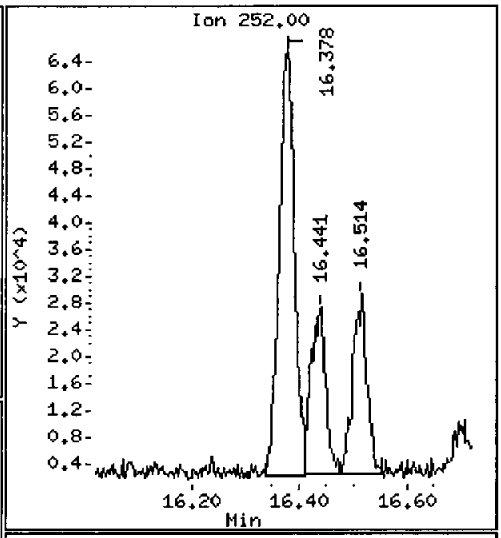
Column phase: ZB-35

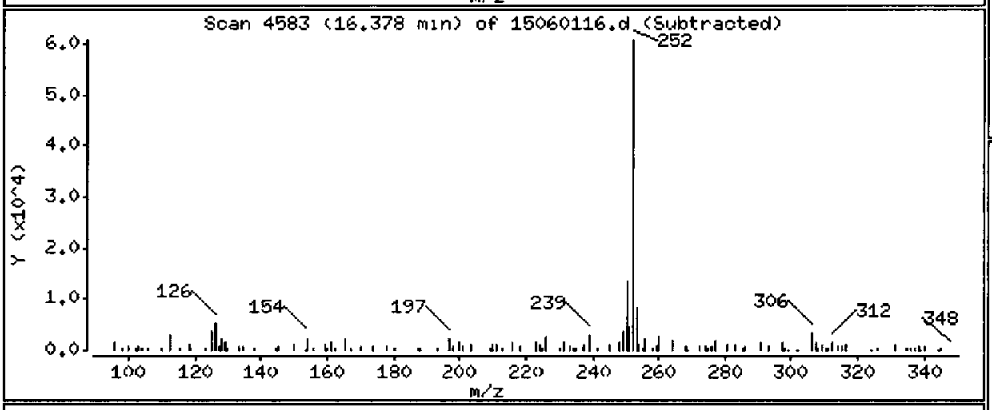
Column diameter: 0.25

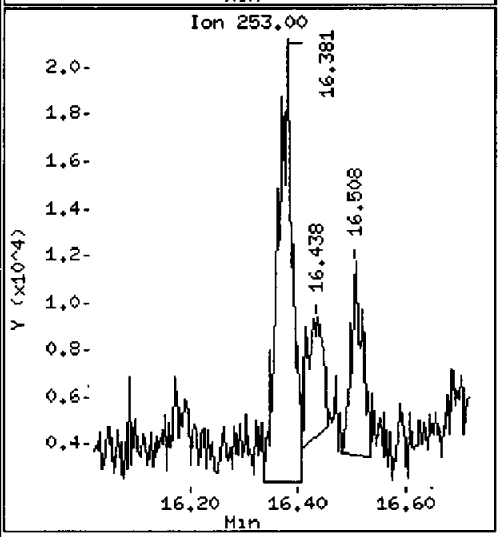
51 Benzo(b)fluoranthene

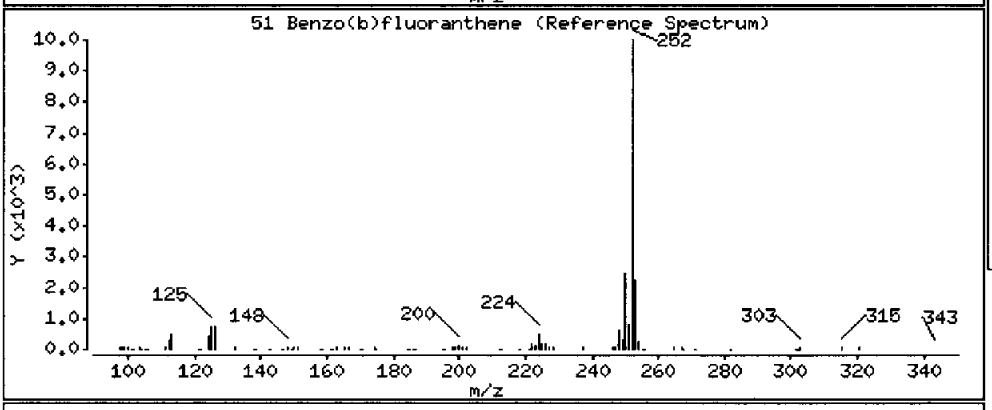
Concentration: 19.54 ug/kg

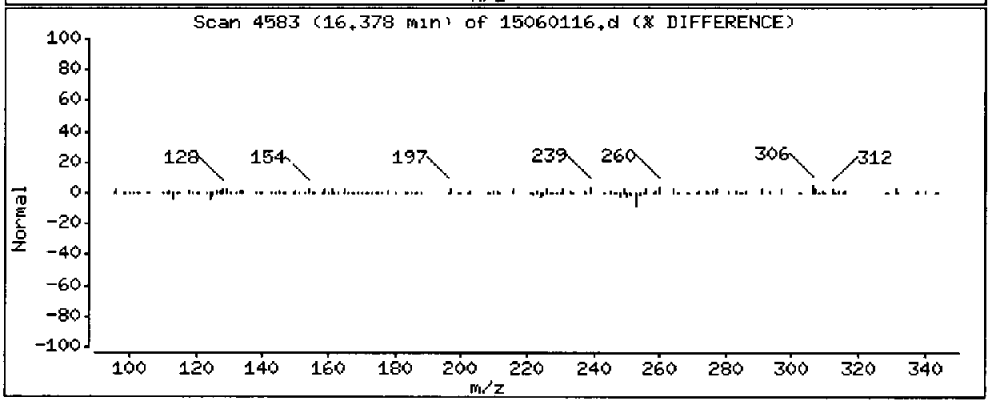












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

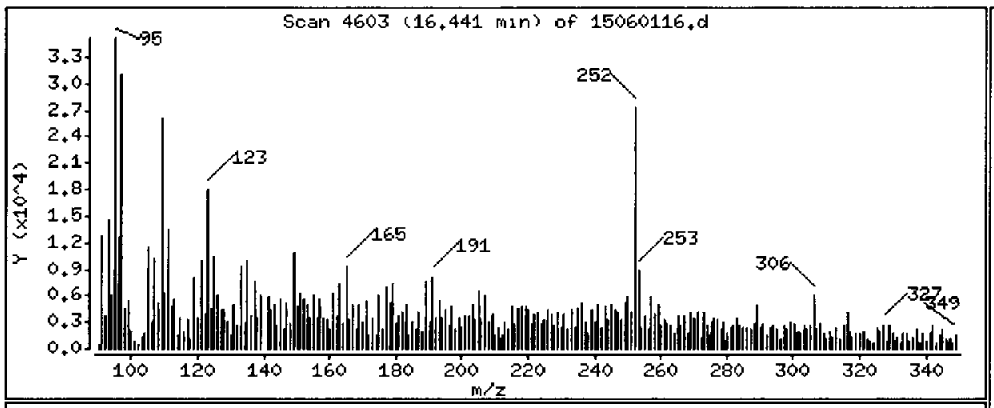
Operator: JZ

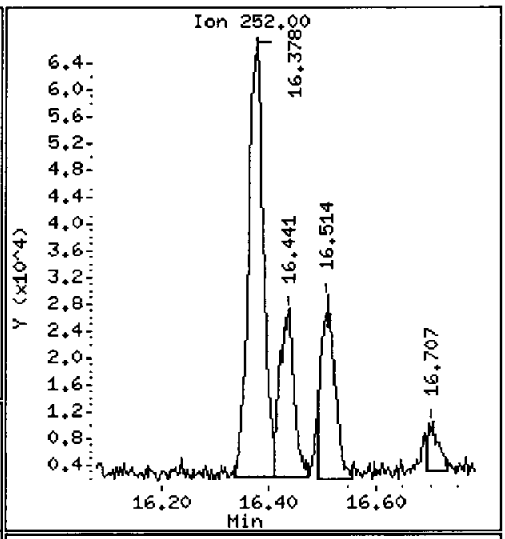
Column phase: ZB-35

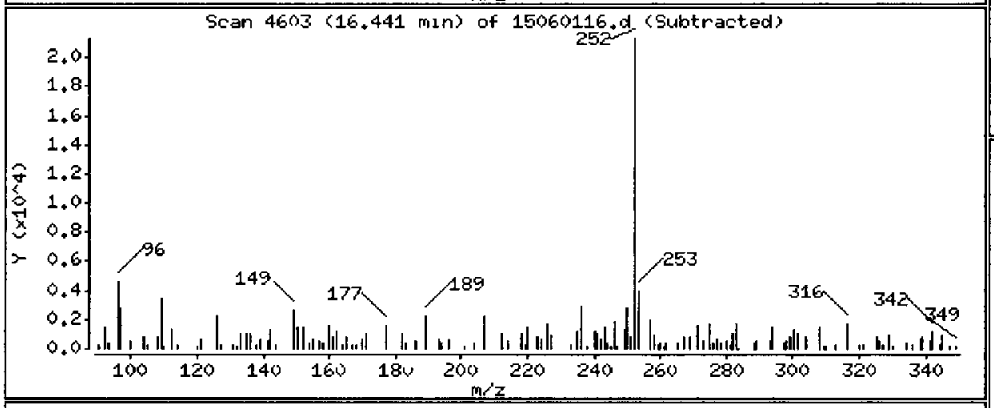
Column diameter: 0.25

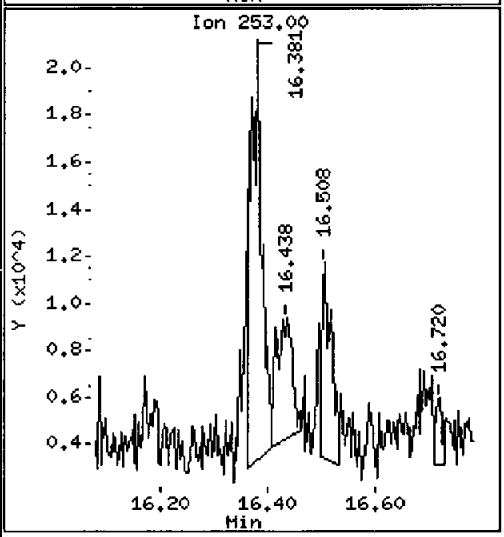
52 Benzo(k)fluoranthene

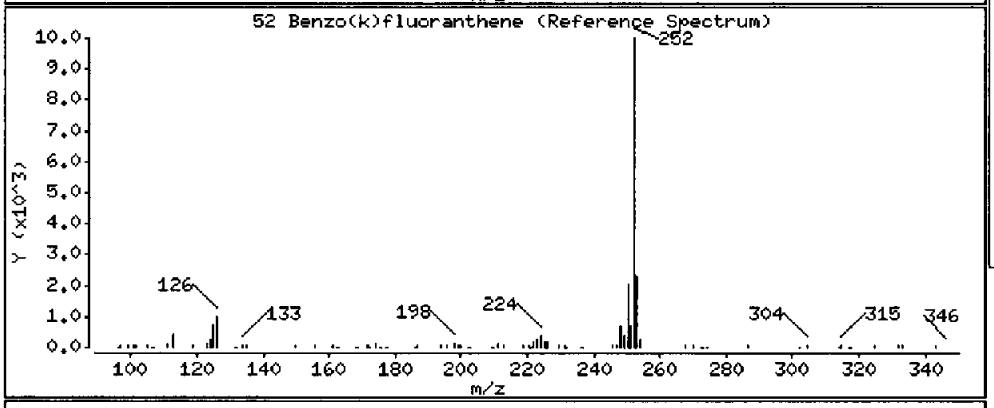
Concentration: 7.184 ug/kg

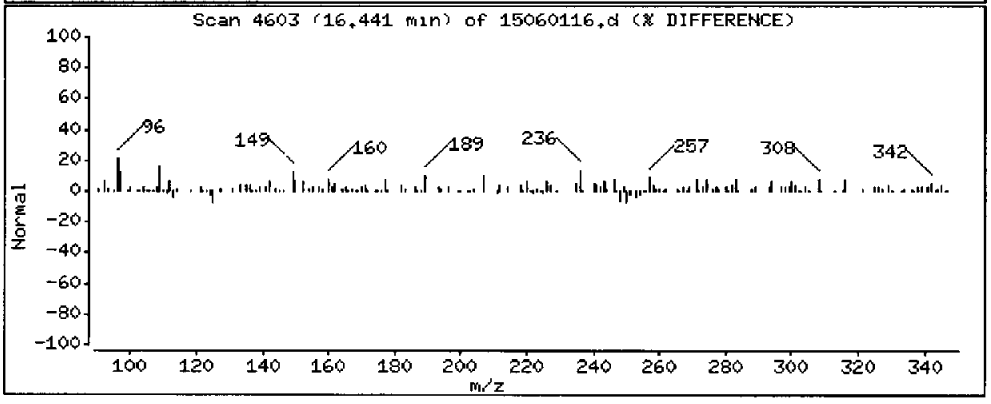












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

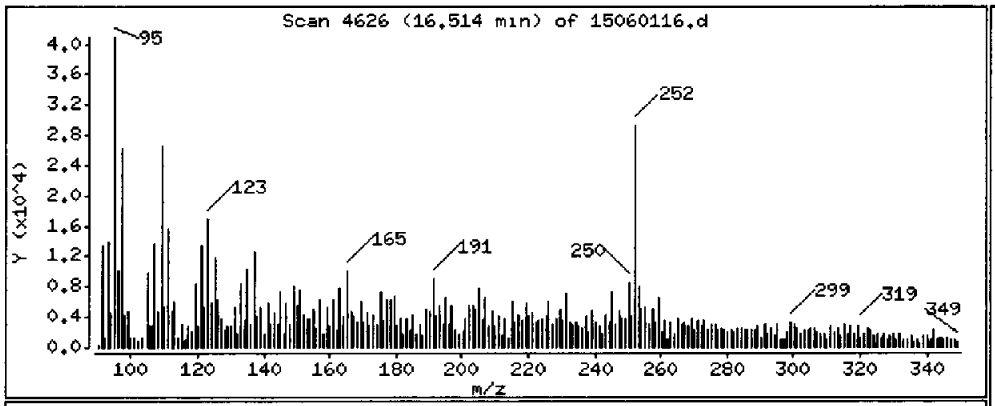
Operator: JZ

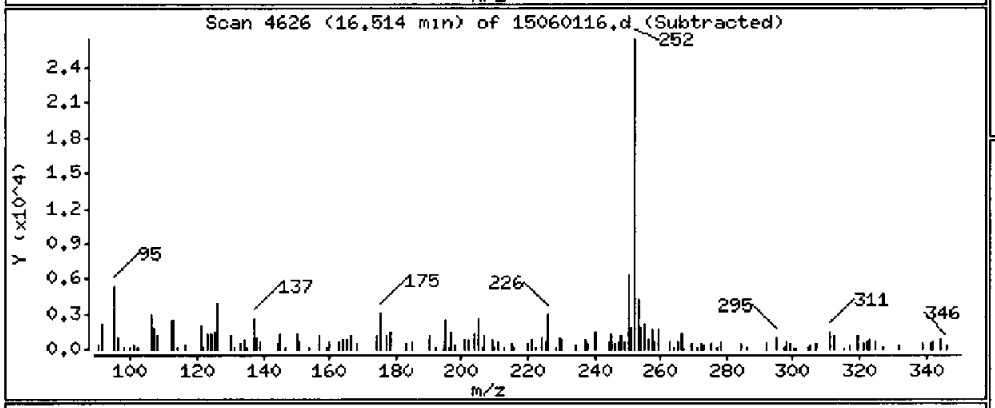
Column phase: ZB-35

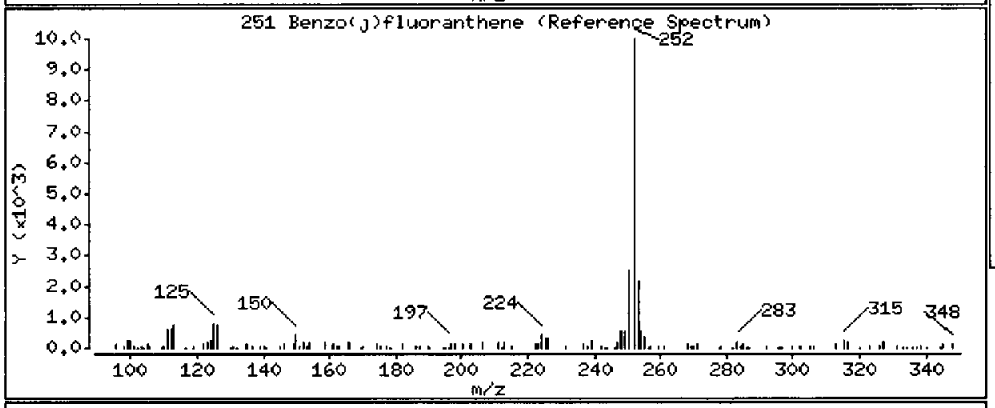
Column diameter: 0.25

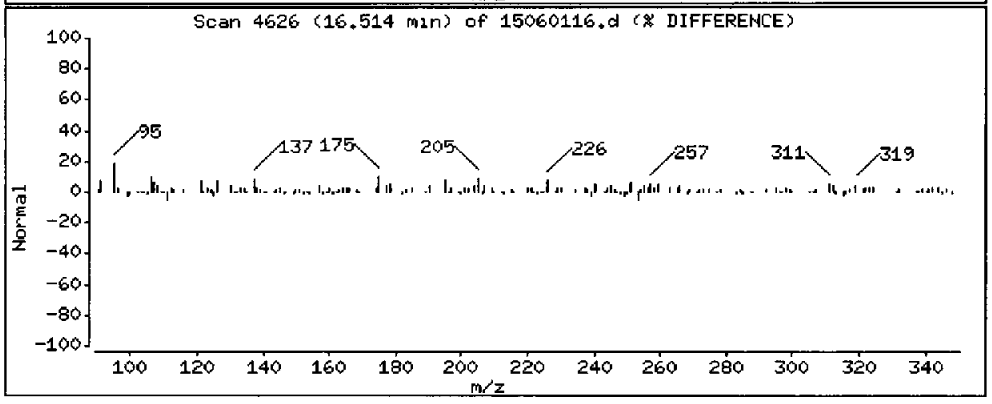
251 Benzo(j)fluoranthene

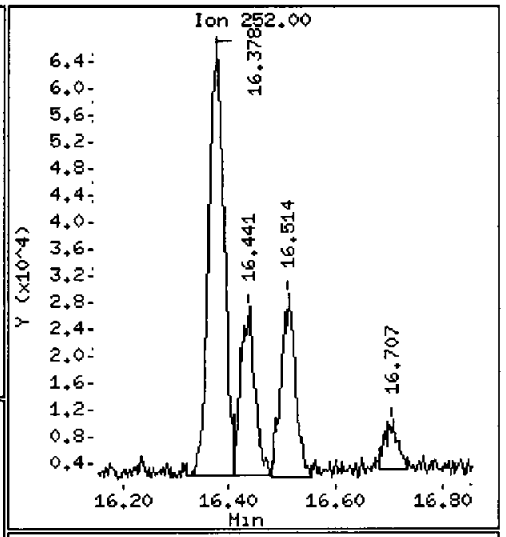
Concentration: 7.943 ug/kg

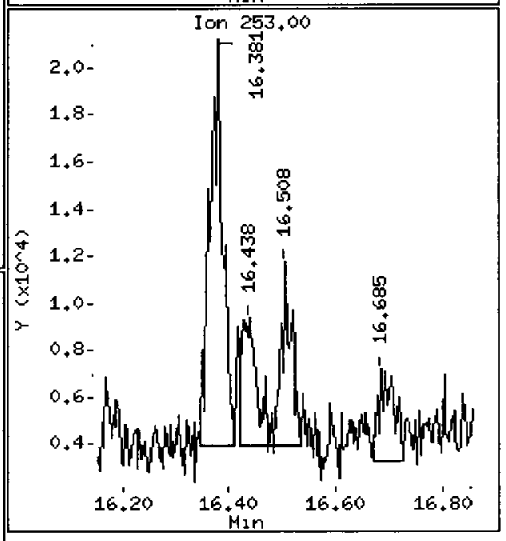












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

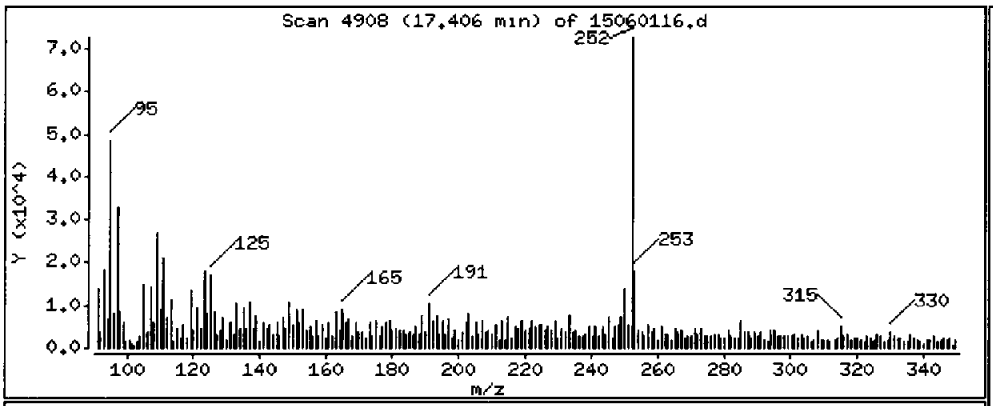
Operator: JZ

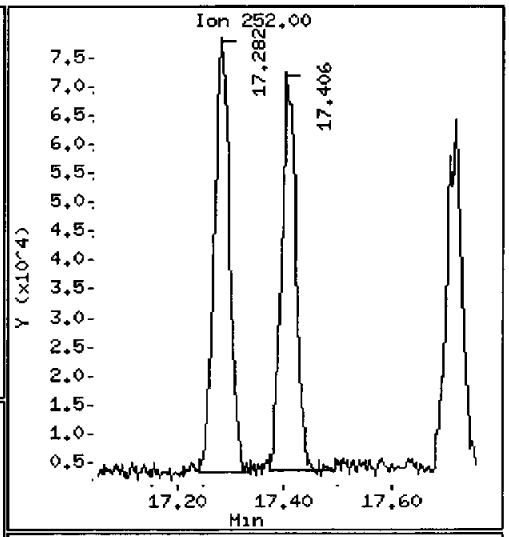
Column phase: ZB-35

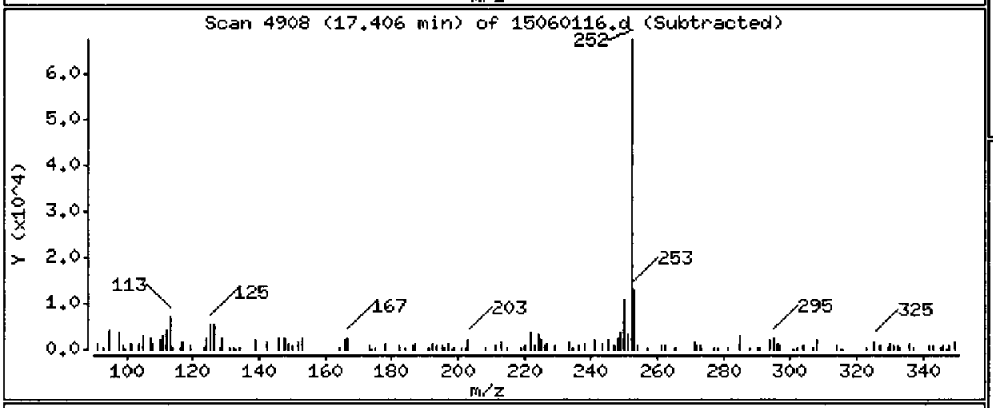
Column diameter: 0.25

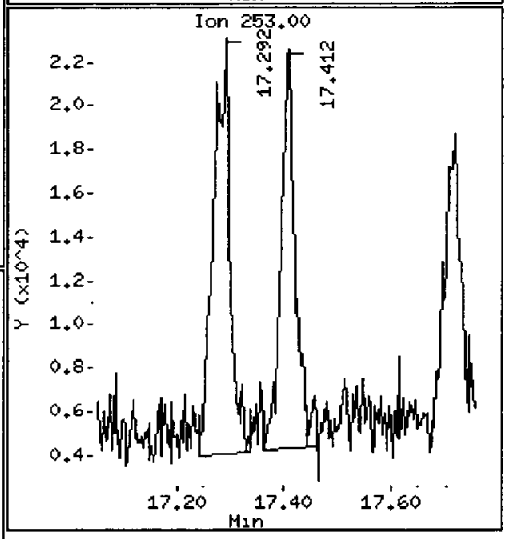
54 Benzo(a)pyrene

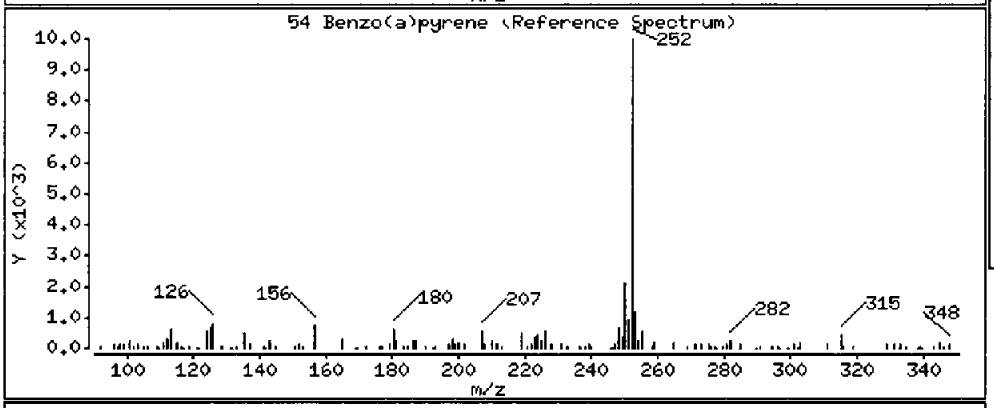
Concentration: 22.53 ug/kg

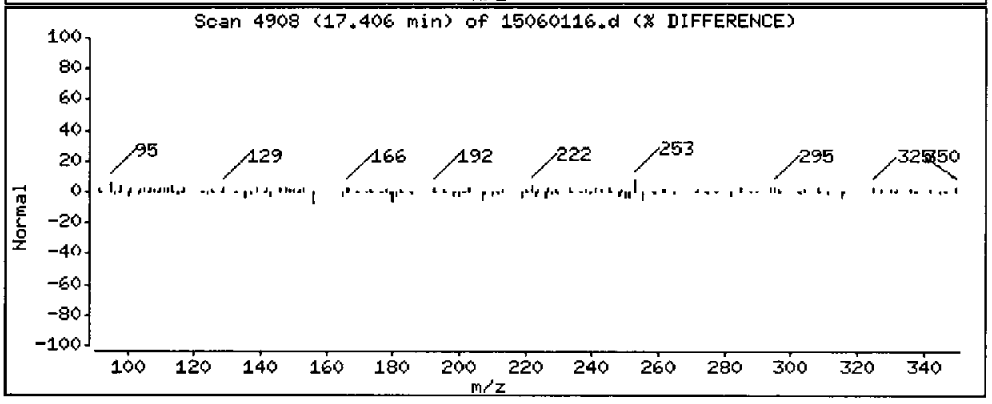












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

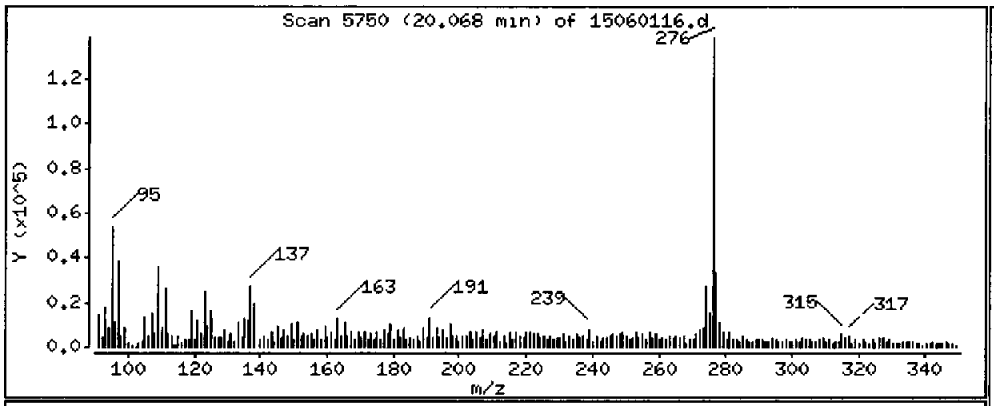
Operator: JZ

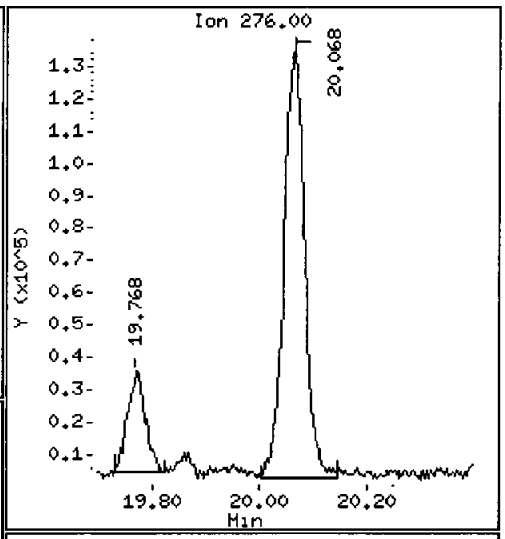
Column phase: ZB-35

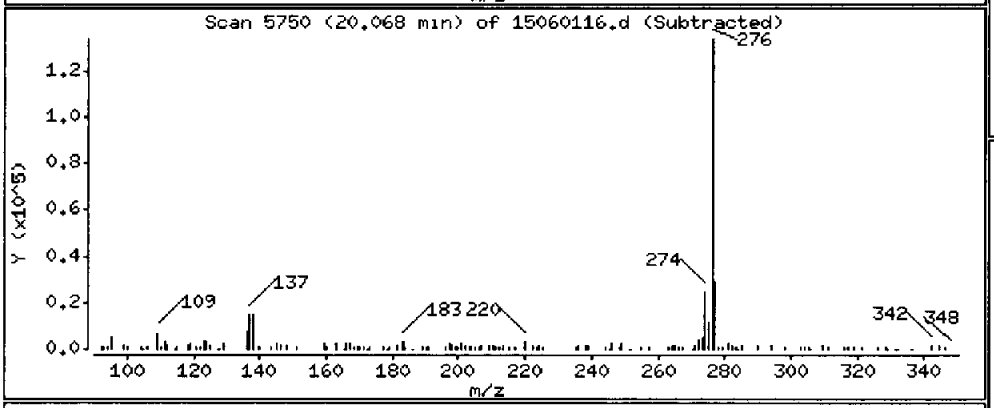
Column diameter: 0.25

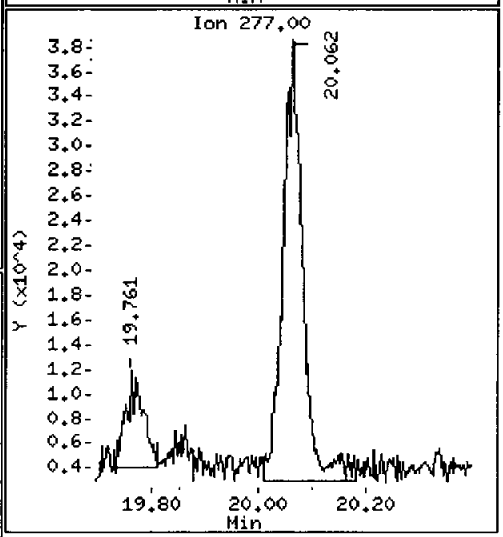
63 Indeno(1,2,3-cd)pyrene

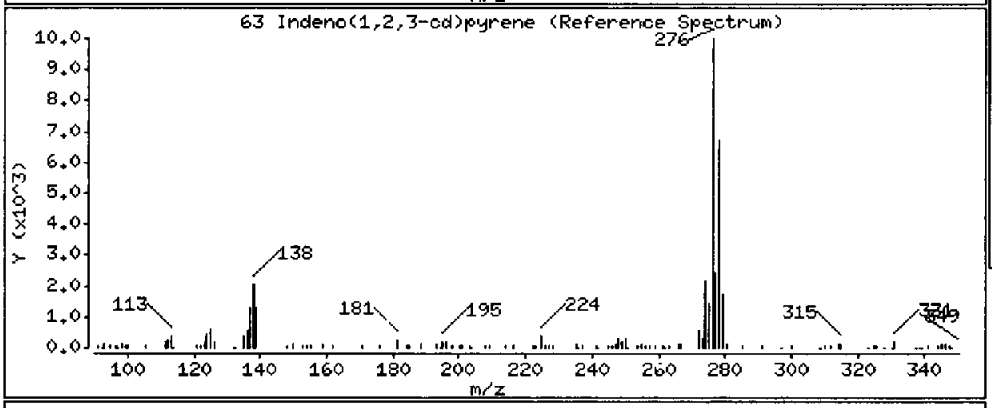
Concentration: 49.90 ug/kg

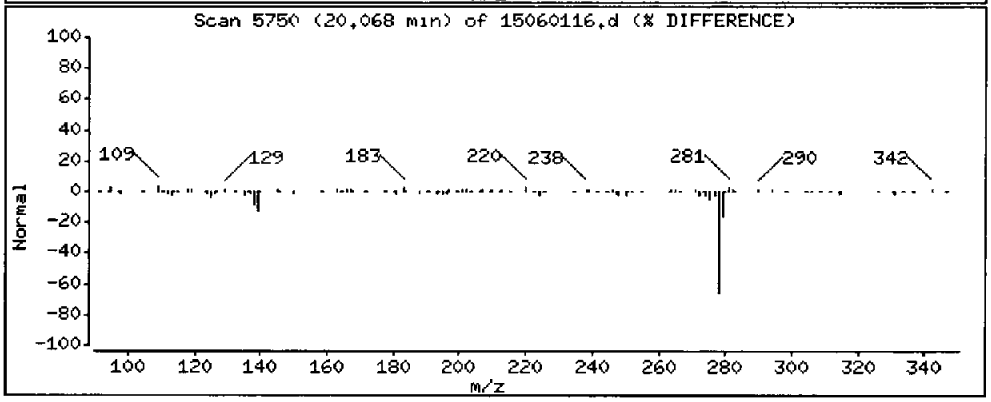












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

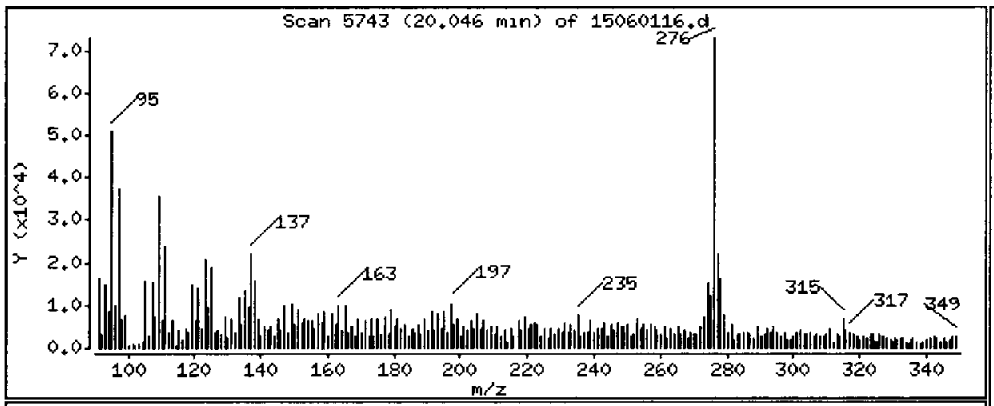
Operator: JZ

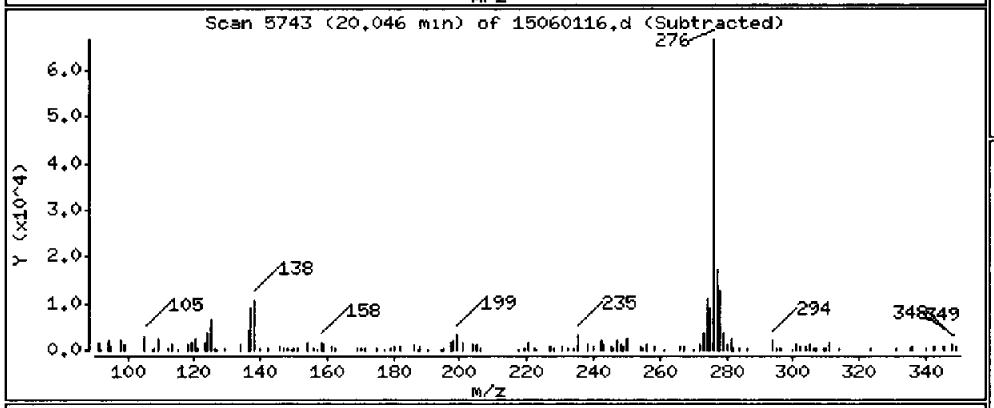
Column phase: ZB-35

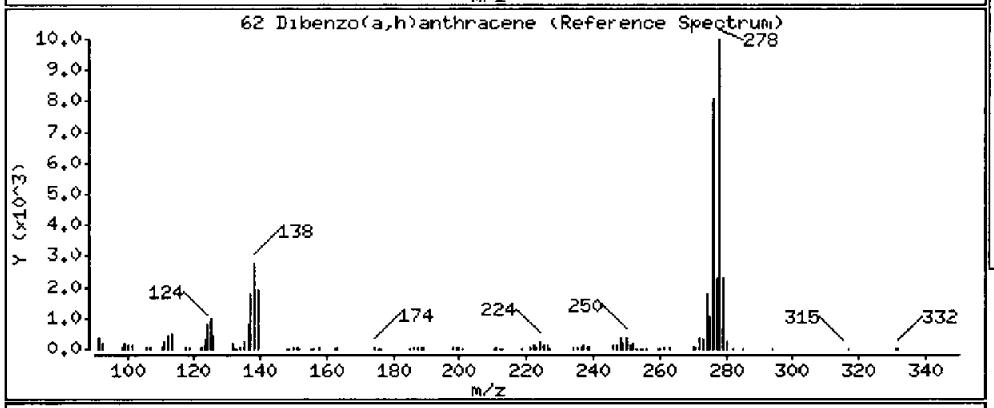
Column diameter: 0.25

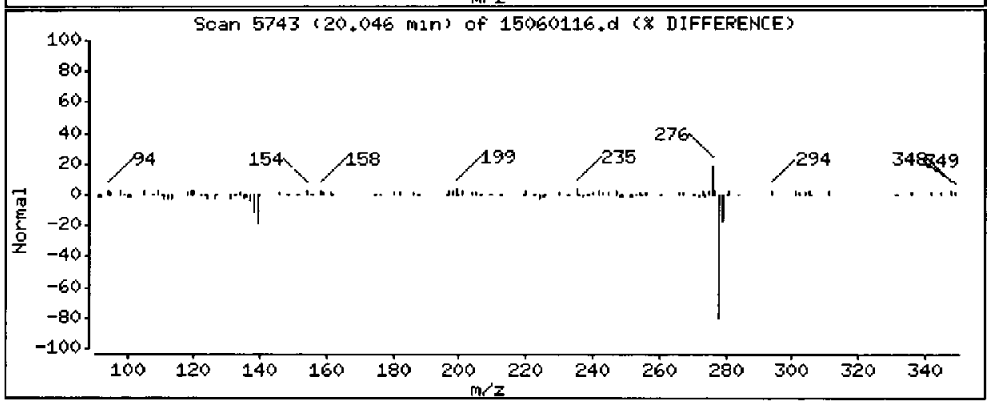
62 Dibenzo(a,h)anthracene

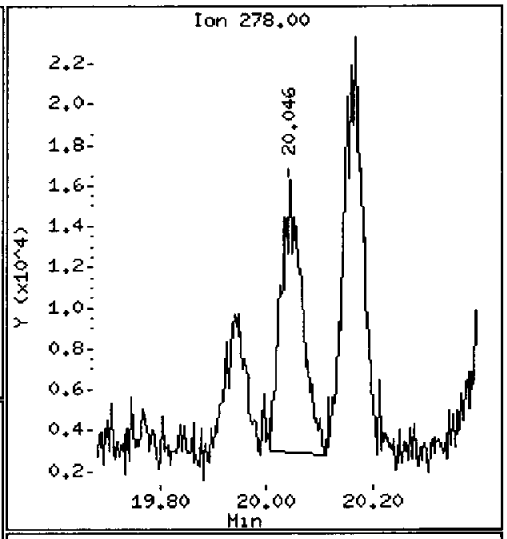
Concentration: 6.375 ug/kg

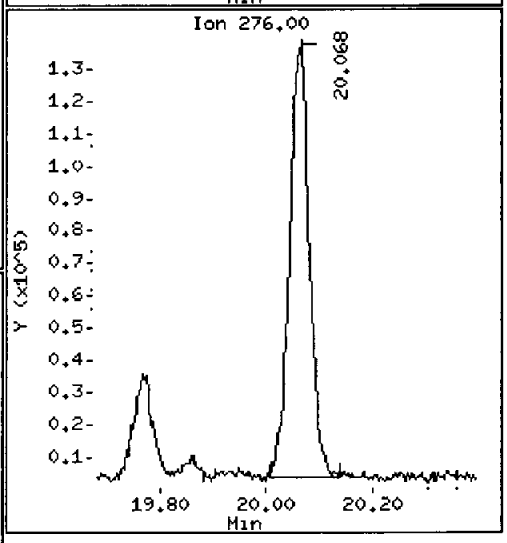












Data File: /chem3/nt8.1/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.1

Sample Info: AGC9J

Volume Injected (uL): 1.0

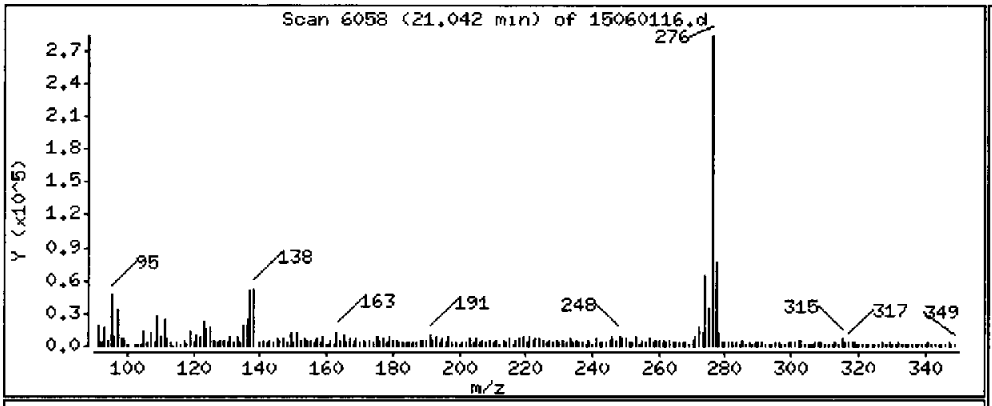
Operator: JZ

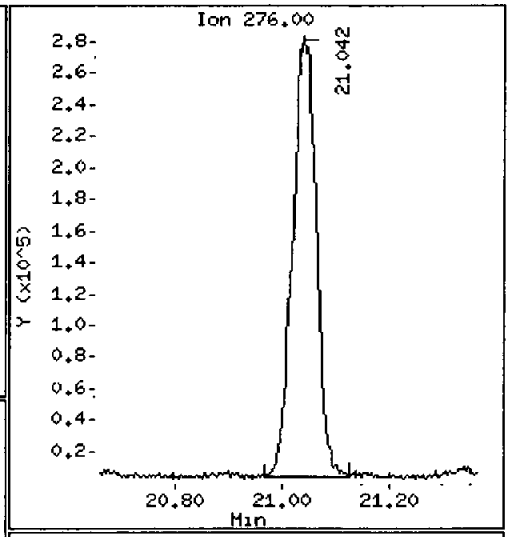
Column phase: ZB-35

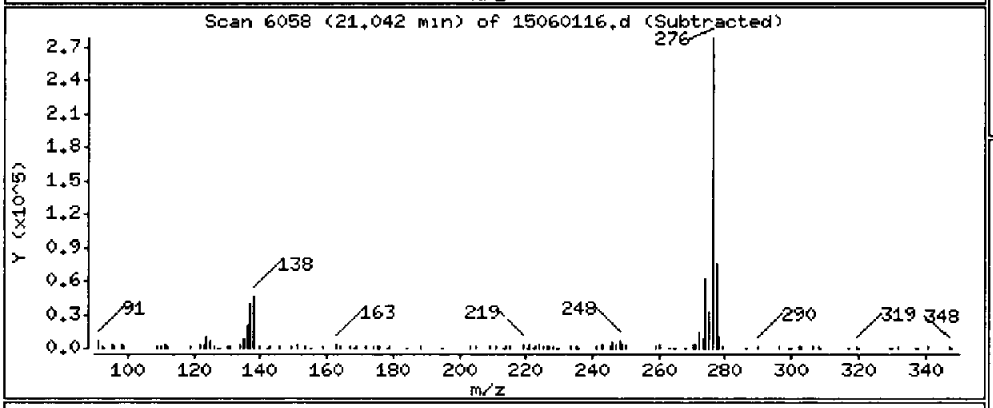
Column diameter: 0.25

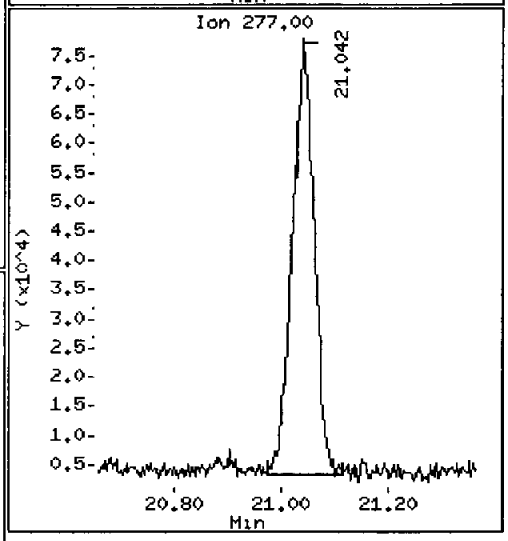
61 Benzo(g,h,i)perylene

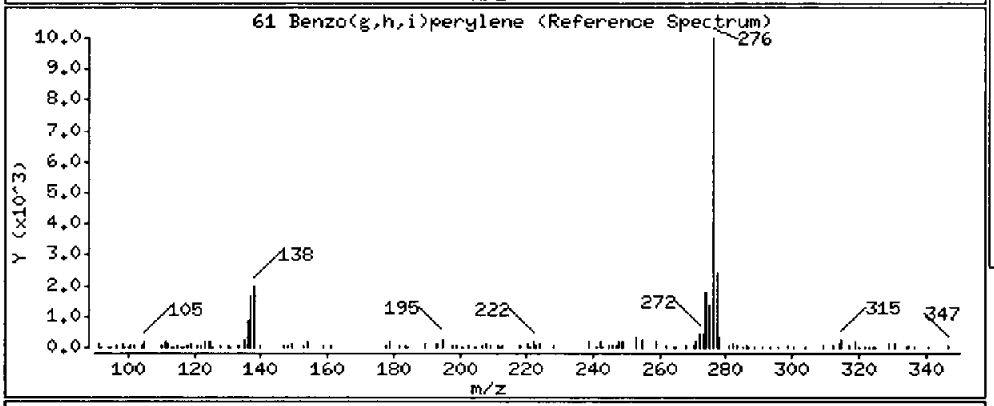
Concentration: 139.1 ug/kg

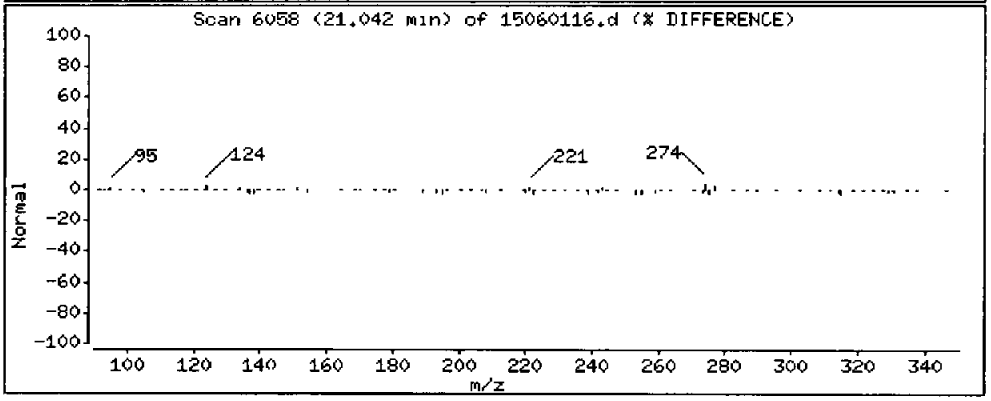












Data File: /chem3/nt8.i/20150601.b/15060116.d

Date : 01-JUN-2015 16:08

Client ID: SDP-05(6.5-7.5)

Instrument: nt8.i

Sample Info: AGC9J

Volume Injected (uL): 1.0

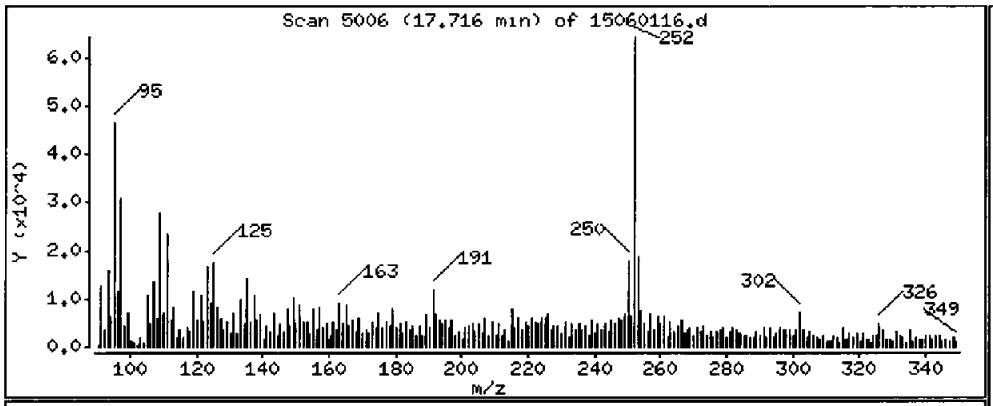
Operator: JZ

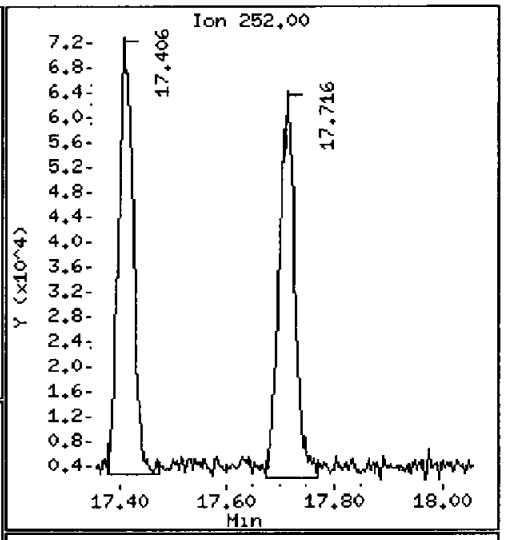
Column phase: ZB-35

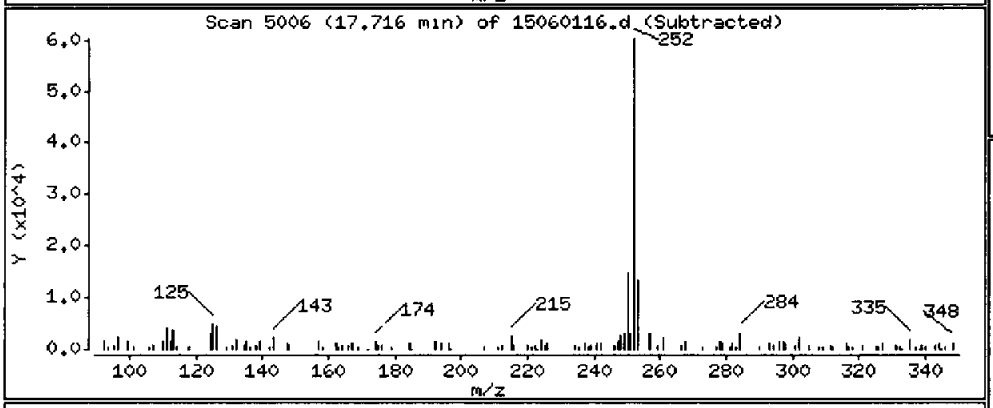
Column diameter: 0.25

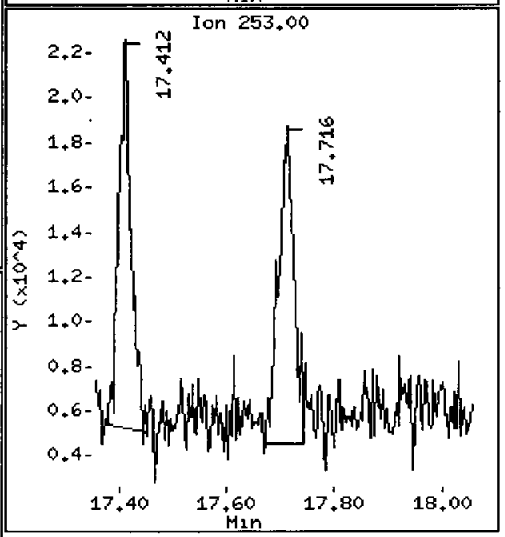
57 Perylene

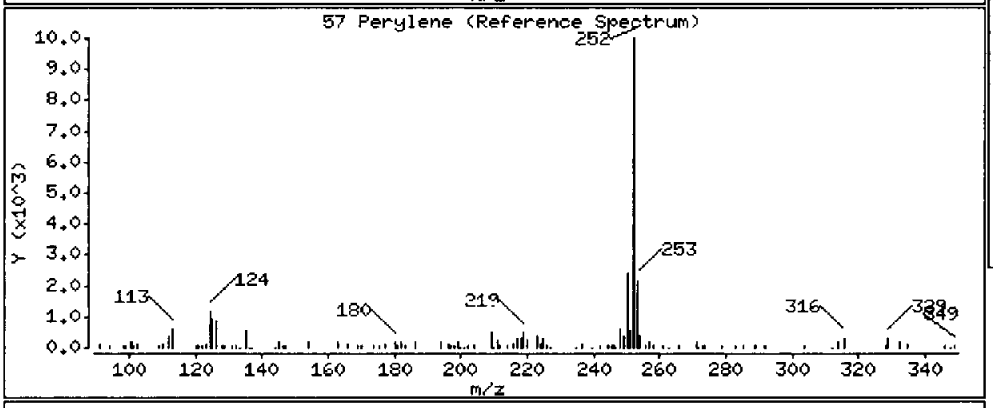
Concentration: 20.81 ug/kg

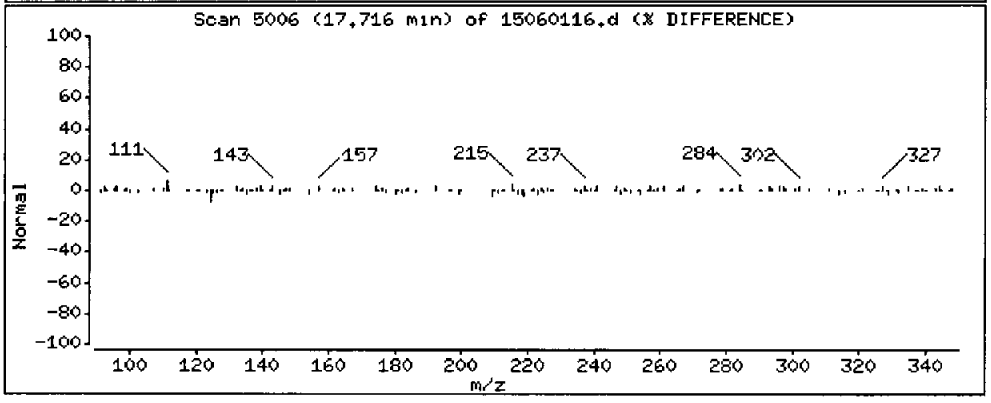












CO-ELUTION SUMMARY FOR FILE - 15060116.d

Lab ID: AGC9J, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC9 00555

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060117.d
Lab Smp Id: AGC9K Client Smp ID: SDP-05(17.5-19.0)
Inj Date : 01-JUN-2015 16:34
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9K
Misc Info : 15-9441
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:39 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	13.02000	Weight of sample extracted (g)
M	19.60000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.736	4.739	(1.000)	439044	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	191413	1.42771	68.19
	14 2-Methylnaphthalene	141	5.514	5.510	(1.164)	7099	0.05629	2.689
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	284264	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.023	9.020	(1.000)	476262	2.00000	
	30 Phenanthrene	178	Compound Not Detected.					
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10.734	10.734	(1.190)	507369	2.16577	103.4
	39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.807	13.807	(1 000)	528231	2.00000	
	48 Chrysene	228	Compound Not Detected					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.640	17.633	(1.000)	558418	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.939	19 929	(1.130)	479689	2.25555	107.7
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	21.014	21.010	(1.191)	27887	0.10095	4.822
	57 Perylene	252	17.703	17 706	(1.004)	164644	0.60657	28.97

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060117.d
Lab Smp Id: AGC9K
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9441

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-05(17.5-19.0
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	439044	27.97
22 Acenaphthene-d10	230598	115299	461196	284264	23.27
28 Phenanthrene-d10	373928	186964	747856	476262	27.37
47 Chrysene-d12	381262	190631	762524	528231	38.55
56 Perylene-d12	380825	190412	761650	558418	46.63

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	-0.06
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.64	0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

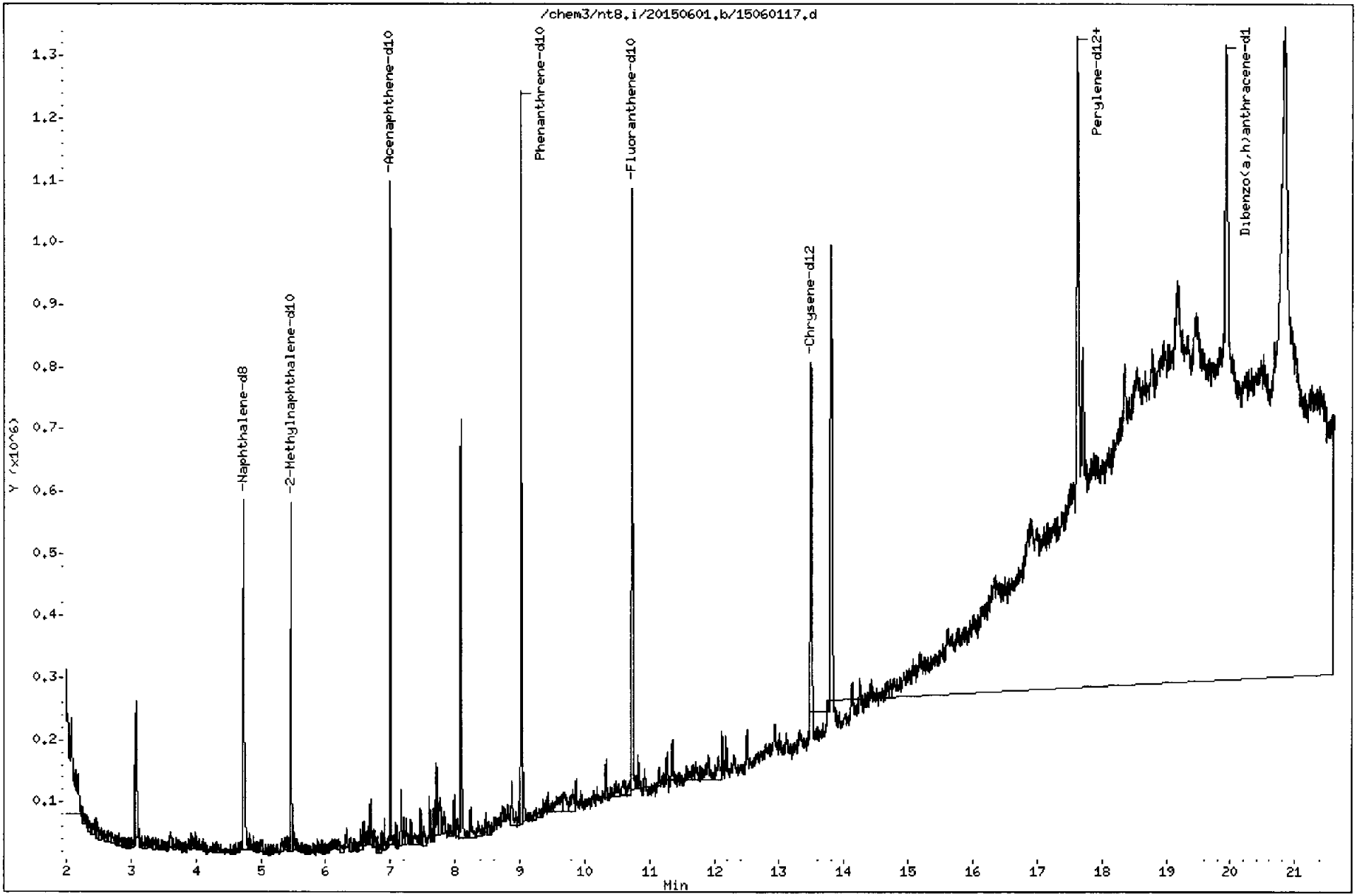
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9K
Client Smp ID: SDP-05(17.5-19.0)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9441

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	143.3	68.19	47.59	32-120
$ 253 Fluoranthene-d10	143.3	103.4	72.19	36-134
$ 60 Dibenzo(a,h)anthra	143.3	107.7	75.19	21-133

Data File: /chem3/nt8.i/20150601.b/15060117.d
Date : 01-JUN-2015 16:34
Client ID: SDP-05(17.5-19.0)
Sample Info: AGC9K
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060117.d

Date : 01-JUN-2015 16:34

Client ID: SDP-05(17.5-19.0)

Instrument: nt8.1

Sample Info: ACC9K

Volume Injected (uL): 1.0

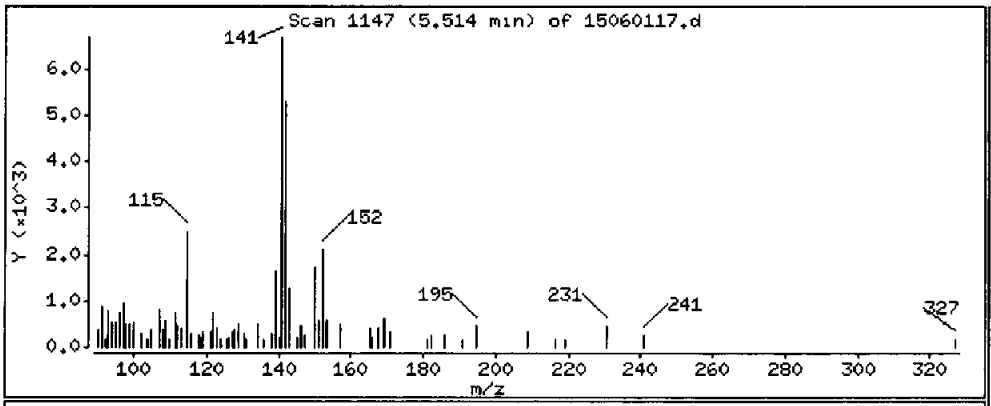
Operator: JZ

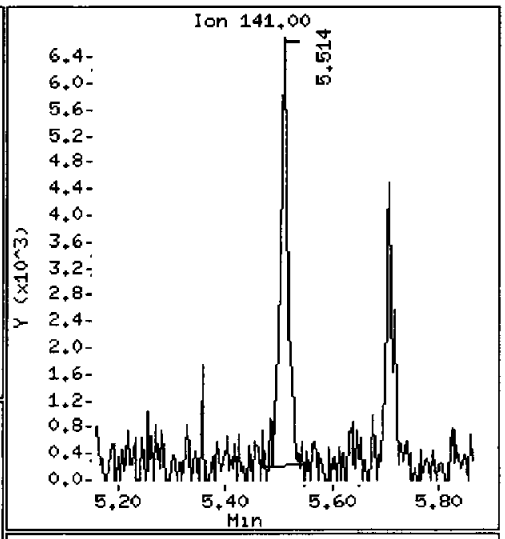
Column phase: ZB-35

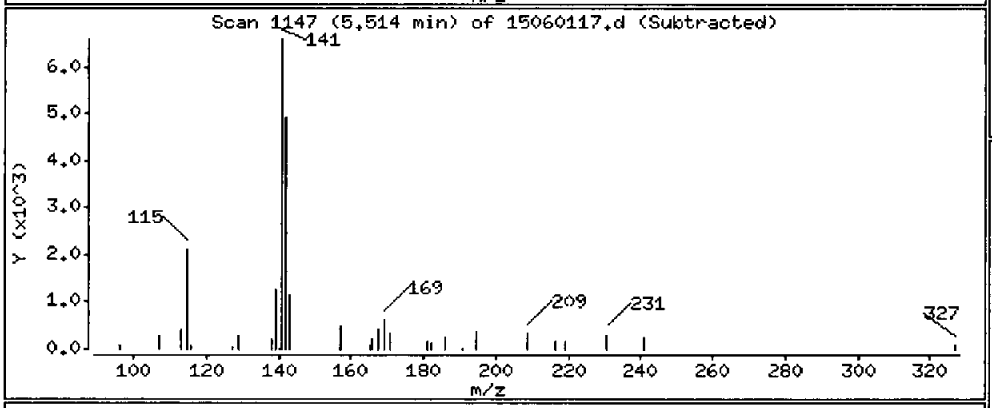
Column diameter: 0.25

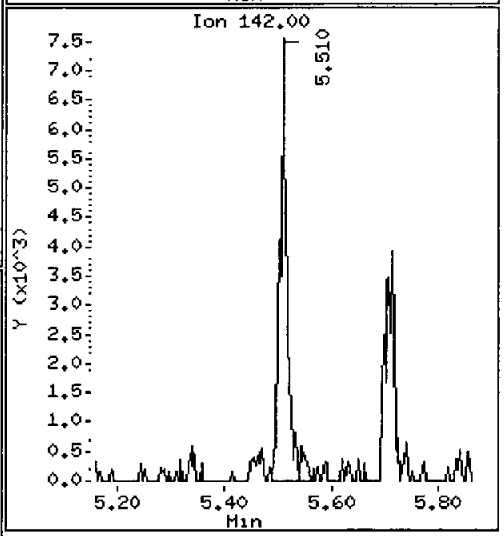
14 2-Methylnaphthalene

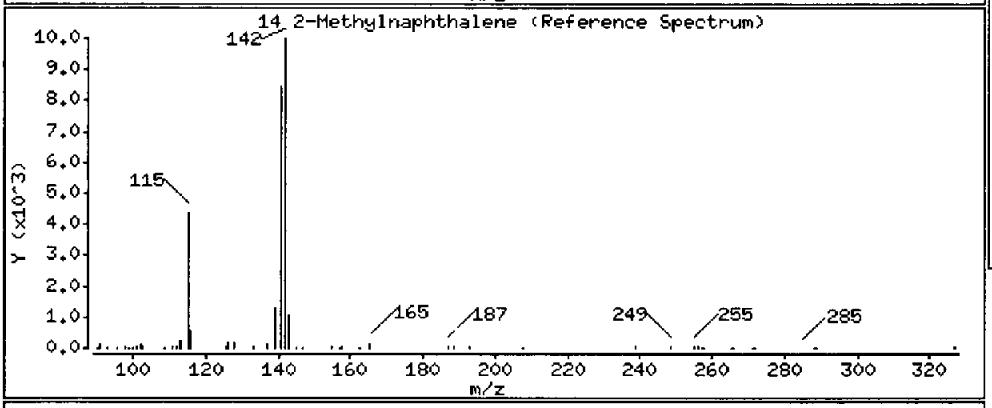
Concentration: 2.689 ug/kg

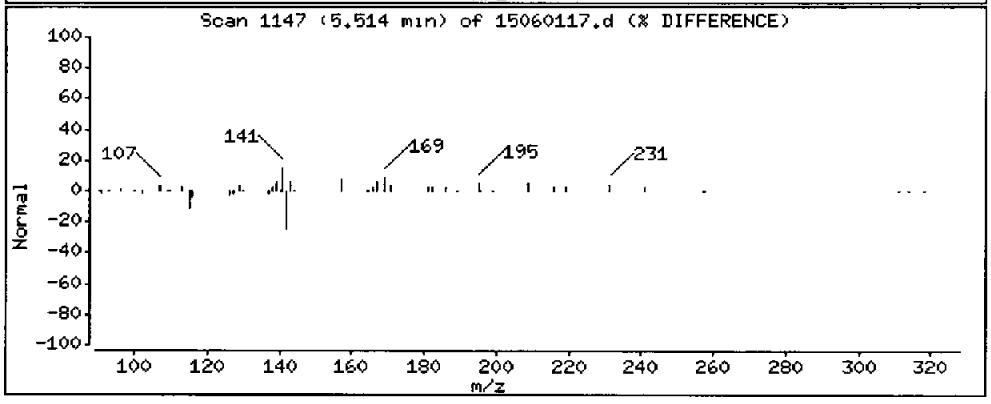












Data File: /chem3/nt8.i/20150601.b/15060117.d

Date : 01-JUN-2015 16:34

Client ID: SDP-05(17.5-19.0)

Instrument: nt8.i

Sample Info: AGC9K

Volume Injected (uL): 1.0

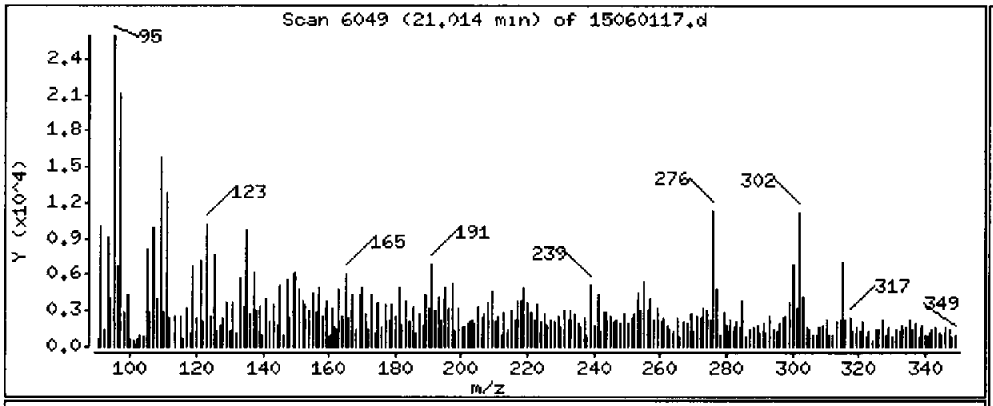
Operator: JZ

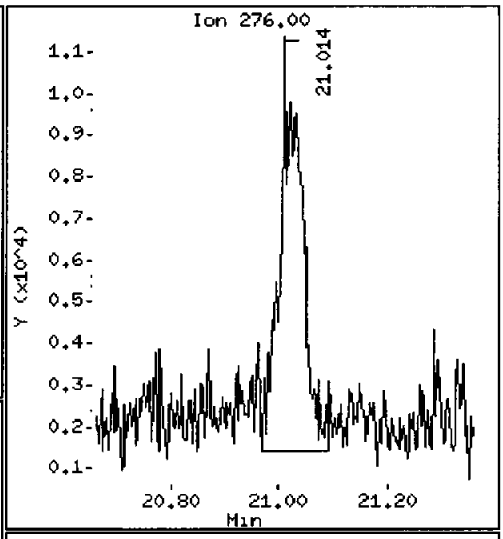
Column phase: ZB-35

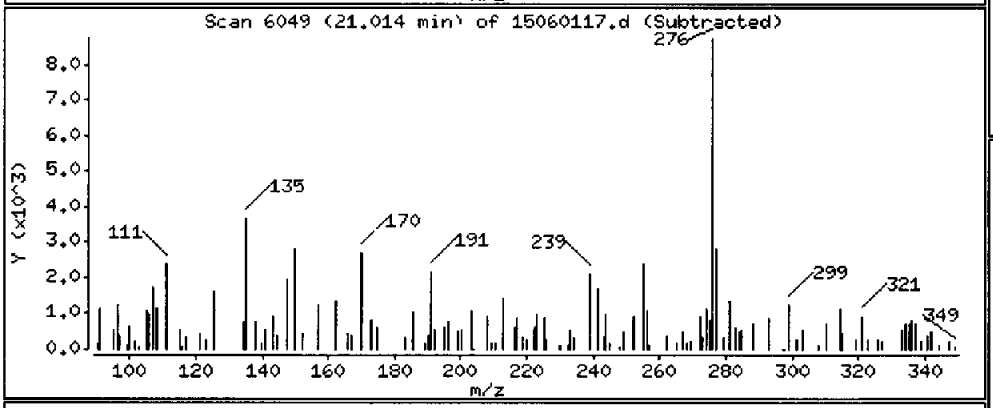
Column diameter: 0.25

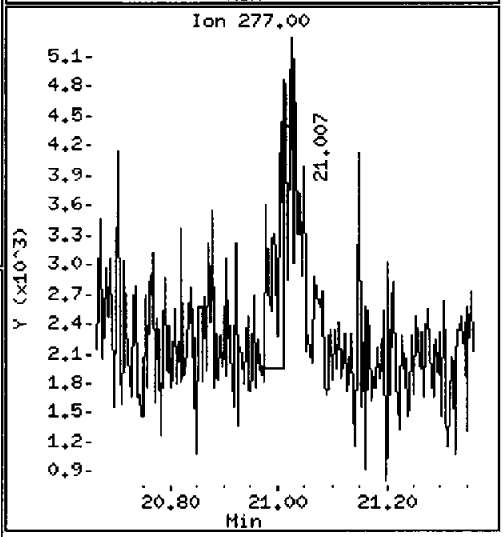
61 Benzo(g,h,i)perylene

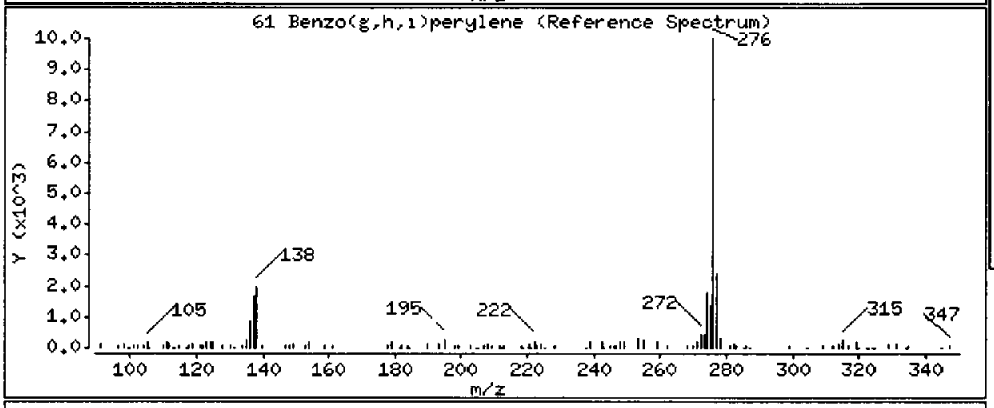
Concentration: 4.822 ug/kg

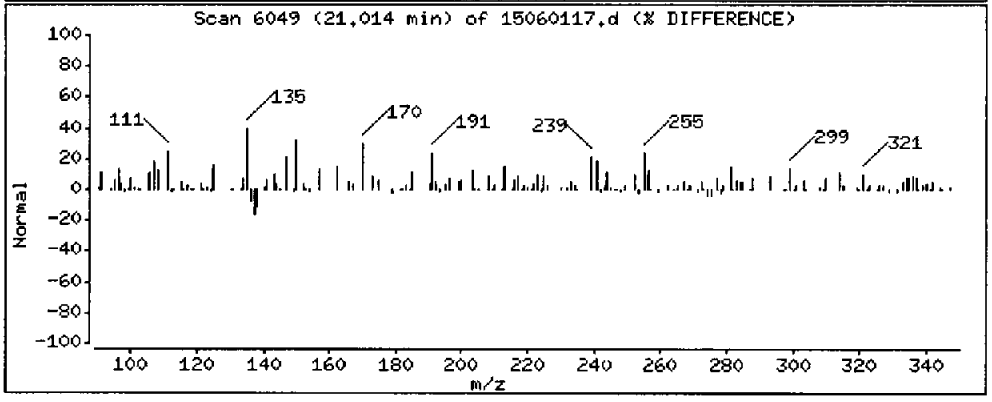












Data File: /chem3/nt8.1/20150601.b/15060117.d

Date : 01-JUN-2015 16:34

Client ID: SDP-05(17.5-19.0)

Instrument: nt8.1

Sample Info: AGC9K

Volume Injected (uL): 1.0

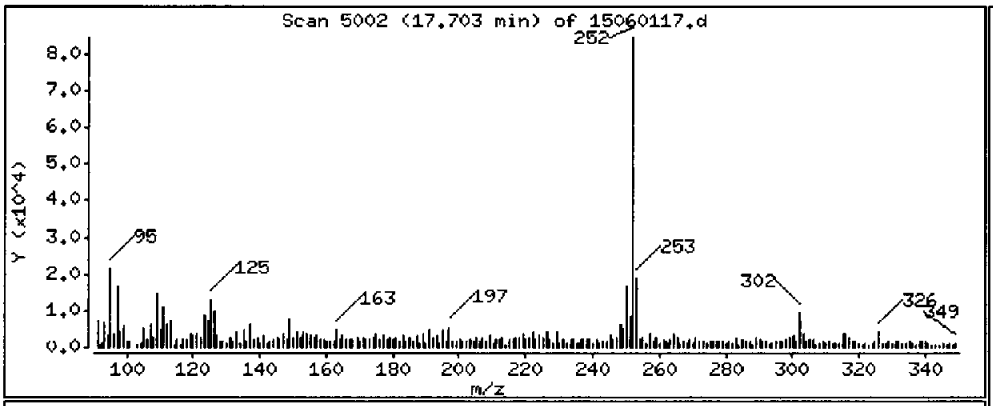
Operator: JZ

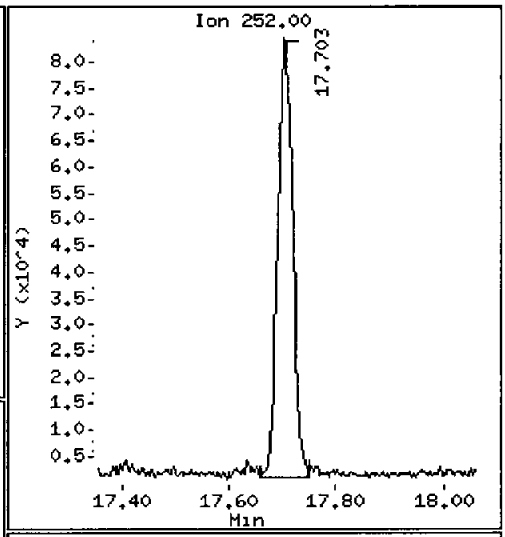
Column phase: ZB-35

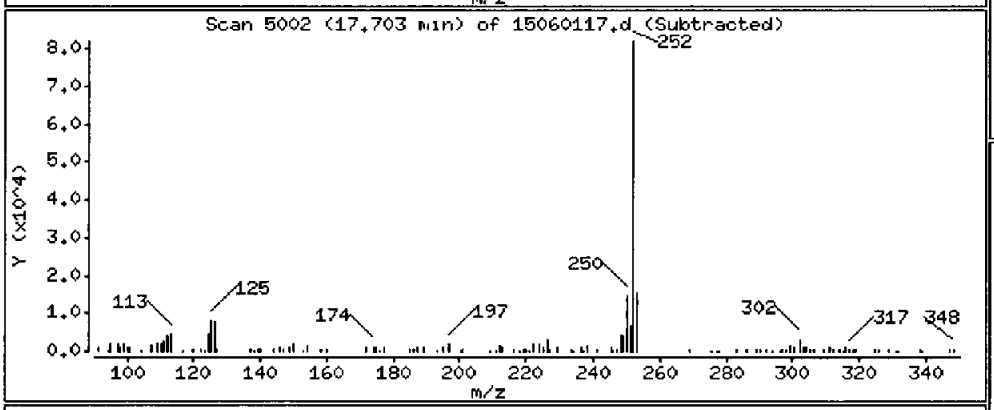
Column diameter: 0.25

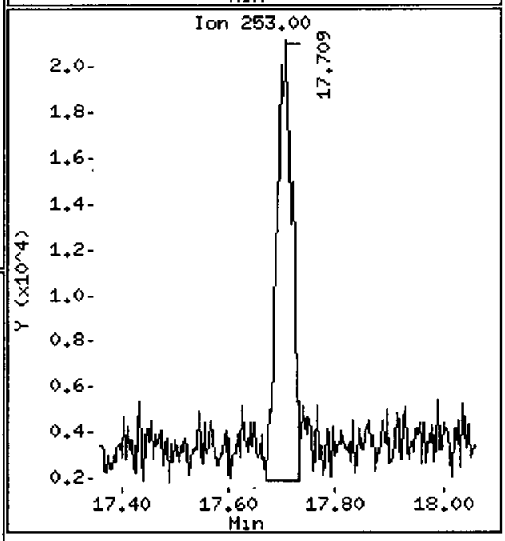
57 Perylene

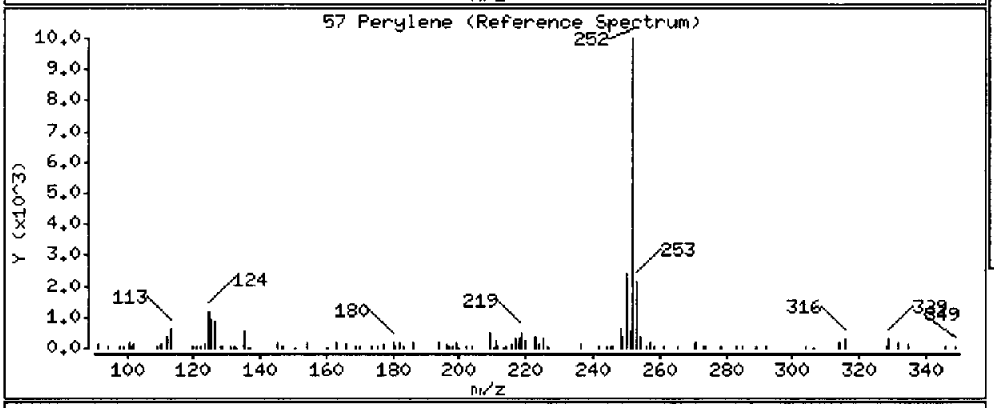
Concentration: 28.97 ug/kg

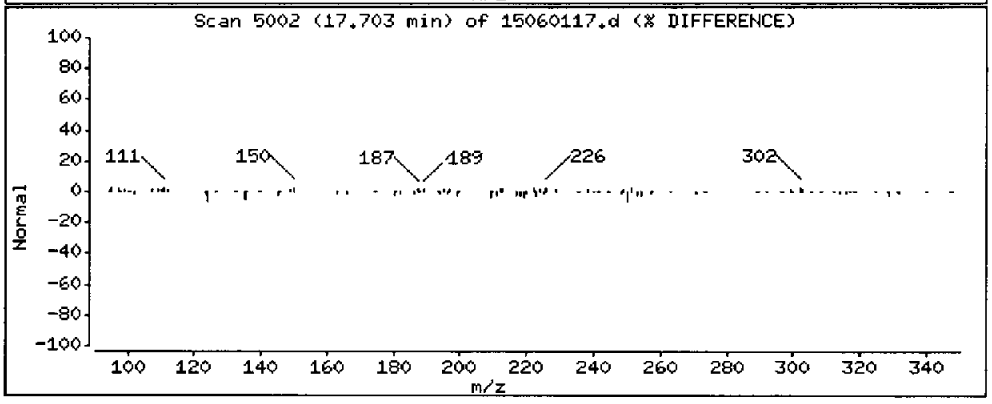












CO-ELUTION SUMMARY FOR FILE - 15060117.d

Lab ID: AGC9K, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC-0851

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060118.d
Lab Smp Id: AGC9MBS1 Client Smp ID: AGC9MBS1
Inj Date : 01-JUN-2015 16:59
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9MBS1
Misc Info : 15-9438
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 01-Jun-2015 17:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 18 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

D 06/01/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Ws	10.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.732	4.739	(1.000)	530212	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.463	5.463	(1.154)	213246	1.31706	65.85
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7 003	7.000	(1.000)	340078	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.023	9.020	(1.000)	584672	2.00000	
	30 Phenanthrene	178	Compound Not Detected.					
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10.734	10.734	(1.190)	485290	1.68742	84.37
	39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.807	13.807	(1.000)	635638	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.637	17.633	(1.000)	672526	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.935	19.929	(1.130)	467100	1.82370	91.19
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060118.d
Lab Smp Id: AGC9MBS1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: AGC9MBS1
Level: LOW
Sample Type: Solid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	530212	54.54
22 Acenaphthene-d10	230598	115299	461196	340078	47.48
28 Phenanthrene-d10	373928	186964	747856	584672	56.36
47 Chrysene-d12	381262	190631	762524	635638	66.72
56 Perylene-d12	380825	190412	761650	672526	76.60

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.73	-0.13
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.02	0.04
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.63	17.13	18.13	17.64	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARCS : BASE

Analytical Resources, Inc.

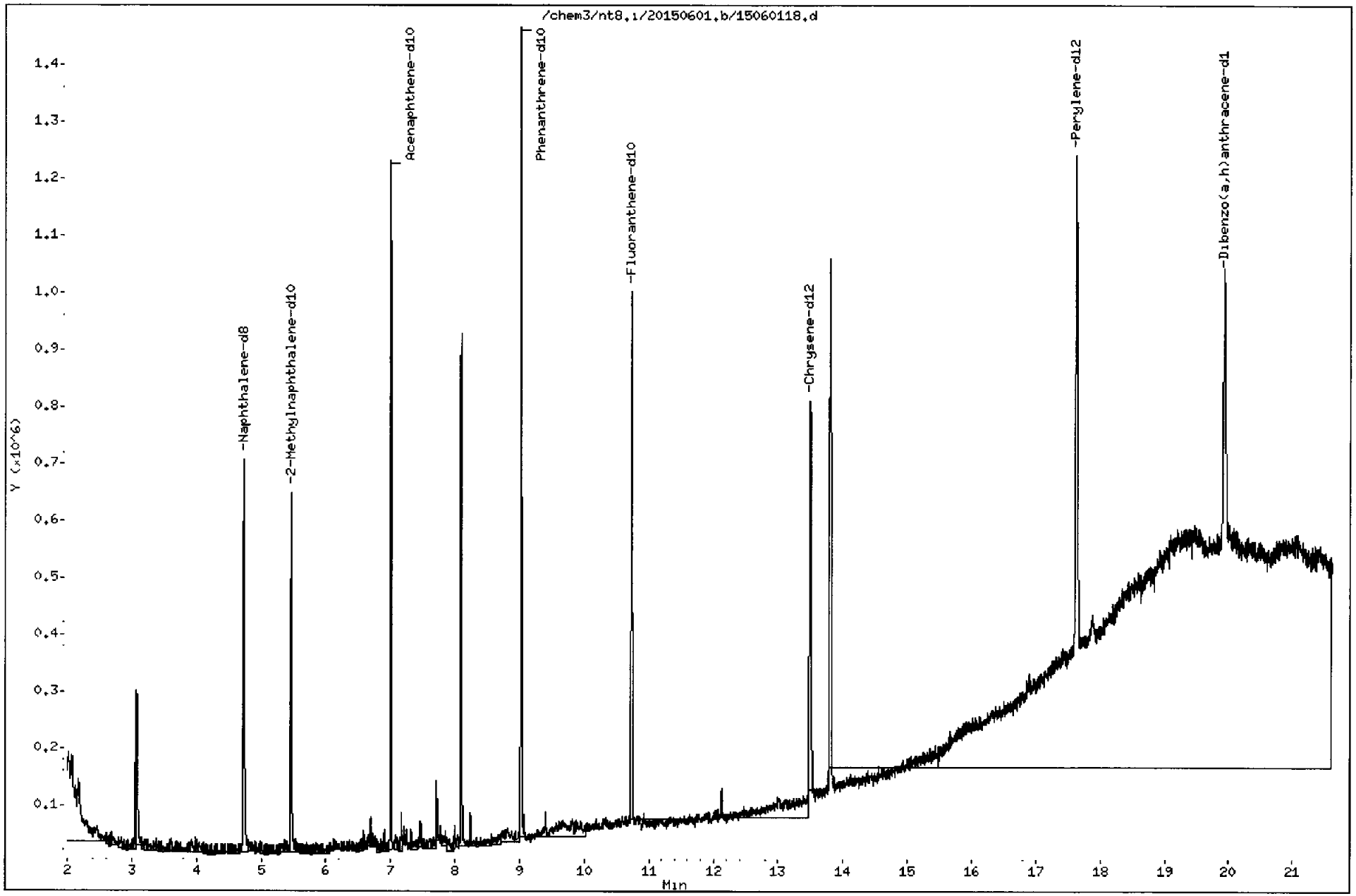
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9MBS1
Client Smp ID: AGC9MBS1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: BLANK
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9438

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	150.0	65.85	43.90	32-120
$ 253 Fluoranthene-d10	150.0	84.37	56.25	36-134
$ 60 Dibenzo(a,h)anthra	150.0	91.19	60.79	21-133

Data File: /chem3/nt8.1/20150601.b/15060118.d
Date : 01-JUN-2015 16:59
Client ID: AGC9MBS1
Sample Info: AGC9MBS1
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15060118.d

Lab ID: AGC9MBS1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150601.b/15060119.d
Lab Smp Id: AGC9C Client Smp ID: SDP-02(16.0-17.5)
Inj Date : 01-JUN-2015 17:25
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9C,3,
Misc Info : 15-9433
Comment : 1ul Injection
Method : /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Meth Date : 02-Jun-2015 15:54 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 19
Dil Factor: 3.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

JZ 06/02/15

Concentration Formula: Amt * DF * Vt/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	3.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
Ws	12.12000	Weight of sample extracted (g)
M	14.90000	% Moisture

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
*	6 Naphthalene-d8	136	4.739	4.739	(1.000)	399256	2.00000	
	7 Naphthalene	128	4.767	4.767	(1.006)	114407	0.59484	173.0
$	12 2-Methylnaphthalene-d10	152	5.466	5.463	(1.153)	45036	0.36939	107.4
	14 2-Methylnaphthalene	141	5.514	5.510	(1.163)	17131	0.14938	43.45
	15 1-methylnaphthalene	141	5.710	5.703	(1.205)	8869	0.07958	23.15
	21 Acenaphthylene	152	6.892	6.892	(0.984)	15738	0.08501	24.73
*	22 Acenaphthene-d10	164	7.003	7.000	(1.000)	253508	2.00000	
	23 Acenaphthene	153	7.054	7.050	(1.007)	17545	0.14242	41.43
	11 Dibenzofuran	168	7.205	7 202	(1.029)	24021	0.14099	41.01
	25 Fluorene	166	7.676	7.673	(1.096)	24503	0.17808	51.80
*	28 Phenanthrene-d10	188	9.027	9.020	(1.000)	428793	2.00000	
	30 Phenanthrene	178	9.061	9.055	(1.004)	213838	1.04599	304.2
	31 Anthracene	178	9.103	9.096	(1.008)	74884	0.40686	118.3
	36 Fluoranthene	202	10.775	10 769	(1.194)	500854	2.09469	609.3
$	253 Fluoranthene-d10	212	10.740	10 734	(1.190)	105906	0.50212	146.0

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/kg)
	39 Pyrene	202	11.272	11 265	(0 815)	481372	1.53355	446.1
	46 Benzo(a)anthracene	228	13.700	13.684	(0 991)	198920	0.70427	204 8
*	47 Chrysene-d12	240	13.823	13 807	(1.000)	563083	2.00000	
	48 Chrysene	228	13.893	13 880	(1.005)	365224	1.28965	375.1
	51 Benzo(b)fluoranthene	252	16 400	16.369	(0.928)	188030	0.58881	171.3
	52 Benzo(k)fluoranthene	252	16 451	16.429	(0.931)	78789	0.24693	71 82
	251 Benzo(j)fluoranthene	252	16.533	16.505	(0.936)	77781	0.24982	72.66
	54 Benzo(a)pyrene	252	17 438	17.402	(0.987)	158117	0.55532	161.5
*	56 Perylene-d12	264	17.668	17.633	(1.000)	608087	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.106	20.046	(1.138)	98429	0.28781	83.71
$	60 Dibenzo(a,h)anthracene-d14	292	19.983	19.929	(1.131)	104302	0.45038	131.0
	62 Dibenzo(a,h)anthracene	278	20.078	20 033	(1.136)	34479	0.12378	36.00
	61 Benzo(g,h,i)perylene	276	21.090	21 010	(1.194)	120145	0.39939	116.2
	57 Perylene	252	17.738	17.706	(1.004)	209249	0.70793	205.9

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15060119.d
Lab Smp Id: AGC9C
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9433,3

Calibration Date: 01-JUN-2015
Calibration Time: 10:06
Client Smp ID: SDP-02(16.0-17.5
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	399256	16.37
22 Acenaphthene-d10	230598	115299	461196	253508	9.94
28 Phenanthrene-d10	373928	186964	747856	428793	14.67
47 Chrysene-d12	381262	190631	762524	563083	47.69
56 Perylene-d12	380825	190412	761650	608087	59.68

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.74	4.24	5.24	4.74	0.00
22 Acenaphthene-d10	7.00	6.50	7.50	7.00	0.05
28 Phenanthrene-d10	9.02	8.52	9.52	9.03	0.07
47 Chrysene-d12	13.81	13.31	14.31	13.82	0.12
56 Perylene-d12	17.63	17.13	18.13	17.67	0.20

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

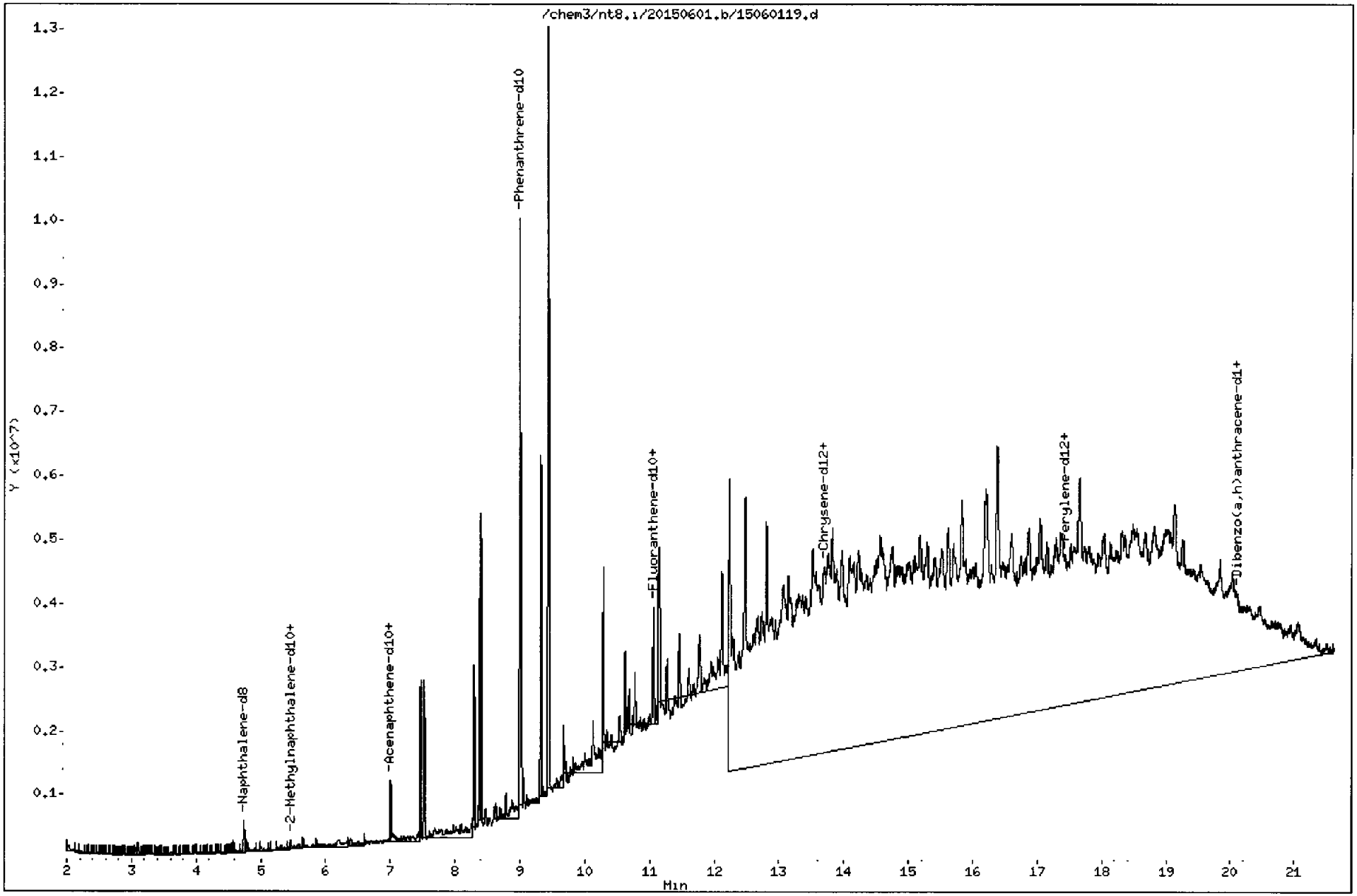
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: SOLID
Fraction: SV
Lab Smp Id: AGC9C
Client Smp ID: SDP-02(16.0-17.5)
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcss.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150601.b/FSIMPNA150413.m
Misc Info: 15-9433,3

SURROGATE COMPOUND	CONC ADDED ug/kg	CONC RECOVERED ug/kg	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	145.4	107.4	73.88	32-120
$ 253 Fluoranthene-d10	145.4	146.0	100.42	36-134
$ 60 Dibenzo(a,h)anthra	145.4	131.0	90.08	21-133

Data File: /chem3/nt8.1/20150601.b/15060119.d
Date : 01-JUN-2015 17:25
Client ID: SDP-02(16.0-17.5)
Sample Info: AGC9C
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

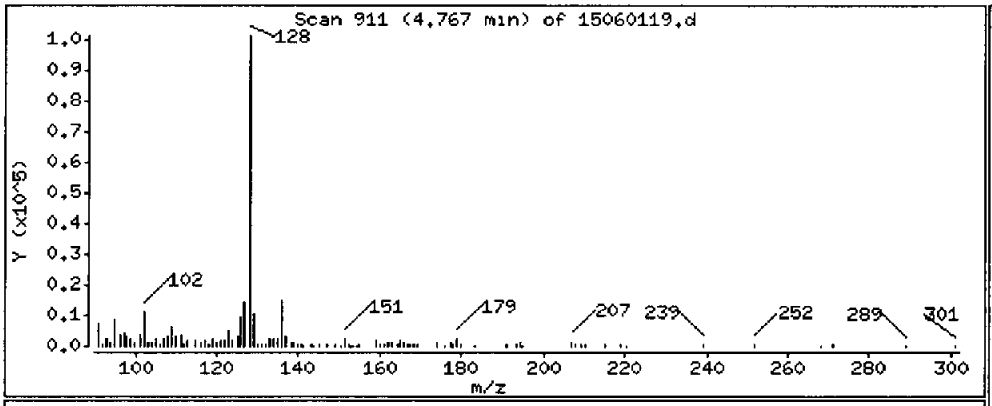
Operator: JZ

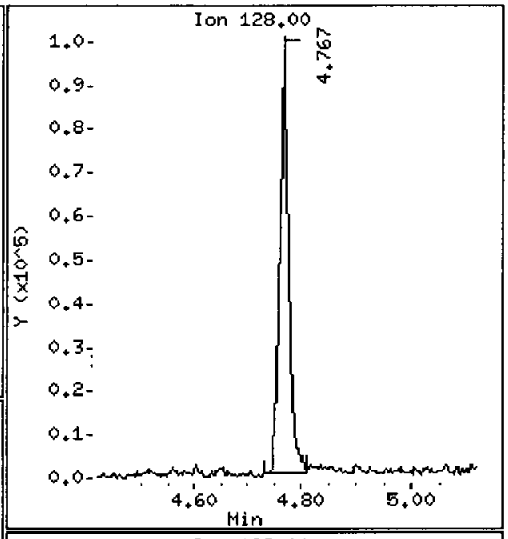
Column phase: ZB-35

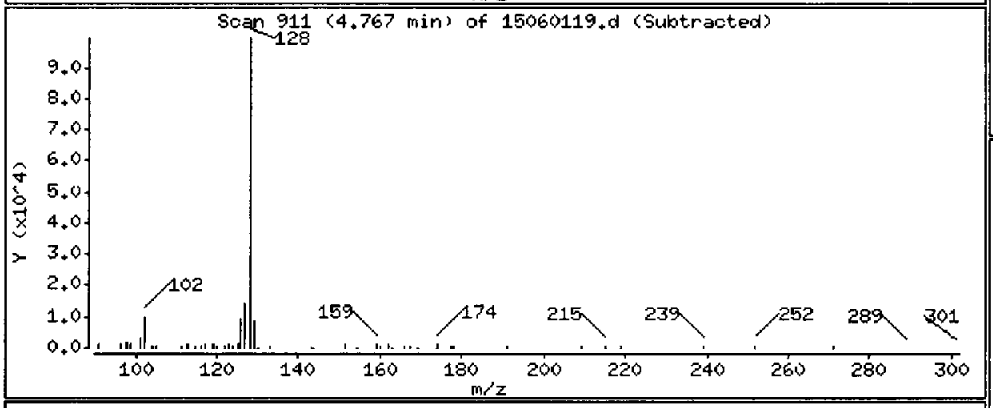
Column diameter: 0.25

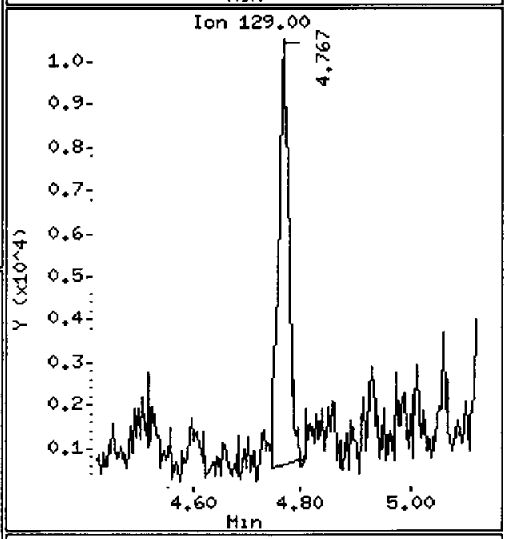
7 Naphthalene

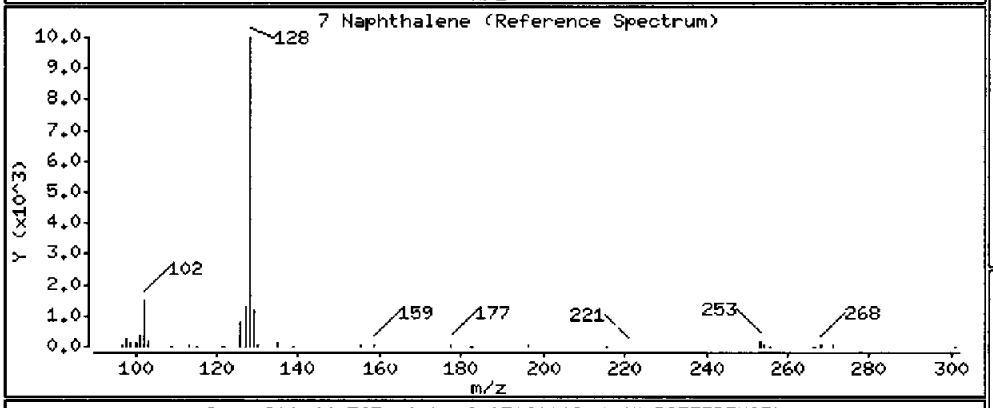
Concentration: 173.0 ug/kg

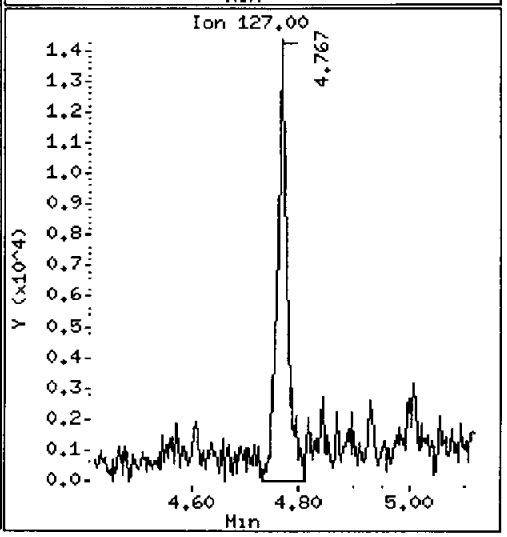


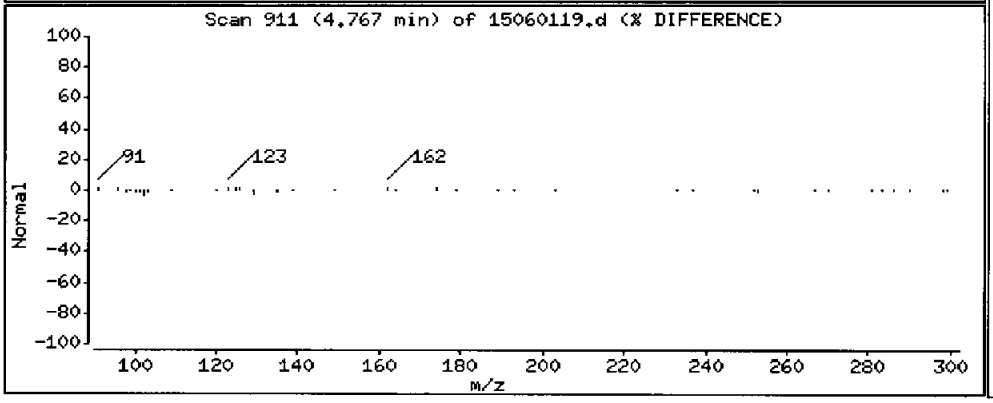












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

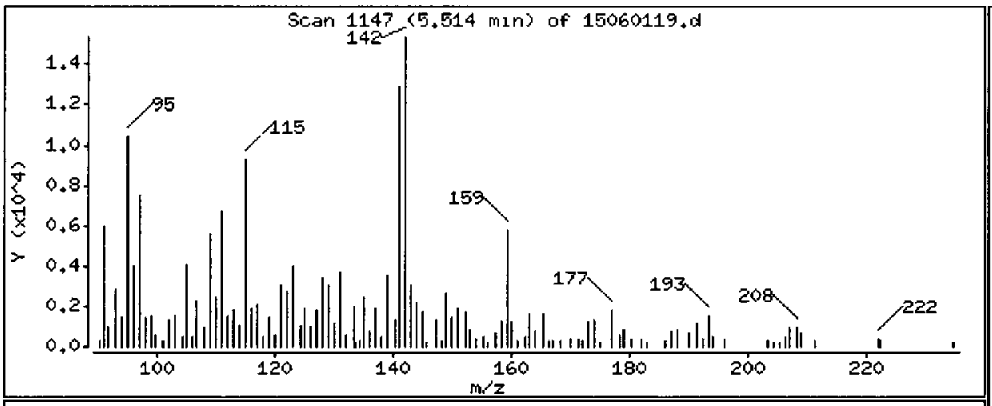
Operator: JZ

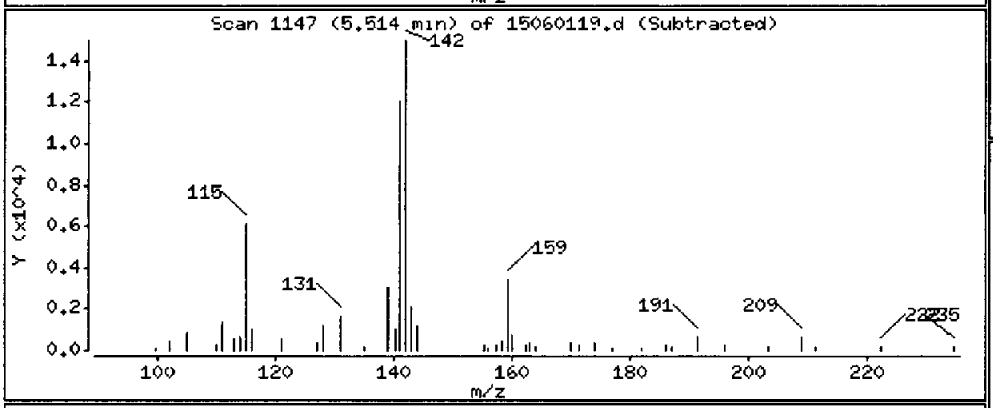
Column phase: ZB-35

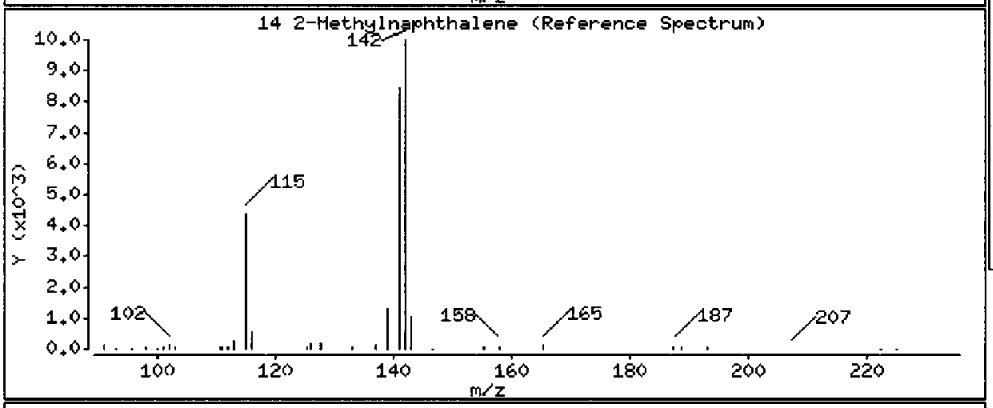
Column diameter: 0.25

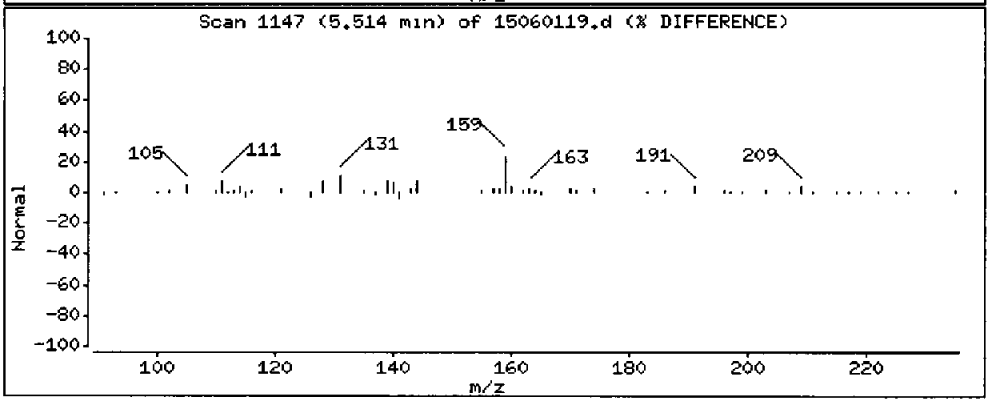
14 2-Methylnaphthalene

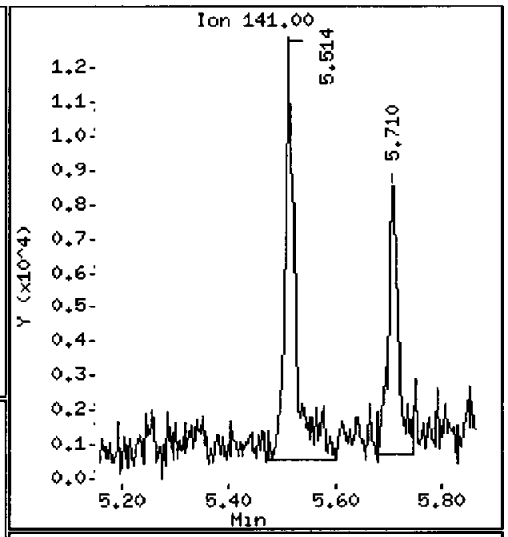
Concentration: 43.45 ug/kg

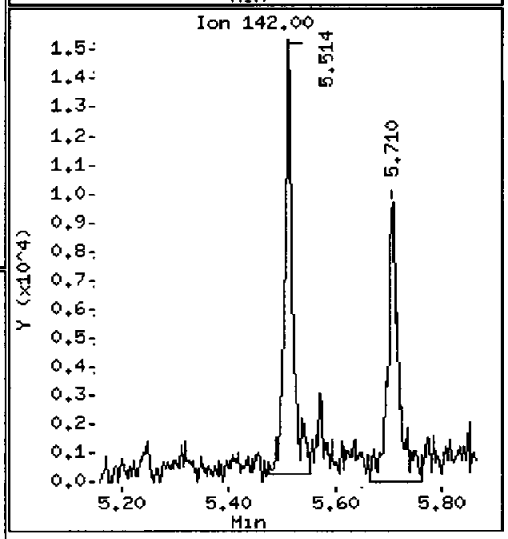












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

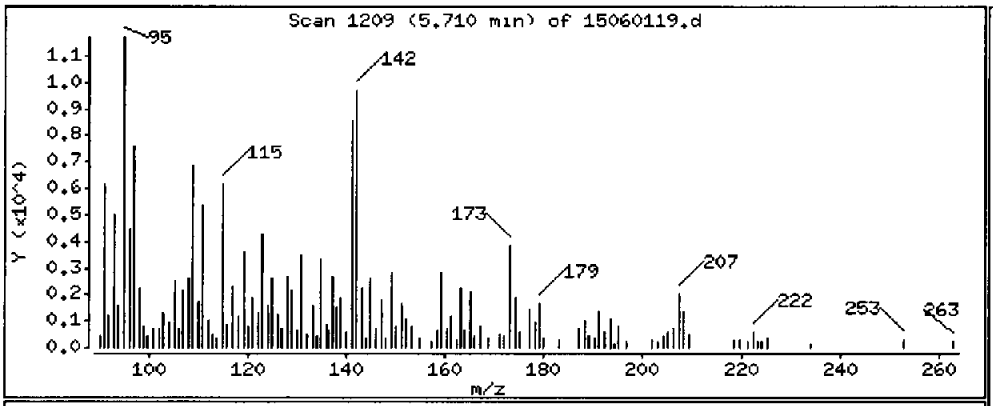
Operator: JZ

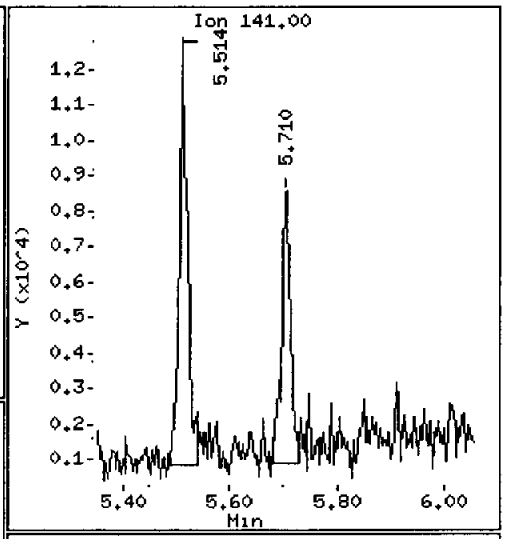
Column phase: ZB-35

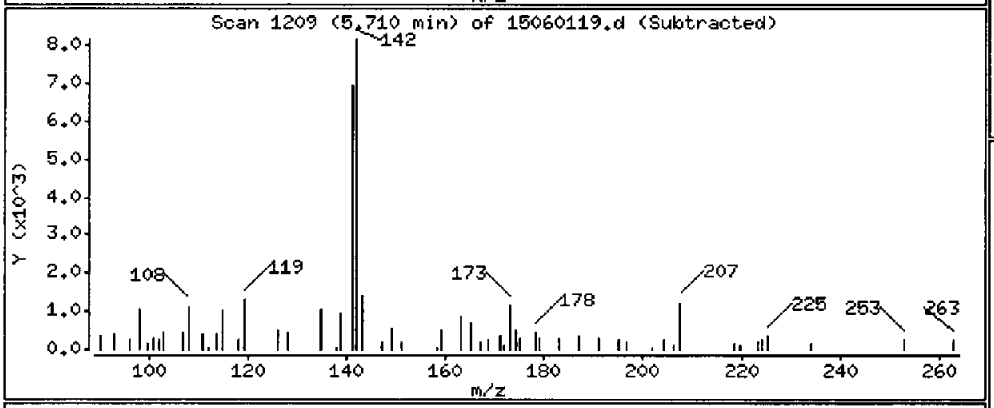
Column diameter: 0.25

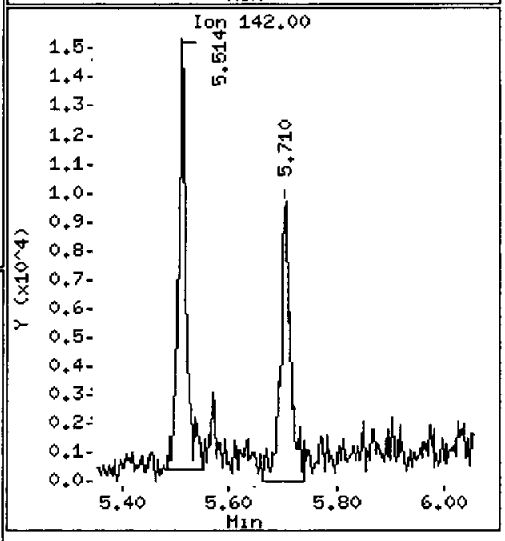
15 1-methylnaphthalene

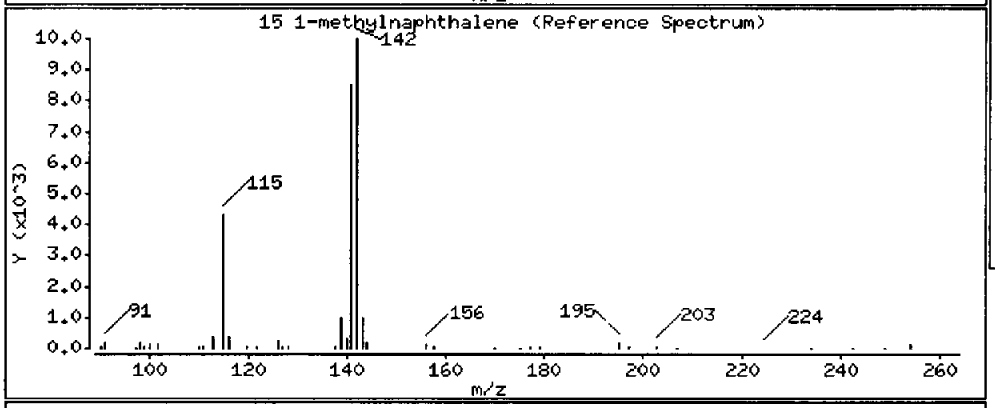
Concentration: 23.15 ug/kg

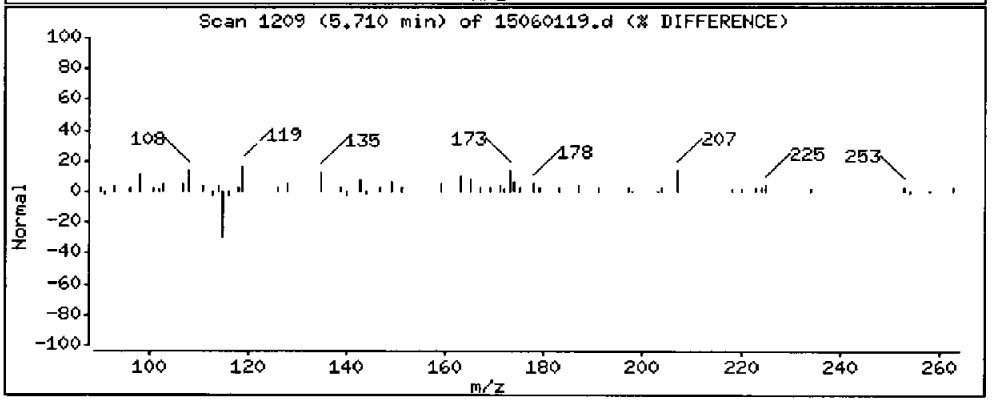












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

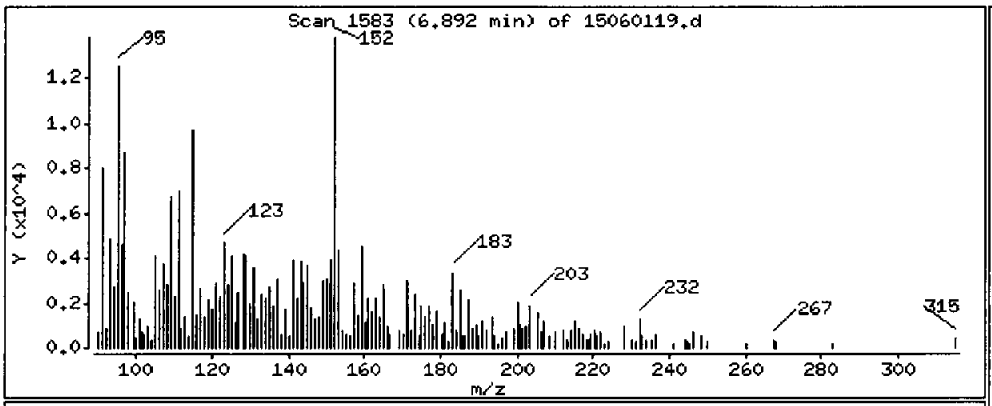
Operator: JZ

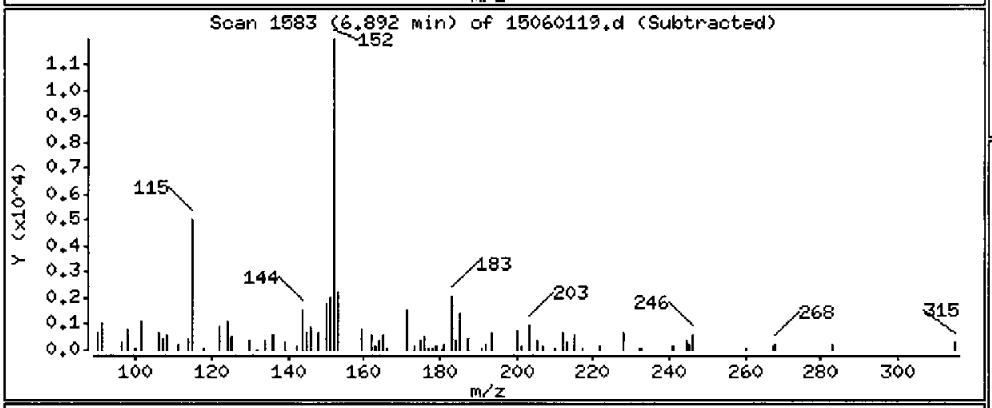
Column phase: ZB-35

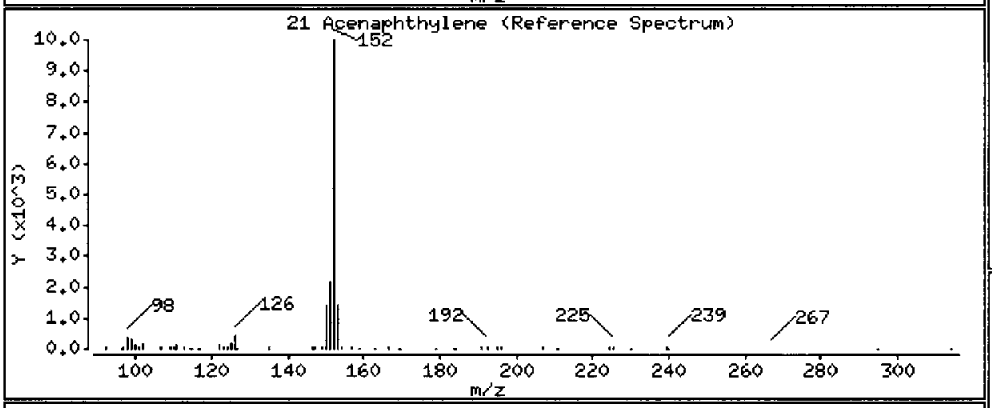
Column diameter: 0.25

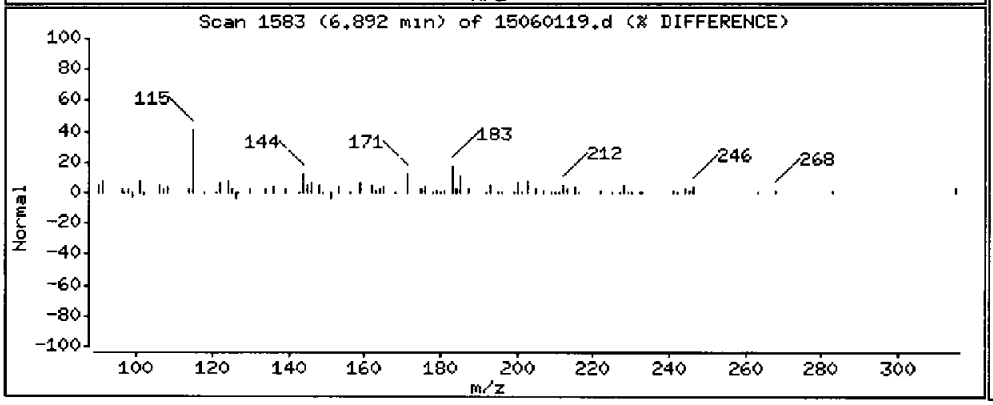
21 Acenaphthylene

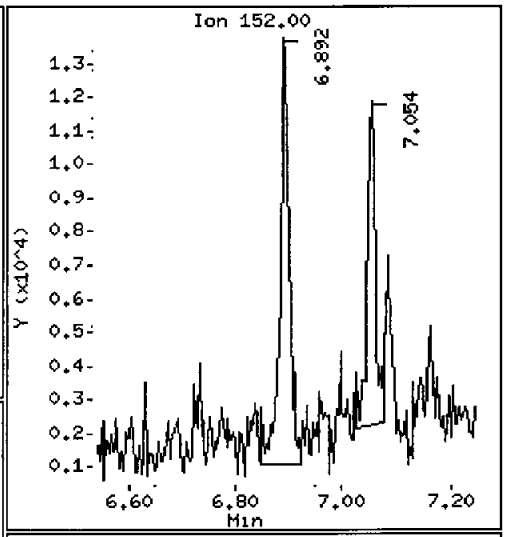
Concentration: 24.73 ug/kg

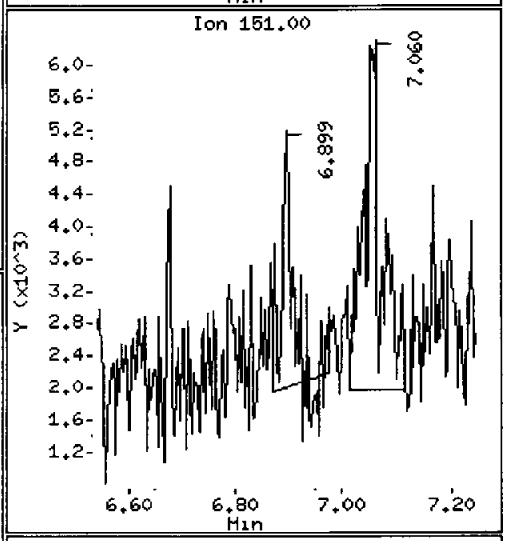


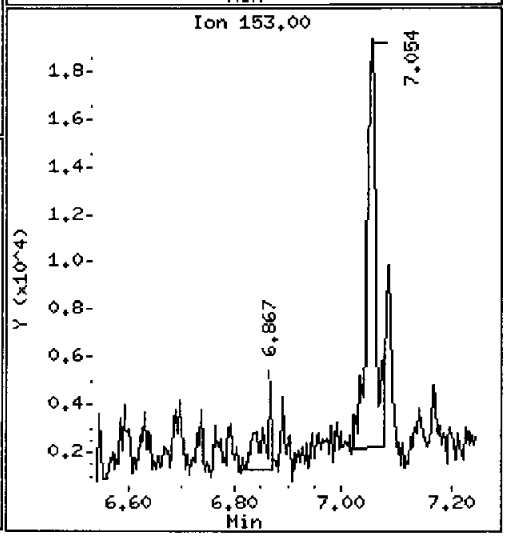












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

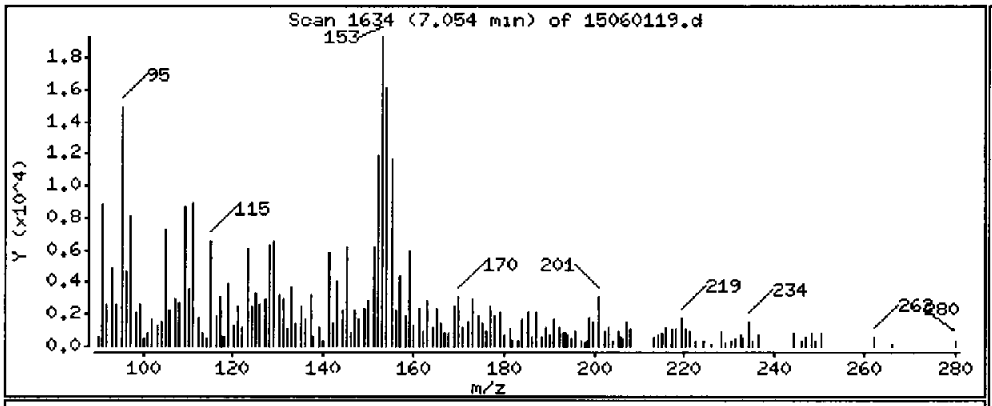
Operator: JZ

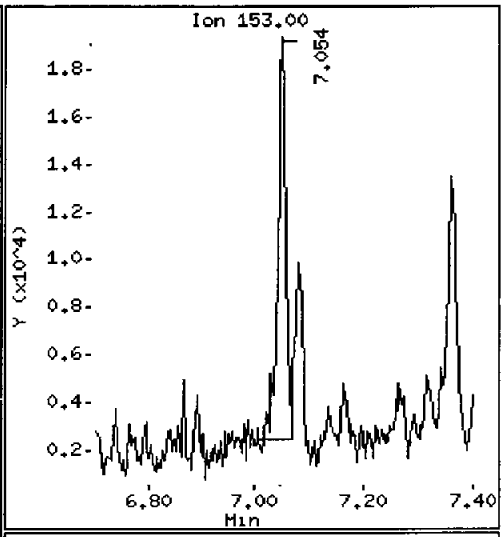
Column phase: ZB-35

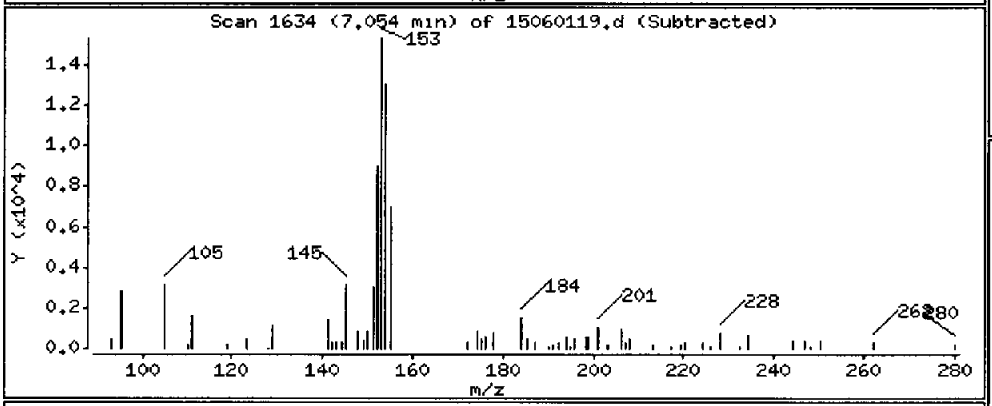
Column diameter: 0.25

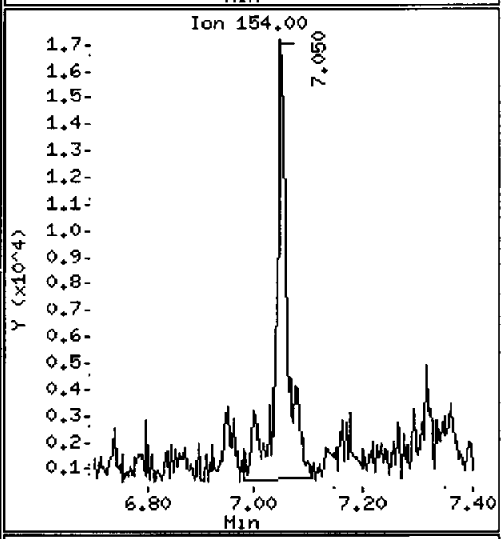
23 Acenaphthene

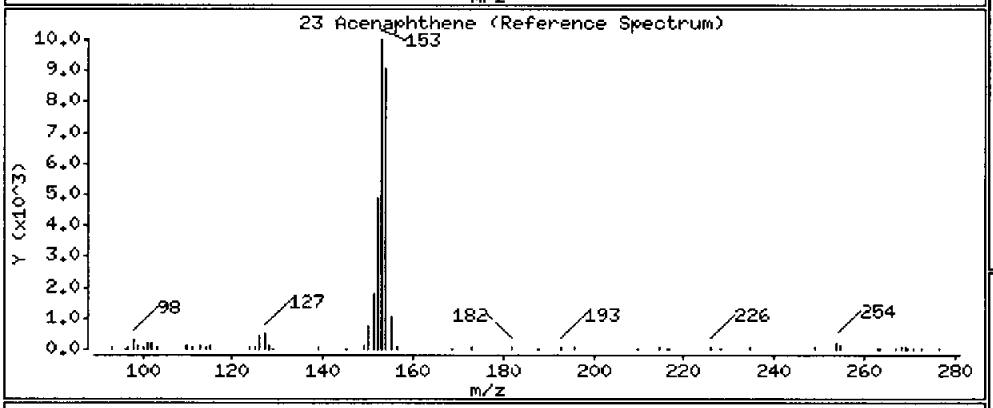
Concentration: 41.43 ug/kg

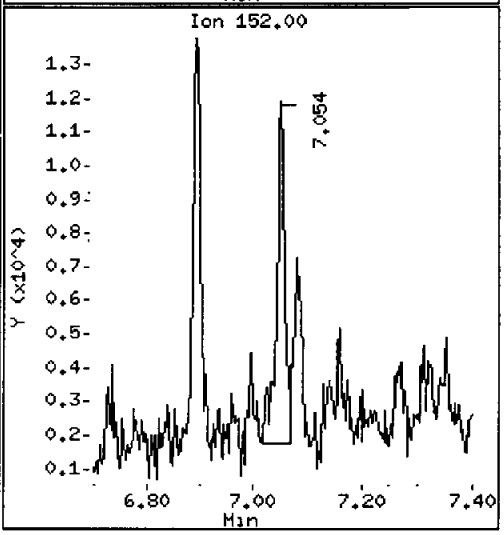


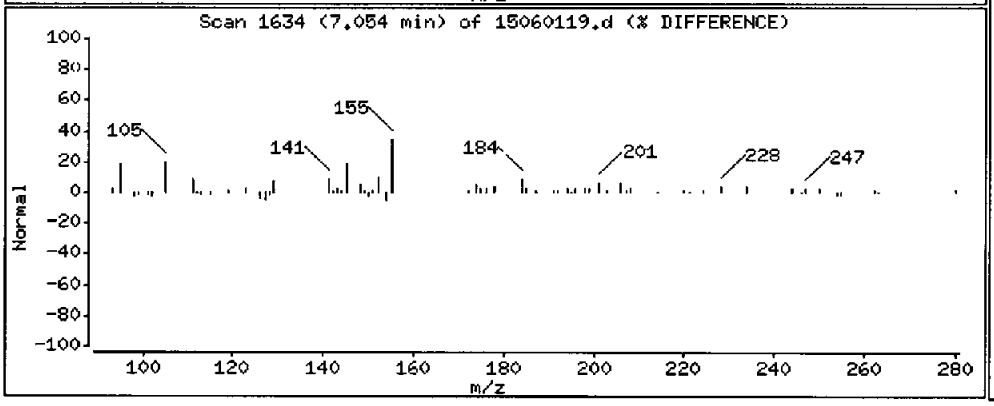












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

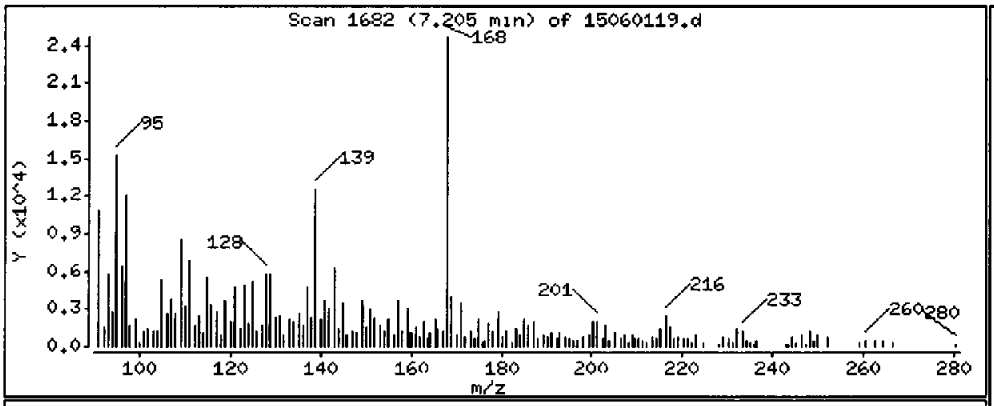
Operator: JZ

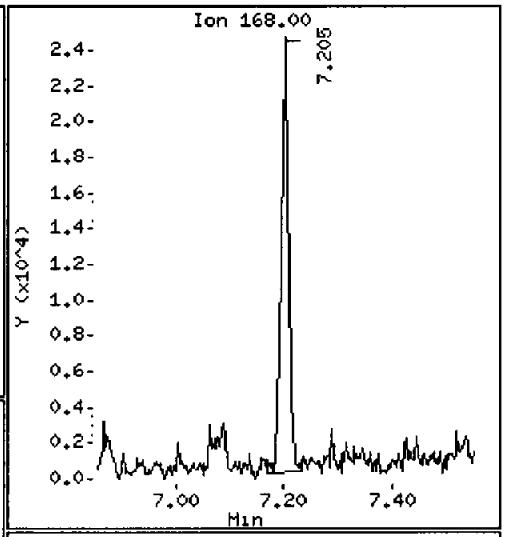
Column phase: ZB-35

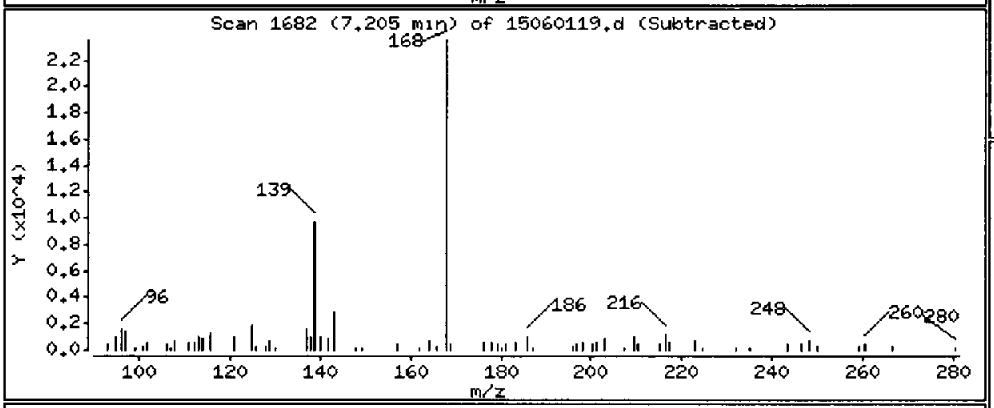
Column diameter: 0.25

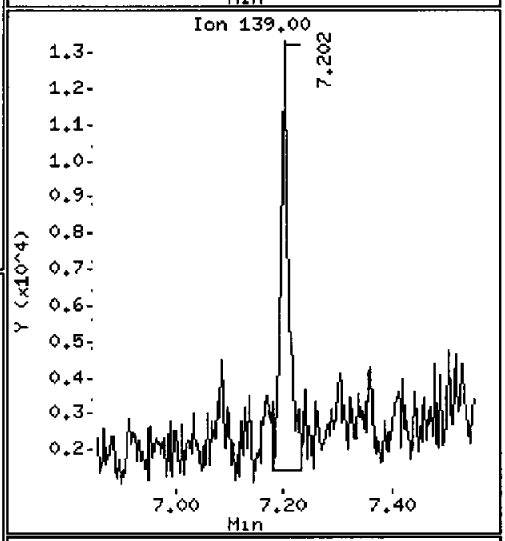
11 Dibenzofuran

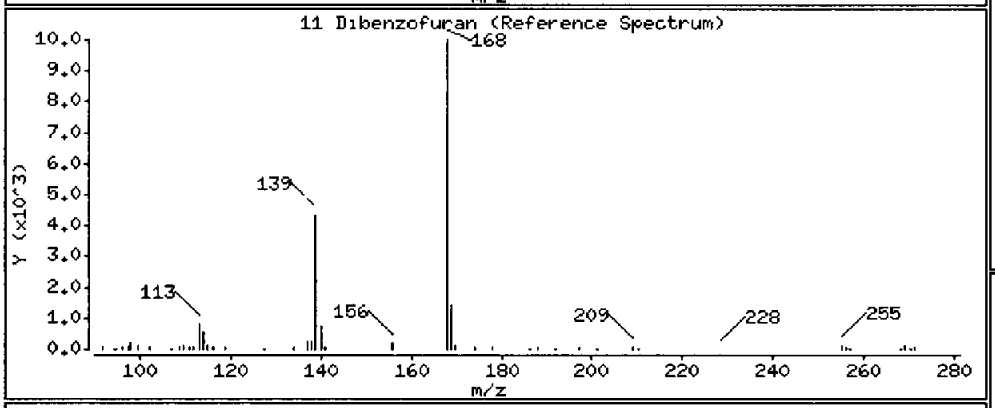
Concentration: 41.01 ug/kg

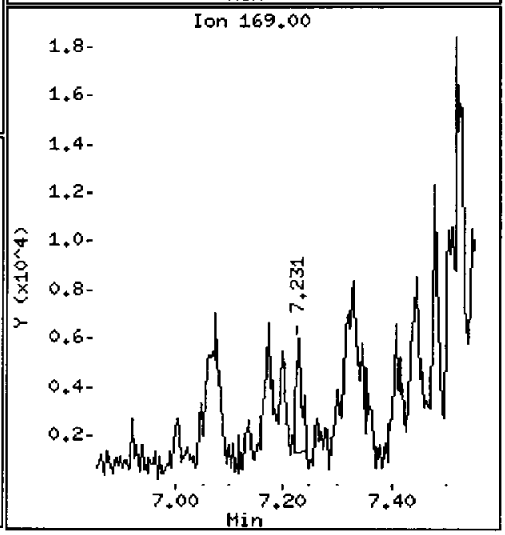


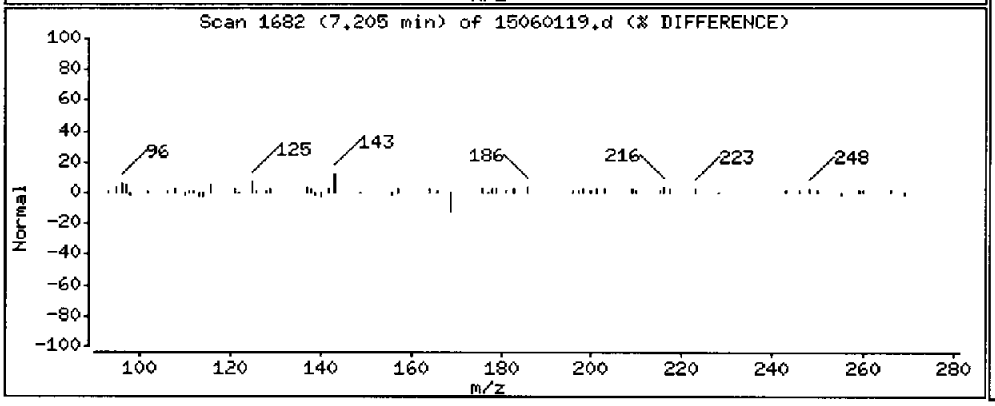












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

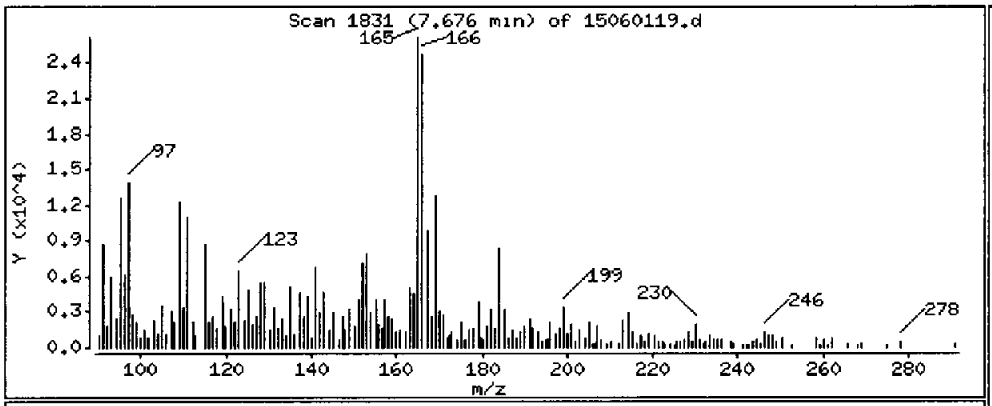
Operator: JZ

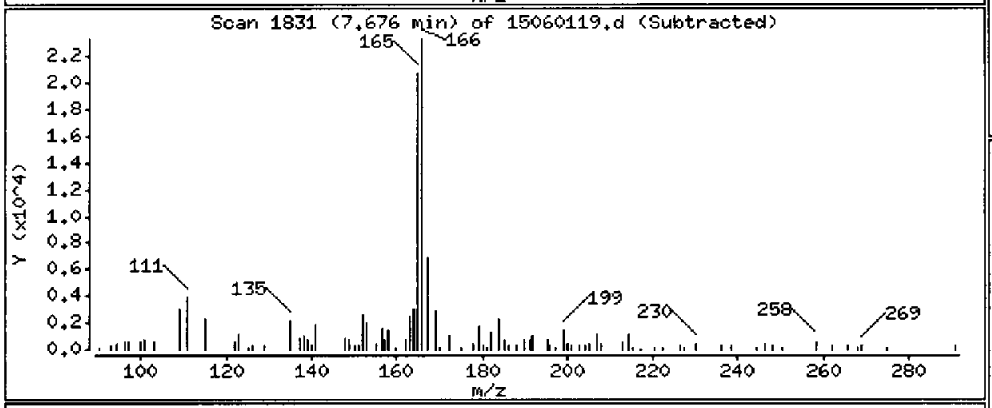
Column phase: ZB-35

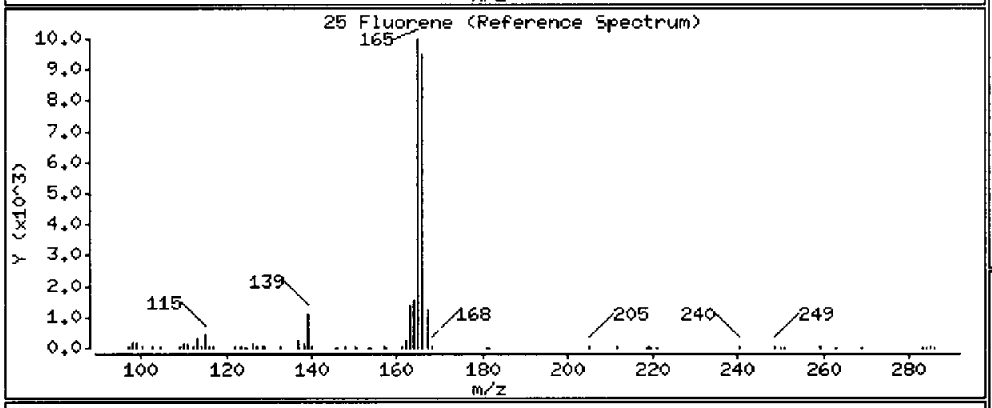
Column diameter: 0.25

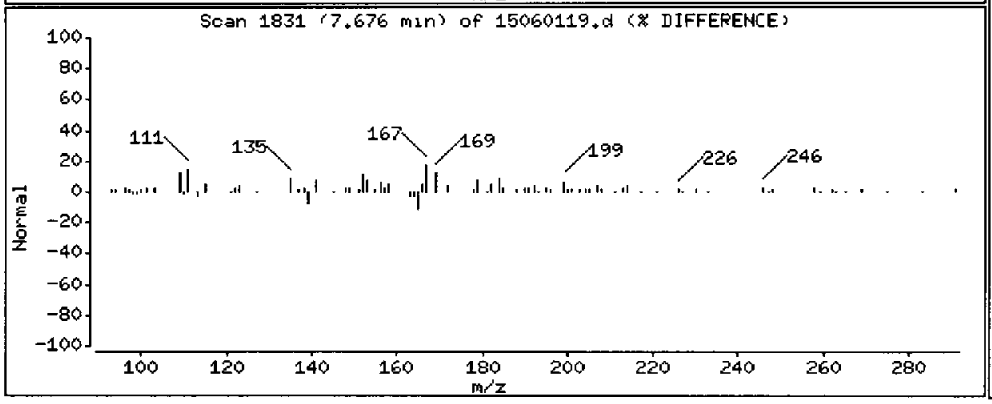
25 Fluorene

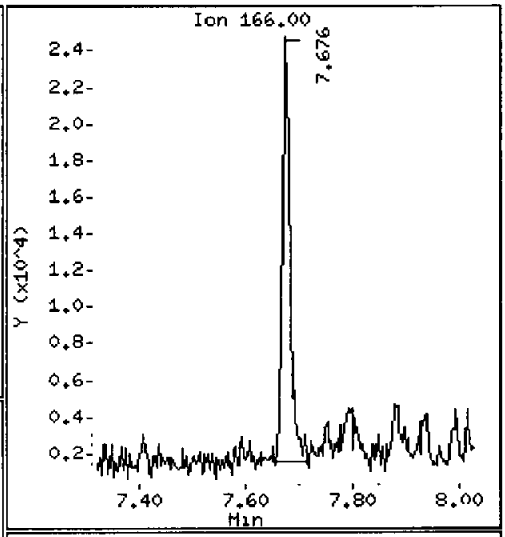
Concentration: 51.80 ug/kg

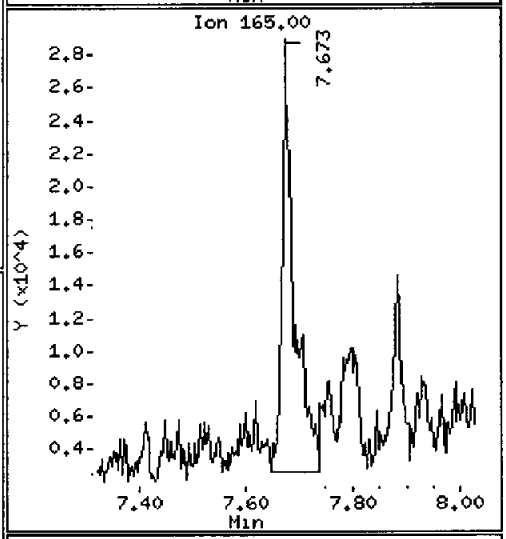


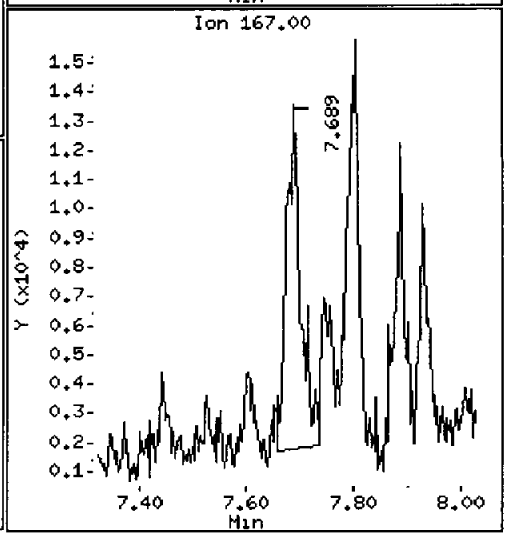












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

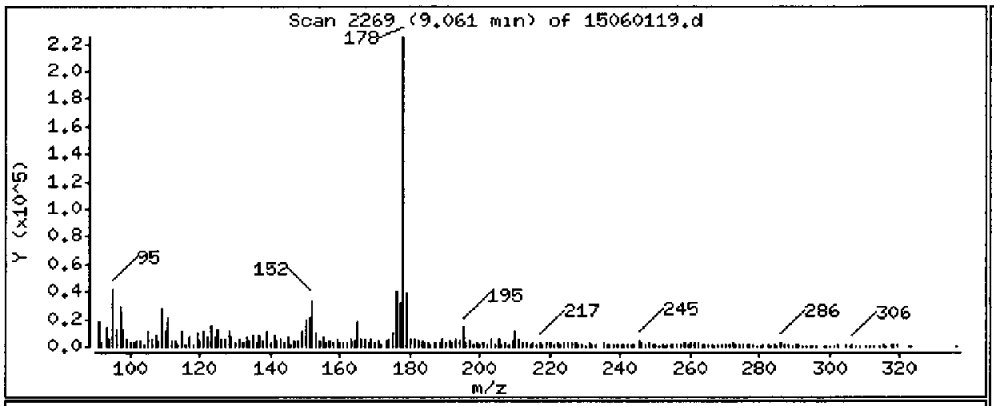
Operator: JZ

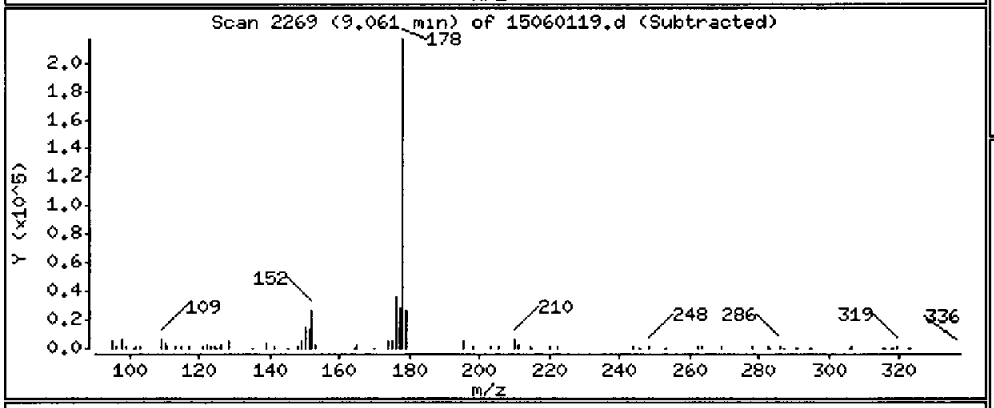
Column phase: ZB-35

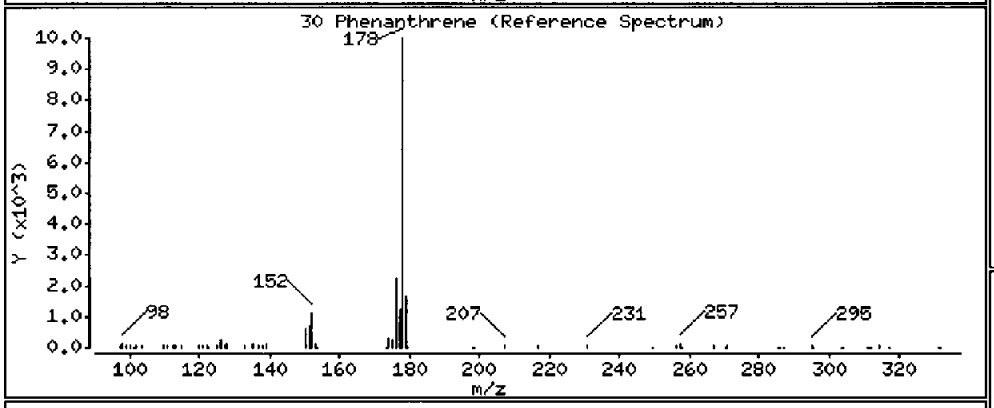
Column diameter: 0.25

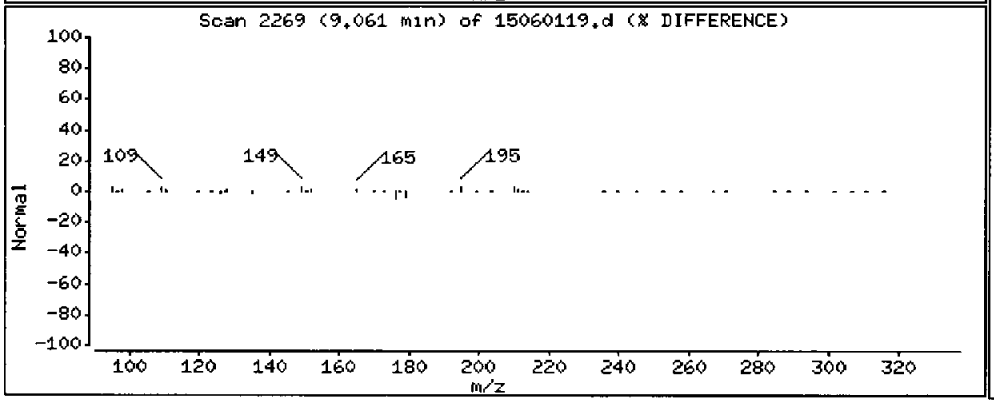
30 Phenanthrene

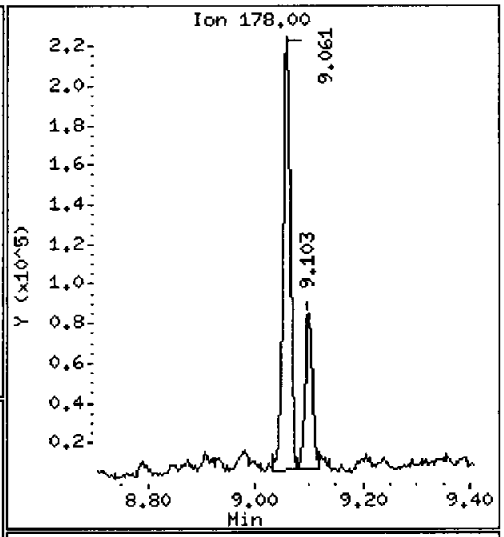
Concentration: 304.2 ug/kg

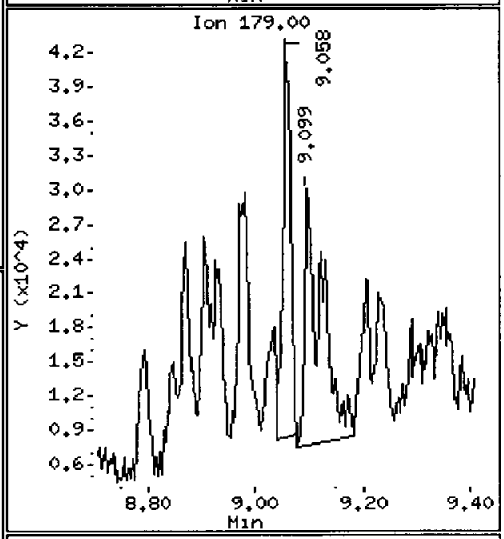


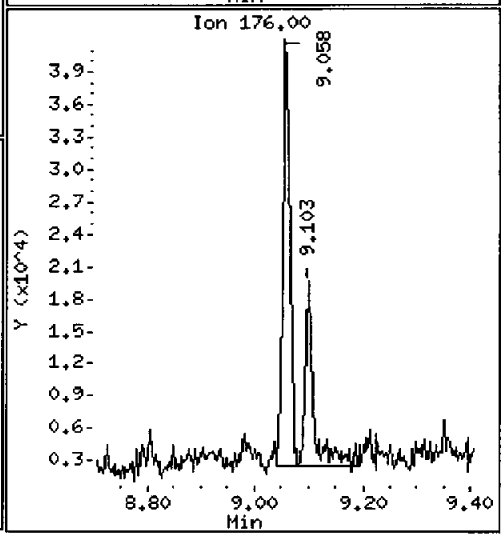












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

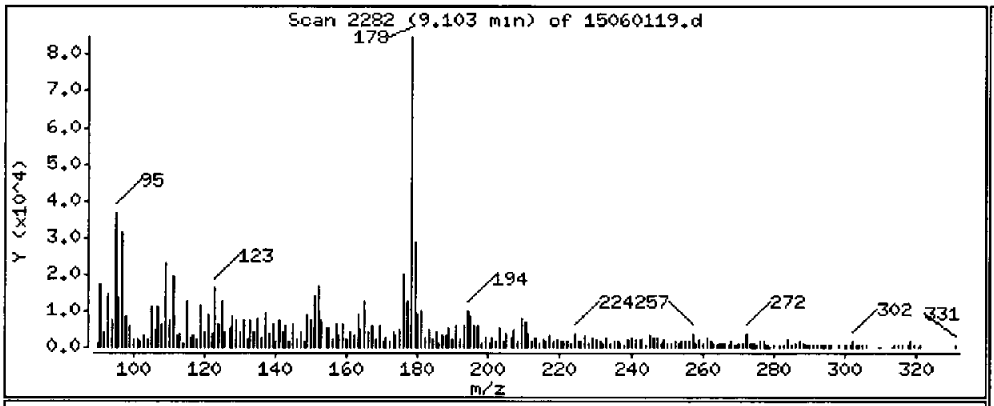
Operator: JZ

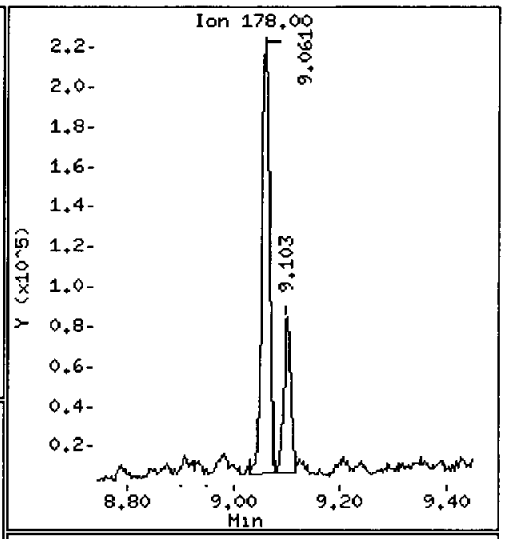
Column phase: ZB-35

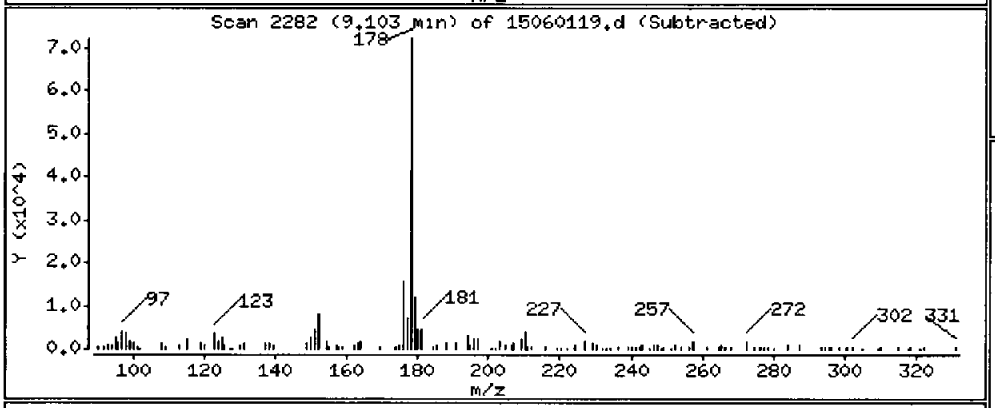
Column diameter: 0.25

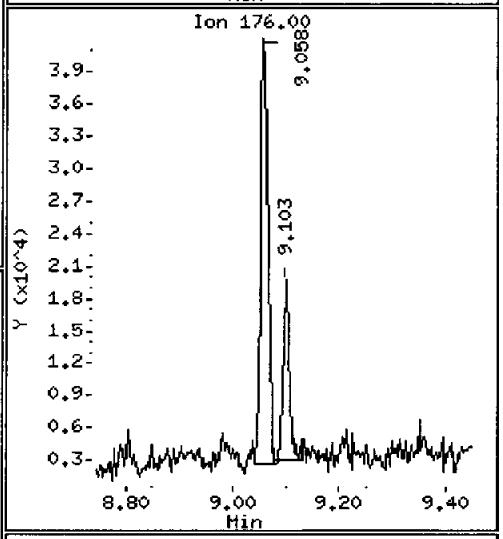
31 Anthracene

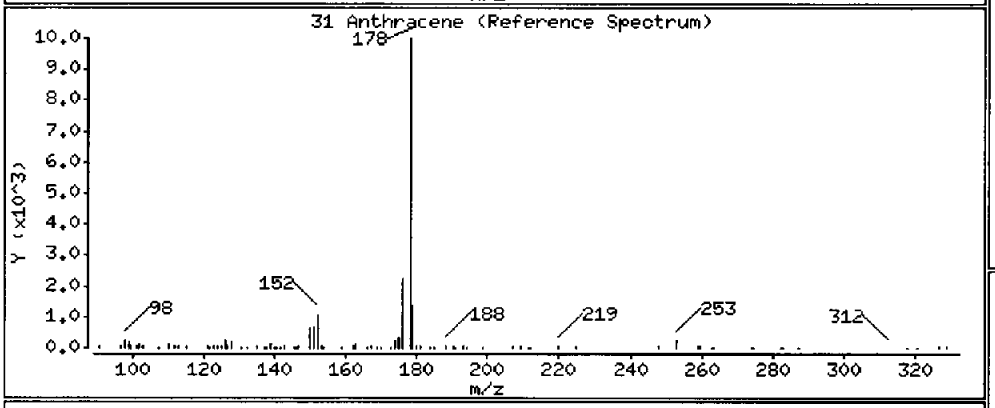
Concentration: 118.3 ug/kg

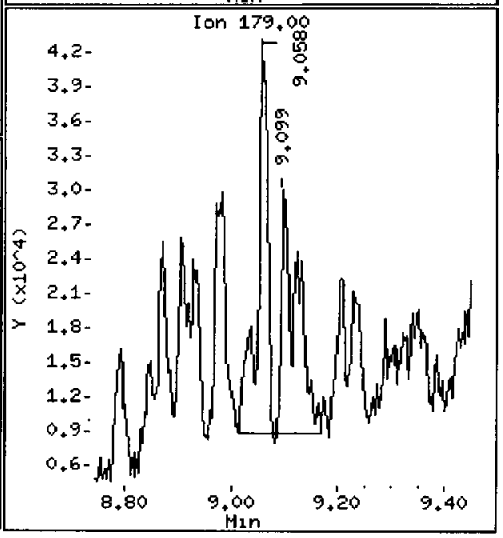


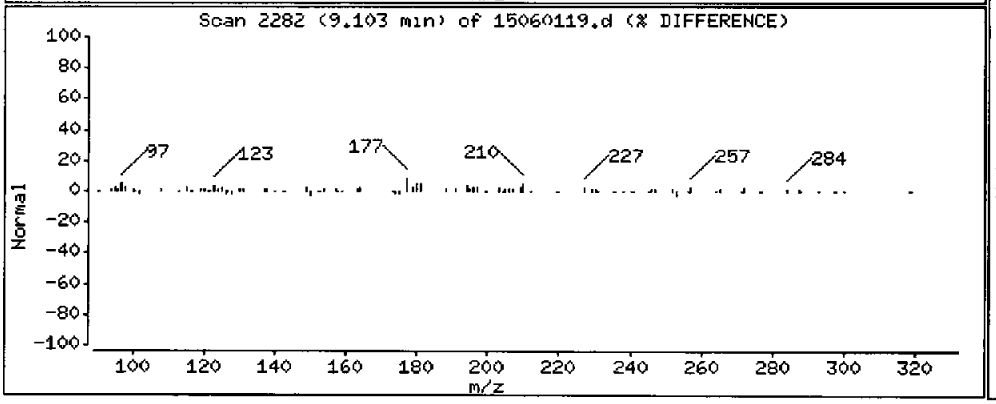












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

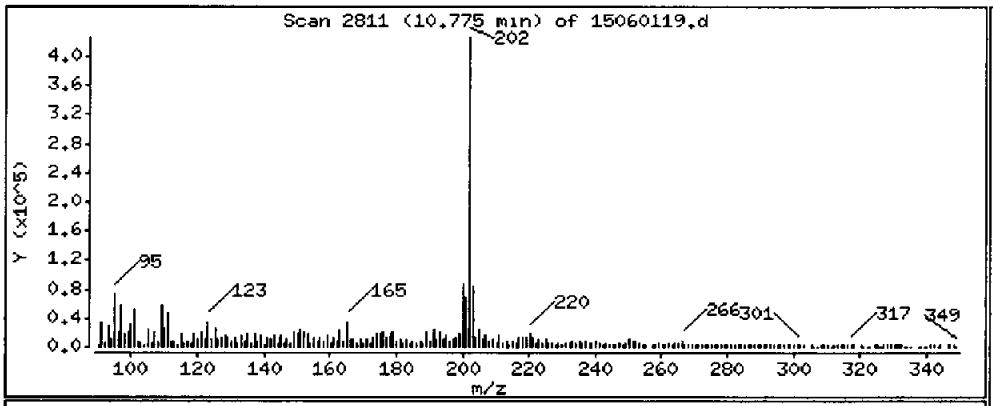
Operator: JZ

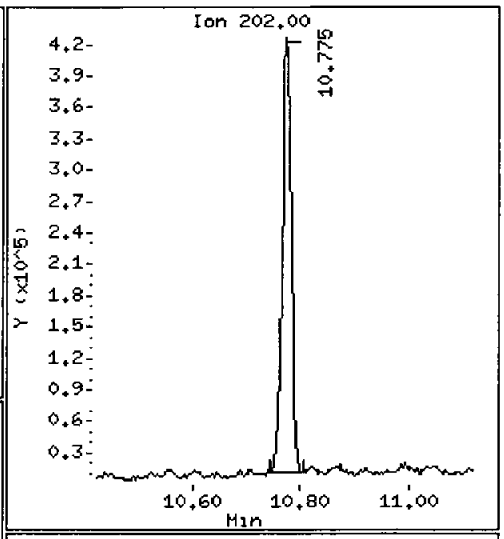
Column phase: ZB-35

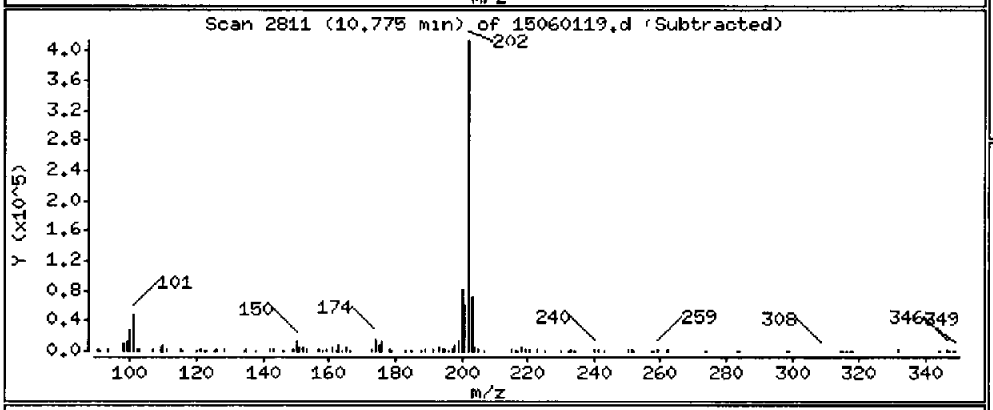
Column diameter: 0.25

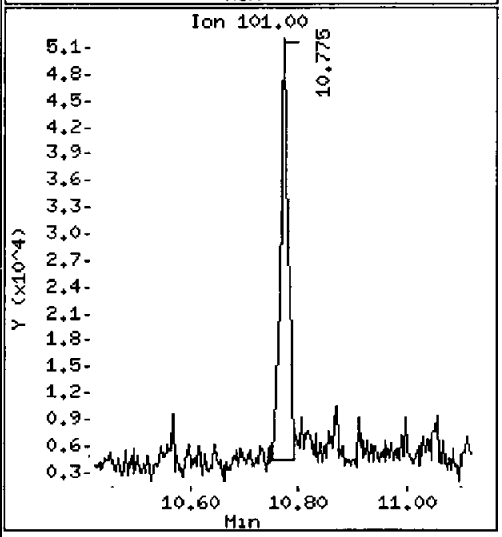
36 Fluoranthene

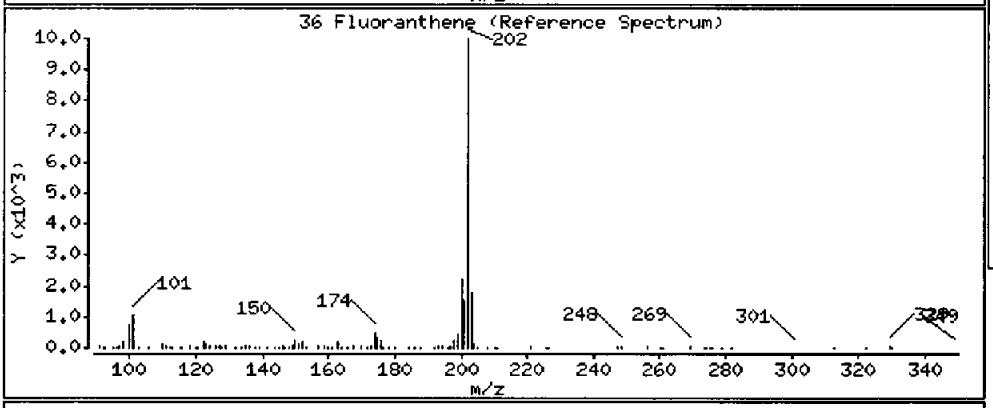
Concentration: 609.3 ug/kg

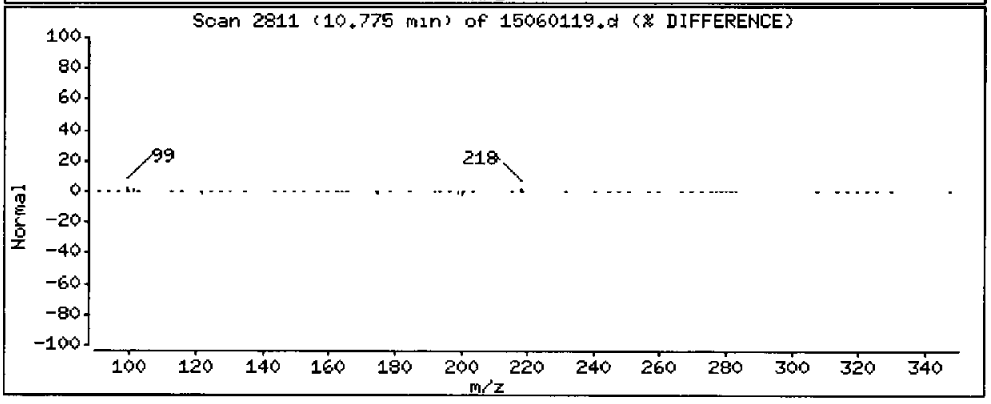












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

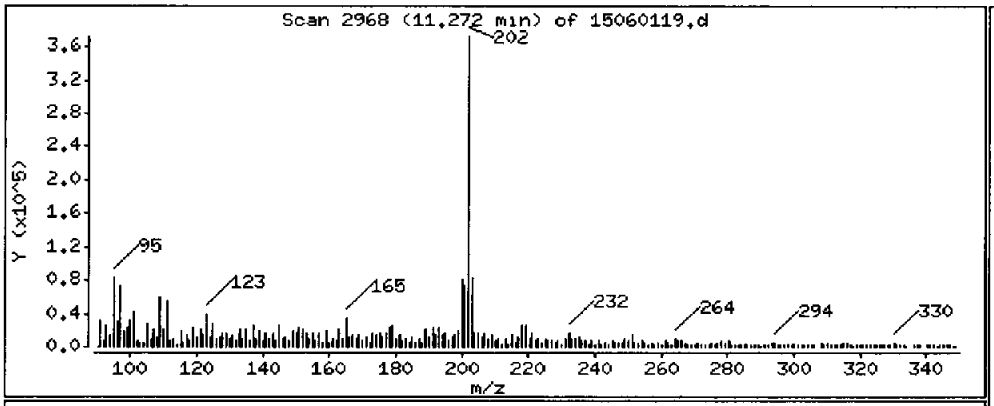
Operator: JZ

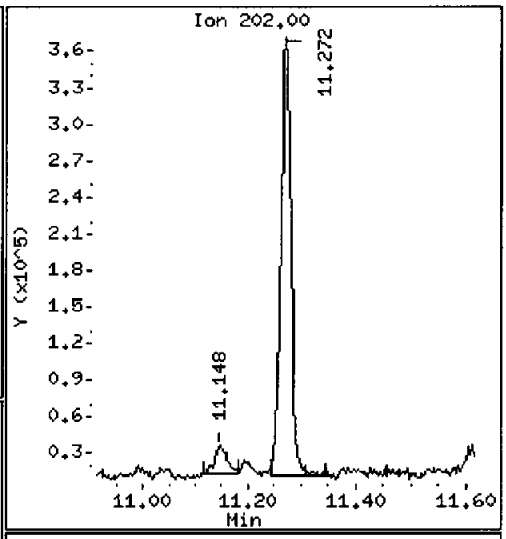
Column phase: ZB-35

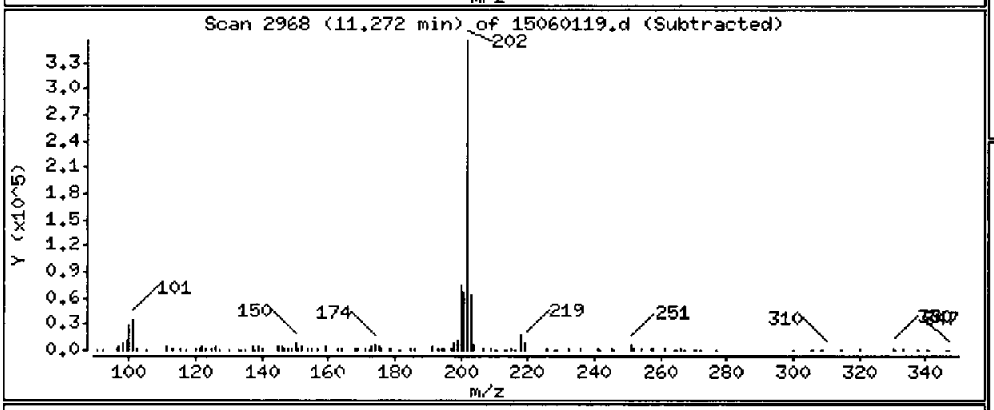
Column diameter: 0.25

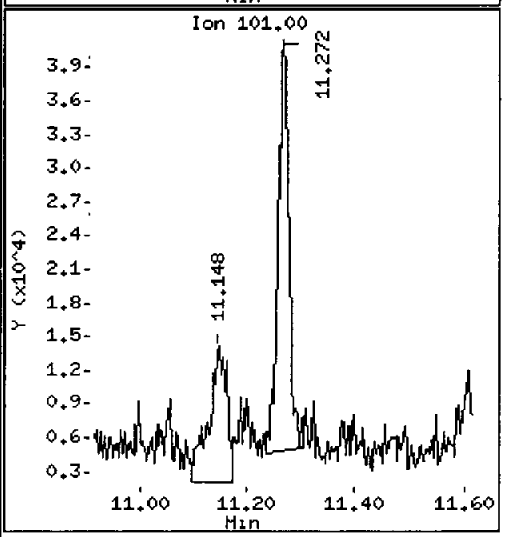
39 Pyrene

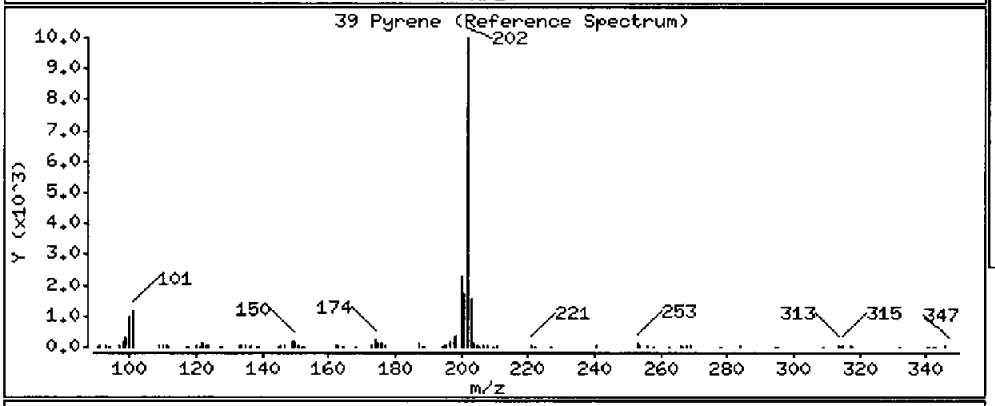
Concentration: 446.1 ug/kg

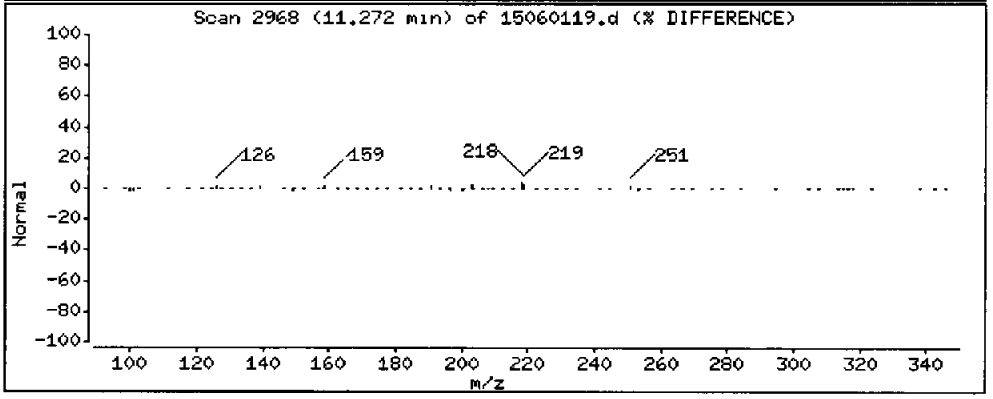












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

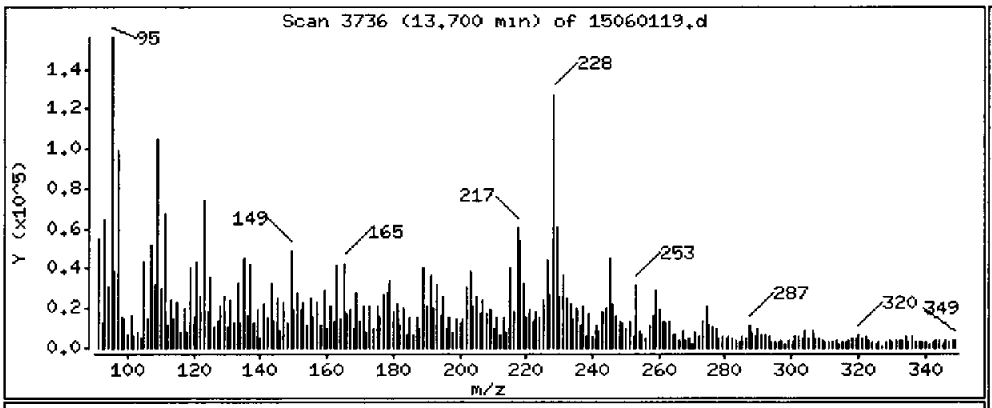
Operator: JZ

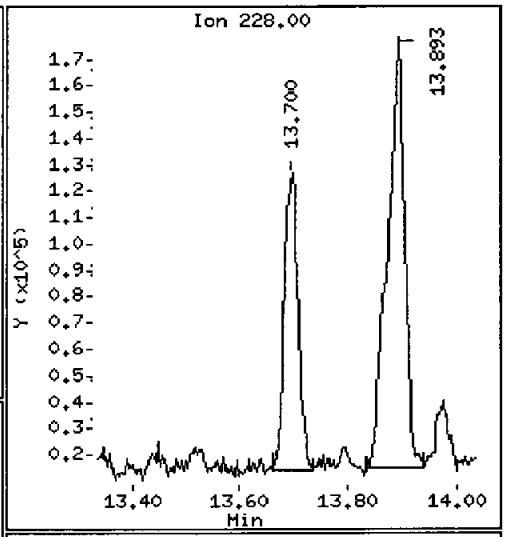
Column phase: ZB-35

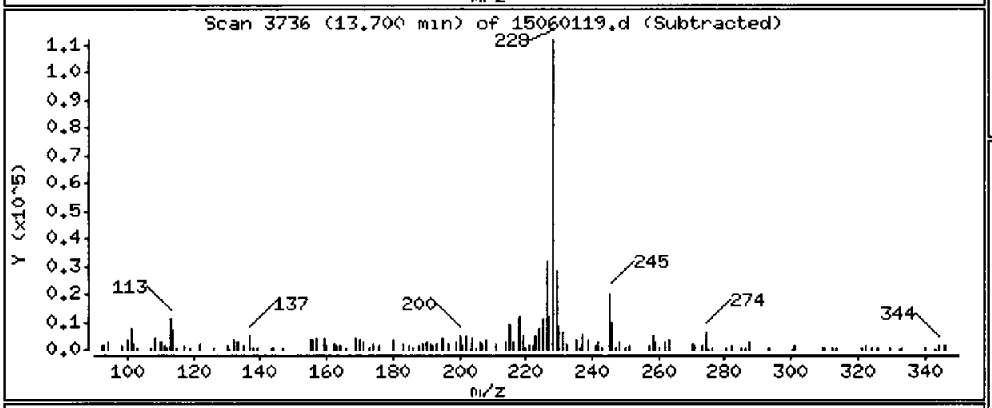
Column diameter: 0.25

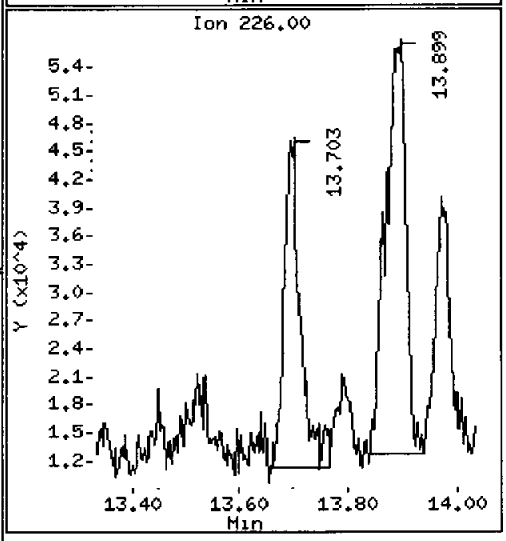
46 Benzo(a)anthracene

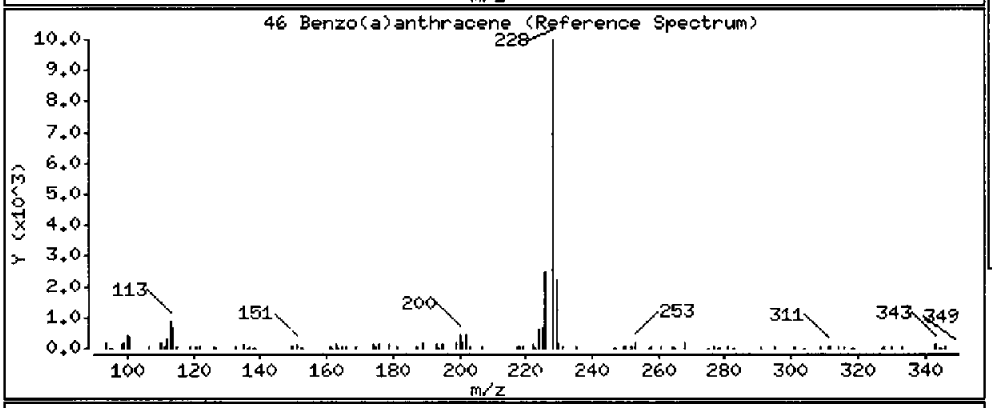
Concentration: 204.8 ug/kg

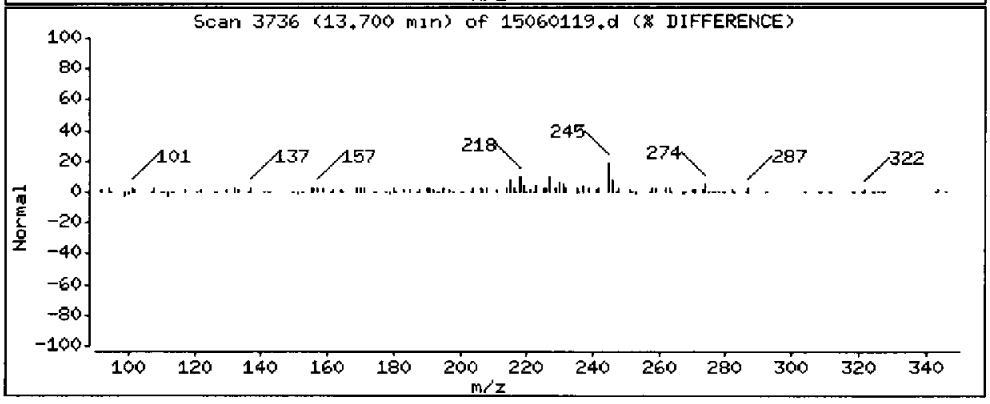












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

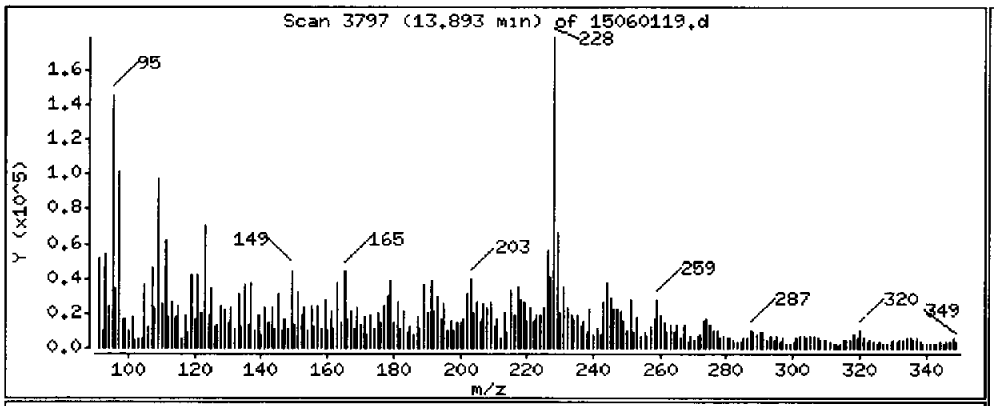
Operator: JZ

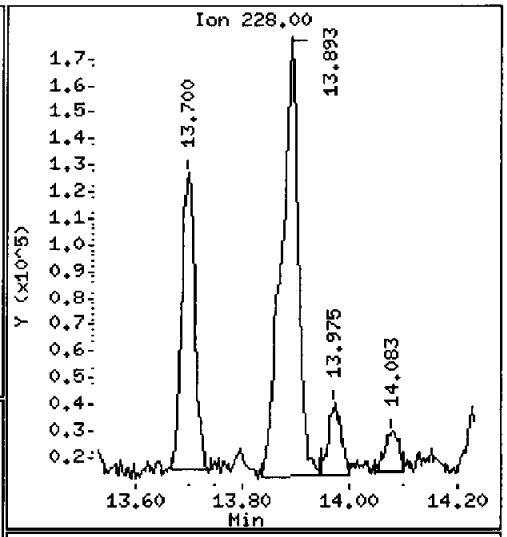
Column phase: ZB-35

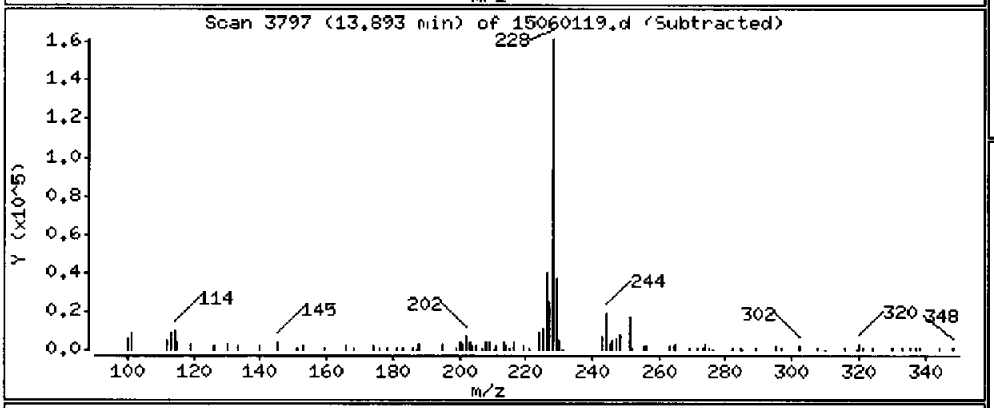
Column diameter: 0.25

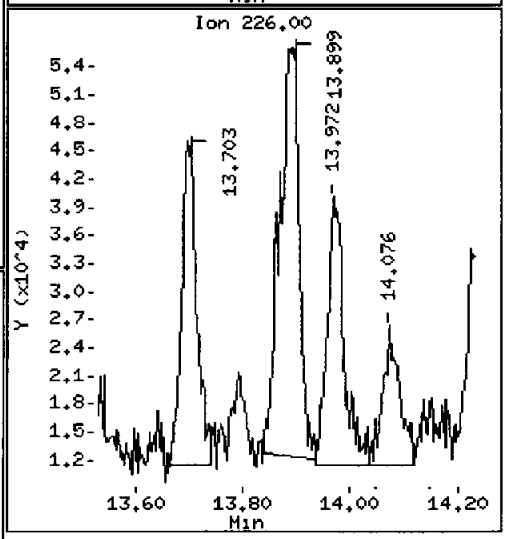
48 Chrysene

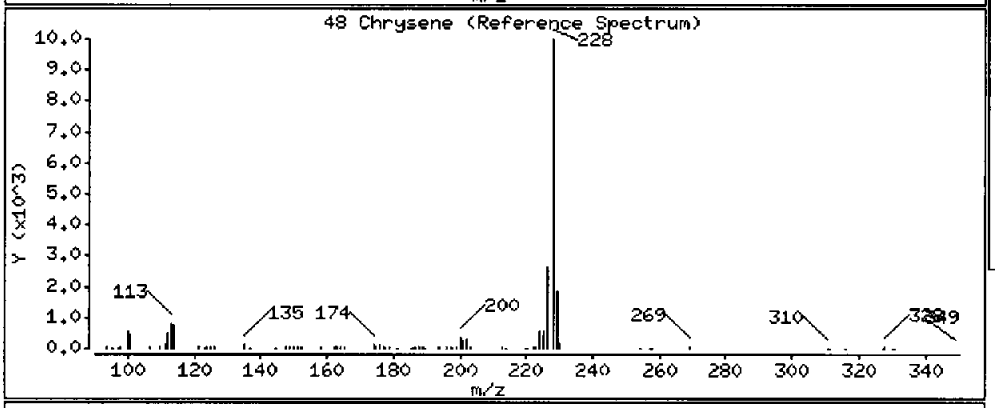
Concentration: 375.1 ug/kg

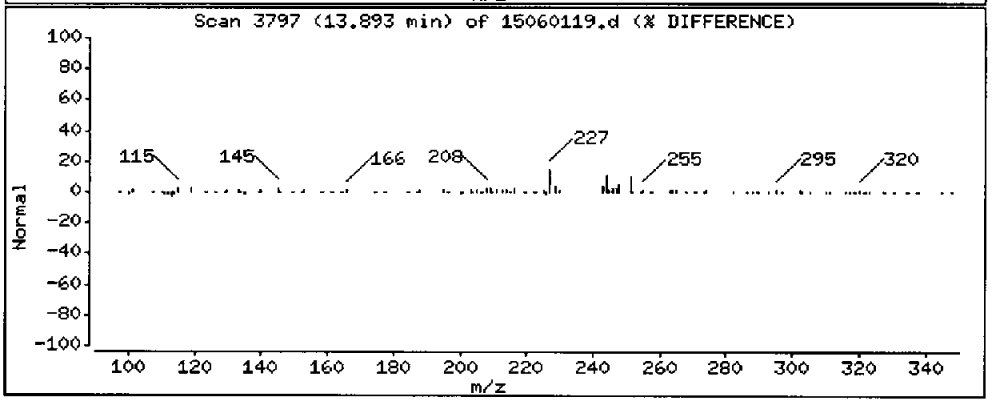












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

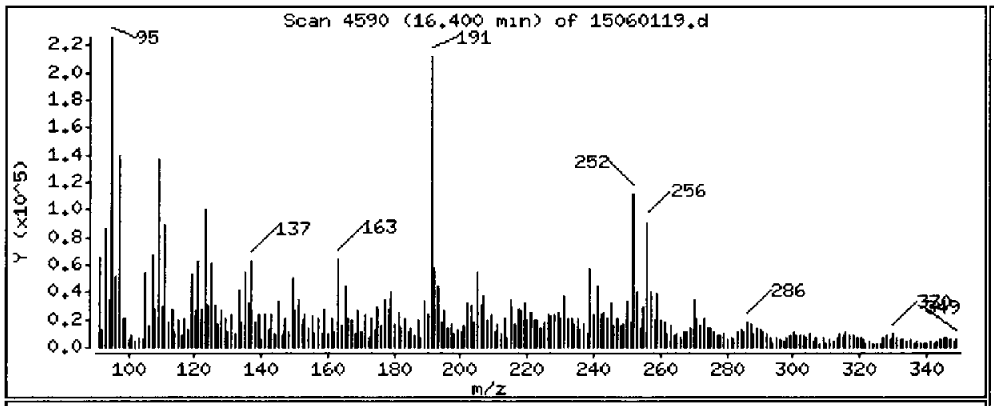
Operator: JZ

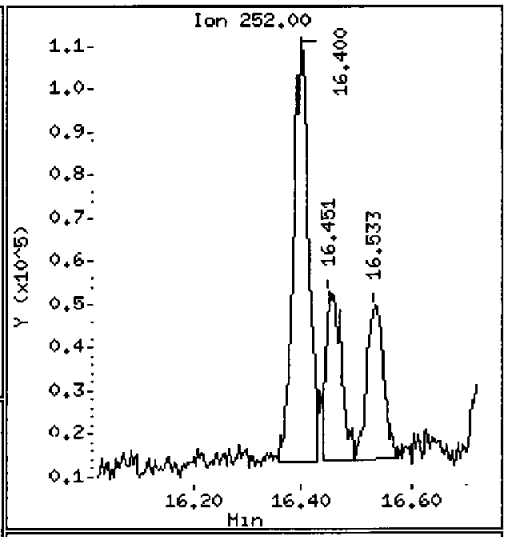
Column phase: ZB-35

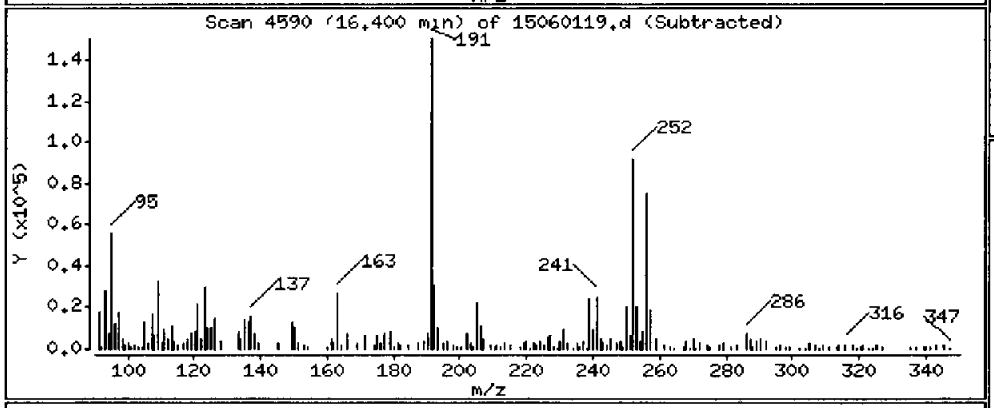
Column diameter: 0.25

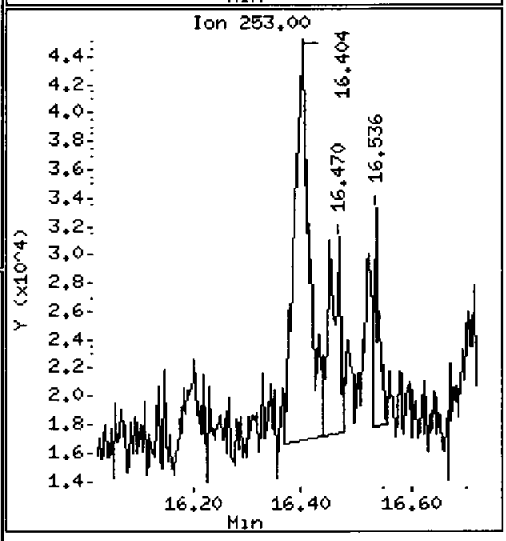
51 Benzo(b)fluoranthene

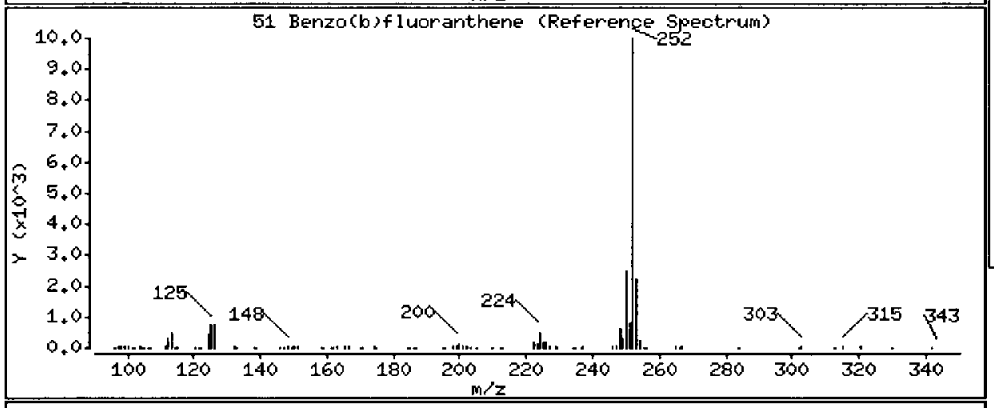
Concentration: 171.3 ug/kg

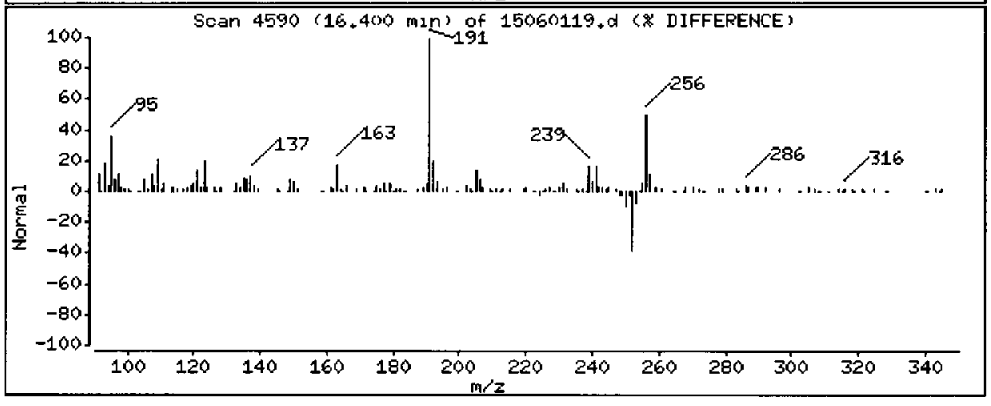












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

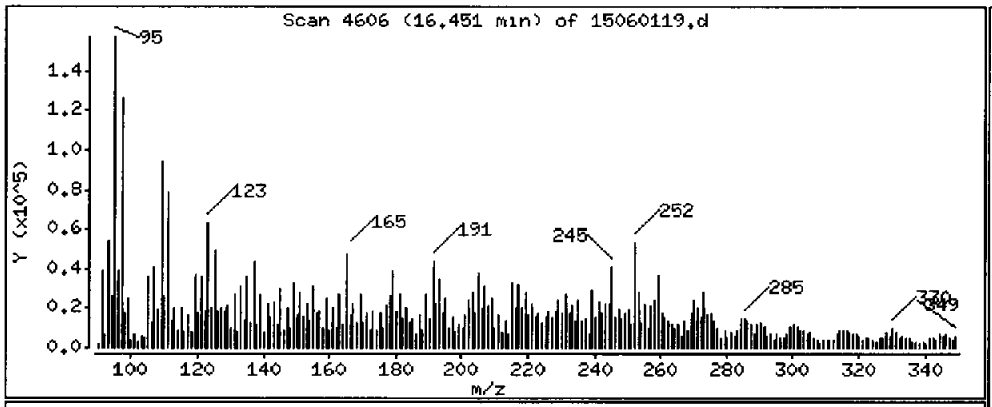
Operator: JZ

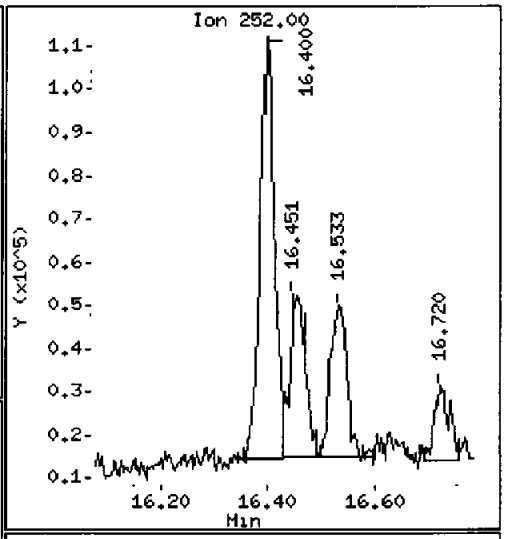
Column phase: ZB-35

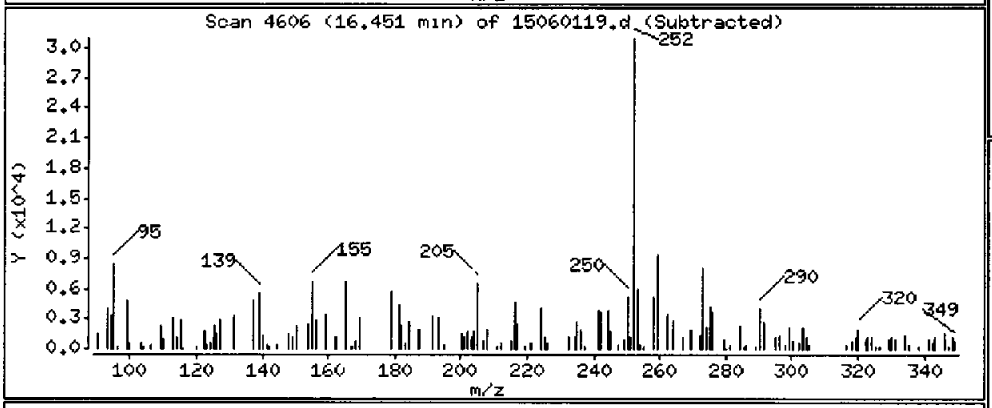
Column diameter: 0.25

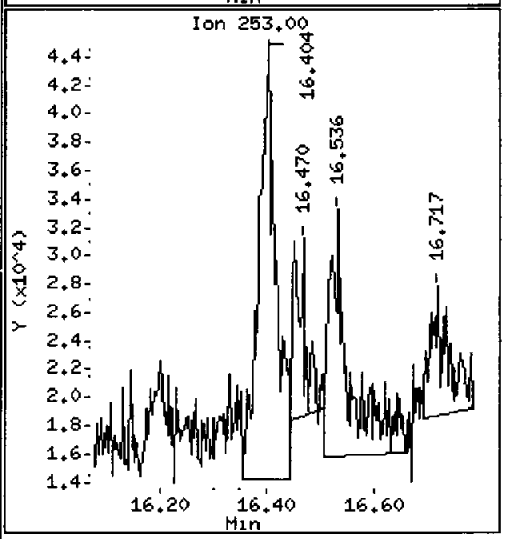
52 Benzo(k)fluoranthene

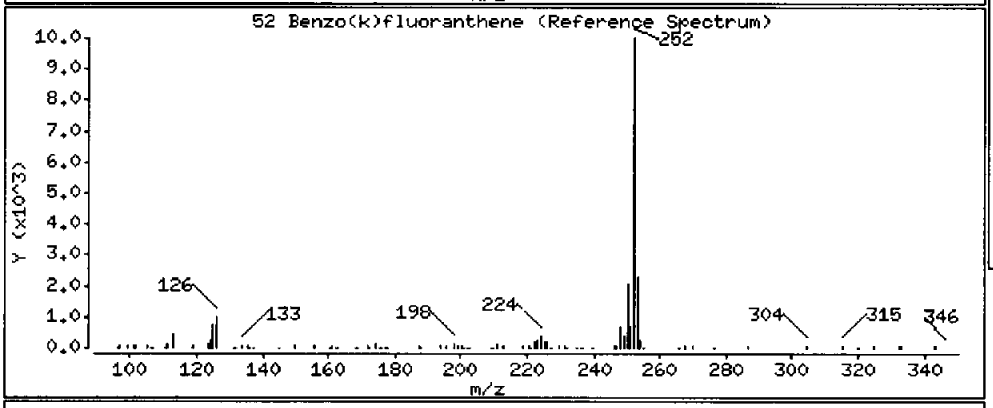
Concentration: 71.82 ug/kg

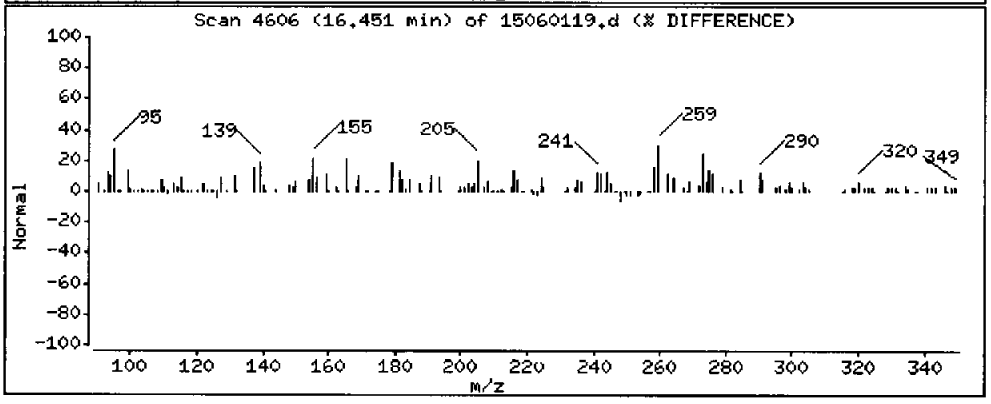












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

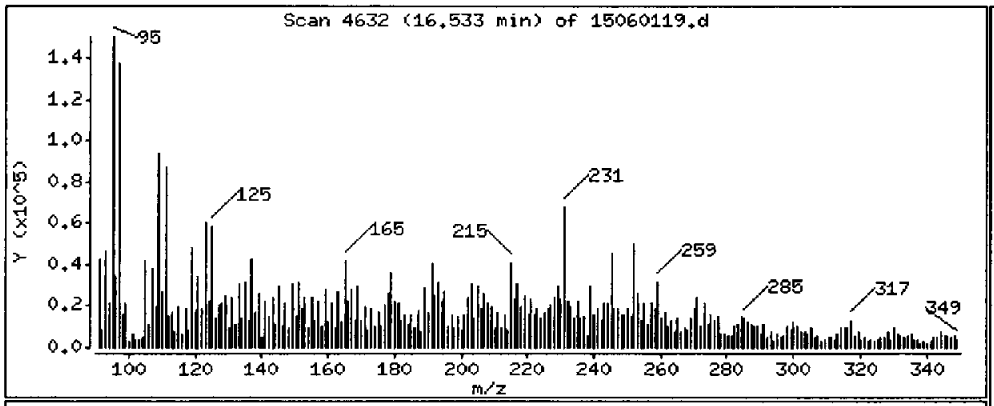
Operator: JZ

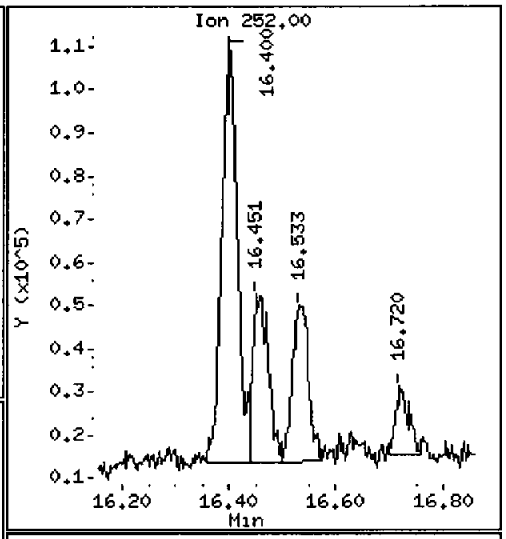
Column phase: ZB-35

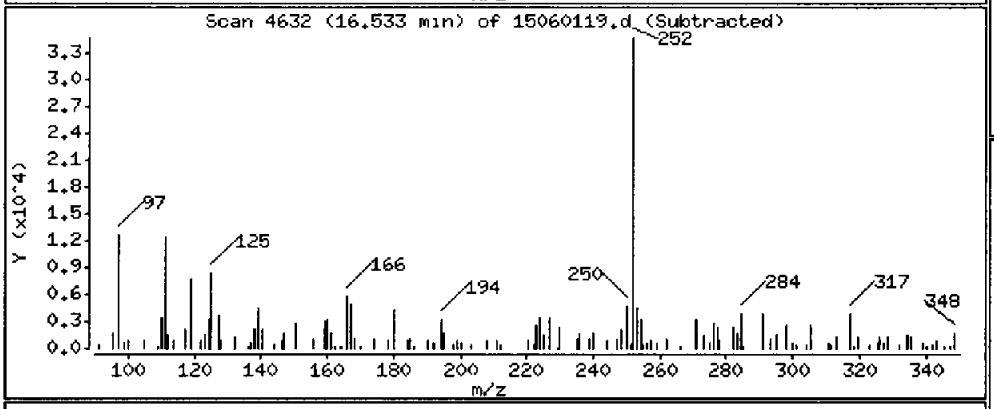
Column diameter: 0.25

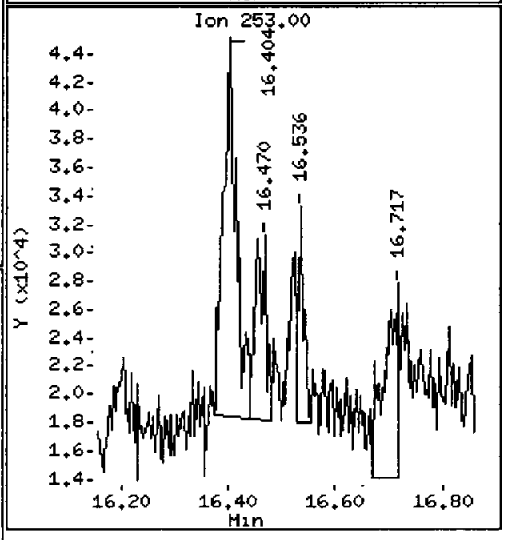
251 Benzo(j)fluoranthene

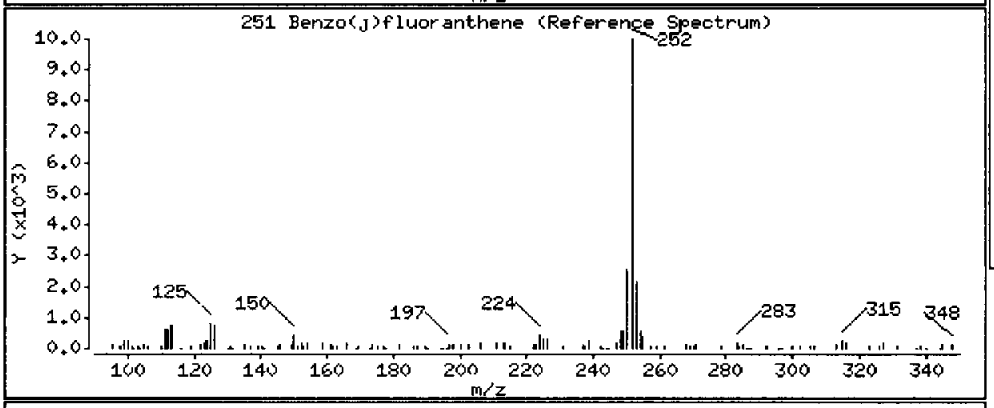
Concentration: 72.66 ug/kg

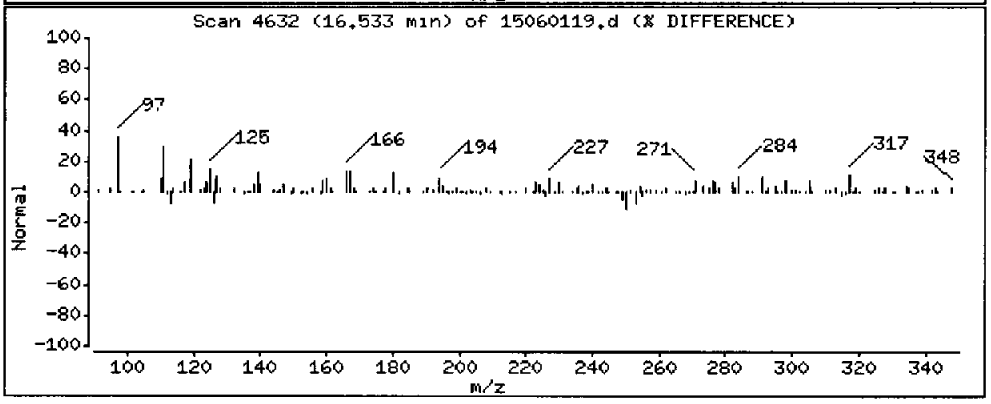












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

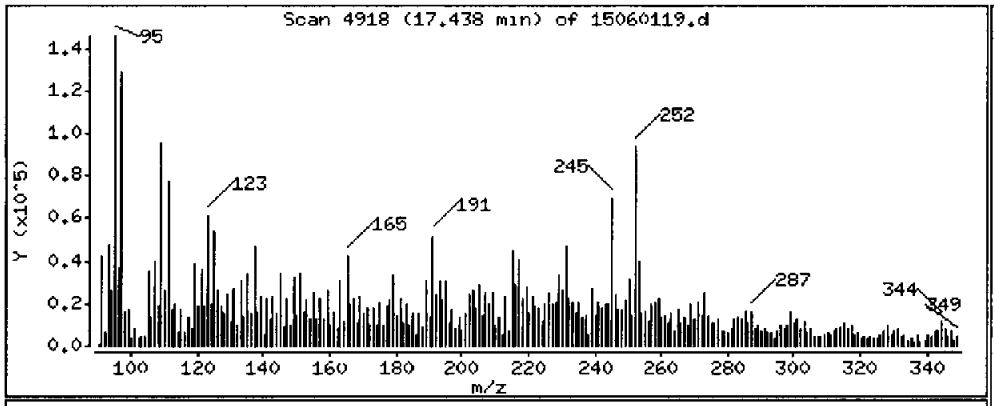
Operator: JZ

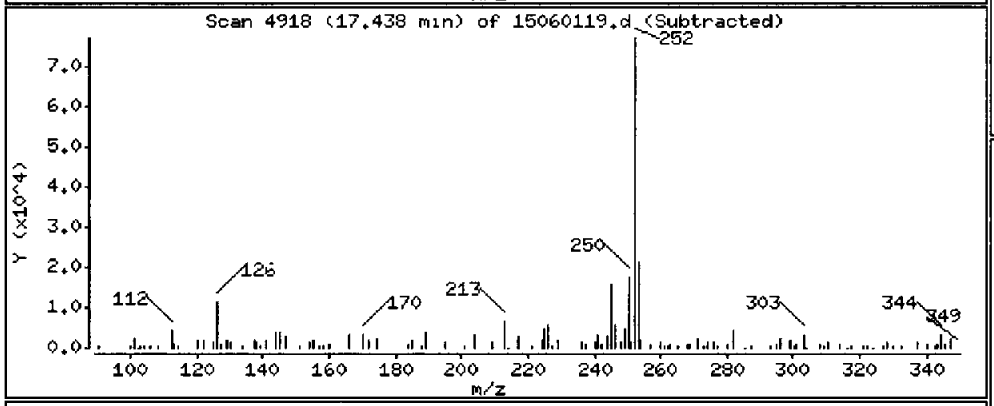
Column phase: ZB-35

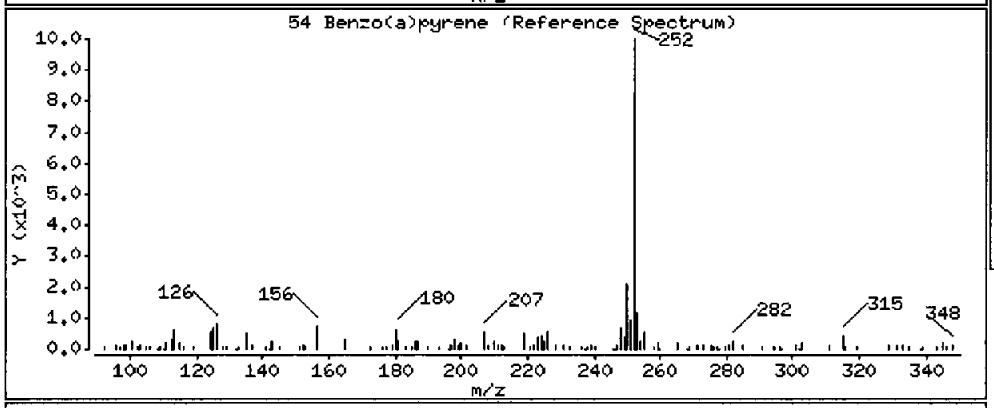
Column diameter: 0.25

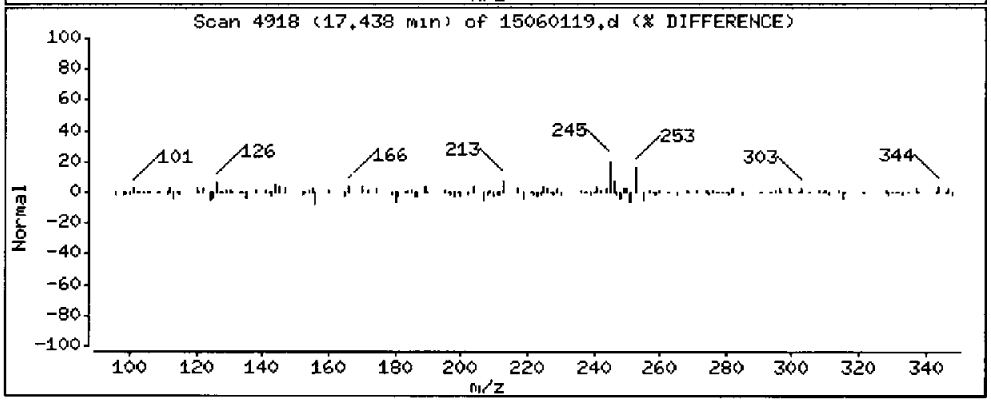
54 Benzo(a)pyrene

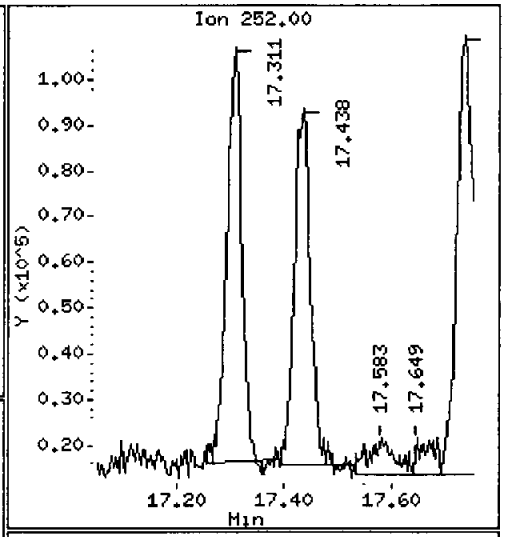
Concentration: 161.5 ug/kg

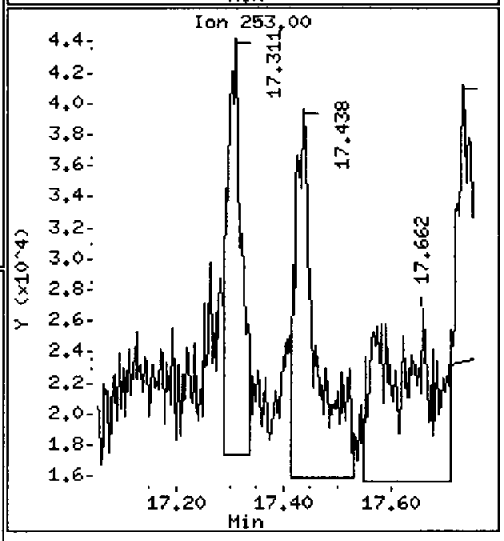












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

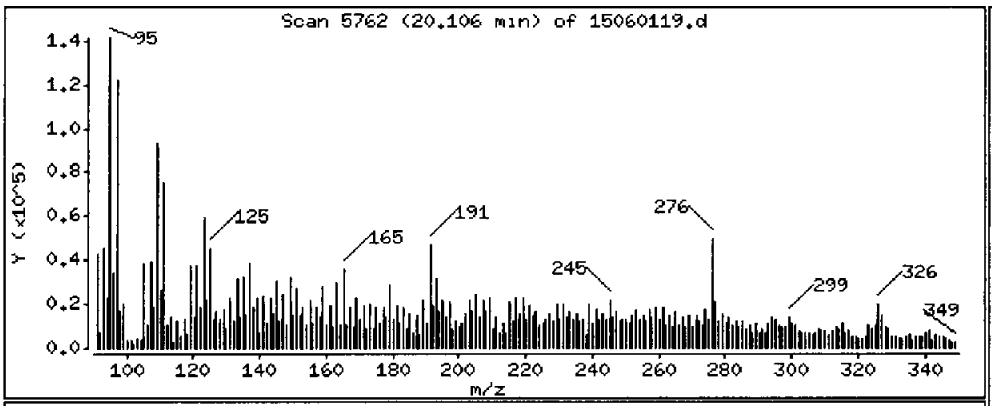
Operator: JZ

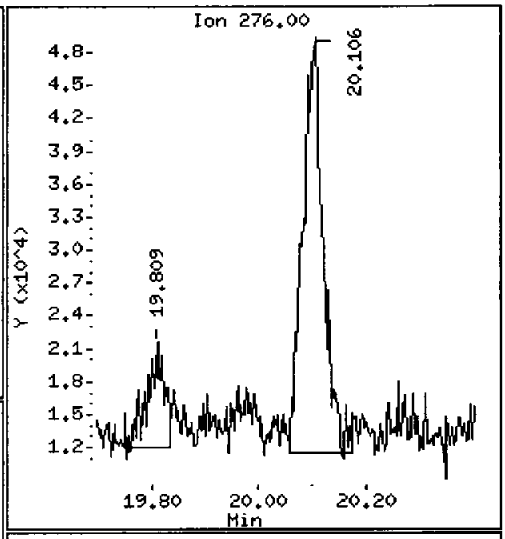
Column phase: ZB-35

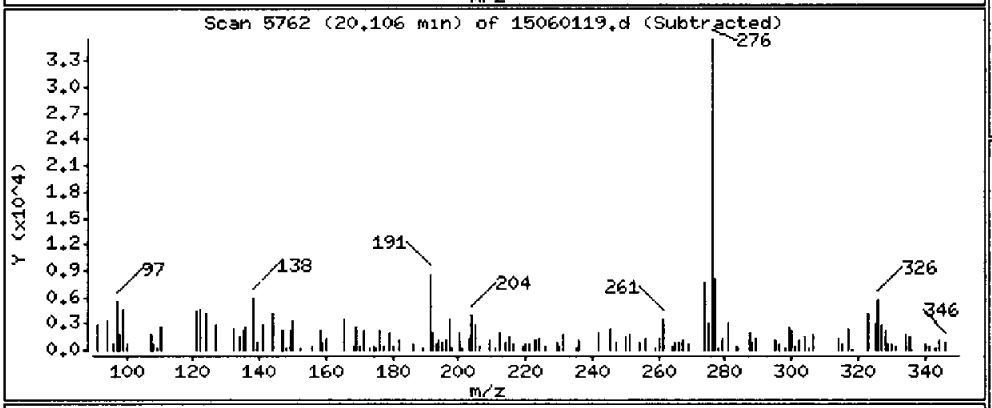
Column diameter: 0.25

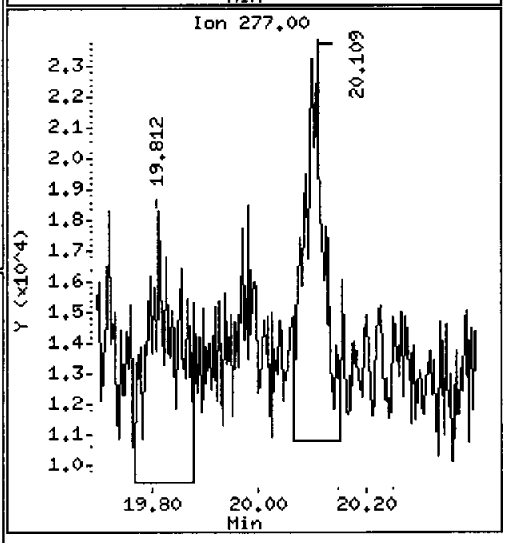
63 Indeno(1,2,3-cd)pyrene

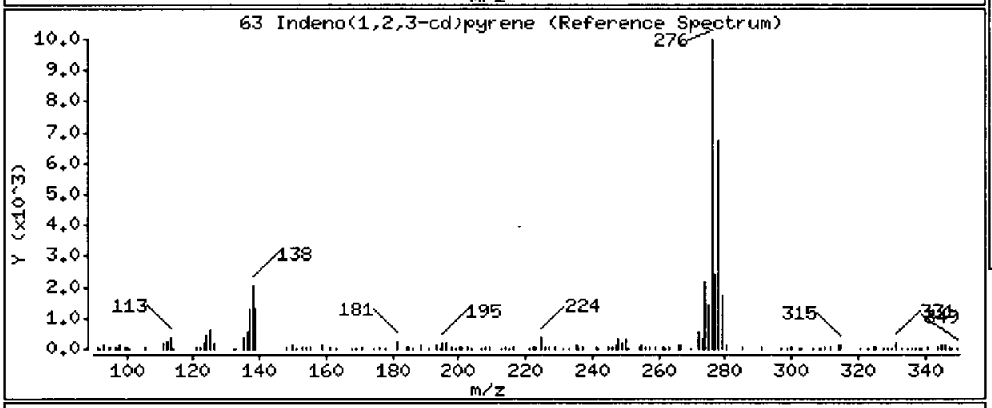
Concentration: 83.71 ug/kg

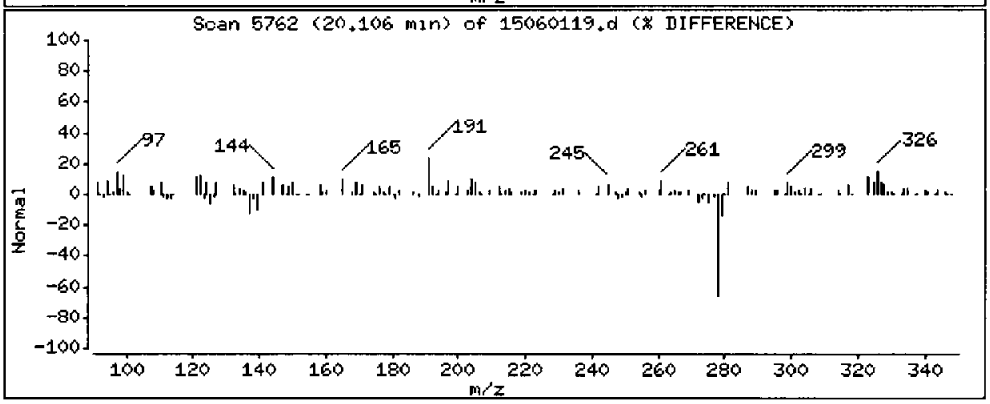












Data File: /chem3/nt8.i/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.i

Sample Info: AGC9C

Volume Injected (uL): 1.0

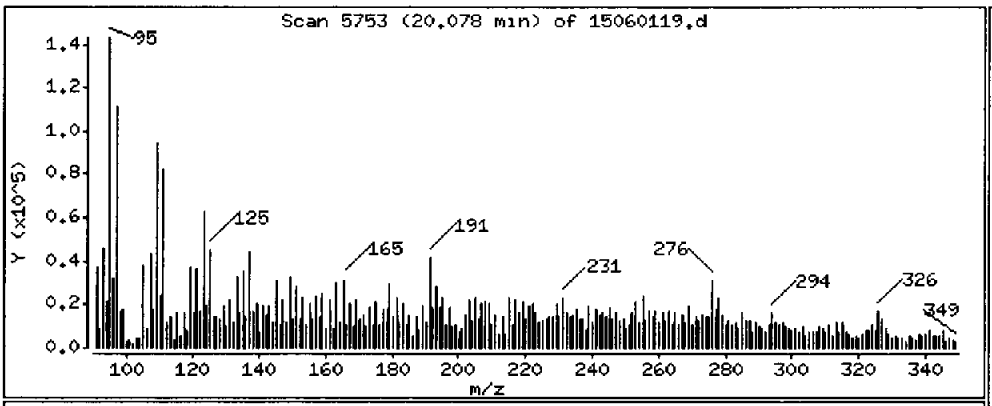
Operator: JZ

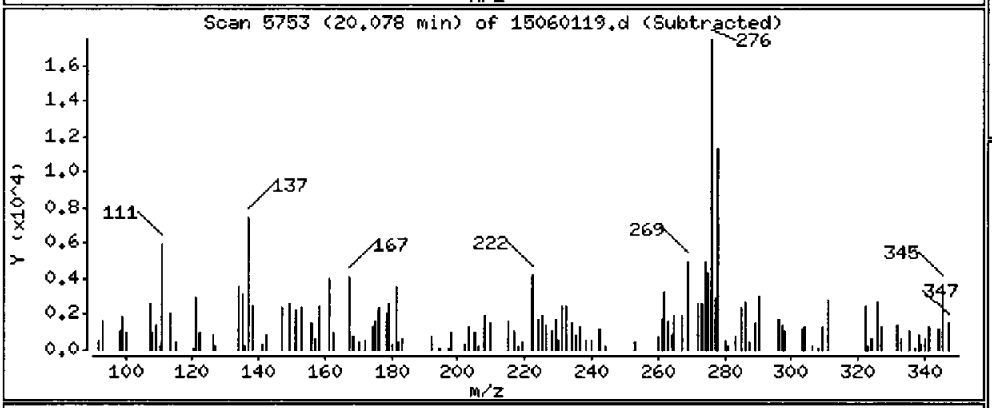
Column phase: ZB-35

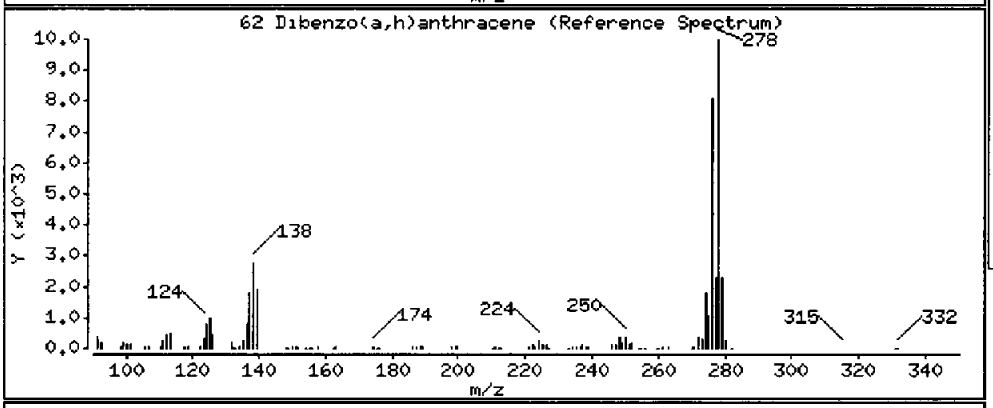
Column diameter: 0.25

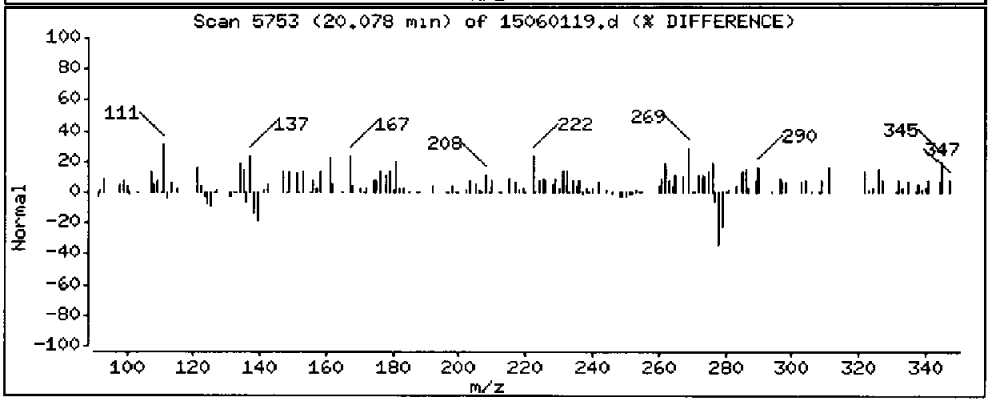
62 Dibenzo(a,h)anthracene

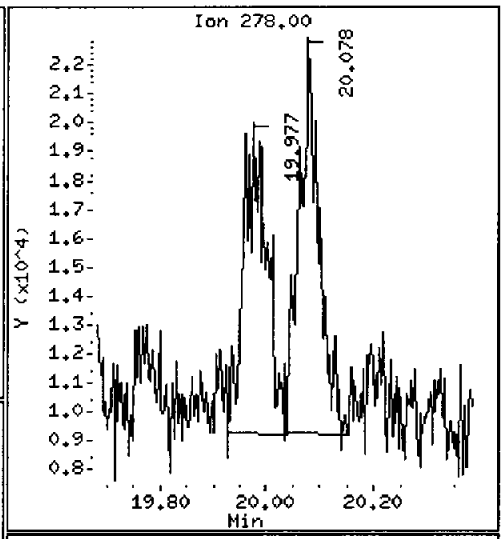
Concentration: 36.00 ug/kg

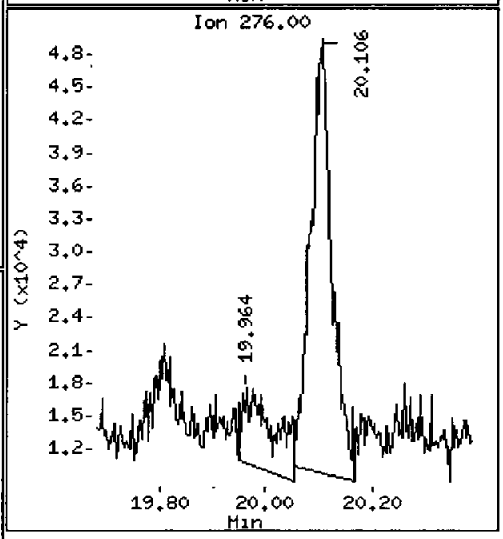












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

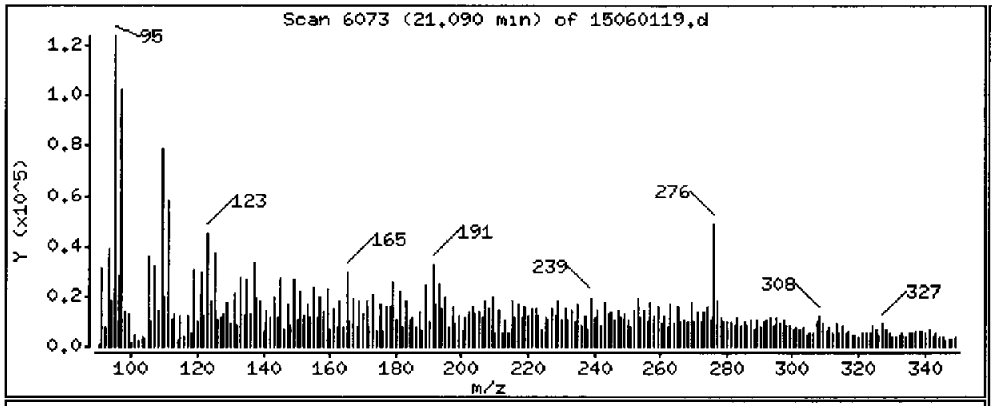
Operator: JZ

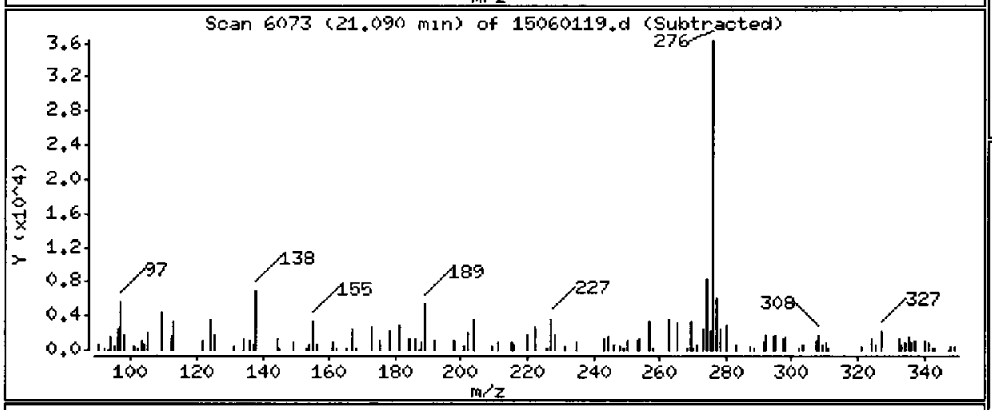
Column phase: ZB-35

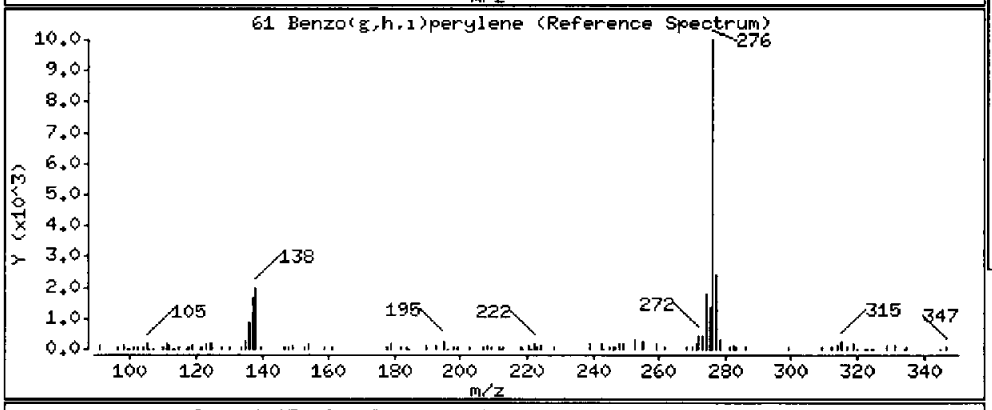
Column diameter: 0.25

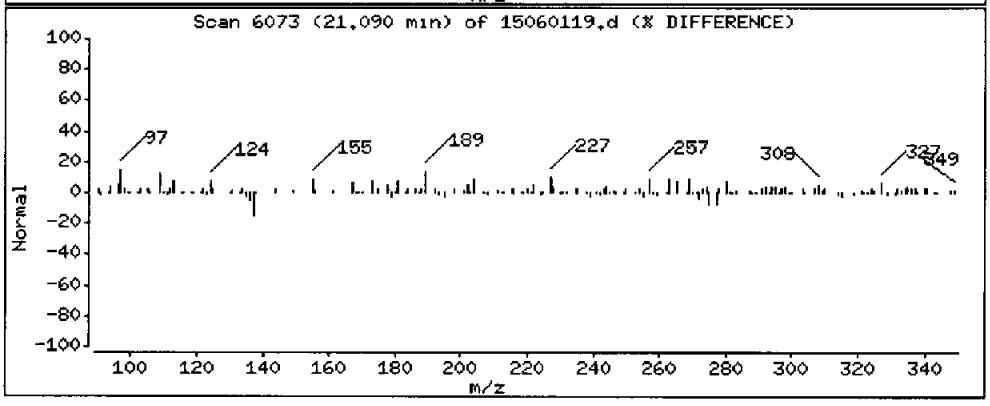
61 Benzo(g,h,i)perylene

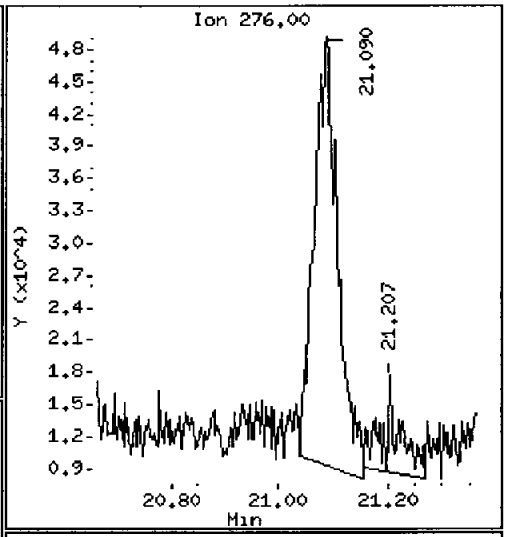
Concentration: 116.2 ug/kg

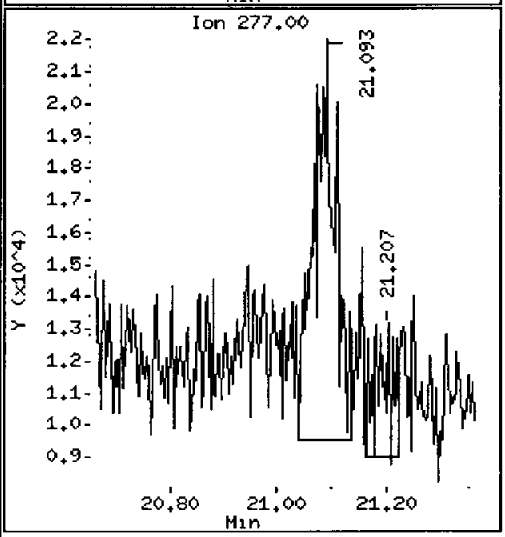












Data File: /chem3/nt8.1/20150601.b/15060119.d

Date : 01-JUN-2015 17:25

Client ID: SDP-02(16.0-17.5)

Instrument: nt8.1

Sample Info: AGC9C

Volume Injected (uL): 1.0

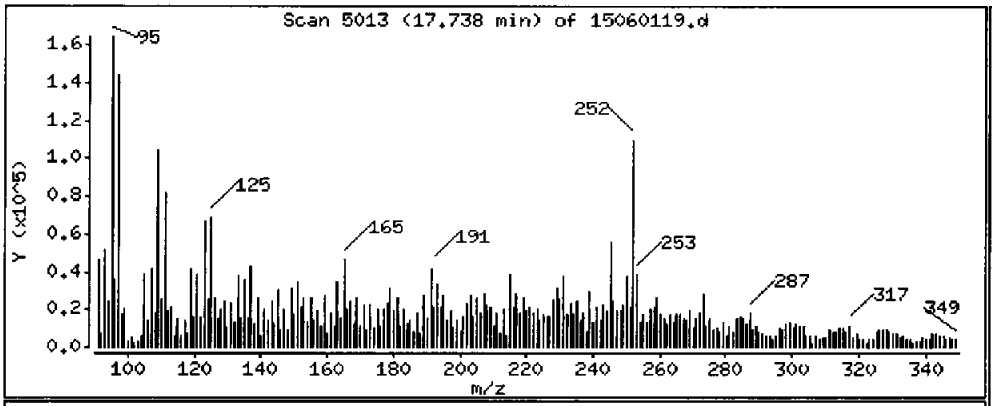
Operator: JZ

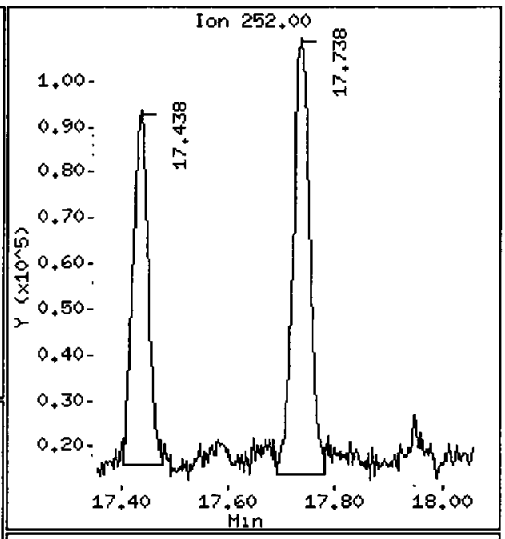
Column phase: ZB-35

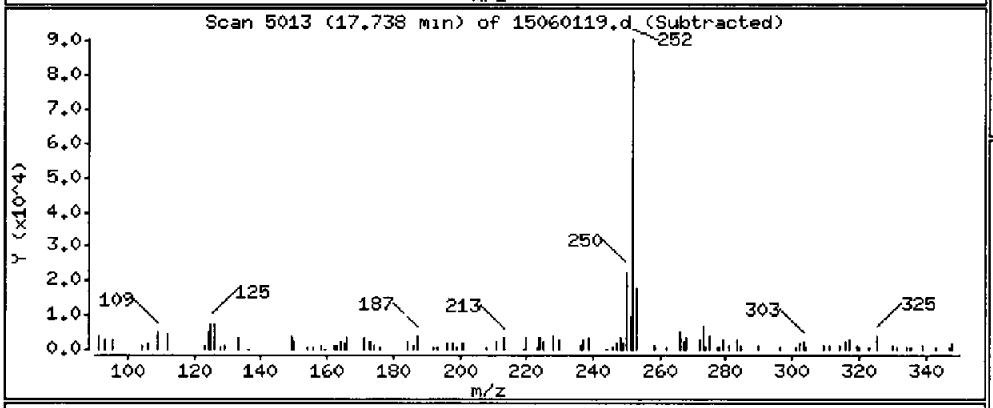
Column diameter: 0.25

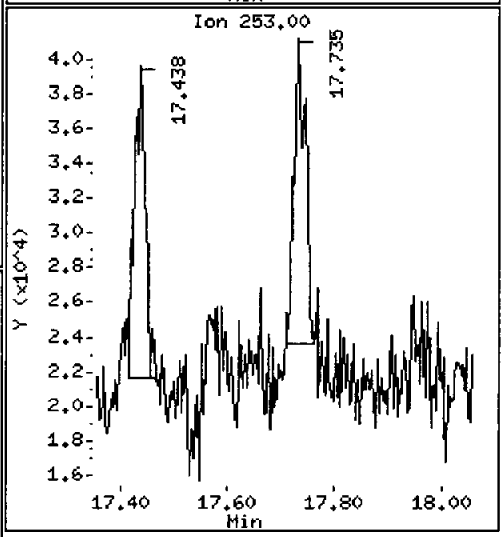
57 Perylene

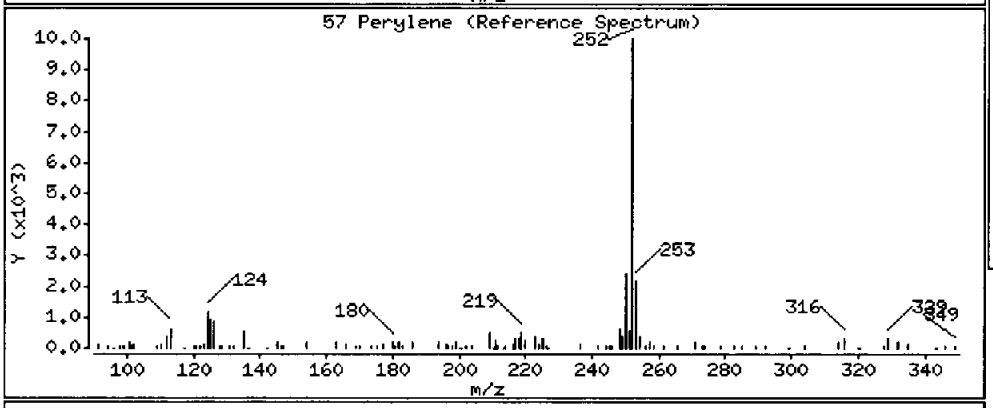
Concentration: 205.9 ug/kg

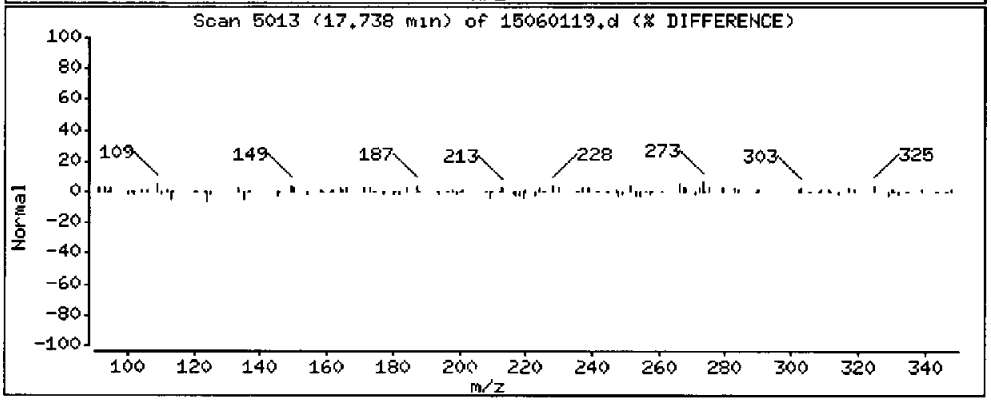












CO-ELUTION SUMMARY FOR FILE - 15060119.d

Lab ID: AGC9C, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 01-JUN-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC/MS SVOA Analyst Notes / Data Review Checklist

ELEMENT/NWA #.: AGC 9 Client: Kennedy Jenks

METHOD: **8270D** (SIM-SVOA) **KRONE** (Butyl Tins) **8270D** (SVOA) **8270D** (OP-Pest)

Instrument: NT-6 NT-8 NT-10 NT11 NT12 NT14

Calibration Code: YDCCC19 Analysis Start Date: 5/27/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
DFTPP Tune met Criteria?	Y / N /	Internal Standard within 50-200%?	Y / N /
DDT Breakdown <20%?	Y / N /	Retention Times within Windows?	Y / N /
Peak Tailing Factor ≤2?	Y / N /	Method Blank in Control?	Y / N /
ICV/CCV Meets %D?	Y / N /	BS/BSD Recovery in Control?	Y / N /
ICAL Q Flag applied?	Y / N /	BS/BSD RPD ≤ 30%?	NA /
ICV/CCV Q flag applied?	Y / N /	MS / MSD Recovery in Control?	Y / N /
Surrogate Recovery met?	Y / N /	MS / MSD RPD ≤ 30%?	NA /
Manual Integrations?	Y / N /	Samples Diluted?	Y / N /
Integration Summary?	Y / N /	Special Analysis Request?	Y / N /

Detail problems, corrective actions and/or other pertinent information below.

Sample 5 + MB/LCS/LCSD
CCV attached
Forms included.
Element Sequence #: SDE0066

(Review 1) Analyst: _____ **Date:** 05/28/15

(Review 2) Reviewer: _____ **Date:** 5/28/15

ARCO 00588

Analytical Resources Inc.: Organics Instrument Log

NT-8 Serial No.:GC=CN10540013, MS=US80138354

Date: 5/22/15 Analysis: 8270/AA Analyst: AB

GC Program: 8270AA Column No: 124773 Column Type: RXI-17SiLMS

Instrument Tune (.U or .CT.): LF0413 EM Voltage: 1765

Calibration File: LF052202 Curve Date: 4/13/15 Injection Vol.: 1µl

YD00014

IS/SS	Ical/Ccal	LCS/ICV
D002072	D000716 AB	
	D002310	

Document All Maintenance Tasks In Element

INTERNAL STANDARD SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

	Time	Filename	LabID	ClientId	DF									
1	1441	15052201.d	DFTPP150522	DFTPP150522	1	NO ISTDS FOUND								
2	1453	15052202.d	ICV150522	ICV150522	1	4 75	297291	7 01	191154	9 03	347015	13 82	373266	17 64 374830
3	1518	15052203.d	AGA0MBW1	AGA0MBW1	1	4 74	334480	7 01	211816	9 03	358520	13 81	396731	17.64 389951
4	1544	15052204.d	AGA0LCSW1	AGA0LCSW1	1	4.74	340624	7 01	220552	9 03	382669	13.82	424265	17 64 420810
5	1610	15052205.d	AGA0A	SS2-051315-G	1	4.74	341691	7 01	214967	9.03	381013	13.83	493942	17 66 482864
6	1635	15052206.d	AGA0B	SS3-051315-G	1	4 74	365334	7 01	225613	9 03	411310	13 83	528145	17 66 499373
7	1701	15052207.d	AGA0C	SS4-051315-G	1	4 74	373792	7 01	236297	9 03	397807	13 82	471757	17.65 477203
8	1727	15052208.d	AGA0D	SS5-051315-G	1	4.74	342243	7.01	218812	9 03	391871	13 82	449176	17 65 435025
9	1752	15052209.d	AGA0DMS	SS5-051315-G	1	4.74	365798	7.01	234973	9.03	403636	13.82	482207	17 66 485779
10	1818	15052210.d	AGA0DMSD	SS5-051315-G	1	4 74	364918	7 01	232351	9 03	401229	13 82	464690	17 65 460840
11	1844	15052211.d	AGA8MBW1	AGA8MBW1	1	4 74	344358	7.01	232596	9 03	401626	13 81	432555	17.65 413095
12	1909	15052212.d	AGA8LCSW1	AGA8LCSW1	1	4 74	375304	7 01	236209	9 03	423109	13 81	473638	17.64 444966
13	1935	15052213 d	AGA8LCSDW1	AGA8LCSDW1	1	4 74	365878	7 01	239375	9 03	424130	13.81	478376	17 64 455442
14	2001	15052214.d	AGA8J	RB-051315	1	4.74	368650	7.01	237975	9.03	421417	13 81	468779	17 64 427974
15	2026	15052215.d	AGC9L	RB-051415	1	4 74	354755	7 01	241022	9 03	422461	13 81	465993	17 64 433370
16	2052	15052216.d	CCV150522	CCV150522	1	4.75	318416	7 01	209270	9 03	373183	13.81	421598	17.64 414444

AB 05/16/15

Every line must contain information or be lined out. Make all entries legible.
Start a new page for each QC period. Document All Maintenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

ARI Job No.: ICV1 Method: FSIMPNA150413.m Instrument: nt8.i Date: 22-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1453	15052202.d	ICV150522	ICV150522	1	NO MANUAL INTEGRATION
1844	15052211.d	AGA8MBW1	AGA8MBW1	1	NO MANUAL INTEGRATION
1909	15052212.d	AGA8LCSW1	AGA8LCSW1	1	NO MANUAL INTEGRATION
1935	15052213.d	AGA8LCSDW1	AGA8LCSDW1	1	NO MANUAL INTEGRATION
2026	15052215.d	AGC9L	RB-051415	1	NO MANUAL INTEGRATION
2052	15052216.d	CCV150522	CCV150522	1	NO MANUAL INTEGRATION

Q-FLAG SUMMARY FOR DATABATCH - /chem3/nt8.i/20150522.b

Instrument: nt8.i Date: 22-MAY-2015 Method: FSIMPNA150413.m

INITIAL CAL: 13-APR-2015

Compound	%RSD or R^2
NO Q-FLAGS	

CONTINUING CAL: 22-MAY-2015

Compound	%D
NO Q-FLAGS	

5/22/15

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 22-MAY-2015 14:53
Lab File ID: 15052202.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: ICV150522 Quant Type: ISTD
Method: /chem3/nt8.i/20150522.b/FSIMPNA150413.m

DE 6/27/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.94011	0.100	-2.42288	20.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.58482	0 100	-4.24327	20.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.58405	0.100	1.66508	20.00000	Averaged
15 1-methylnaphthalene	0.55829	0.54794	0.100	-1.85284	20.00000	Averaged
21 Acenaphthylene	1.46062	1.53955	0.100	5.40381	20.00000	Averaged
23 Acenaphthene	0.97186	1.02721	0.100	5.69486	20.00000	Averaged
11 Dibenzofuran	1.34410	1.40136	0.100	4.26023	20.00000	Averaged
25 Fluorene	1.08551	1.20456	0.100	10.96714	20.00000	Averaged
30 Phenanthrene	0 95354	0.94683	0.100	-0.70428	20.00000	Averaged
31 Anthracene	0 85847	0.87269	0.100	1.65661	20.00000	Averaged
36 Fluoranthene	1.11525	1.11724	0.100	0.17776	20.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.00162	0.100	1.81344	20.00000	Averaged
39 Pyrene	1.11491	1.06544	0.100	-4.43728	20.00000	Averaged
46 Benzo(a)anthracene	1.00322	1.01067	0.100	0.74354	20.00000	Averaged
48 Chrysene	1.00588	0.97755	0 100	-2.81688	20.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	1.04208	0.100	-0.78282	20.00000	Averaged
52 Benzo(k)fluoranthene	1 04943	1.04269	0.100	-0.64198	20.00000	Averaged
251 Benzo(j)fluoranthene	1 02402	1.01710	0.100	-0.67547	20.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.90320	0.100	-3.55345	20.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1 12480	1.13407	0.100	0.82340	20.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0.81652	0.010	7.19862	20.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.94819	0.100	3.49892	20.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.97617	0.100	-1.33755	20.00000	Averaged
57 Perylene	0.97216	0.94858	0.100	-2.42508	20.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052202.d
Lab Smp Id: ICV150522 Client Smp ID: ICV150522
Inj Date : 22-MAY-2015 14:53
Operator : JZ Inst ID: nt8.i
Smp Info : ICV150522
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 22-May-2015 18:22 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

AMOUNTS

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
* 6 Naphthalene-d8	136	4.748	4 748	(1.000)	297291	2.00000	
7 Naphthalene	128	4.777	4 777	(1.006)	349358	2.50000	2.439
$ 12 2-Methylnaphthalene-d10	152	5.472	5 472	(1.152)	217328	2.50000	2.394
14 2-Methylnaphthalene	141	5.520	5.520	(1.162)	217042	2.50000	2.542
15 1-methylnaphthalene	141	5.713	5.713	(1.203)	203622	2.50000	2.454
21 Acenaphthylene	152	6.898	6.898	(0.984)	367866	2.50000	2.635
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	191154	2.00000	
23 Acenaphthene	153	7.060	7.060	(1.007)	245445	2.50000	2.642
11 Dibenzofuran	168	7.208	7.208	(1.028)	334846	2.50000	2.607
25 Fluorene	166	7.679	7.679	(1 096)	287822	2.50000	2.774
* 28 Phenanthrene-d10	188	9.026	9.026	(1 000)	347015	2.00000	
30 Phenanthrene	178	9.061	9.061	(1.004)	410703	2.50000	2.482
31 Anthracene	178	9.102	9.102	(1.008)	378545	2 50000	2.541
36 Fluoranthene	202	10.775	10.775	(1.194)	484623	2 50000	2.504
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.190)	434470	2.50000	2.545
39 Pyrene	202	11.271	11.271	(0 816)	497116	2.50000	2.389
46 Benzo(a)anthracene	228	13.690	13.690	(0 991)	471563	2.50000	2.519
* 47 Chrysene-d12	240	13.817	13.817	(1.000)	373266	2.00000	
48 Chrysene	228	13.890	13.890	(1.005)	456105	2.50000	2.430
51 Benzo(b)fluoranthene	252	16.381	16.381	(0.928)	488255	2.50000	2.480
52 Benzo(k)fluoranthene	252	16.441	16.441	(0.932)	488541	2.50000	2.484
251 Benzo(j)fluoranthene	252	16.517	16 517	(0.936)	476548	2.50000	2.483
54 Benzo(a)pyrene	252	17.415	17.415	(0.987)	423182	2.50000	2.411
* 56 Perylene-d12	264	17.643	17.643	(1.000)	374830	2.00000	
63 Indeno(1,2,3-cd)pyrene	276	20.059	20.059	(1.137)	531352	2.50000	2.521
$ 60 Dibenzo(a,h)anthracene-d14	292	19.942	19.942	(1.130)	382570	2.50000	2.680
62 Dibenzo(a,h)anthracene	278	20.043	20.043	(1.136)	444261	2.50000	2.587

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.029	21.029	(1.192)	457374	2.50000	2.467
57 Perylene	252	17.716	17.716	(1.004)	444447	2.50000	2.439

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052202.d
Lab Smp Id: ICV150522
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: ICV150522
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	297291	-13.35
22 Acenaphthene-d10	230598	115299	461196	191154	-17.11
28 Phenanthrene-d10	373928	186964	747856	347015	-7.20
47 Chrysene-d12	381262	190631	762524	373266	-2.10
56 Perylene-d12	380825	190412	761650	374830	-1.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.82	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

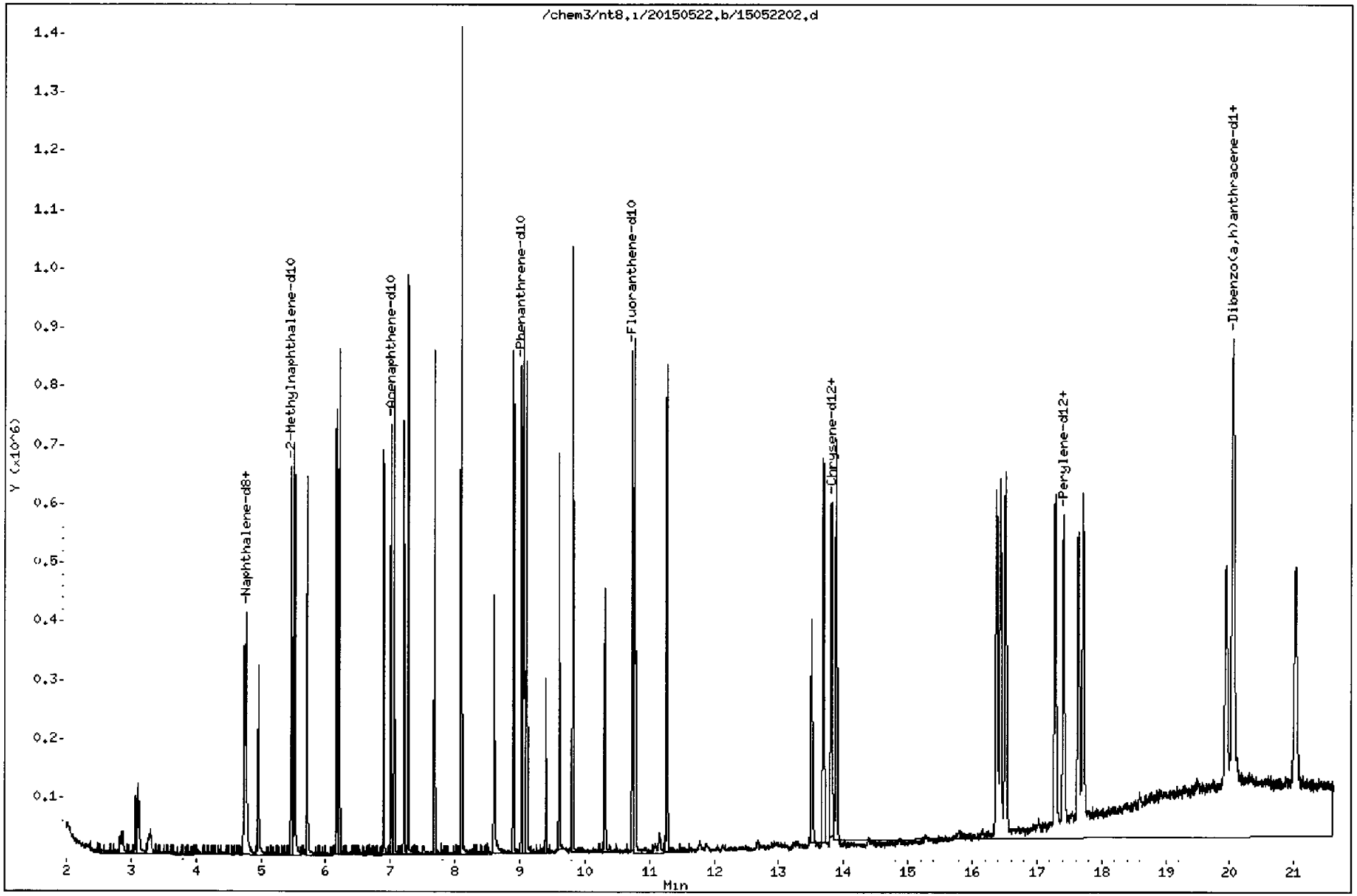
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150522.b/15052202.d
Date : 22-MAY-2015 14:53
Client ID: ICV150522
Sample Info: ICV150522

Instrument: nt8.i

Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052202.d

Lab ID: ICV150522, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem3/nt8.1/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

Instrument: nt8.1

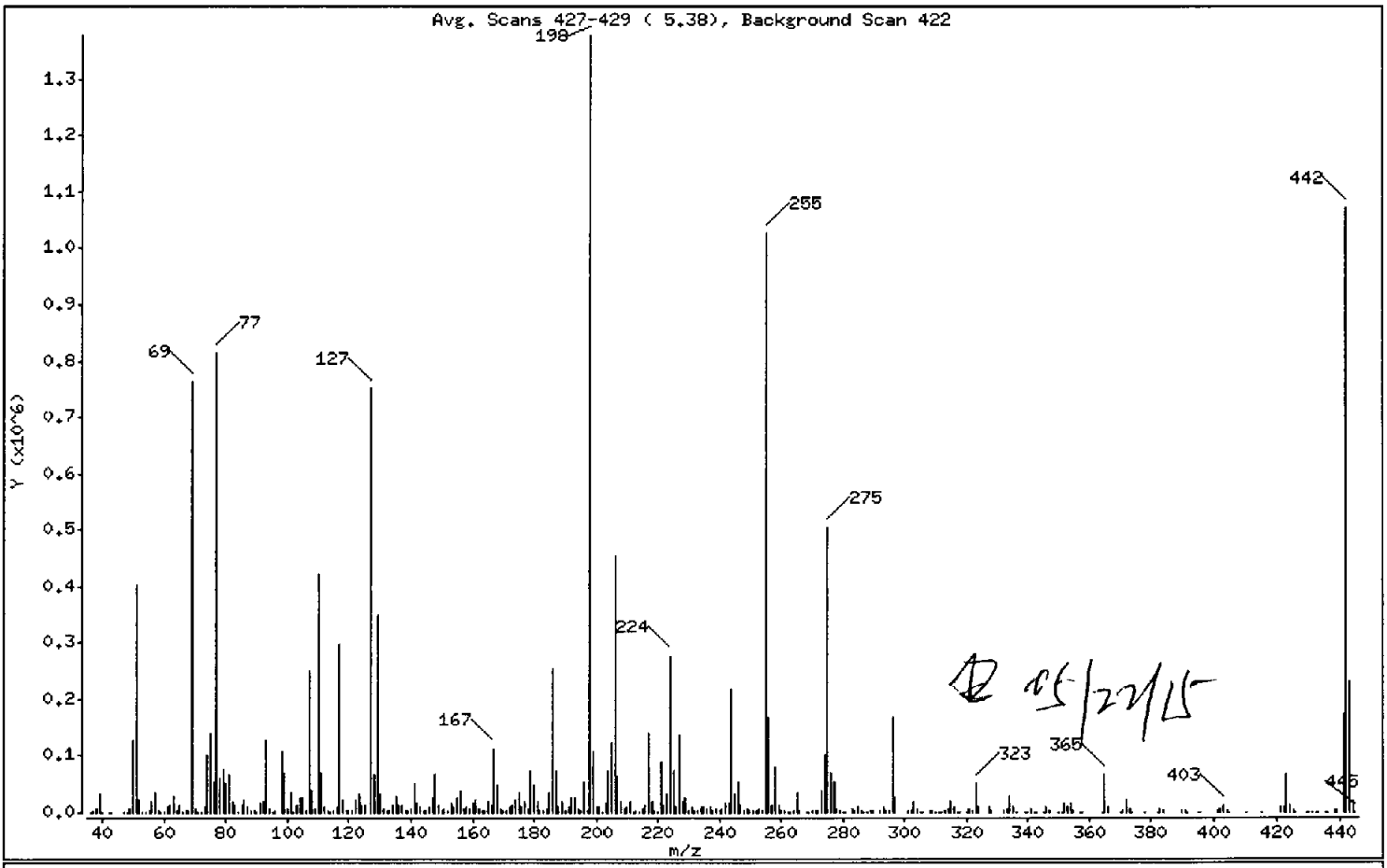
Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	29.11
68	Less than 2.00% of mass 69	0.22 (0.41)
69	Mass 69 relative abundance	55.30
70	Less than 2.00% of mass 69	0.35 (0.63)
127	10.00 - 80.00% of mass 198	54.48
197	Less than 2.00% of mass 198	0.26
199	5.00 - 9.00% of mass 198	7.75
275	10.00 - 60.00% of mass 198	36.47
365	Greater than 1.00% of mass 198	4.87
441	0.01 - 24.00% of mass 442	12.53 (16.11)
442	50.00 - 200.00% of mass 198	77.79
443	15.00 - 24.00% of mass 442	16.75 (21.54)

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522 Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	133	133.00	2095	227.00	136960	323.00	49368
37.00	2809	134.00	11222	228.00	18576	324.00	8578
38.00	7849	135.00	29392	229.00	24776	325.00	1037
39.00	32344	136.00	13020	230.00	3346	326.00	844
40.00	1457	137.00	14258	231.00	9200	327.00	10834
41.00	656	138.00	3046	232.00	2175	328.00	4731
42.00	208	139.00	2131	233.00	2421	329.00	1148
43.00	462	140.00	5620	234.00	8771	331.00	94
44.00	148	141.00	50576	235.00	8737	332.00	3861
45.00	1002	142.00	15278	236.00	6449	333.00	5368
47.00	108	143.00	10218	237.00	8728	334.00	30008
48.00	486	144.00	2916	238.00	1664	335.00	8085
49.00	5506	145.00	2078	239.00	5233	336.00	857
50.00	126656	146.00	9702	240.00	4470	339.00	846
51.00	401216	147.00	24656	241.00	7769	340.00	564
52.00	21592	148.00	65440	242.00	15541	341.00	5293
53.00	439	149.00	11090	243.00	17384	342.00	1438
54.00	85	150.00	3256	244.00	219136	343.00	545
55.00	3619	151.00	6177	245.00	30280	345.00	182
56.00	17472	152.00	3120	246.00	53368	346.00	10368
57.00	35392	153.00	15554	247.00	11577	347.00	2438
58.00	2172	154.00	10768	248.00	2670	348.00	129
59.00	547	155.00	25120	249.00	7410	350.00	185
60.00	986	156.00	36760	250.00	1808	351.00	984
61.00	10440	157.00	7608	251.00	2494	352.00	14425
62.00	12711	158.00	8585	252.00	2317	353.00	10273
63.00	29888	159.00	7515	253.00	4782	354.00	14266
64.00	4742	160.00	16744	254.00	3900	355.00	2256
65.00	12367	161.00	21656	255.00	1025024	356.00	213
66.00	1347	162.00	5810	256.00	166720	357.00	89
67.00	2330	163.00	1976	257.00	13618	358.00	408
68.00	3089	164.00	2428	258.00	78344	359.00	818
69.00	762240	165.00	20048	259.00	11374	360.00	108
70.00	4825	166.00	13381	260.00	1785	361.00	125
71.00	491	167.00	110632	261.00	2437	363.00	415

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522 Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
72.00	1279	168.00	46304	262.00	258	364.00	480
73.00	8486	169.00	6447	263.00	387	365.00	67168
74.00	101760	170.00	3710	264.00	2376	366.00	10579
75.00	138048	171.00	4204	265.00	34056	367.00	1003
76.00	53656	172.00	10014	266.00	4159	370.00	1161
77.00	814336	173.00	11349	267.00	189	371.00	2502
78.00	59624	174.00	20776	268.00	453	372.00	20800
79.00	75288	175.00	35792	269.00	88	373.00	5013
80.00	51216	176.00	9232	270.00	1790	374.00	794
81.00	66328	177.00	19960	271.00	2542	377.00	477
82.00	17520	178.00	6333	272.00	3882	378.00	440
83.00	12577	179.00	72056	273.00	37368	379.00	157
84.00	719	180.00	46176	274.00	100384	382.00	96
85.00	12263	181.00	19560	275.00	502656	383.00	5516
86.00	22536	182.00	3497	276.00	69032	384.00	1682
87.00	8695	183.00	2187	277.00	54464	385.00	673
88.00	3815	184.00	6739	278.00	7916	389.00	127
89.00	1832	185.00	35672	279.00	1711	390.00	2436
90.00	712	186.00	252928	280.00	116	391.00	1679
91.00	15213	187.00	73384	281.00	346	392.00	1578
92.00	18224	188.00	8027	282.00	1357	393.00	626
93.00	127472	189.00	19344	283.00	6520	395.00	110
94.00	7910	190.00	3027	284.00	4208	396.00	107
95.00	1570	191.00	8169	285.00	8767	397.00	398
96.00	4261	192.00	24600	286.00	1634	401.00	1734
98.00	108232	193.00	24392	287.00	105	402.00	7467
99.00	70344	194.00	5544	288.00	695	403.00	12187
100.00	5090	195.00	3551	289.00	1846	404.00	4515
101.00	33400	196.00	53392	290.00	1751	405.00	832
102.00	1451	197.00	3611	291.00	1146	410.00	545
103.00	12415	198.00	1378304	292.00	2279	415.00	439
104.00	24600	199.00	106832	293.00	10224	416.00	192
105.00	25024	200.00	8546	294.00	3051	420.00	281
106.00	3918	201.00	9616	295.00	3979	421.00	8393
107.00	249216	202.00	1249	296.00	167360	422.00	9079

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522 Instrument: nt8.i

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1 Column diameter: 0.32

Data File: 15052201.d
Spectrum: Avg. Scans 427-429 (5.38), Background Scan 422
Location of Maximum: 198.00
Number of points: 375

m/z	Y	m/z	Y	m/z	Y	m/z	Y
108.00	39072	203.00	15691	297.00	24824	423.00	67848
109.00	5517	204.00	73424	298.00	1489	424.00	13402
110.00	422464	205.00	124248	301.00	2273	425.00	1638
111.00	69992	206.00	452480	302.00	3019	426.00	151
112.00	9466	207.00	62200	303.00	19336	427.00	111
113.00	3292	208.00	17952	304.00	4869	428.00	120
114.00	983	209.00	6435	305.00	776	429.00	307
115.00	1965	210.00	8007	306.00	163	430.00	663
116.00	9110	211.00	20480	307.00	517	431.00	123
117.00	299008	212.00	1184	308.00	2541	432.00	445
118.00	21312	213.00	2341	309.00	1677	433.00	117
119.00	2164	214.00	1002	310.00	1417	434.00	239
120.00	3561	215.00	6859	311.00	423	435.00	739
121.00	1836	216.00	11546	312.00	561	436.00	799
122.00	21816	217.00	140416	313.00	1684	437.00	1577
123.00	30416	218.00	17496	314.00	7178	438.00	1587
124.00	12613	219.00	1791	315.00	18624	439.00	3736
125.00	11800	220.00	1295	316.00	10566	440.00	651
127.00	750912	221.00	88656	317.00	1317	441.00	172736
128.00	67432	222.00	11367	318.00	137	442.00	1072128
129.00	349952	223.00	31256	319.00	585	443.00	230912
130.00	30120	224.00	276544	320.00	883	444.00	19888
131.00	6567	225.00	73432	321.00	5201	445.00	1341
132.00	3589	226.00	8680	322.00	2209		

ACS_20511

Data File: /chem3/nt8.1/20150522.b/tune.b/15052201.d

Date : 22-MAY-2015 14:41

Client ID: DFTPP150522

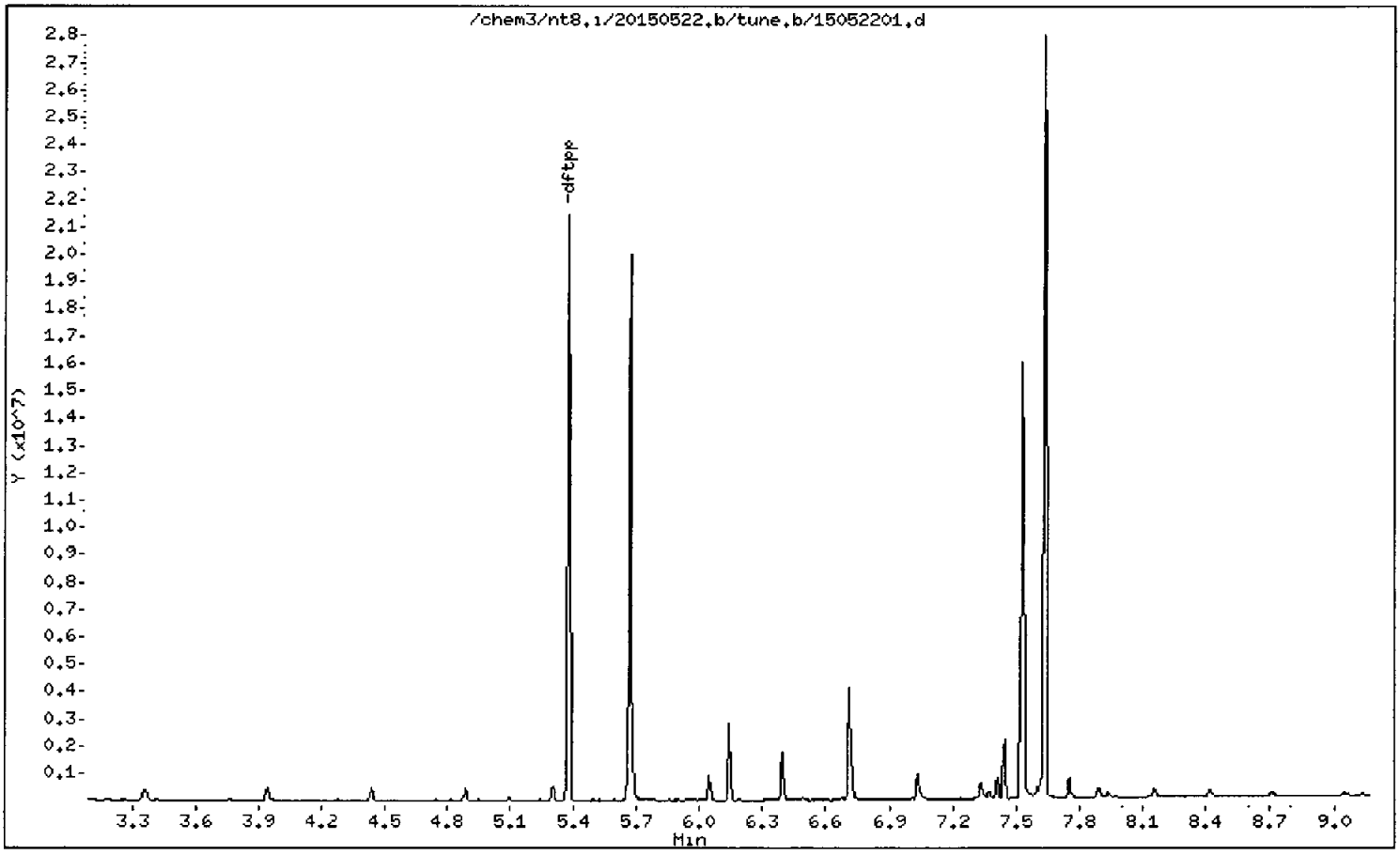
Instrument: nt8.1

Sample Info: DFTPP150522

Operator: JZ

Column phase: ZB-5ms1

Column diameter: 0.32



Analytical Resources Inc.
ABN by sw846 8270C
DDT Breakdown Report

Data file: /chem3/nt8.i/20150522.b/ddt.b/15052201.d ARI ID: DDT150522
Method: /chem3/nt8.i/20150522.b/ddt.b/sw846ddt.m Misc: 15-
Analysis Date: 22-MAY-2015 14:41 Instrument: nt8.i

COMPOUND	RT	AREA
Pentachlorophenol	5.670	1591237
Benzidine	7.532	4047505
4,4'-DDE	7.034	15796
4,4'-DDD	7.446	310923
4,4'-DDT	7.638	3132013

$$\text{DDT Percent Breakdown} = \frac{(\text{DDE Area} + \text{DDD Area}) * 100}{(\text{DDE Area} + \text{DDD Area} + \text{DDT Area})}$$

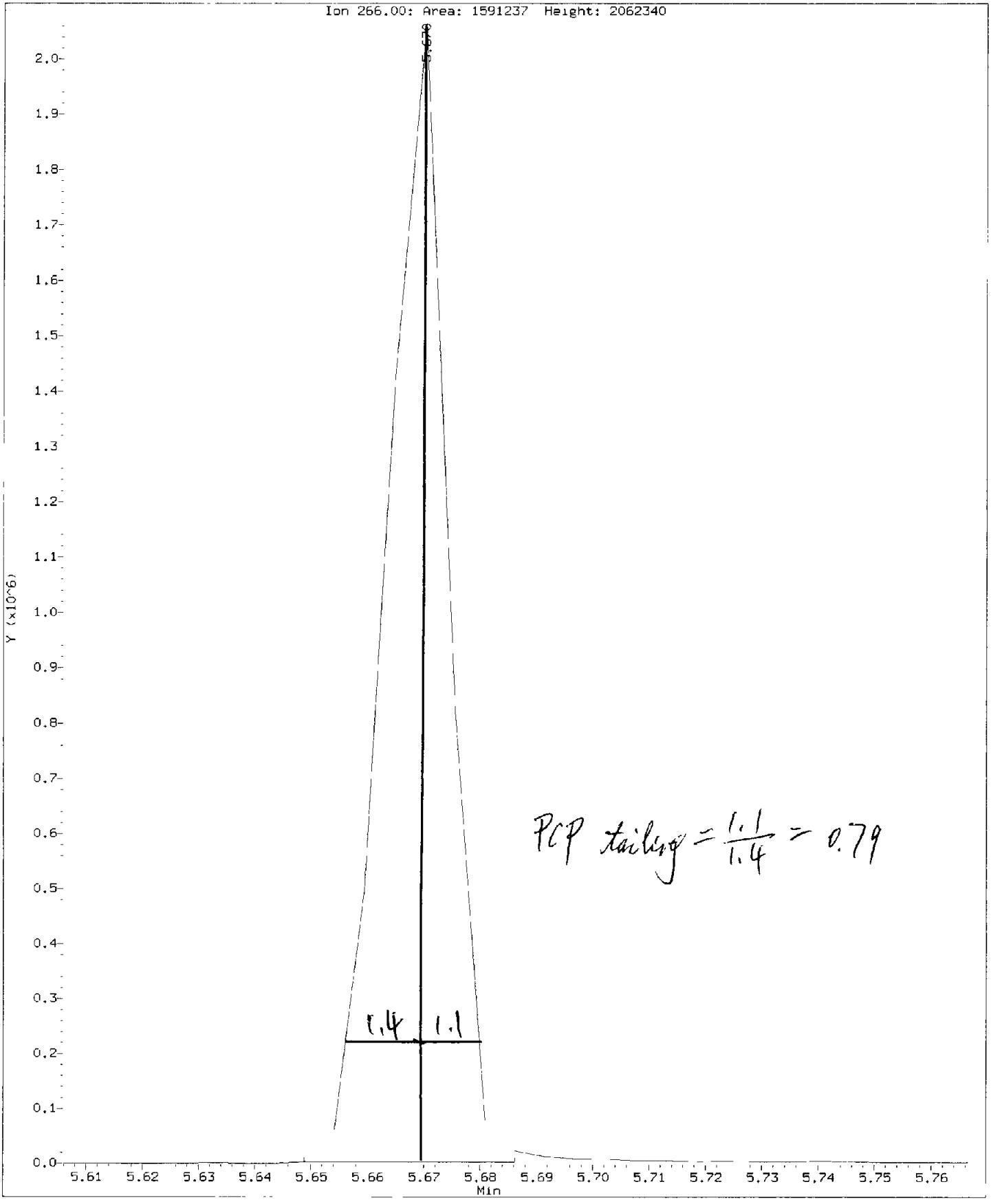
$$\text{DDT Percent Breakdown} = \frac{(15796 + 310923) * 100}{(15796 + 310923 + 3132013)}$$

DDT Percent Breakdown = 9.4 %

05/22/15

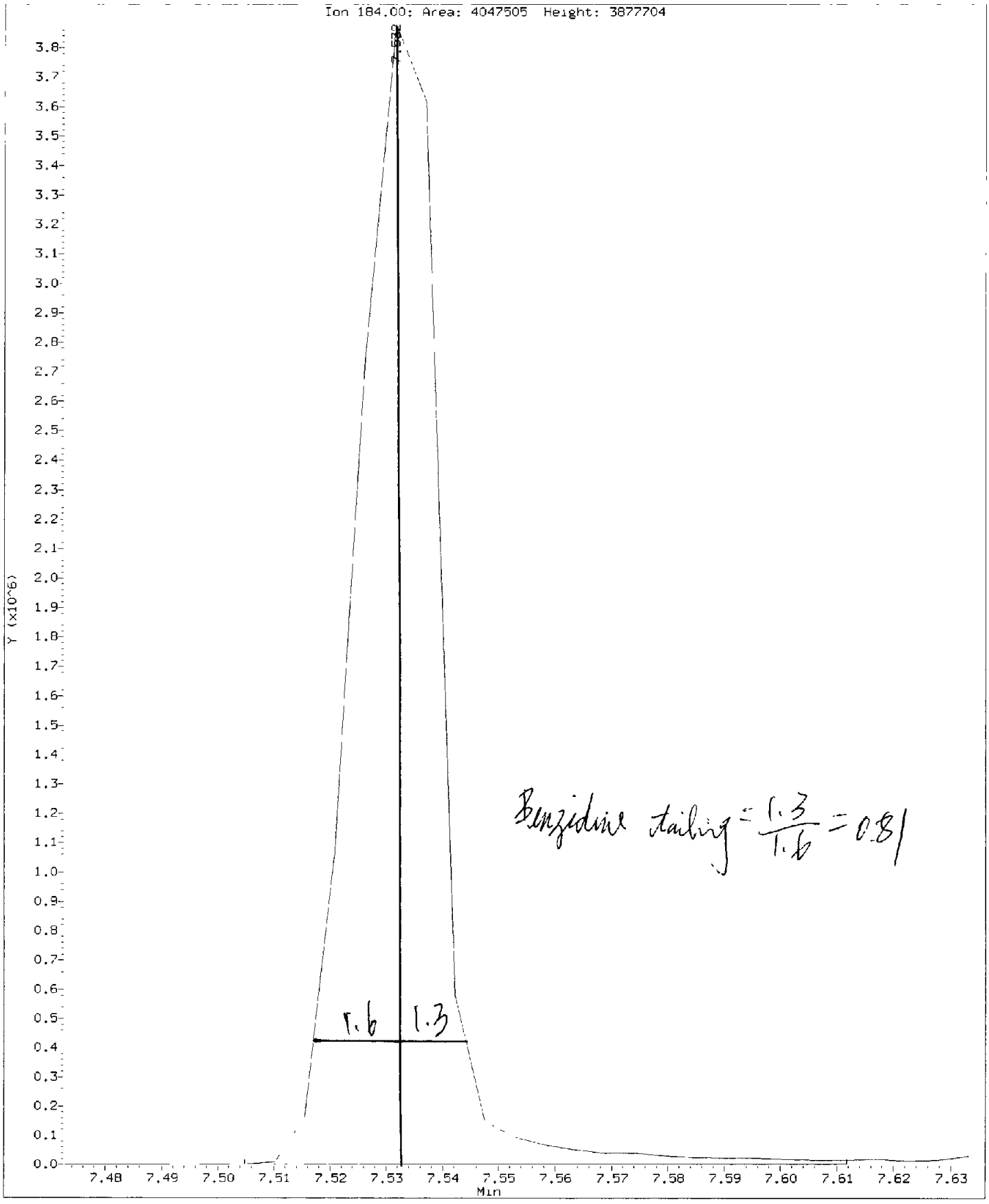
Data File: /chem3/nt8.1/20150522.b/ddt.b/15052201.d
Injection Date: 22-MAY-2015 14:41
Instrument: nt8.1
Client Sample ID: DDT150522

Compound: Pentachlorophenol
CAS Number: 87-86-5



Data File: /chem3/nt8.1/20150522.b/ddt.b/15052201.d
Injection Date: 22-MAY-2015 14:41
Instrument: nt8.1
Client Sample ID: DDT150522

Compound: Benzidine
CAS Number:



Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt8.i Injection Date: 22-MAY-2015 20:52
Lab File ID: 15052216.d Init. Cal. Date(s): 13-APR-2015 13-APR-2015
Analysis Type: Init. Cal. Times: 12:22 14:58
Lab Sample ID: CCV150522 Quant Type: ISTD
Method: /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m

AR 6/26/15

COMPOUND	RRF / AMOUNT	RF2	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
7 Naphthalene	0.96345	0.92999	0.100	-3 47325	50.00000	Averaged
$ 12 2-Methylnaphthalene-d10	0.61074	0.60364	0.100	-1.16261	50.00000	Averaged
14 2-Methylnaphthalene	0.57449	0.58837	0.100	2.41716	50.00000	Averaged
15 1-methylnaphthalene	0.55829	0.56491	0.100	1.18656	50.00000	Averaged
21 Acenaphthylene	1.46062	1.55980	0.100	6.79008	50.00000	Averaged
23 Acenaphthene	0.97186	0.98787	0.100	1.64667	50.00000	Averaged
11 Dibenzofuran	1.34410	1.40866	0.100	4.80351	50.00000	Averaged
25 Fluorene	1.08551	1 19261	0.100	9.86628	50.00000	Averaged
30 Phenanthrene	0.95354	0 95187	0.100	-0.17525	50.00000	Averaged
31 Anthracene	0.85847	0.88054	0.100	2.57083	50.00000	Averaged
36 Fluoranthene	1.11525	1.13092	0.100	1.40433	50.00000	Averaged
$ 253 Fluoranthene-d10	0.98378	1.01014	0.100	2.67963	50.00000	Averaged
39 Pyrene	1.11491	1.02260	0.100	-8.27967	50.00000	Averaged
46 Benzo(a)anthracene	1.00322	1.01103	0.100	0.77850	50.00000	Averaged
48 Chrysene	1.00588	0.93485	0.100	-7.06189	50.00000	Averaged
51 Benzo(b)fluoranthene	1.05030	1.01933	0.100	-2.94884	50.00000	Averaged
52 Benzo(k)fluoranthene	1.04943	1.03704	0.100	-1.18117	50.00000	Averaged
251 Benzo(j)fluoranthene	1.02402	0.99911	0.100	-2.43242	50.00000	Averaged
54 Benzo(a)pyrene	0.93648	0.89233	0.100	-4.71447	50.00000	Averaged
63 Indeno(1,2,3-cd)pyrene	1.12480	1.12401	0.100	-0.07053	50.00000	Averaged
$ 60 Dibenzo(a,h)anthracene-d14	0.76169	0 80650	0.010	5.88351	50.00000	Averaged
62 Dibenzo(a,h)anthracene	0.91613	0.92962	0.100	1.47225	50.00000	Averaged
61 Benzo(g,h,i)perylene	0.98941	0.95966	0.100	-3.00700	50.00000	Averaged
57 Perylene	0.97216	0.97305	0.100	0.09192	50.00000	Averaged

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/ccv.b/15052216.d
Lab Smp Id: CCV150522 Client Smp ID: CCV150522
Inj Date : 22-MAY-2015 20:52
Operator : JZ Inst ID: nt8.i
Smp Info : CCV150522
Misc Info : 15-
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m
Meth Date : 26-May-2015 12:41 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 16 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
* 6	Naphthalene-d8	136	4.752	4.752	(1.000)	318416	2.00000	
7	Naphthalene	128	4.777	4.777	(1.005)	370155	2.50000	2.413
$ 12	2-Methylnaphthalene-d10	152	5.476	5.476	(1.152)	240259	2.50000	2.471
14	2-Methylnaphthalene	141	5.520	5.520	(1.162)	234184	2.50000	2.560
15	1-methylnaphthalene	141	5.716	5.716	(1.203)	224845	2.50000	2.530
21	Acenaphthylene	152	6.902	6.902	(0.985)	408025	2.50000	2.670
* 22	Acenaphthene-d10	164	7.009	7.009	(1.000)	209270	2.00000	
23	Acenaphthene	153	7.060	7.060	(1.007)	258414	2.50000	2.541
11	Dibenzofuran	168	7.209	7.209	(1.028)	368489	2.50000	2.620
25	Fluorene	166	7.683	7.683	(1.096)	311973	2.50000	2.747
* 28	Phenanthrene-d10	188	9.030	9.030	(1.000)	373183	2.00000	
30	Phenanthrene	178	9.061	9.061	(1.004)	444027	2.50000	2.496
31	Anthracene	178	9.103	9.103	(1.008)	410751	2.50000	2.564
36	Fluoranthene	202	10.775	10.775	(1.193)	527548	2.50000	2.535
$ 253	Fluoranthene-d10	212	10.740	10.740	(1.189)	471207	2.50000	2.567
39	Pyrene	202	11.268	11.268	(0.816)	538909	2.50000	2.293
46	Benzo(a)anthracene	228	13.687	13.687	(0.991)	532808	2.50000	2.519
* 47	Chrysene-d12	240	13.814	13.814	(1.000)	421598	2.00000	
48	Chrysene	228	13.887	13.887	(1.005)	492661	2.50000	2.323
51	Benzo(b)fluoranthene	252	16.381	16.381	(0.928)	528071	2.50000	2.426
52	Benzo(k)fluoranthene	252	16.438	16.438	(0.932)	537242	2.50000	2.470
251	Benzo(j)fluoranthene	252	16.514	16.514	(0.936)	517592	2.50000	2.439
54	Benzo(a)pyrene	252	17.409	17.409	(0.987)	462274	2.50000	2.382
* 56	Perylene-d12	264	17.643	17.643	(1.000)	414444	2.00000	
63	Indeno(1,2,3-cd)pyrene	276	20.059	20.059	(1.137)	582299	2.50000	2.498
$ 60	Dibenzo(a,h)anthracene-d14	292	19.945	19.945	(1.130)	417813	2.50000	2.647
62	Dibenzo(a,h)anthracene	278	20.040	20.040	(1.136)	481594	2.50000	2.537

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)
61 Benzo(g,h,i)perylene	276	21.026	21 026	(1.192)	497155	2.50000	2 425
57 Perylene	252	17.716	17 716	(1.004)	504095	2.50000	2.502

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052216.d
Lab Smp Id: CCV150522
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/ccv.b/FSIMPNA150413C.m
Misc Info: 15-

Calibration Date: 22-MAY-2015
Calibration Time: 20:52
Client Smp ID: CCV150522
Level:
Sample Type:

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	318416	-7.19
22 Acenaphthene-d10	230598	115299	461196	209270	-9.25
28 Phenanthrene-d10	373928	186964	747856	373183	-0.20
47 Chrysene-d12	381262	190631	762524	421598	10.58
56 Perylene-d12	380825	190412	761650	414444	8.83

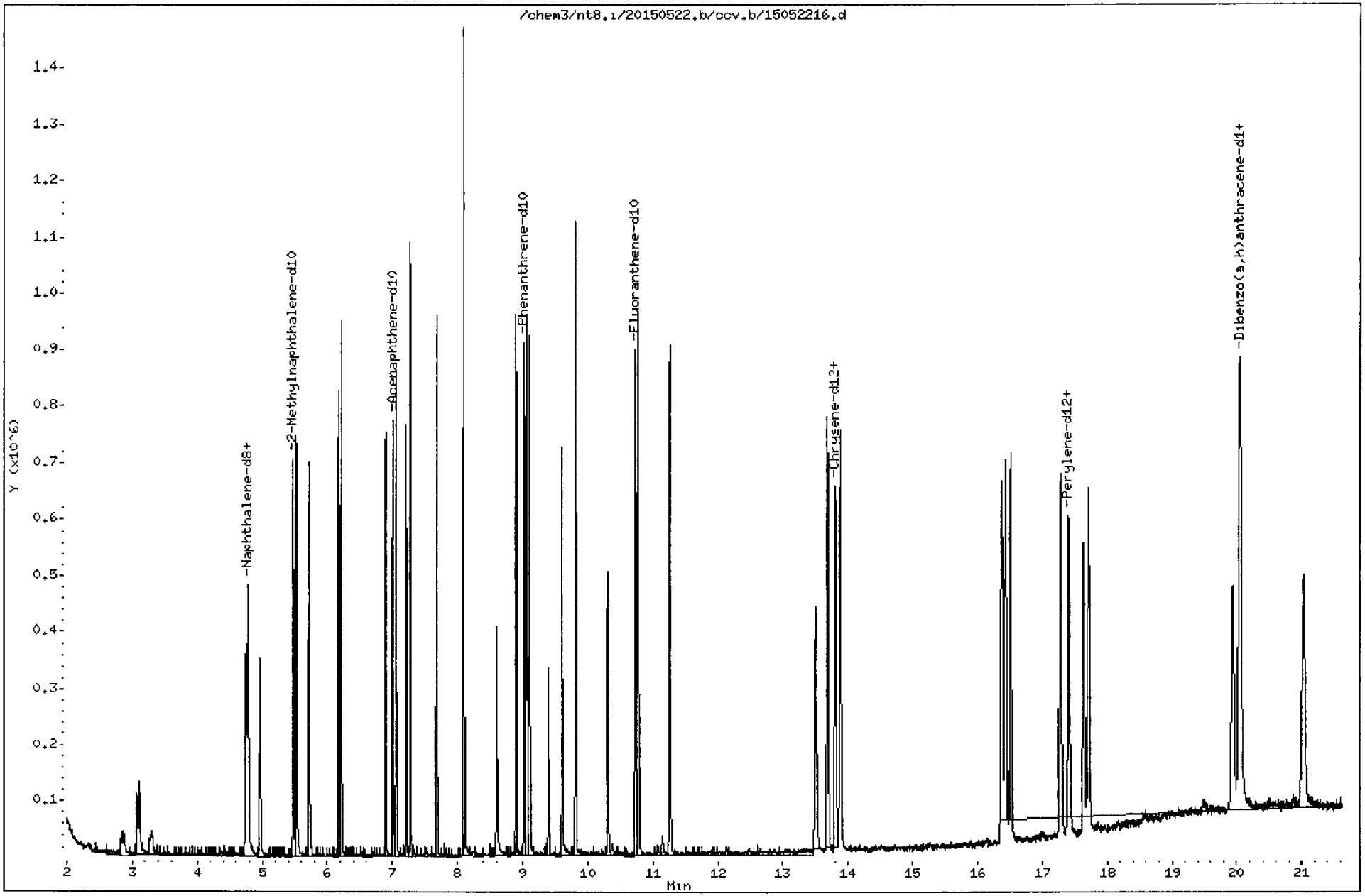
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.75	0.00
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.81	13.31	14.31	13.81	0.00
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem3/nt8.i/20150522.b/ccv.b/15052216.d
Date : 22-MAY-2015 20:52
Client ID: CCV150522
Sample Info: CCV150522

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25

Column phase: ZB-35



CO-ELUTION SUMMARY FOR FILE - 15052216.d

Lab ID: CCV150522, Method: ccv.b/FSIMPNA150413C.m, Instrument: nt8.i, Date: 2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052211.d
Lab Smp Id: AGA8MBW1 AGA9MBW1 Client Smp ID: AGA8MBW1
Inj Date : 22-MAY-2015 18:44
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8MBW1
Misc Info : 15-9298 15-9462
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 11 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
*	6 Naphthalene-d8	136	4.742	4.748	(1.000)	344358	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.472	5.472	(1.154)	224744	2.13724	2.137
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	232596	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.027	9.026	(1.000)	401626	2.00000	
	30 Phenanthrene	178	Compound Not Detected.					
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10.740	10.740	(1.190)	520689	2 63567	2 636
	39 Pyrene	202	Compound Not Detected					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.814	13.817	(1.000)	432555	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.646	17 643	(1 000)	413095	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.938	19.942	(1.130)	440635	2.80080	2.801
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052211.d
Lab Smp Id: AGA8MBW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8MBW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	344358	0.37
22 Acenaphthene-d10	230598	115299	461196	232596	0.87
28 Phenanthrene-d10	373928	186964	747856	401626	7.41
47 Chrysene-d12	381262	190631	762524	432555	13.45
56 Perylene-d12	380825	190412	761650	413095	8.47

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.02
56 Perylene-d12	17.64	17.14	18.14	17.65	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

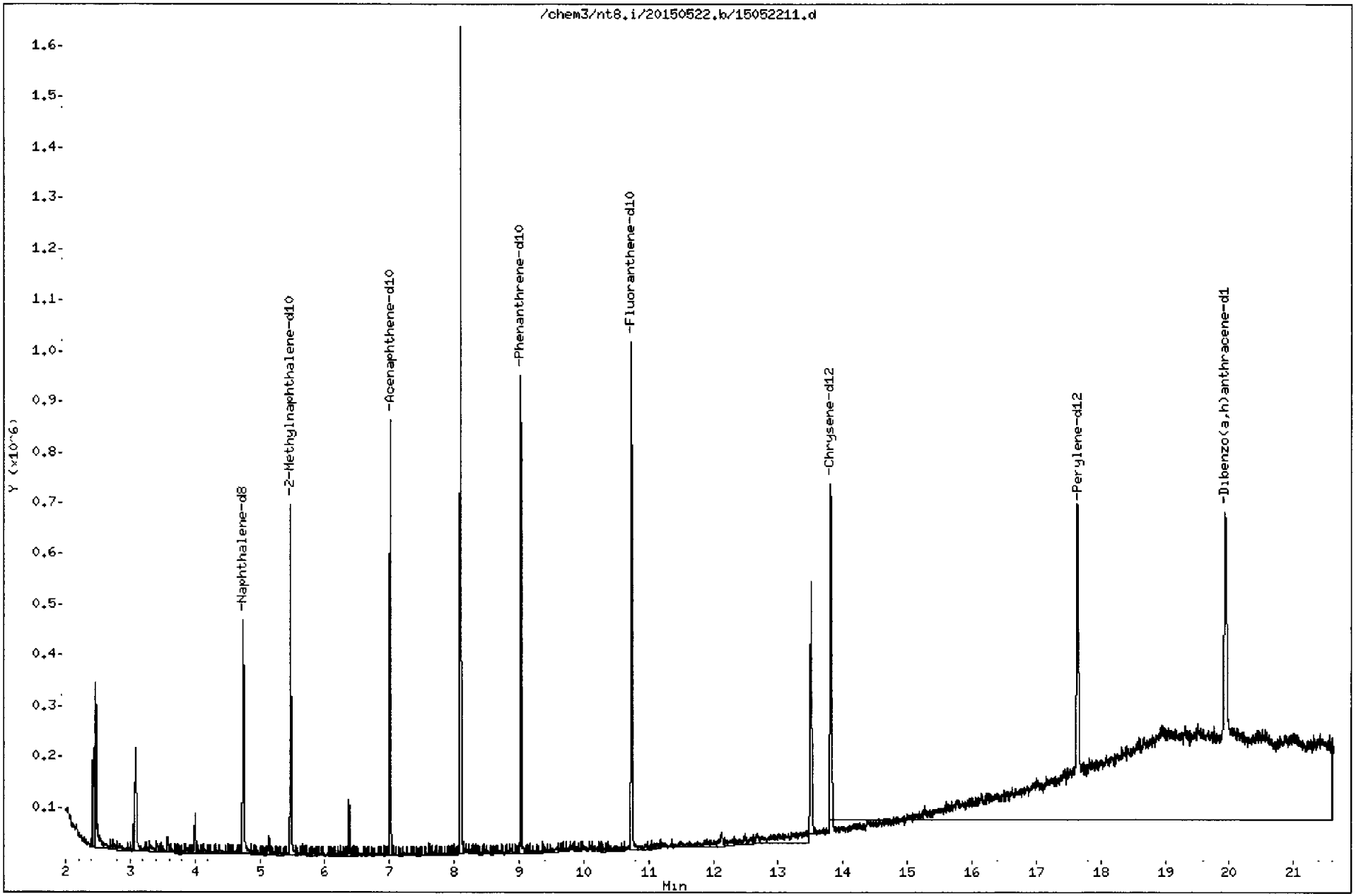
RECOVERY REPORT

Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8MBW1
Client Smp ID: AGA8MBW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: BLANK
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	2.137	71.24	31-120
$ 253 Fluoranthene-d10	3.000	2.636	87.86	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.801	93.36	10-125

Data File: /chem3/nt8.i/20150522.b/15052211.d
Date : 22-MAY-2015 18:44
Client ID: AGA8MBW1
Sample Info: AGA8MBW1
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052211.d

Lab ID: AGA8MBW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-20

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052212.d
Lab Smp Id: AGA8LCSW1 AGC9LCSW1 Client Smp ID: AGA8LCSW1
Inj Date : 22-MAY-2015 19:09
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8LCSW1,
Misc Info : 15-9298 CF-9442
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 12 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.742	4.748	(1.000)	375304	2.00000	
7 Naphthalene	128	4.771	4.777	(1.006)	354142	1.95881	1.959
$ 12 2-Methylnaphthalene-d10	152	5.472	5.472	(1.154)	224143	1.95577	1.956
14 2-Methylnaphthalene	141	5.520	5.520	(1.164)	229847	2.13210	2.132
15 1-methylnaphthalene	141	5.713	5.713	(1.205)	219533	2.09552	2.096
21 Acenaphthylene	152	6.902	6.898	(0.985)	385303	2.23355	2.234
* 22 Acenaphthene-d10	164	7.009	7 009	(1.000)	236209	2.00000	
23 Acenaphthene	153	7.060	7.060	(1.007)	264019	2.30019	2.300
11 Dibenzofuran	168	7.208	7.208	(1.028)	370491	2.33388	2.334
25 Fluorene	166	7.683	7.679	(1.096)	318866	2.48717	2.487
* 28 Phenanthrene-d10	188	9.030	9.026	(1.000)	423109	2.00000	
30 Phenanthrene	178	9.061	9.061	(1.004)	481480	2.38680	2.387
31 Anthracene	178	9.102	9.102	(1.008)	461194	2.53944	2.539
36 Fluoranthene	202	10.775	10.775	(1.193)	608183	2.57773	2.578
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.189)	555326	2.66827	2.668
39 Pyrene	202	11 268	11.271	(0.816)	628320	2.37970	2.380

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	13.690	13.690	(0.991)	606439	2.55256	2.553
*	47 Chrysene-d12	240	13.814	13.817	(1.000)	473638	2.00000	
	48 Chrysene	228	13.886	13.890	(1.005)	578166	2.42711	2.427
	51 Benzo(b)fluoranthene	252	16.381	16.381	(0.929)	631411	2.70209	2.702
	52 Benzo(k)fluoranthene	252	16.438	16.441	(0.932)	620598	2.65803	2.658
	251 Benzo(j)fluoranthene	252	16.517	16.517	(0.936)	471429	2.06925	2.069
	54 Benzo(a)pyrene	252	17.412	17.415	(0.987)	526096	2.52506	2.525
*	56 Perylene-d12	264	17.640	17.643	(1.000)	444966	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.055	20.059	(1.137)	666089	2.66170	2.662
$	60 Dibenzo(a,h)anthracene-d14	292	19.948	19.942	(1.131)	464126	2.73881	2.739
	62 Dibenzo(a,h)anthracene	278	20.049	20.043	(1.137)	561718	2.75590	2.756
	61 Benzo(g,h,i)perylene	276	21.033	21.029	(1.192)	568502	2.58262	2.583
	57 Perylene	252	17.719	17.716	(1.004)	465336	2.15146	2.151

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052212.d
Lab Smp Id: AGA8LCSW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8LCSW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	375304	9.39
22 Acenaphthene-d10	230598	115299	461196	236209	2.43
28 Phenanthrene-d10	373928	186964	747856	423109	13.15
47 Chrysene-d12	381262	190631	762524	473638	24.23
56 Perylene-d12	380825	190412	761650	444966	16.84

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.04
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.02
56 Perylene-d12	17.64	17.14	18.14	17.64	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

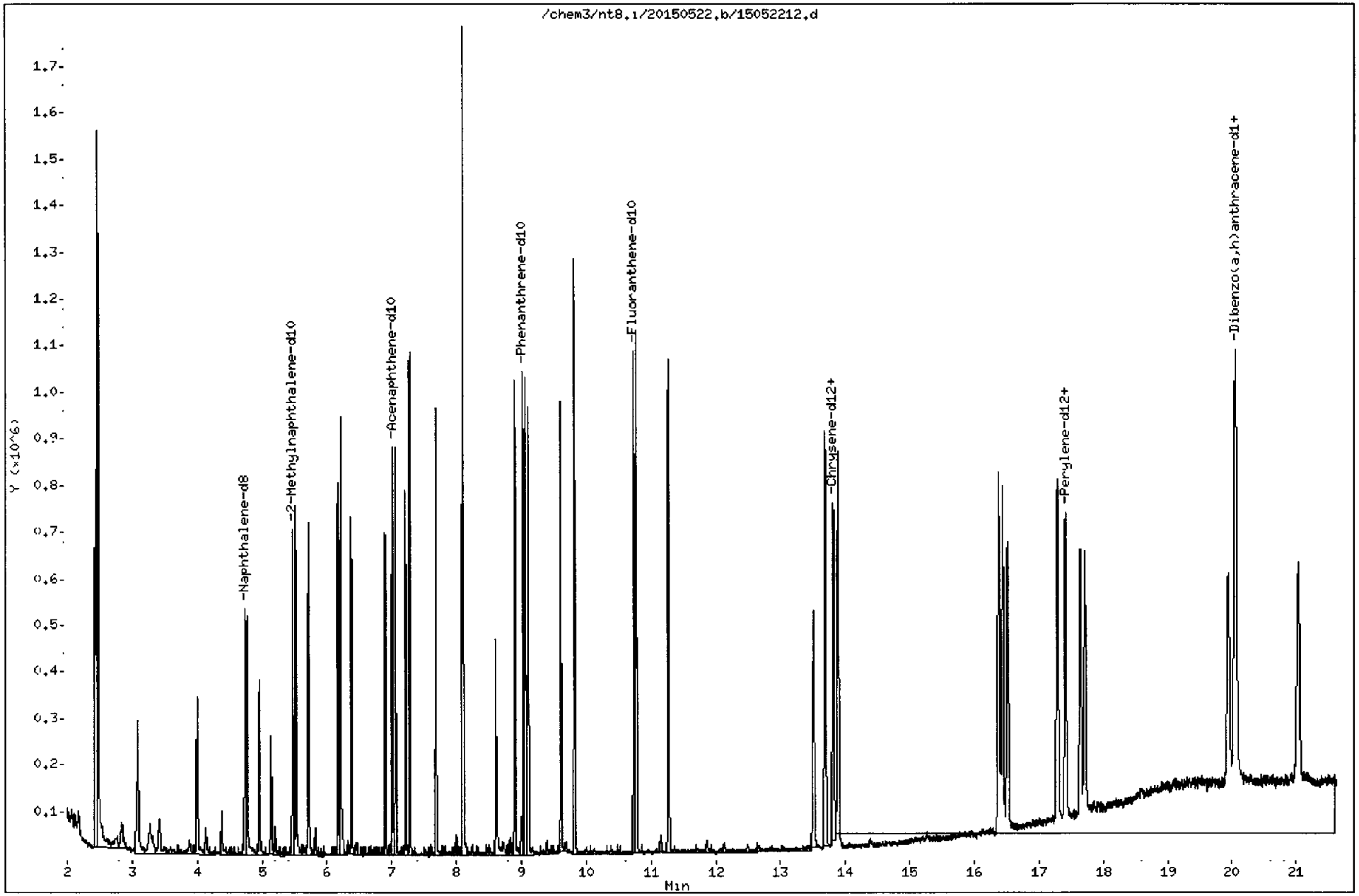
Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8LCSW1
Client Smp ID: AGA8LCSW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: LCS
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.959	65.29	36-120
14 2-Methylnaphthalen	3.000	2.132	71.07	35-120
15 1-methylnaphthalen	3.000	2.096	69.85	39-120
21 Acenaphthylene	3.000	2.234	74.45	35-120
23 Acenaphthene	3.000	2.300	76.67	39-120
11 Dibenzofuran	3.000	2.334	77.80	38-120
25 Fluorene	3.000	2.487	82.91	41-120
30 Phenanthrene	3.000	2.387	79.56	46-120
31 Anthracene	3.000	2.539	84.65	36-120
36 Fluoranthene	3.000	2.578	85.92	46-120
39 Pyrene	3.000	2.380	79.32	49-120
46 Benzo(a)anthracene	3.000	2.553	85.09	42-120
48 Chrysene	3.000	2.427	80.90	48-120
51 Benzo(b)fluoranthe	3.000	2.702	90.07	35-127
52 Benzo(k)fluoranthe	3.000	2.658	88.60	37-129
251 Benzo(j)fluoranthe	3.000	2.069	68.98	40-120
54 Benzo(a)pyrene	3.000	2.525	84.17	36-120
63 Indeno(1,2,3-cd)py	3.000	2.662	88.72	40-120
62 Dibenzo(a,h)anthra	3.000	2.756	91.86	38-120
61 Benzo(g,h,i)peryle	3.000	2.583	86.09	38-120
57 Perylene	3.000	2.151	71.72	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.956	65.19	31-120
$ 253 Fluoranthene-d10	3.000	2.668	88.94	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.739	91.29	10-125

Data File: /chem3/nt8.1/20150522.b/15052212.d
Date : 22-MAY-2015 19:09
Client ID: AGA8LCSW1
Sample Info: AGA8LCSW1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.1
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052212.d

Lab ID: AGA8LCSW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052213.d
Lab Smp Id: AGA8LCSDW1 AGC9LCSDW1 Client Smp ID: AGA8LCSDW1
Inj Date : 22-MAY-2015 19:35
Operator : JZ Inst ID: nt8.i
Smp Info : AGA8LCSDW1,
Misc Info : 15-9298 It-9442
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 13 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

05/26/15

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	FINAL (ug/L)
* 6 Naphthalene-d8	136	4.739	4.748	(1 000)	365878	2.00000	
7 Naphthalene	128	4.767	4.777	(1.006)	332494	1.88646	1.886
$ 12 2-Methylnaphthalene-d10	152	5.469	5.472	(1.154)	207939	1.86113	1.861
14 2-Methylnaphthalene	141	5.517	5.520	(1.164)	214237	2.03849	2.038
15 1-methylnaphthalene	141	5.713	5.713	(1.206)	203014	1.98776	1.988
21 Acenaphthylene	152	6.899	6.898	(0.984)	364753	2.08647	2.086
* 22 Acenaphthene-d10	164	7.009	7.009	(1.000)	239375	2.00000	
23 Acenaphthene	153	7.057	7.060	(1.007)	249107	2.14157	2.142
11 Dibenzofuran	168	7.209	7.208	(1.028)	341955	2.12564	2.126
25 Fluorene	166	7.680	7.679	(1.096)	298164	2.29495	2.295
* 28 Phenanthrene-d10	188	9.027	9.026	(1.000)	424130	2.00000	
30 Phenanthrene	178	9.061	9.061	(1.004)	462273	2.28608	2.286
31 Anthracene	178	9.103	9.102	(1 008)	437997	2.40591	2.406
36 Fluoranthene	202	10.775	10.775	(1.194)	602187	2.54618	2.546
$ 253 Fluoranthene-d10	212	10.740	10.740	(1.190)	530883	2.54469	2.545
39 Pyrene	202	11.268	11.271	(0.816)	610660	2.28991	2.290

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	13 691	13.690	(0.991)	587121	2.44677	2.447
*	47 Chrysene-d12	240	13 811	13.817	(1.000)	478376	2.00000	
	48 Chrysene	228	13.887	13.890	(1.005)	581550	2.41714	2.417
	51 Benzo(b)fluoranthene	252	16.378	16.381	(0.928)	623166	2.60546	2.605
	52 Benzo(k)fluoranthene	252	16.441	16 441	(0.932)	605390	2.53325	2.533
	251 Benzo(j)fluoranthene	252	16.514	16.517	(0.936)	471502	2 02196	2.022
	54 Benzo(a)pyrene	252	17.412	17.415	(0.987)	487921	2.28797	2.288
*	56 Perylene-d12	264	17.643	17 643	(1.000)	455442	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	20.056	20 059	(1.137)	596052	2.32704	2.327
$	60 Dibenzo(a,h)anthracene-d14	292	19.939	19.942	(1.130)	356777	2.05691	2.057
	62 Dibenzo(a,h)anthracene	278	20.046	20.043	(1.136)	443850	2.12753	2.128
	61 Benzo(g,h,i)perylene	276	21.033	21.029	(1.192)	507655	2.25315	2.253
	57 Perylene	252	17.713	17.716	(1.004)	452057	2.04198	2.042

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052213.d
Lab Smp Id: AGA8LCSDW1
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: AGA8LCSDW1
Level: LOW
Sample Type: Liquid

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	365878	6.64
22 Acenaphthene-d10	230598	115299	461196	239375	3.81
28 Phenanthrene-d10	373928	186964	747856	424130	13.43
47 Chrysene-d12	381262	190631	762524	478376	25.47
56 Perylene-d12	380825	190412	761650	455442	19.59

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.20
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.04
56 Perylene-d12	17.64	17.14	18.14	17.64	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

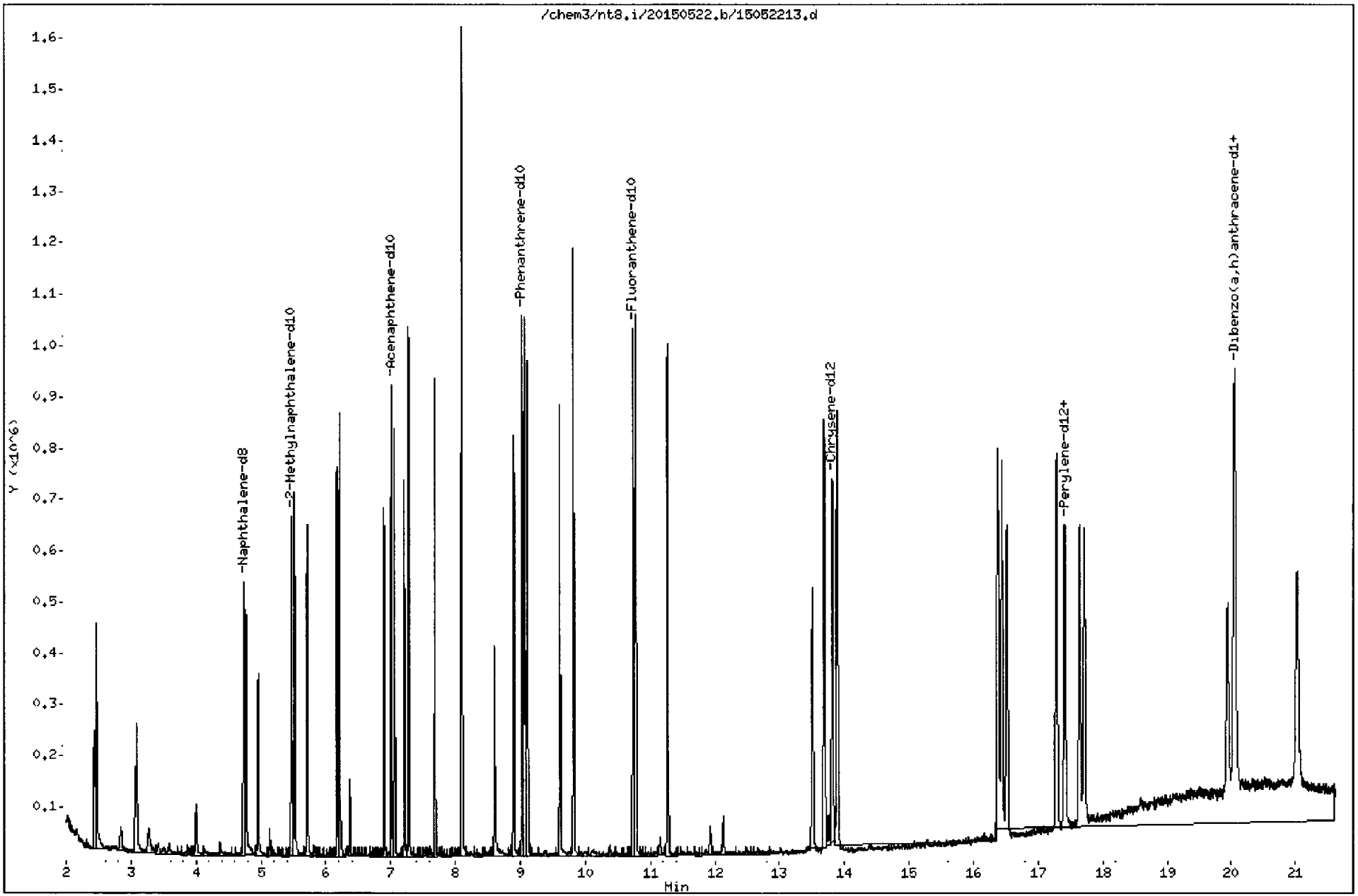
Client Name: KJC
Client SDG: AGA8
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGA8LCSDW1
Client Smp ID: AGA8LCSDW1
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: LCSD
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9298

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 Naphthalene	3.000	1.886	62.88	36-120
14 2-Methylnaphthalen	3.000	2.038	67.95	35-120
15 1-methylnaphthalen	3.000	1.988	66.26	39-120
21 Acenaphthylene	3.000	2.086	69.55	35-120
23 Acenaphthene	3.000	2.142	71.39	39-120
11 Dibenzofuran	3.000	2.126	70.85	38-120
25 Fluorene	3.000	2.295	76.50	41-120
30 Phenanthrene	3.000	2.286	76.20	46-120
31 Anthracene	3.000	2.406	80.20	36-120
36 Fluoranthene	3.000	2.546	84.87	46-120
39 Pyrene	3.000	2.290	76.33	49-120
46 Benzo(a)anthracene	3.000	2.447	81.56	42-120
48 Chrysene	3.000	2.417	80.57	48-120
51 Benzo(b)fluoranthe	3.000	2.605	86.85	35-127
52 Benzo(k)fluoranthe	3.000	2.533	84.44	37-129
251 Benzo(j)fluoranthe	3.000	2.022	67.40	40-120
54 Benzo(a)pyrene	3.000	2.288	76.27	36-120
63 Indeno(1,2,3-cd)py	3.000	2.327	77.57	40-120
62 Dibenzo(a,h)anthra	3.000	2.128	70.92	38-120
61 Benzo(g,h,i)peryle	3.000	2.253	75.10	38-120
57 Perylene	3.000	2.042	68.07	30-160

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.861	62.04	31-120
$ 253 Fluoranthene-d10	3.000	2.545	84.82	46-121
$ 60 Dibenzo(a,h)anthra	3.000	2.057	68.56	10-125

Data File: /chem3/nt8.i/20150522.b/15052213.d
Date : 22-MAY-2015 19:35
Client ID: AGA8LCSDW1
Sample Info: AGA8LCSDW1,
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052213.d

Lab ID: AGA8LCSDW1, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Analytical Resources, Inc.

Semivolatile Report SW846 Method 8270D

Data file : /chem3/nt8.i/20150522.b/15052215.d
Lab Smp Id: AGC9L Client Smp ID: RB-051415
Inj Date : 22-MAY-2015 20:26
Operator : JZ Inst ID: nt8.i
Smp Info : AGC9L
Misc Info : 15-9442
Comment : 1ul Injection
Method : /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Meth Date : 26-May-2015 16:15 jianqing Quant Type: ISTD
Cal Date : 13-APR-2015 12:50 Cal File: 15041303.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pnax.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	500.00000	Volume of final extract (uL)
Vo	500.00000	Volume of sample extracted (mL)

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
*	6 Naphthalene-d8	136	4.742	4.748	(1.000)	354755	2.00000	
	7 Naphthalene	128	Compound Not Detected.					
$	12 2-Methylnaphthalene-d10	152	5.473	5.472	(1.154)	207809	1.91827	1.918
	14 2-Methylnaphthalene	141	Compound Not Detected.					
	15 1-methylnaphthalene	141	Compound Not Detected.					
	21 Acenaphthylene	152	Compound Not Detected.					
*	22 Acenaphthene-d10	164	7.009	7.009	(1.000)	241022	2.00000	
	23 Acenaphthene	153	Compound Not Detected.					
	11 Dibenzofuran	168	Compound Not Detected.					
	25 Fluorene	166	Compound Not Detected.					
*	28 Phenanthrene-d10	188	9.027	9.026	(1.000)	422461	2 00000	
	30 Phenanthrene	178	Compound Not Detected.					
	31 Anthracene	178	Compound Not Detected.					
	36 Fluoranthene	202	Compound Not Detected.					
$	253 Fluoranthene-d10	212	10 740	10.740	(1.190)	494127	2.37786	2.378
	39 Pyrene	202	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)
	46 Benzo(a)anthracene	228	Compound Not Detected.					
*	47 Chrysene-d12	240	13.811	13.817	(1.000)	465993	2.00000	
	48 Chrysene	228	Compound Not Detected.					
	51 Benzo(b)fluoranthene	252	Compound Not Detected.					
	52 Benzo(k)fluoranthene	252	Compound Not Detected.					
	251 Benzo(j)fluoranthene	252	Compound Not Detected.					
	54 Benzo(a)pyrene	252	Compound Not Detected.					
*	56 Perylene-d12	264	17.640	17.643	(1.000)	433370	2.00000	
	63 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
$	60 Dibenzo(a,h)anthracene-d14	292	19.935	19.942	(1.130)	306146	1.85491	1.855
	62 Dibenzo(a,h)anthracene	278	Compound Not Detected.					
	61 Benzo(g,h,i)perylene	276	Compound Not Detected.					
	57 Perylene	252	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt8.i
Lab File ID: 15052215.d
Lab Smp Id: AGC9L
Analysis Type: SV
Quant Type: ISTD
Operator: JZ
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9442

Calibration Date: 22-MAY-2015
Calibration Time: 14:53
Client Smp ID: RB-051415
Level: LOW
Sample Type: Water

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	343090	171545	686180	354755	3.40
22 Acenaphthene-d10	230598	115299	461196	241022	4.52
28 Phenanthrene-d10	373928	186964	747856	422461	12.98
47 Chrysene-d12	381262	190631	762524	465993	22.22
56 Perylene-d12	380825	190412	761650	433370	13.80

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
6 Naphthalene-d8	4.75	4.25	5.25	4.74	-0.13
22 Acenaphthene-d10	7.01	6.51	7.51	7.01	0.00
28 Phenanthrene-d10	9.03	8.53	9.53	9.03	0.00
47 Chrysene-d12	13.82	13.32	14.32	13.81	-0.04
56 Perylene-d12	17.64	17.14	18.14	17.64	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

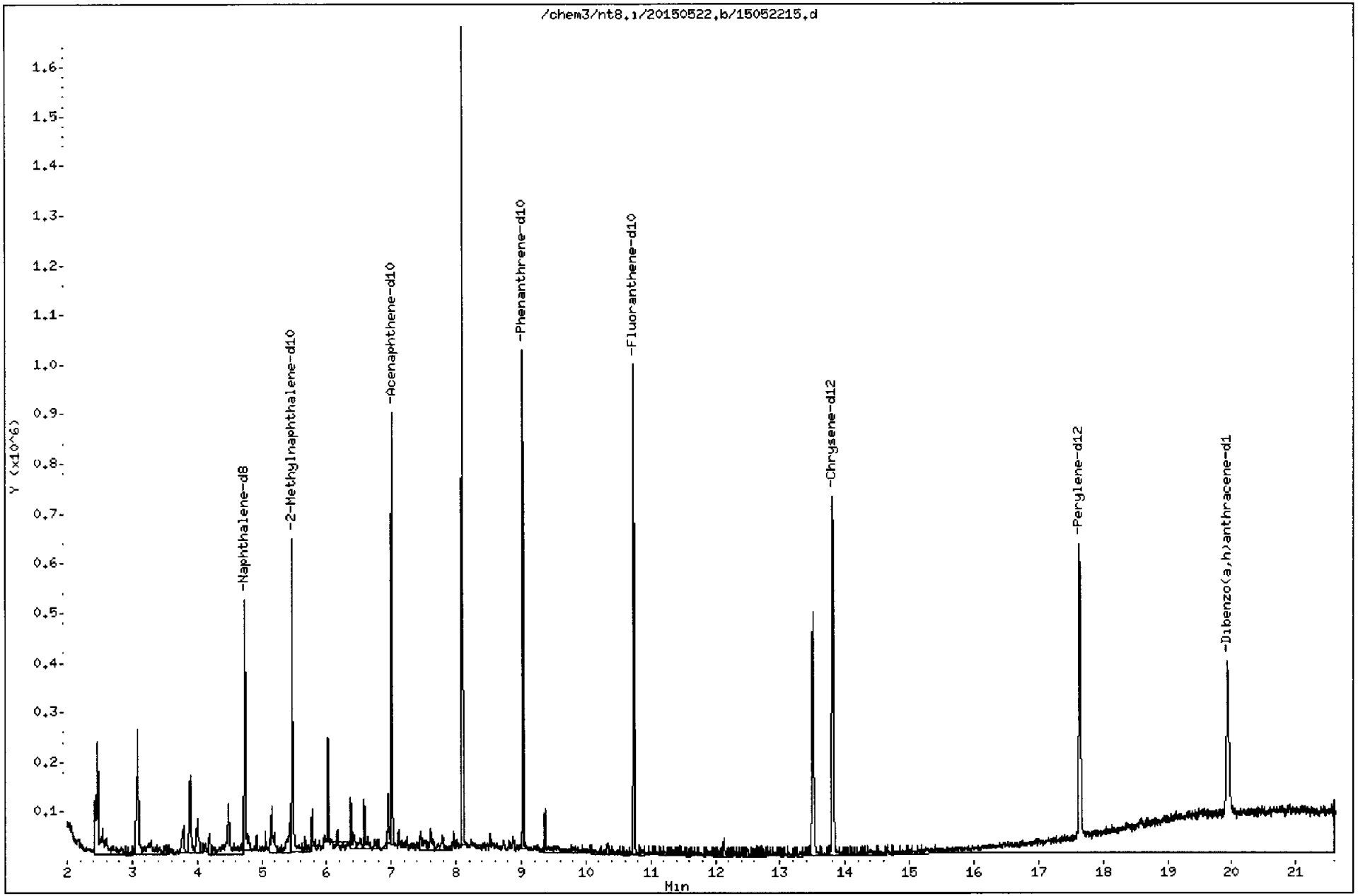
RECOVERY REPORT

Client Name: KJC
Client SDG: AGC9
Sample Matrix: LIQUID
Fraction: SV
Lab Smp Id: AGC9L
Client Smp ID: RB-051415
Level: LOW
Operator: JZ
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: pnalcsw.spk
Quant Type: ISTD
Sublist File: pnax.sub
Method File: /chem3/nt8.i/20150522.b/FSIMPNA150413.m
Misc Info: 15-9442

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 12 2-Methylnaphthalen	3.000	1.918	63.94	31-120
$ 253 Fluoranthene-d10	3.000	2.378	79.26	46-121
$ 60 Dibenzo(a,h)anthra	3.000	1.855	61.83	10-125

Data File: /chem3/nt8.i/20150522.b/15052215.d
Date : 22-MAY-2015 20:26
Client ID: RB-051415
Sample Info: AGC9L
Volume Injected (uL): 1.0
Column phase: ZB-35

Instrument: nt8.i
Operator: JZ
Column diameter: 0.25



CO-ELUTION SUMMARY FOR FILE - 15052215.d

Lab ID: AGC9L, Method: FSIMPNA150413.m, Instrument: nt8.i, Date: 22-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AGC9 - 08615

PCB Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGC9

AGC9 - 08SEP

Incorporated
Analytical Chemists and
Consultants

(8082A) PCB – Soil/ Sediment
Microwave (3546) (SOP # 3304S)

Element Batch BDE ΦΦ5Φ
Preparation Test PCB PSDDA # 5

ARI Job No(s) AGC9 Page 1 of 1 PSDDA (20ppb) Batch set up by: ~~SH~~

Bottle #	ARI Sample I.D.	Weight Extracted (eq to 5.0g dry wt)	(REQ) Acid Clean (5mL)	(REQ) Sulfur Clean (5mL) very High 1 2 3 Sulfur	(Opt/REQ) Silica Gel Clean (1:5) Y / N	Extraction Final Volume	Volume to Lab	Comments	Verify Client ID
	MBS AGC9	5.00g	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL		MW ΦS 5/21/15 Analyst/Date
	SBS	5.00g	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL		Microwave CT 1 2 3 5/22/15 Analyst/Date
1	Sample A	6.Φ2	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	15EΦΦ13-Φ1A	
1	B	7.Φ5	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ2A	KD 100°C Exchange to Hexane (2 X 20mL) 1 2 3 4 5 6 RH 5/27/15 Analyst/Date
1	C	6.Φ4	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ3A	
1	D	8.Φ3	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ4A	
1	E	7.Φ2	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ5A	
1	F	6.Φ8	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ6A	
1	G	7.Φ5	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ7A	TurboVap 1 2 3 Pre-Cleanups SH 5/27/15 Analyst/Date
1	H	6.Φ1	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ8A	
1	HMS	6.Φ5	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ8A	
1	Hmsd	6.Φ4	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ8A	
1	I	6.Φ9	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-Φ9A	
1	J	7.Φ2	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-1ΦA	
1	K	7.Φ4	5.0mL	5.0mL	1mL Y / N	5.0mL	1mL	-11A	TurboVap 1 2 3 Post Cleanups N/A Analyst/Date
Analyst/Date	MS ΦS/22/15		SH 5/27/15	SH 5/27/15		SH 5/27/15	SH 5/27/15	Reviewed by: SH 5/27/15	

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	N(DΦΦ1454)	2µg/mL	100µL	10/14/15	CT	
Spike	1(DΦΦΦ667)	20µg/mL	125µL	2/13/16	CT	
~~QLS Spike~~	~~5(~~ ~~)~~	~~2µg/mL~~	~~50µL~~			
Extraction Time: 12:Φ4			Balance ID: B1S9209ΦΦ2			

SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone until the solvent layer is 3" inches above the soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in cold water 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into E. flask with sodium sulfate in bottom+ funnel with neutral glasswool plug. 8. Rinse with Hexane. 9. Add 8:2 Hexane/Acetone to the vessel 3"inches above the soil layer after homogenization. Microwave a 2nd time. 10. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 11. KD (Small or Large Drying Column) on 100° bath. (Blanks=only 5g Sodium Sulfate). 12. Exchange (2 X with 20mL) Hexane. 13. TurboVap. 14. Clean-ups. 15. TurboVap (if Silica Clean). 16. Vial with Hexane.

A. Need Total Solids Y / N B. Archive/Freeze Y / N

Organic Extractions
Reagent and Solutions Identification

(8082A) PCB – (Soil) / Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) AGC9

(8082A) PCB PSDDA (20ppb) Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station:	Microwave
Anhydrous Sodium Sulfate: DD41874	CT 5/22/15
Neutral Glasswool: DD41994	
1:1 Hexane/Acetone: DD42419	
80:20 Hexane/Acetone: DD42475	
Hexane: DD41893	
KD Station:	KD
Hexane: DD41893	RH
Anhydrous Sodium Sulfate: NA	5/27/15
Neutral Glasswool: NA	
Vialing Station:	Vialing
Hexane: DD41893	SG
Concentrated Sulfuric Acid: DD41179	5/27/15
Tetrabutylammonium hydrogensulfate (TBAS): DD41534	
Sodium Sulfite: CD44322	
Silica Gel (SPE) Darts: N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory
Analyst Notes

ARI Job No.: AGC9 Client ID: Kennedy/Jenks Consultants

Parameter: PCB PSDDA Client Project: POS sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= A-K	KM 5/19/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: JM 06/02/15

AGC9 00610

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Benchsheet

(8082A) PCB – Water
Separatory Funnel (3510C) (SOP # 3311S)
In-House (1ppb)

Element Batch BDF0010 ~~BDF0095~~

Preparation Test PCB # 1 (PCBWSI)

ARI Job No(s) AGA8, AGC9 Page 1 of 1 Batch set up by: ~~JH~~

Bottle #	ARI Sample ID	Volume Extracted	(REQ) Acid Clean (5mL)	(REQ) Sulfur Clean (5mL) 1 2 3	(opt) Silica Gel Clean (1:5) Y/N	FEV	Volume to Lab	Comments (see note)	Verify Client ID
	AGA8 MBW	500mL	5mL	5mL	1mL Y/N	5mL	1mL		CT 5/24/15
	SBW	500mL	5mL	5mL	1mL Y/N	5mL	1mL		Analyst/Date
	SBW Dup	500mL	5mL	5mL	1mL Y/N	5mL	1mL		Verify pH is 5-9
	~~QLS~~	~~500mL~~	~~5mL~~	~~5mL~~	~~1mL Y/N~~	~~5mL~~	~~1mL~~		CT 5/24/15
4	AGA8 J	500mL	5mL	5mL	1mL Y/N	5mL	1mL	15E0811-10 D	
7	AGC9 L	500mL	5mL	5mL	1mL Y/N	5mL	1mL	15E0813-12 D	Analyst/Date
		~~500mL~~	~~5mL~~	~~5mL~~	~~1mL Y/N~~	~~5mL~~	~~1mL~~		KD 80-85°C
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		Hexane Exchange (2 X 20mL) 100°C
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		(1)2(3)4 5 6
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		KS 5/22/15
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		Analyst/Date
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		TurboVap 1 2 3 Pre-Cleanups (4mL=10mL Hexane Exchange
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		missed - see note
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		GM
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		Analyst/Date 5/26/15
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		TurboVap 1 2 3 Post Cleanups
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		
		500mL	5mL	5mL	1mL Y/N	5mL	1mL		
		~~500mL~~	~~5mL~~	~~5mL~~	~~1mL Y/N~~	5mL	1mL		
Analyst/Date		AR 5/20/15	GM 5/26/15	GM 5/26/15	✓	GM 5/26/15	GM 5/26/15	GM 5/26/15	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	N (D040454)	2µg/mL	100µL	10/10/15	AR	~~JH~~
Spike	1 (D040467)	20µg/mL	125µL	2/13/16	AR	~~JH~~
~~QLS Spike~~	~~5 ( )~~	~~2µg/mL~~	~~250µL~~			

Extraction Time: 14:34

SPECIAL INSTRUCTIONS: 1. Verify pH 2. Adjust pH (if necessary=Analyst Notes). 3. Add Surr/Spike.
4. Extract 3X with 30mL DCM. 5. KD (NO Drying Column) at 80°. 6. Exchange (2 X with 20mL) Hexane at 100°.
7. TurboVap to 4mL=10mL Hexane Exchange. 8. TurboVap 9. Clean-ups? 10. TurboVap (if Silica Clean)
11. Vial 1mL with Hexane. A (Archive Y) N

Reagent and Solutions Identification

(8082A) PCB – Water
Separatory Funnel (3510C) (SOP # 3311S)

ARI Job No(s) AGA8, AGC9

(8082 A) PCB Aqueous:	Analyst/Date
Separatory Funnel Station: Methylene Chloride: (I#) I-441946 Anhydrous Sodium Sulfate: (I# + jar date) D441874	Sep. Funnel CT 5/24/15
KD Station: Methylene Chloride: (I#) DΦΦ2226 Hexane: (I#) DΦΦ1893	KD RB 5/22/15
Vialing Station: Hexane: (I#) DΦΦ1893 Concentrated Sulfuric Acid: (I#) DΦΦ1179 Tetrabutylammonium hydrogensulfate (TBAS): (H#) DΦΦ1534 Sodium Sulfite: (I#) CΦΦ4322 Silica Gel (SPE) Darts: (I#) N/A	Vialing GM 5/26/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8 / AGC9 Client ID: Kennedy Jenks Consultants

Parameter: PCB Client Project: POS Silver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☑ No Anomalies AGA8 sample J, AGC9 L	PC 5/20/15
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☑ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	
Hexane exchanged was missed at final vialing	GM 5/26/15

Reviewed by/Date: 05/29/15

0166F

Revision 10
09/12/13

ARI 03852

PCB Raw Data
Initial Calibration

ARI Job ID: AGC9

Analysis	Matrix	Method
8082A PCB Solid 4	Water	EPA 8082A

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JGR	05/28/2015
	Comments: *YE00033*			
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	05/28/2015
3	Manual integrations include before/after pictures	NA	JGR	05/28/2015
4	Internal Standard areas within 50-200% from reference	YES	JGR	05/28/2015
5	All SCV within +/- 20% (DOD)	YES	JGR	05/28/2015
6	All SCV within +/- 30%	YES	JGR	05/28/2015
7	NO Linear or Quadratic Fits Used	YES	JGR	05/28/2015
8	NO Calibration points dropped	YES	JGR	05/28/2015
9	Additional Notes	NA	JGR	05/28/2015
10	Reviewer Approval (Reviewer)	YES	BB	05/28/2015

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB1.m
Batch File: /chem2/ecd7.i/20150527.b/ical-1.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05271511	05271512	05271513	05271514	05271515	05271516
INJ.DATE:	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015
INJ.TIME:	18:11	18:33	18:54	19:15	19:37	19:58

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
*	41 IS-BNB	3.349	3.348	3.345	3.347	3.348	3.347	3.345	3.245-3.445	3.347	0.001
$	1 Tetrachloro-m-xylene	6.345	6.344	6.342	6.344	6.345	6.345	6.343	6.243-6.443	6.344	0.001
	2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.023	4.923-5.123	+++++	+++++
	3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.829	8.729-8.929	+++++	+++++
	4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.026	4.926-5.126	+++++	+++++
	7 Aroclor-1016	8.346	8.346	8.345	8.346	8.347	8.347	8.347	8.247-8.447	8.346	0.001
	6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	9.395	9.295-9.495	+++++	+++++
	8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.368	10.268-10.468	+++++	+++++
	9 Aroclor-1260	12.468	12.469	12.468	12.468	12.469	12.469	12.469	12.369-12.569	12.469	0.001
	10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.467	12.367-12.567	+++++	+++++
	11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.612	13.512-13.712	+++++	+++++
$	13 Decachlorobiphenyl	14.889	14.890	14.889	14.889	14.890	14.890	14.889	14.789-14.989	14.890	0.000
*	12 IS-HBBP	15.142	15.142	15.142	15.142	15.143	15.143	15.142	15.042-15.242	15.142	0.000
	42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.653	10.603-10.703	+++++	+++++
	43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.212	11.162-11.262	+++++	+++++
	44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.721	11.671-11.771	+++++	+++++
	46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.089	10.989-11.189	+++++	+++++

Reviewer 1 _____ Date: 05/29/15
Reviewer 2 _____ Date: 5/28/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB1.m
Batch File: /chem2/ecd7.i/20150527.b/ical-1.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.664	11.564-11.764	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.177	12.077-12.277	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB2.m
Batch File: /chem2/ecd7.i/20150527.b/ical-2.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	05271511	05271512	05271513	05271514	05271515	05271516
INJ.DATE:	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015	27-MAY-2015
INJ.TIME:	18:11	18:33	18:54	19:15	19:37	19:58

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	3.699	3.697	3.695	3.696	3.698	3.696	3.694	3.594-3.794	3.697	0.001
$ 2 Tetrachloro-m-xylene	5.910	5.909	5.907	5.910	5.910	5.909	5.908	5.808-6.008	5.909	0.001
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.018	4.918-5.118	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.021	4.921-5.121	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.029	7.929-8.129	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.803	8.703-8.903	+++++	+++++
7 Aroclor-1016	8.029	8.029	8.029	8.029	8.031	8.031	8.031	7.931-8.131	8.030	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.615	10.515-10.715	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.394	12.294-12.494	+++++	+++++
9 Aroclor-1260	12.394	12.394	12.394	12.394	12.395	12.395	12.395	12.295-12.495	12.394	0.000
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.569	13.469-13.669	+++++	+++++
$ 13 Decachlorobiphenyl	14.862	14.862	14.861	14.862	14.862	14.863	14.862	14.762-14.962	14.862	0.001
* 12 IS-HBBP	15.445	15.444	15.444	15.445	15.445	15.445	15.445	15.345-15.545	15.445	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.701	10.651-10.751	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.090	11.040-11.140	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.391	11.291-11.491	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.849	11.749-11.949	+++++	+++++

Reviewer 1 _____ Date: 05/29/15
Reviewer 2 _____ Date: 5/28/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150527.b/PCB2.m
Batch File: /chem2/ecd7.i/20150527.b/ical-2.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.280	12.180-12.380	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.117	7.017-7.217	+++++	+++++

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

ARI Job No.: IB Method: PCB1.m Instrument: ecd7.i Date: 27-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1750	05271510.d	IB		1	NO MANUAL INTEGRATION
1811	05271511.d	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1833	05271512.d	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1854	05271513.d	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1915	05271514.d	1PPMAR1660		1	NO MANUAL INTEGRATION
1937	05271515.d	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1958	05271516.d	0.5PPMAR1660		1	NO MANUAL INTEGRATION
2020	05271517.d	AR1242		1	NO MANUAL INTEGRATION
2041	05271518.d	AR1248		1	NO MANUAL INTEGRATION
2102	05271519.d	AR1254		1	NO MANUAL INTEGRATION
2124	05271520.d	AR2162		1	NO MANUAL INTEGRATION
2145	05271521.d	AR3268		1	NO MANUAL INTEGRATION
2207	05271522.d	AR1660ICV		1	NO MANUAL INTEGRATION
2228	05271523.d	AR1242ICV		1	NO MANUAL INTEGRATION
2249	05271524.d	AR1248ICV		1	NO MANUAL INTEGRATION
2311	05271525.d	AR1254ICV		1	NO MANUAL INTEGRATION
2332	05271526.d	AR2162		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2354	05271527.d	AR3268		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/ical-1.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	27-MAY-2015 17:50	05271510.d	1	IB	
2	27-MAY-2015 18:11	05271511.d	1	0.25PPMAR1660	
3	27-MAY-2015 18:33	05271512.d	1	0.02PPMAR1660	
4	27-MAY-2015 18:54	05271513.d	1	0.05PPMAR1660	
5	27-MAY-2015 19:15	05271514.d	1	1PPMAR1660	
6	27-MAY-2015 19:37	05271515.d	1	0.1PPMAR1660	
7	27-MAY-2015 19:58	05271516.d	1	0.5PPMAR1660	
8	27-MAY-2015 20:20	05271517.d	1	AR1242	
9	27-MAY-2015 20:41	05271518.d	1	AR1248	
10	27-MAY-2015 21:02	05271519.d	1	AR1254	
11	27-MAY-2015 21:24	05271520.d	1	AR2162	
12	27-MAY-2015 21:45	05271521.d	1	AR3268	
13	27-MAY-2015 22:07	05271522.d	1	AR1660ICV	
14	27-MAY-2015 22:28	05271523.d	1	AR1242ICV	
15	27-MAY-2015 22:49	05271524.d	1	AR1248ICV	
16	27-MAY-2015 23:11	05271525.d	1	AR1254ICV	
17	27-MAY-2015 23:32	05271526.d	1	AR2162	
18	27-MAY-2015 23:54	05271527.d	1	AR3268	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

SDE64

Calibration File Names:
Level 1: /chem2/ecd7.i/20150527.b/ical-1.b/05271512.d
Level 2: /chem2/ecd7.i/20150527.b/ical-1.b/05271513.d
Level 3: /chem2/ecd7.i/20150527.b/ical-1.b/05271515.d
Level 4: /chem2/ecd7.i/20150527.b/ical-1.b/05271511.d
Level 5: /chem2/ecd7.i/20150527.b/ical-1.b/05271516.d
Level 6: /chem2/ecd7.i/20150527.b/ical-1.b/05271514.d
Level 7: /chem2/ecd7.i/20150527.b/ical-1.b/05271521.d
Level 8: /chem2/ecd7.i/20150527.b/ddt-1.b/05271528.d

YE33

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00326	+++++	0.00326	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.00510	+++++	0.00510	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01438	+++++	0.01438	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.02886	+++++	0.02886	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01033	+++++	0.01033	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00963	+++++	0.00963	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01442	+++++					0.01442	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00185	+++++					0.00185	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00352	+++++					0.00352	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00960	+++++					0.00960	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01605	+++++					0.01605	0.000
7 Aroclor-1016(1)	0.01358	0.01357	0.01357	0.01220	0.01205	0.01224		
	+++++	+++++					0.01287	6.025
(2)	0.04083	0.04089	0.04124	0.03709	0.03724	0.03932		
	+++++	+++++					0.03944	4.771
(3)	0.01261	0.01419	0.01422	0.01304	0.01311	0.01375		
	+++++	+++++					0.01349	4.944
(4)	0.01446	0.01469	0.01482	0.01390	0.01368	0.01435		
	+++++	+++++					0.01432	3.124

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00919	+++++	0.00919	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01954	+++++	0.01954	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.02270	+++++	0.02270	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02296	+++++	0.02296	0.000
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.01461	+++++	0.01461	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02088	+++++	0.02088	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01694	+++++	0.01694	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.03196	+++++	0.03196	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++	0.02291	+++++	0.02291	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
9 Aroclor-1260(1)	0.02997	0.02758	0.02708	0.02400	0.02350	0.02447	+++++	+++++	0.02610	9.684
(2)	0.08018	0.08338	0.08516	0.08110	0.08414	0.09286	+++++	+++++	0.08447	5.345
(3)	0.03873	0.03890	0.03983	0.03761	0.03854	0.04186	+++++	+++++	0.03924	3.731
(4)	0.02377	0.02374	0.02448	0.02275	0.02291	0.02442	+++++	+++++	0.02368	3.086
(5)	0.01234	0.01281	0.01343	0.01263	0.01294	0.01394	+++++	+++++	0.01301	4.461
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04717	+++++	0.04717	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.13122	+++++	0.13122	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.04136	+++++	0.04136	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.07177	+++++	0.07177	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06421	+++++					0.06421	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12401	+++++					0.12401	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14535	+++++					0.14535	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12995	+++++					0.12995	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.45431	+++++					0.45431	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	686					686	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	667					667	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	870					870	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1259					1259	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB1.m
Cal Date : 28-May-2015 07:20 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1017	1017	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1043	1043	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	0.52435	0.52735	0.54619	0.51871	0.54317	0.59505	+++++	+++++	0.54247	5.149
$ 13 Decachlorobiphenyl	1.03626	0.99724	1.01909	0.93885	0.97962	1.06519	+++++	+++++	1.00604	4.417

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Calibration File Names:
Level 1: /chem2/ecd7.i/20150527.b/ical-2.b/05271512.d
Level 2: /chem2/ecd7.i/20150527.b/ical-2.b/05271513.d
Level 3: /chem2/ecd7.i/20150527.b/ical-2.b/05271515.d
Level 4: /chem2/ecd7.i/20150527.b/ical-2.b/05271511.d
Level 5: /chem2/ecd7.i/20150527.b/ical-2.b/05271516.d
Level 6: /chem2/ecd7.i/20150527.b/ical-2.b/05271514.d
Level 7: /chem2/ecd7.i/20150527.b/ical-2.b/05271521.d
Level 8: /chem2/ecd7.i/20150527.b/ddt-2.b/05271528.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
1 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00831	+++++	0.00831	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01390	+++++	0.01390	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.00785	+++++	0.00785	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.02401	+++++	0.02401	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00505	+++++	0.00505	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01695	+++++	0.01695	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01987	+++++							0.01987	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01020	+++++							0.01020	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03218	+++++							0.03218	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.06793	+++++							0.06793	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.02366	+++++							0.02366	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.02878	+++++							0.02878	0.000
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.04409	+++++							0.04409	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03523	+++++							0.03523	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03734	+++++							0.03734	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.04820	+++++							0.04820	0.000
7 Aroclor-1016(1)	0.04972	0.04779	0.04653	0.04082	0.03905	0.03918				
	+++++	+++++							0.04385	10.753
(2)	0.10420	0.09885	0.09747	0.08636	0.08466	0.08713				
	+++++	+++++							0.09311	8.694
(3)	0.02641	0.02558	0.02523	0.02237	0.02200	0.02254				
	+++++	+++++							0.02402	8.028
(4)	0.01851	0.01814	0.01795	0.01582	0.01544	0.01595				
	+++++	+++++							0.01697	8.087
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.04214	+++++							0.04214	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.01997	+++++							0.01997	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.03293	+++++							0.03293	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.07025	+++++							0.07025	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(5)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.04197	+++++							0.04197	0.000
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.12680	+++++							0.12680	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.11918	+++++							0.11918	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.24458	+++++							0.24458	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.10546	+++++							0.10546	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++				
	0.08290	+++++							0.08290	0.000
9 Aroclor-1260(1)	0.08448	0.07743	0.07497	0.06642	0.06361	0.06347				
	+++++	+++++							0.07173	11.960
(2)	0.17811	0.17649	0.17306	0.15917	0.15655	0.15914				
	+++++	+++++							0.16709	5.880
(3)	0.05734	0.05431	0.05309	0.04683	0.04662	0.04620				
	+++++	+++++							0.05073	9.442

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	___ RRF	% RSD
(4)	0.12245	0.11651	0.11547	0.10218	0.10211	0.10183	+++++	+++++	0.11009	8.301
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.18747	+++++	0.18747	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.17713	+++++	0.17713	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.14275	+++++	0.14275	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.40246	+++++	0.40246	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	708	708	0.000
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1104	1104	0.000
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	666	666	0.000
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	825	825	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAY-2015 18:11
End Cal Date : 28-MAY-2015 00:15
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150527.b/PCB2.m
Cal Date : 28-May-2015 07:16 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	954	954	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene	1.11693	1.07901	1.10652	1.02308	1.04522	1.10241	+++++	+++++	1.07886	3.471
$ 13 Decachlorobiphenyl	1.06750	1.00112	0.99763	0.89052	0.90874	0.92137	+++++	+++++	0.96448	7.107

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271510.d
Data file 2: 20150527.b/ical-2.b/05271510.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 27-MAY-2015 17:50
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.001	693959	5.907	-0.001	3342051	19.1	19.4	1.5	Tetrachloro-m-xylene
14.889	0.000	2802412	14.862	0.000	4111207	40.2	38.6	4.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	47.7	48.4
Decachlorobiphenyl	100.4	96.5

5/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5364462	-1.6
Hexabromobiphenyl	5633814	5547552	-1.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12796516	-2.0
Hexabromobiphenyl	8980422	8835826	-1.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

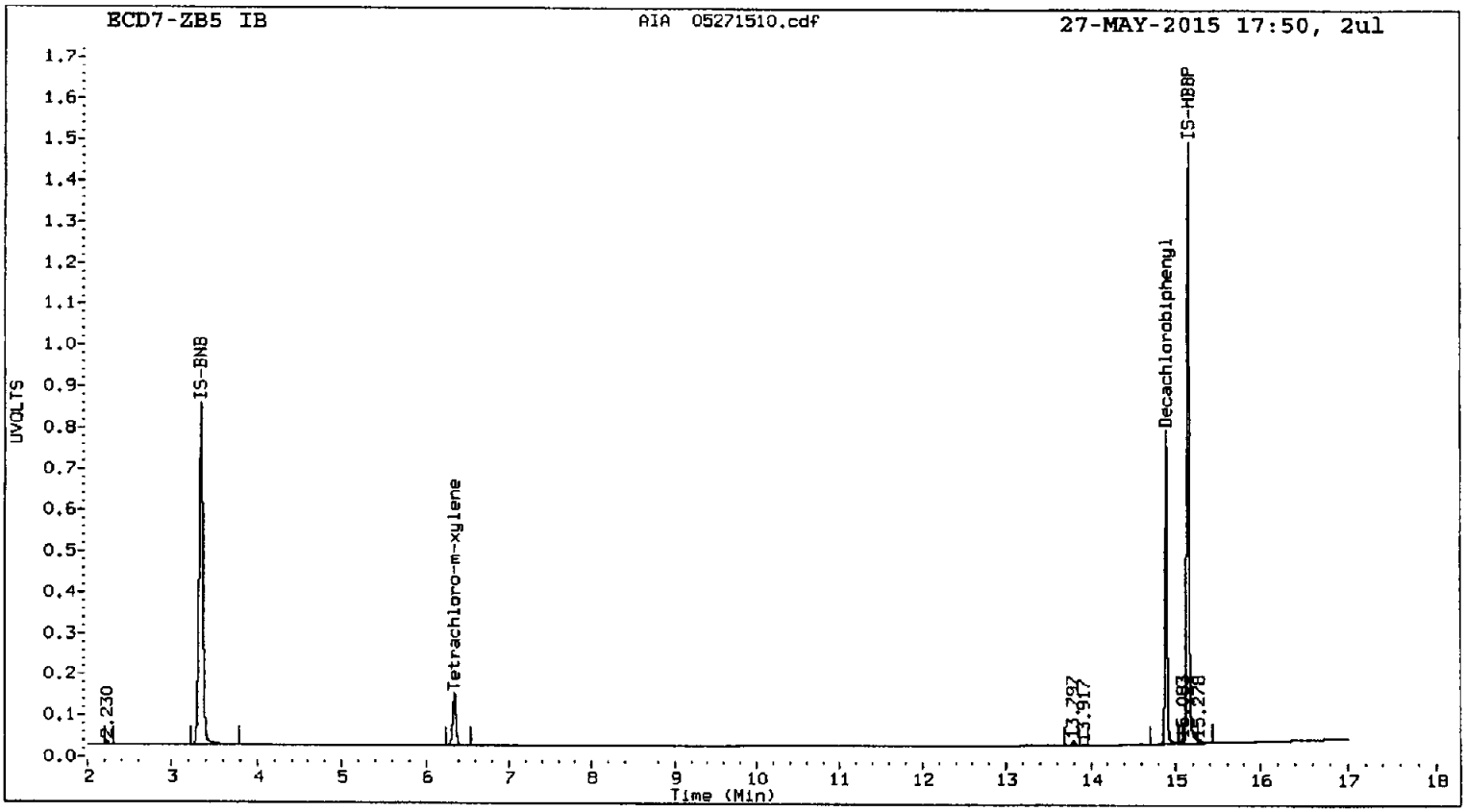
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	12.431	0.037	14830	1.1
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	14.250	0.038	46157	5.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

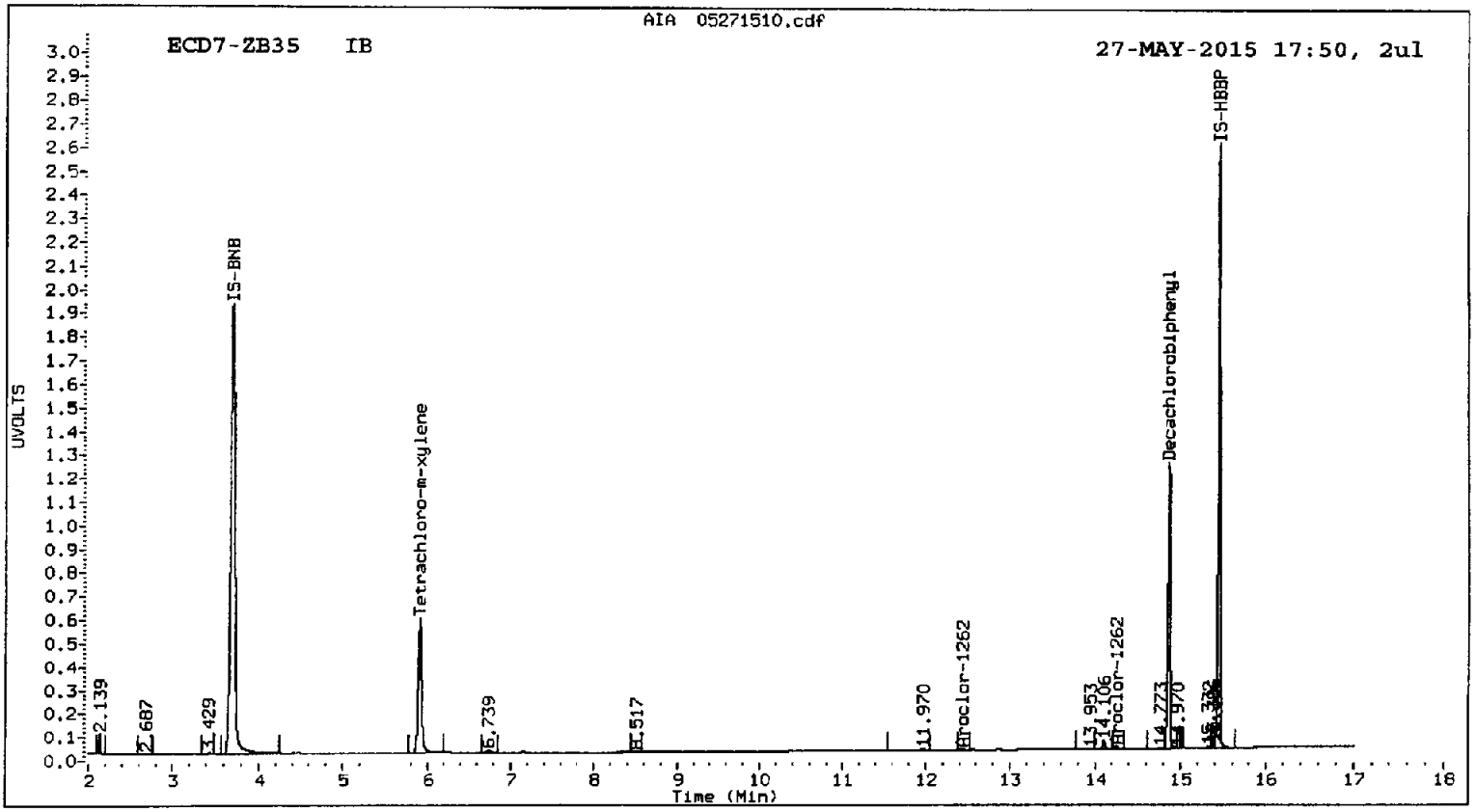
Total PCB Area Col1 (6.443 - 14.789) = 57680 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 293463 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 IB
AIA 05271510.cdf
27-MAY-2015 17:50, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.230
13.797
13.917
15.278
Time (Min)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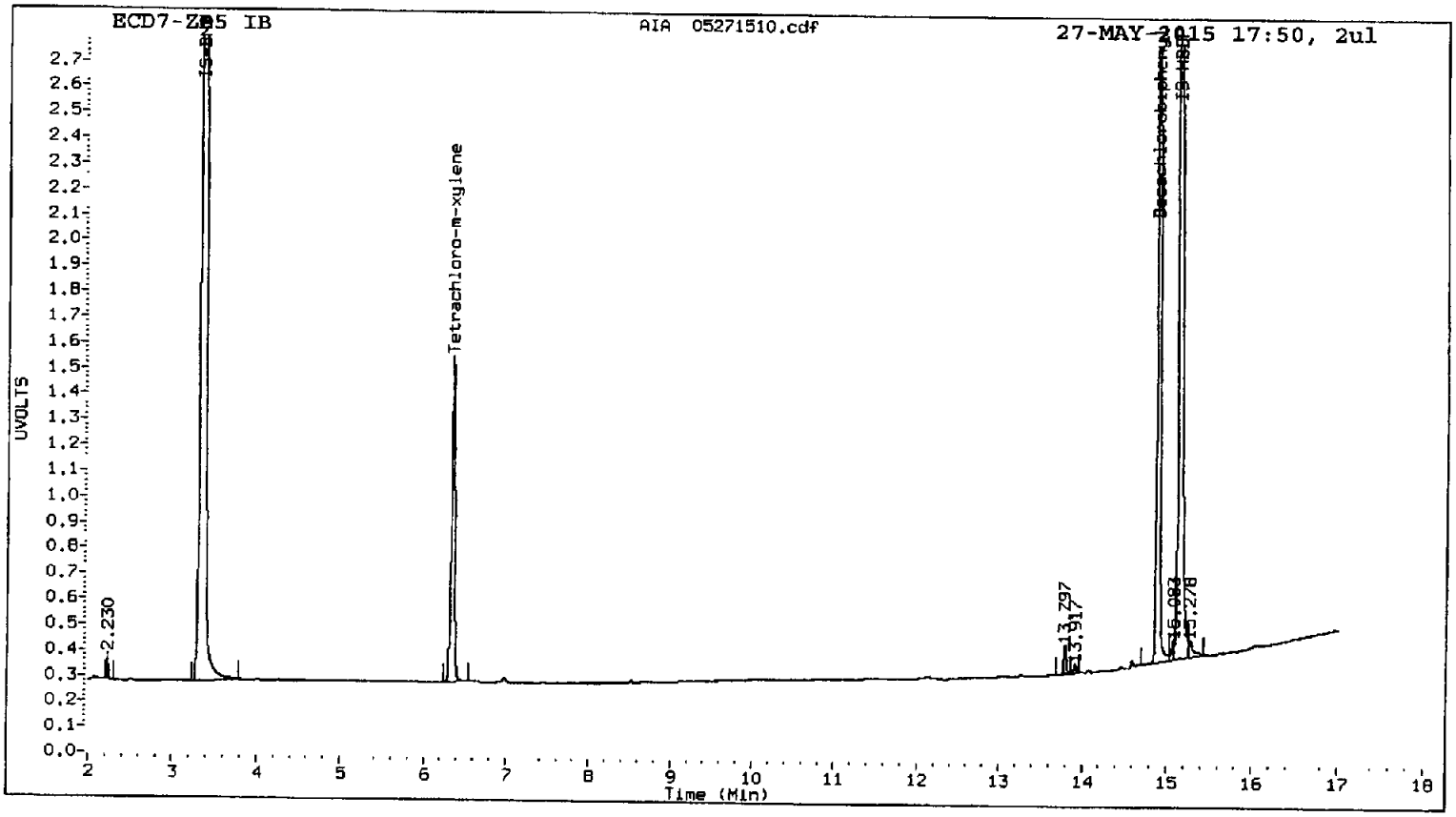
ECD7-ZB35 IB
27-MAY-2015 17:50, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.139
2.687
3.429
6.739
8.517
11.970
Aroclor-1262
13.953
14.106
Aroclor-1262
14.273
14.970
Time (Min)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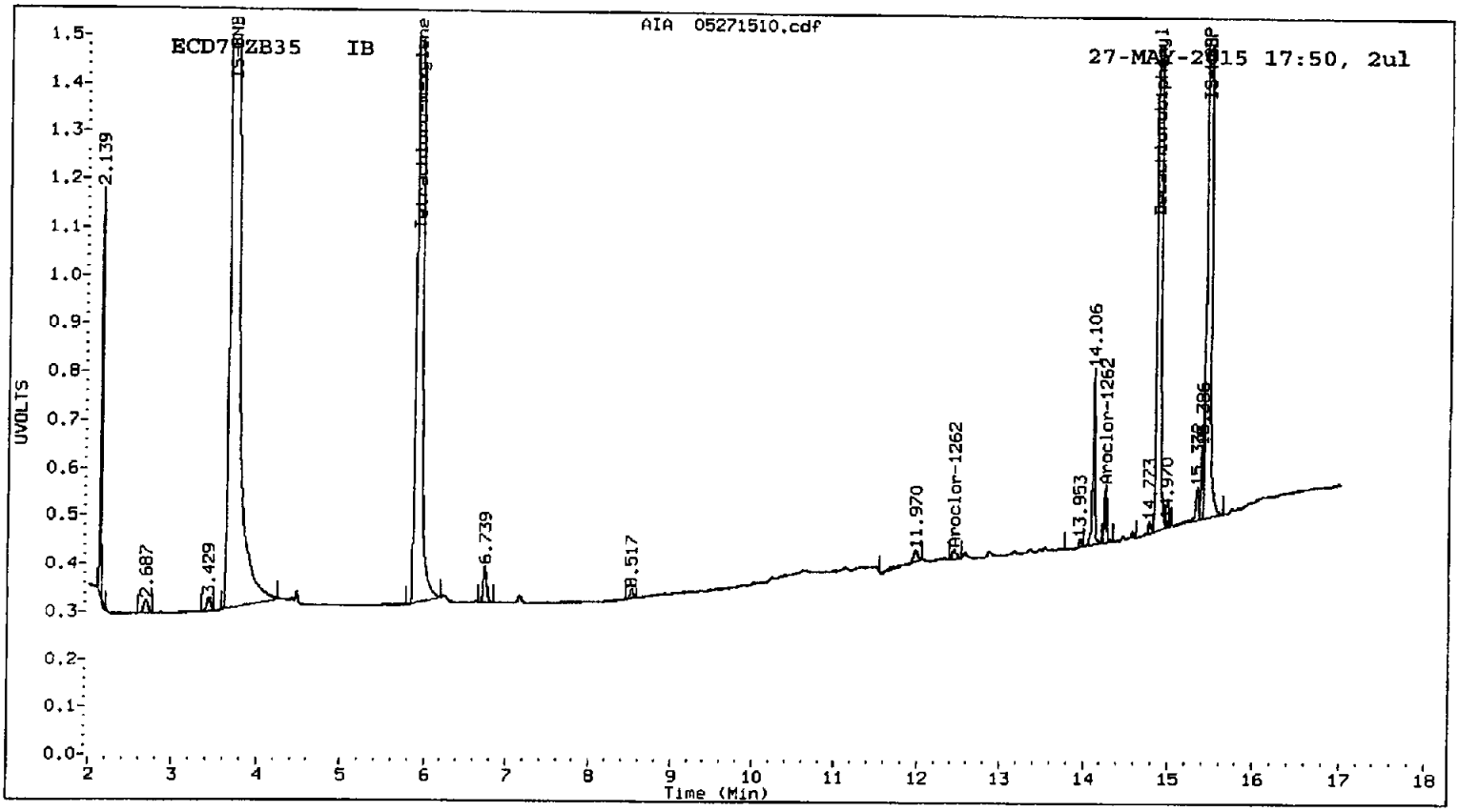
27-MAY-2015 17:50, 2ul
Tetrachloro-m-xylene
2.230
13.297
13.917
15.083
15.278
UVOLTS
Time (Min)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AIA 05271510.cdf
27-MAY-2015 17:50, 2ul
2.139
2.687
3.429
6.739
8.517
11.970
Aroclor-1262
13.953
14.106
Aroclor-1262
14.723
14.970
15.386
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271511.d
Data file 2: 20150527.b/ical-2.b/05271511.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:11
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	0.002	706669	5.910	0.002	3340230	19.1	19.0	0.8	Tetrachloro-m-xylene
14.889	0.000	1322328	14.862	0.000	1999318	18.7	18.5	1.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

✓ 05/29/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	47.8	47.4
Decachlorobiphenyl	46.7	46.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5449431	0.0
Hexabromobiphenyl	5633814	5633814	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13059494	0.0
Hexabromobiphenyl	8980422	8980422	0.0

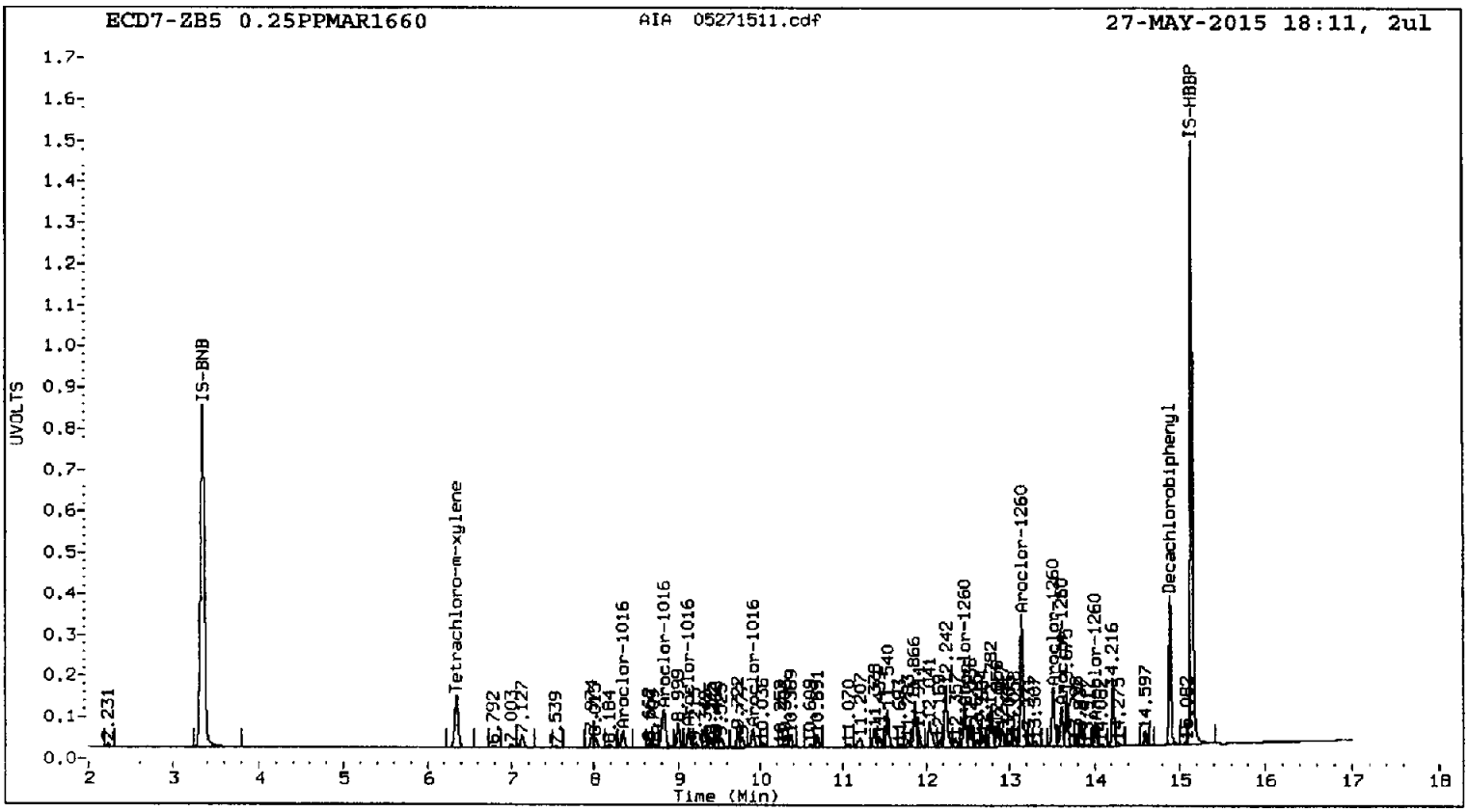
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	207713	237.0	1	8.029	-0.002	1665955	232.7
Aroclor-1016	2	8.831	0.000	631583	235.1	2	8.808	0.001	3524576	231.9
Aroclor-1016	3	9.127	-0.002	222143	241.8	3	9.246	-0.002	913106	232.9
Aroclor-1016	4	9.911	-0.001	236641	242.7	4	10.009	-0.001	645674	233.1
Total Col1Ave (4 peaks):					239.1	Total Col2Ave (4 peaks):				232.6 RPD = 3
Corrected Ave (3 peaks):					238.0	Corrected Ave (3 peaks):				232.5 RPD = 2
CalAmt %D:					-4.3	CalAmt %D:				-6.9
Aroclor-1260	1	12.468	-0.001	422529	229.9	1	12.394	-0.001	1863920	231.5
Aroclor-1260	2	13.143	-0.001	1427781	240.0	2	13.100	-0.001	4466798	238.1
Aroclor-1260	3	13.513	-0.002	662195	239.6	3	13.571	-0.001	1314314	230.8
Aroclor-1260	4	13.612	-0.001	400456	240.1	4	13.623	-0.001	2867509	232.0
Aroclor-1260	5	14.011	-0.001	222390	242.7	NS	---			----
Total Col1Ave (5 peaks):					238.5	Total Col2Ave (4 peaks):				233.1 RPD = 2
Corrected Ave (4 peaks):					237.4	Corrected Ave (3 peaks):				231.4 RPD = 3
CalAmt %D:					-4.6	CalAmt %D:				-6.8

Total PCB Area Col1 (6.443 - 14.789) = 11981775 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 51420896 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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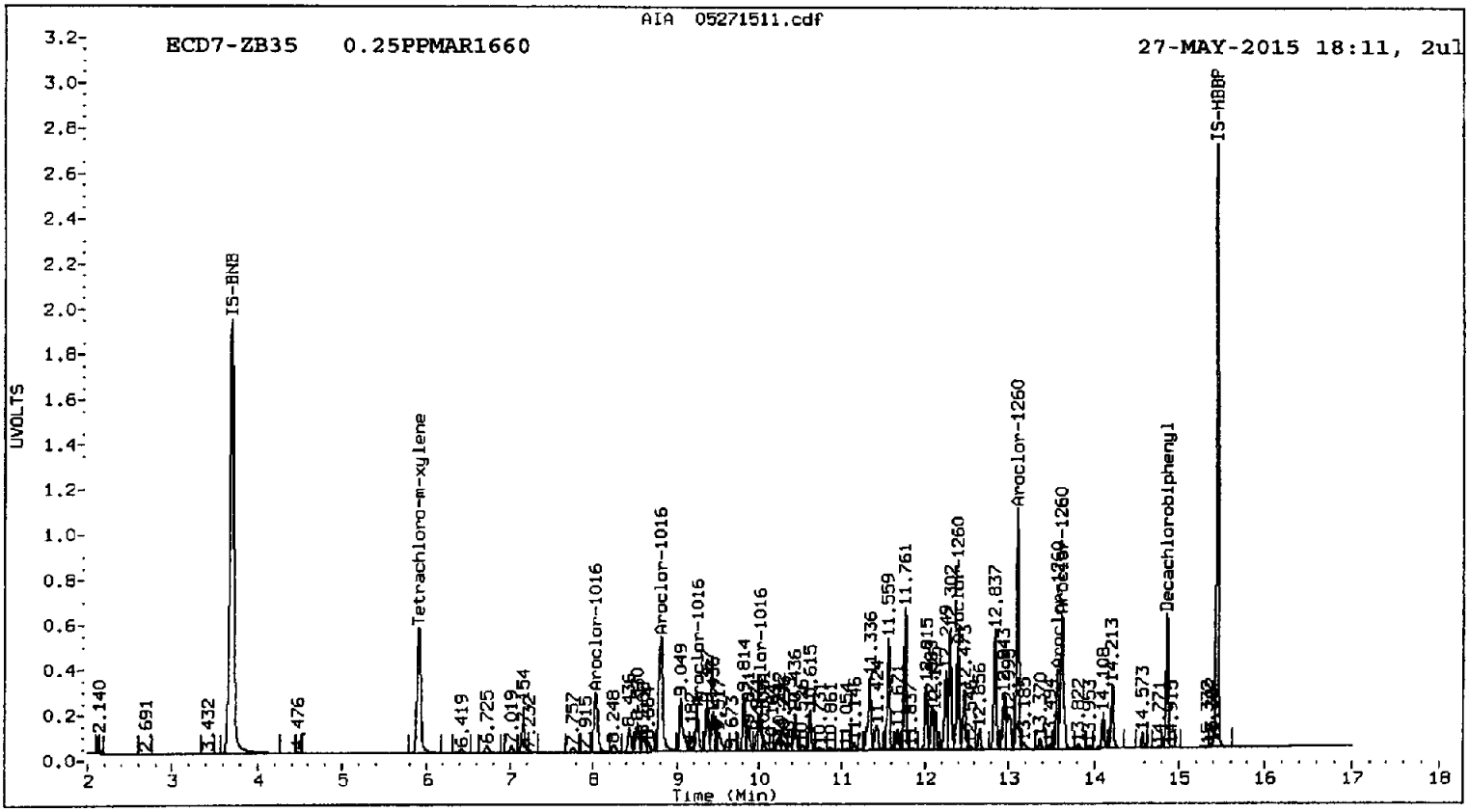
AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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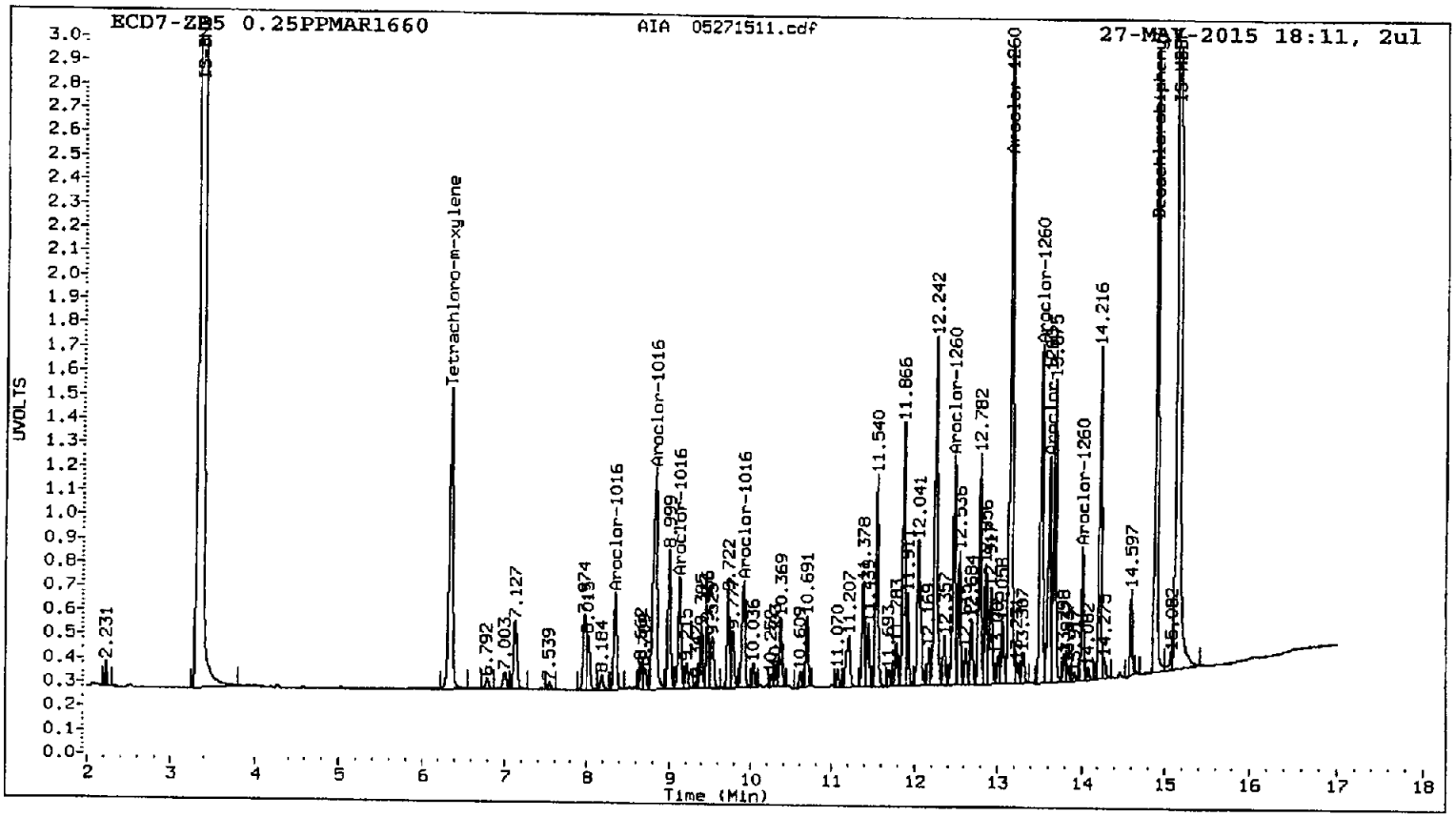
ECD7-ZB35 0.25PPMAR1660
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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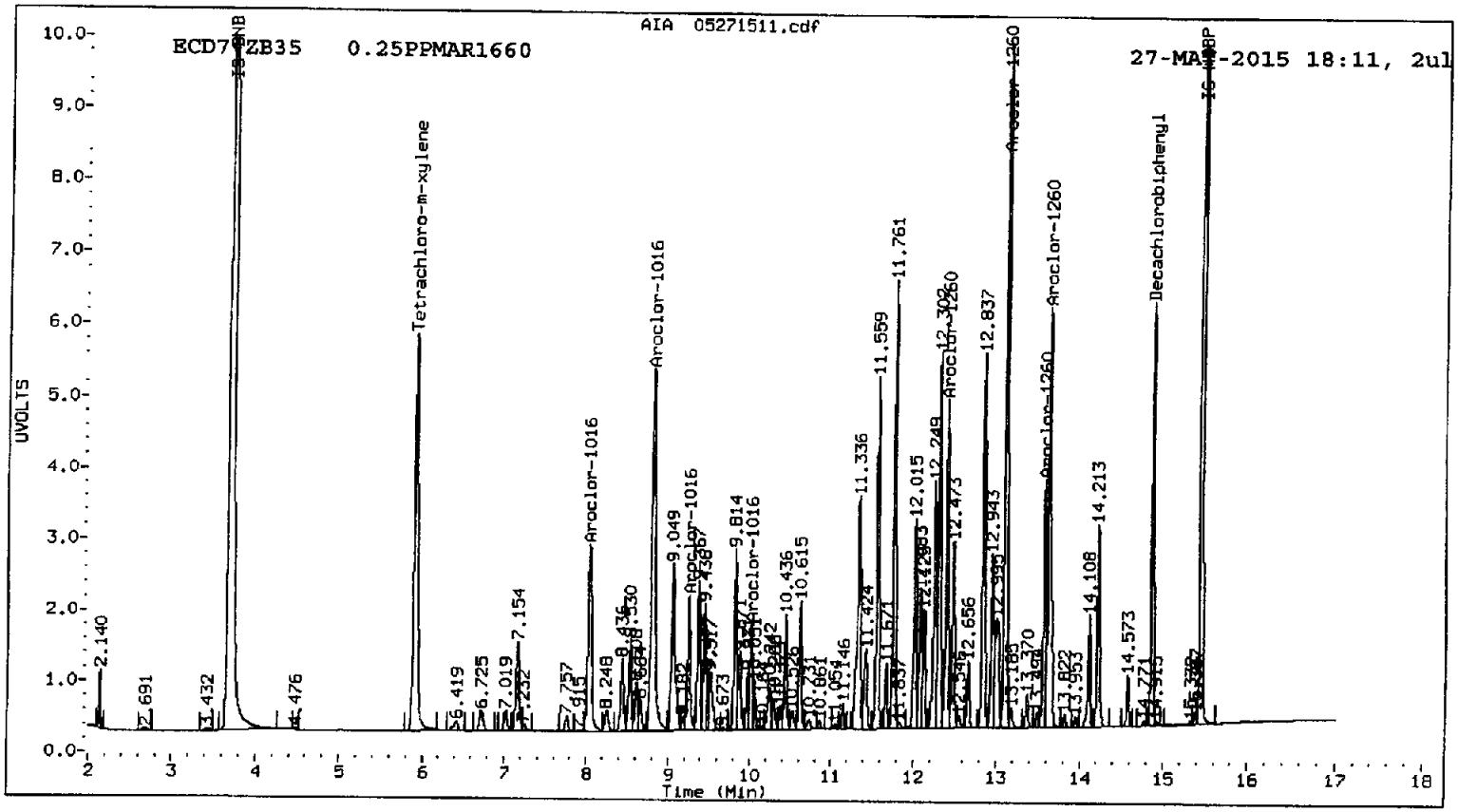
AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 0.25PPMAR1660
AIA 05271511.cdf
27-MAY-2015 18:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271512.d
Data file 2: 20150527.b/ical-2.b/05271512.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:33
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.344	0.000	57092	5.909	0.001	292135	1.5	1.7	6.9	Tetrachloro-m-xylene
14.890	0.001	117645	14.862	0.000	193634	1.6	1.8	7.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

JL 05/28/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	3.9	4.1
Decachlorobiphenyl	4.1	4.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5444099	-0.1
Hexabromobiphenyl	5633814	5676446	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13077546	0.1
Hexabromobiphenyl	8980422	9069474	1.0

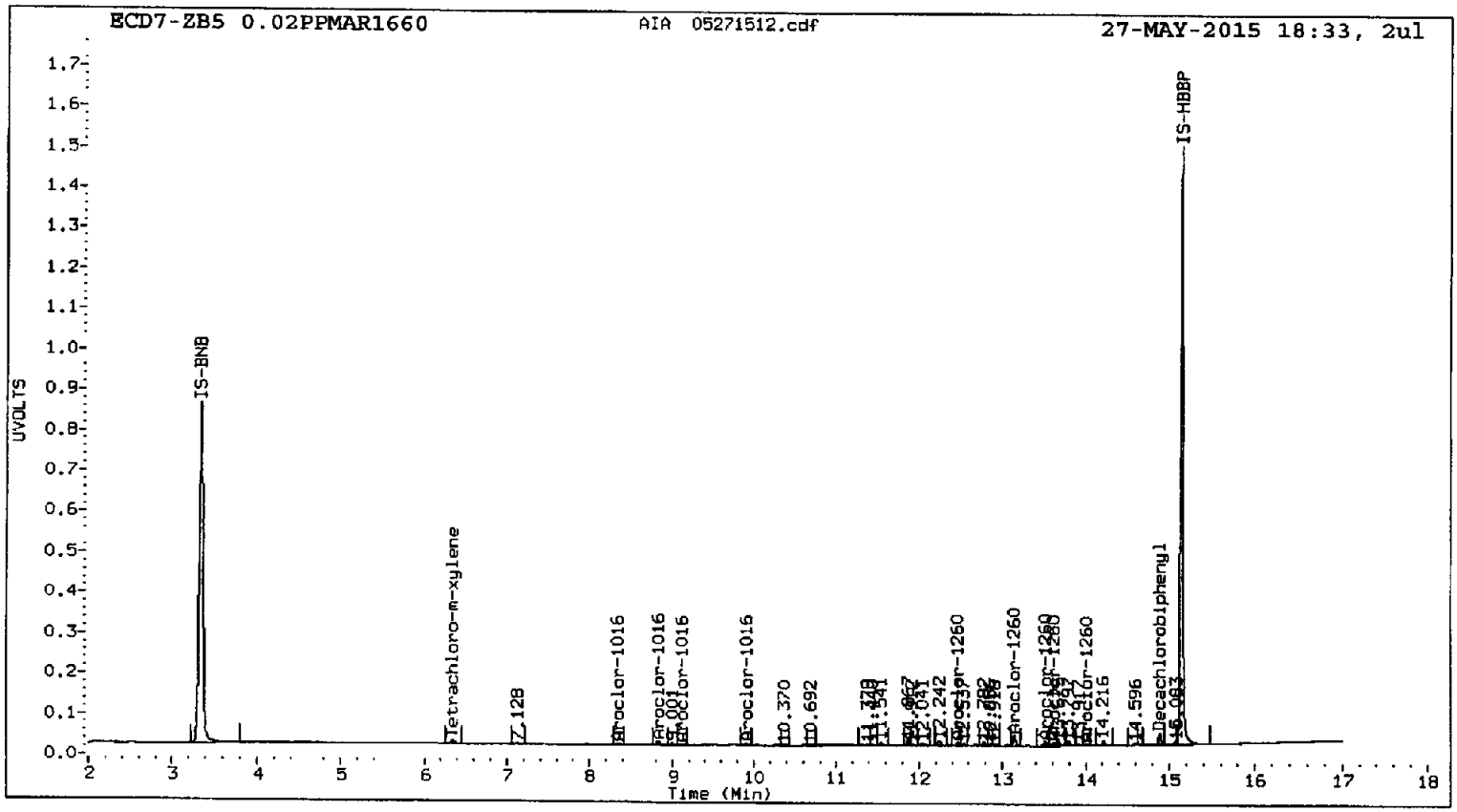
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

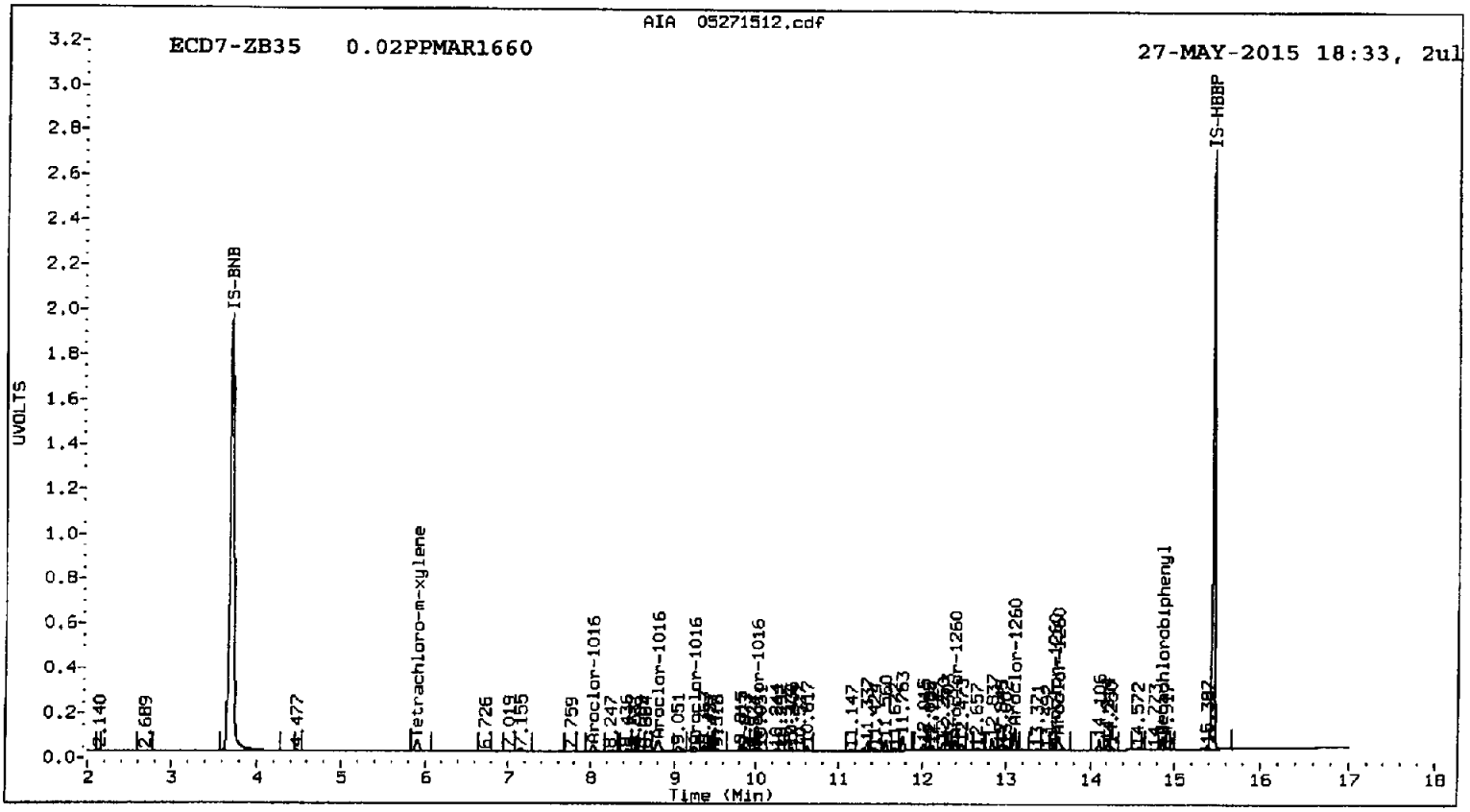
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	18479	21.1	1	8.029	-0.002	162568	22.7
Aroclor-1016	2	8.831	-0.001	55575	20.7	2	8.809	0.001	340656	22.4
Aroclor-1016	3	9.128	-0.001	17157	18.7	3	9.247	0.000	86337	22.0
Aroclor-1016	4	9.912	-0.001	19679	20.2	4	10.009	-0.001	60509	21.8
Total Col1Ave (4 peaks):					20.2	Total Col2Ave (4 peaks):			22.2	RPD = 10
Corrected Ave (3 peaks):					19.9	Corrected Ave (3 peaks):			22.1	RPD = 10
CalAmt %D:					0.9	CalAmt %D:			11.1	
Aroclor-1260	1	12.469	0.000	42532	23.0	1	12.394	-0.001	191541	23.6
Aroclor-1260	2	13.144	-0.001	113778	19.0	2	13.102	0.000	403851	21.3
Aroclor-1260	3	13.513	-0.002	54959	19.7	3	13.572	0.000	130018	22.6
Aroclor-1260	4	13.613	0.000	33738	20.1	4	13.624	0.000	277647	22.2
Aroclor-1260	5	14.011	0.000	17505	19.0	NS	---			----
Total Col1Ave (5 peaks):					20.1	Total Col2Ave (4 peaks):			22.4	RPD = 11
Corrected Ave (4 peaks):					19.4	Corrected Ave (3 peaks):			22.1	RPD = 13
CalAmt %D:					0.7	CalAmt %D:			12.2	

Total PCB Area Col1 (6.443 - 14.789) = 917096 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 5083290 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 0.02PPMAR1660
AIA 05271512.cdf
27-MAY-2015 18:33, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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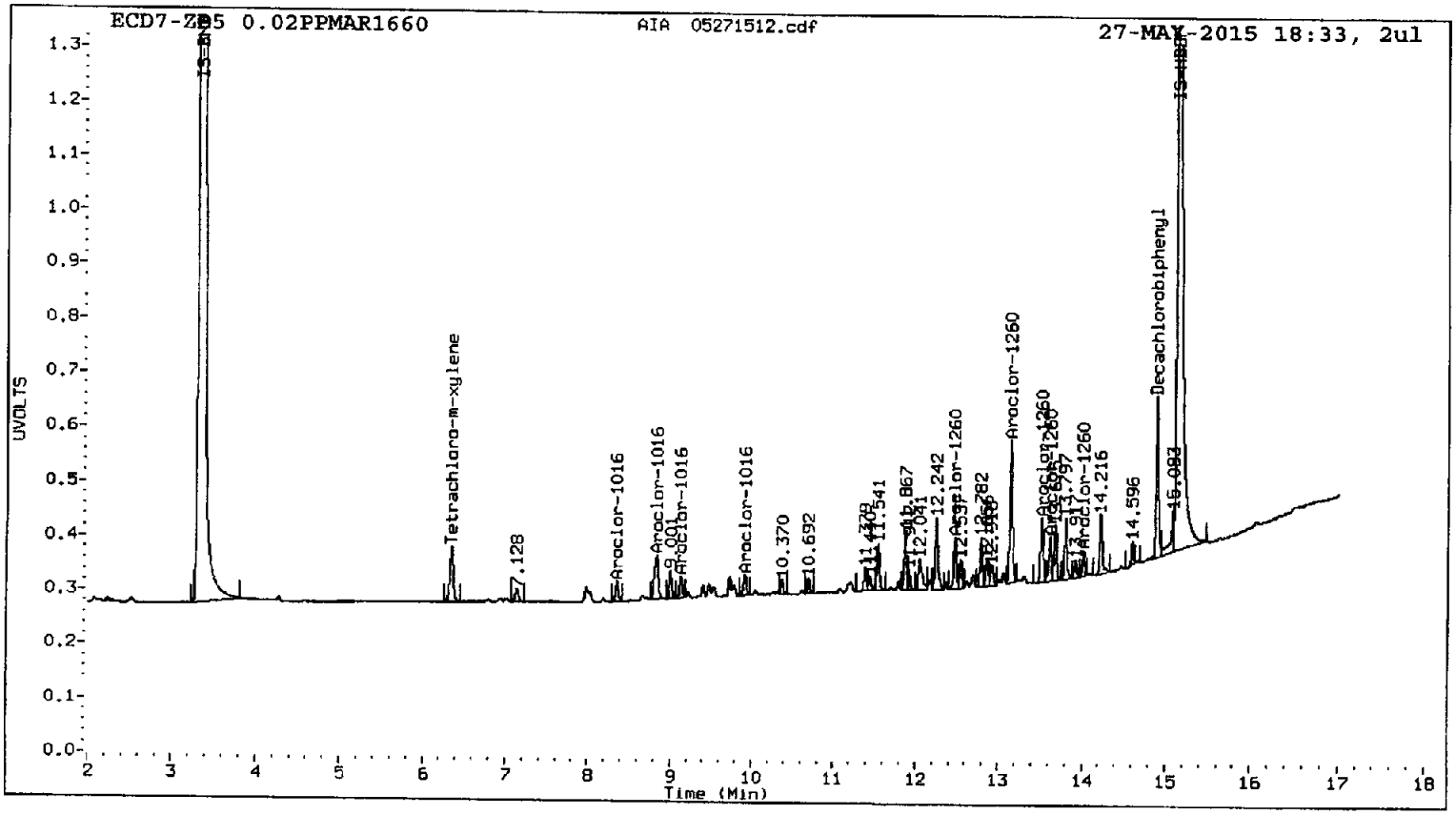
ECD7-ZB35 0.02PPMAR1660
27-MAY-2015 18:33, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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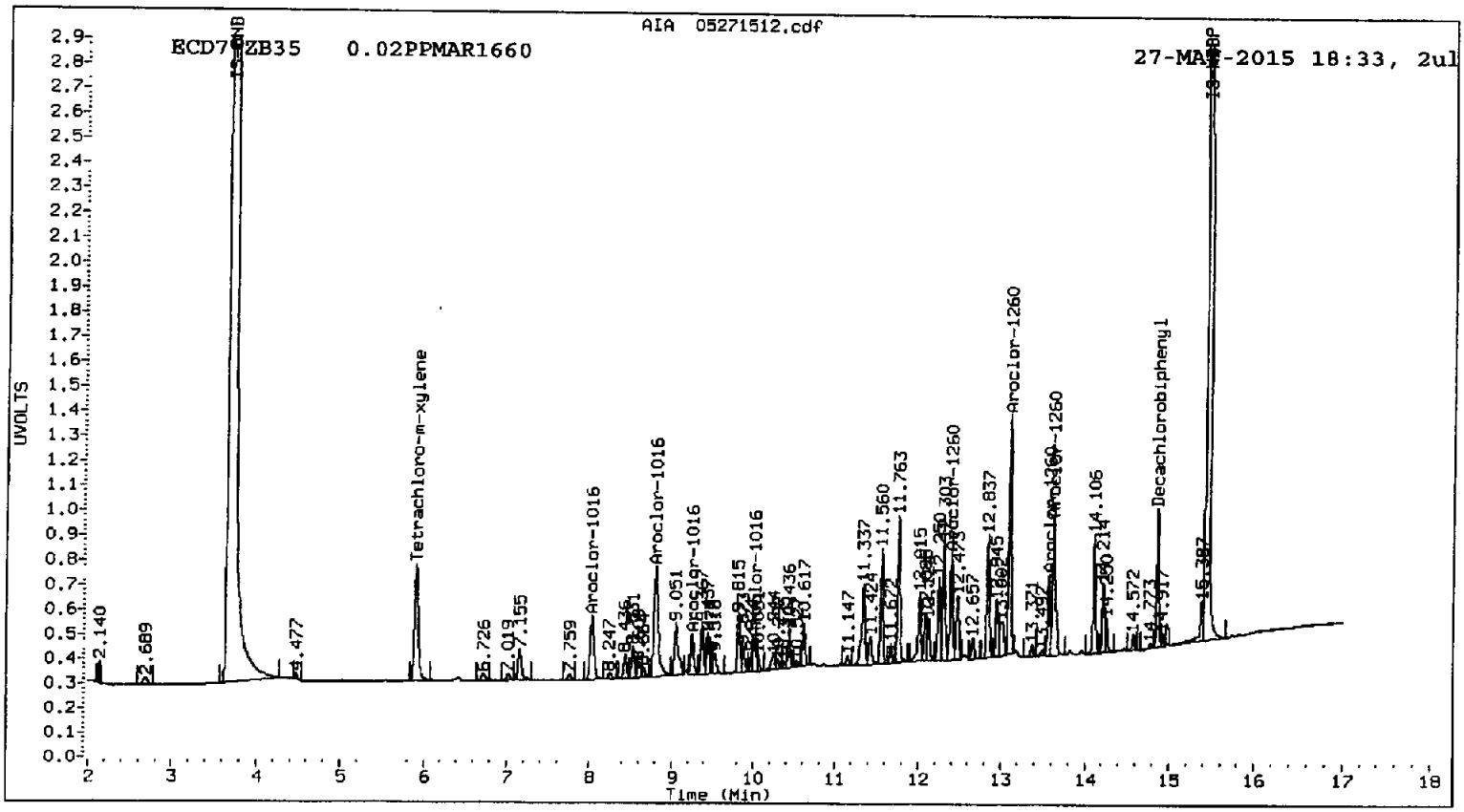
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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ECD7-ZB35 0.02PPMAR1660
27-MAY-2015 18:33, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271513.d
Data file 2: 20150527.b/ical-2.b/05271513.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 18:54
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.342	-0.001	138921	5.907	-0.001	687323	3.9	4.0	2.8	Tetrachloro-m-xylene
14.889	0.000	273941	14.861	-0.001	443553	4.0	4.2	4.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.7	10.0
Decachlorobiphenyl	9.9	10.4

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5268631	-3.3
Hexabromobiphenyl	5633814	5493956	-2.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12739883	-2.4
Hexabromobiphenyl	8980422	8861124	-1.3

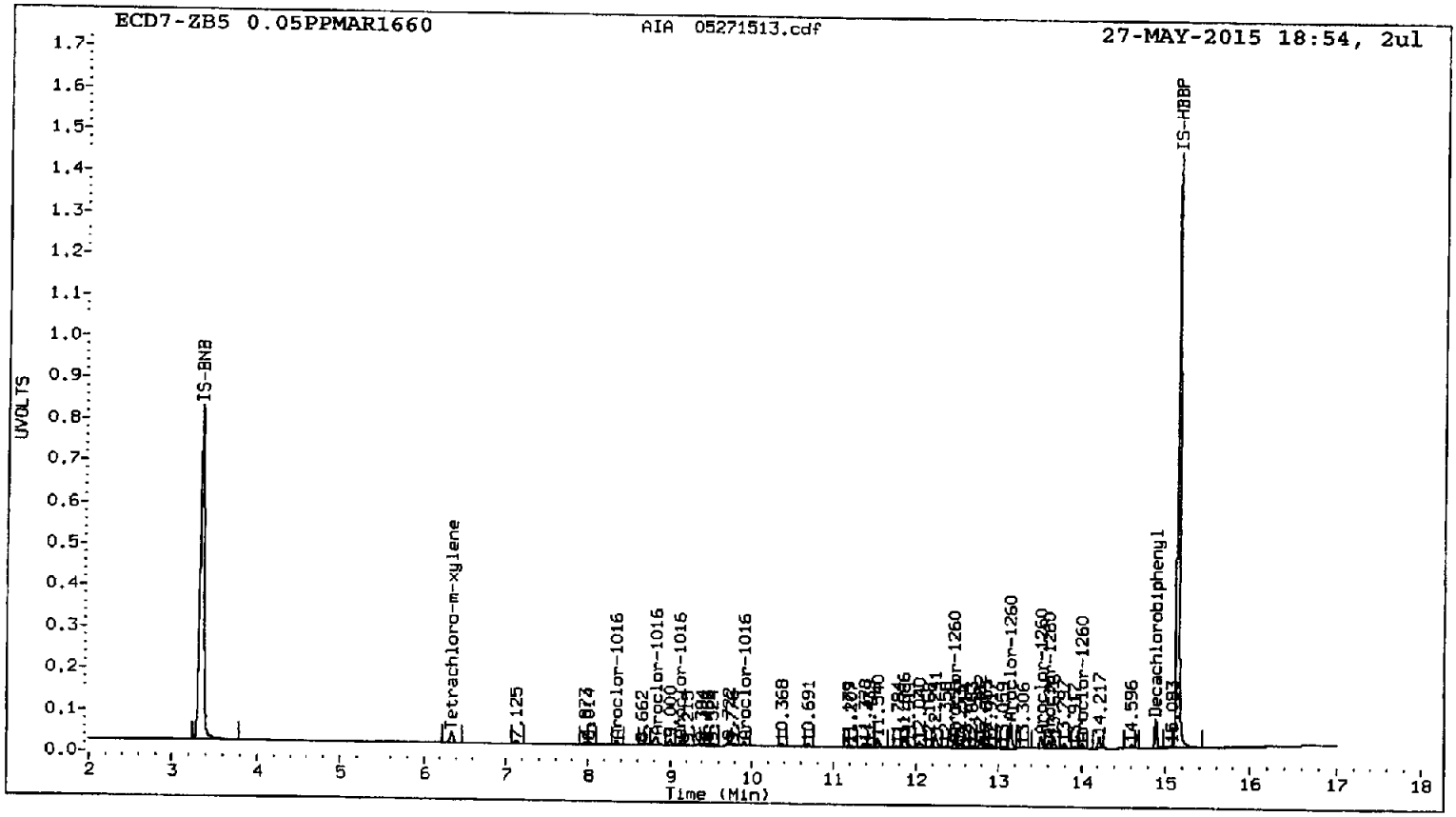
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

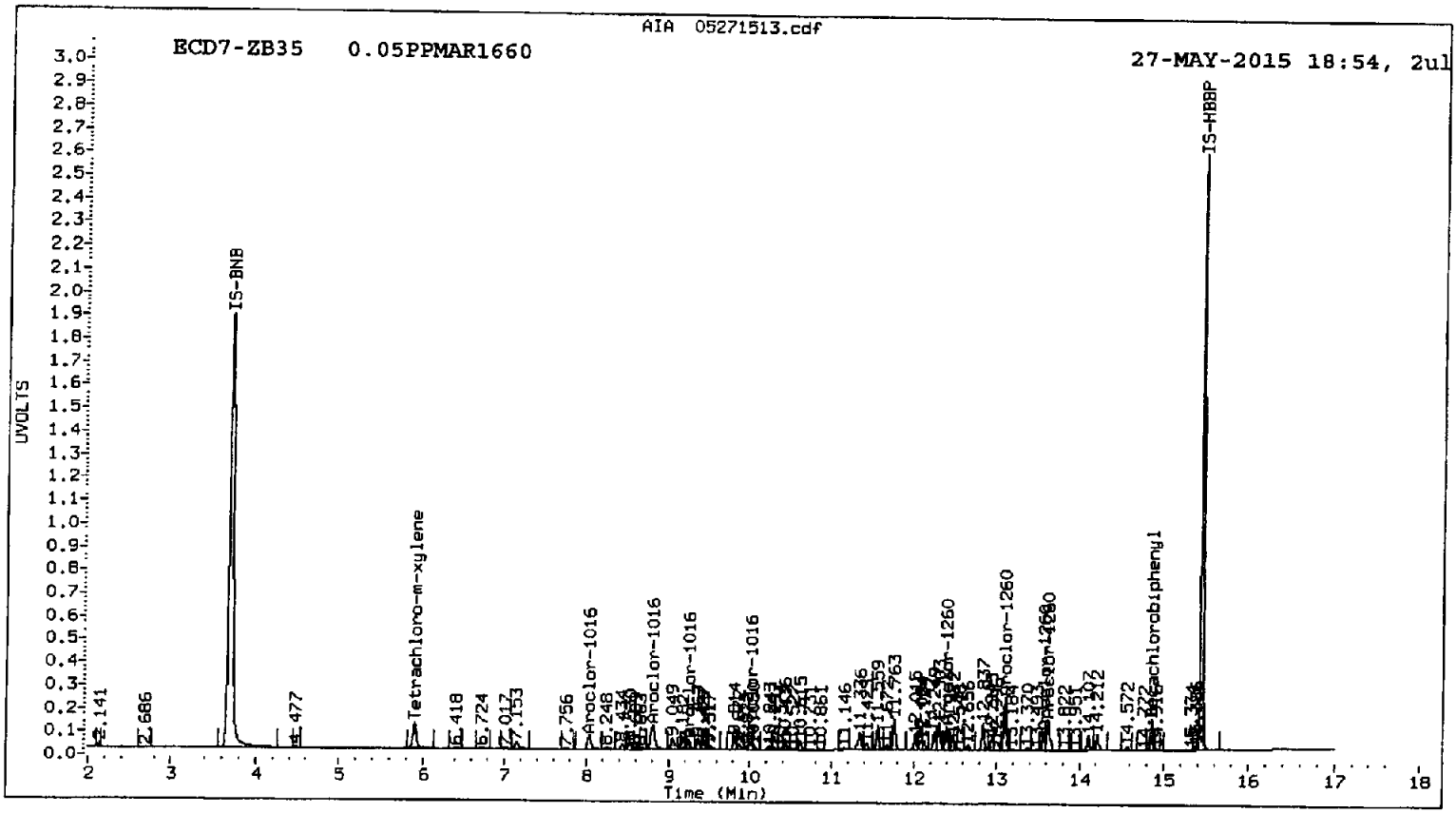
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.345	-0.002	44685	52.7	1	8.029	-0.002	380495	54.5
Aroclor-1016	2	8.830	-0.002	134641	51.8	2	8.809	0.001	787120	53.1
Aroclor-1016	3	9.127	-0.001	46728	52.6	3	9.247	0.000	203655	53.2
Aroclor-1016	4	9.910	-0.002	48379	51.3	4	10.009	-0.001	144440	53.5
Total Col1Ave (4 peaks):					52.1	Total Col2Ave (4 peaks):				53.6 RPD = 3
Corrected Ave (3 peaks):					51.9	Corrected Ave (3 peaks):				53.3 RPD = 3
CalAmt %D:					4.2	CalAmt %D:				7.1
Aroclor-1260	1	12.468	-0.001	94690	52.8	1	12.394	-0.001	428821	54.0
Aroclor-1260	2	13.143	-0.001	286305	49.4	2	13.101	-0.001	977460	52.8
Aroclor-1260	3	13.513	-0.001	133583	49.6	3	13.571	-0.001	300793	53.5
Aroclor-1260	4	13.612	-0.001	81530	50.1	4	13.622	-0.002	645251	52.9
Aroclor-1260	5	14.011	-0.001	43978	49.2	NS	---			----
Total Col1Ave (5 peaks):					50.2	Total Col2Ave (4 peaks):				53.3 RPD = 6
Corrected Ave (4 peaks):					49.6	Corrected Ave (3 peaks):				53.1 RPD = 7
CalAmt %D:					0.4	CalAmt %D:				6.6

Total PCB Area Col1 (6.443 - 14.789) = 2455199 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 11769510 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 0.05PPMAR1660
AIA 05271513.cdf
27-MAY-2015 18:54, 2ul
IS-HBBP
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
UVOLTS
Time (Min)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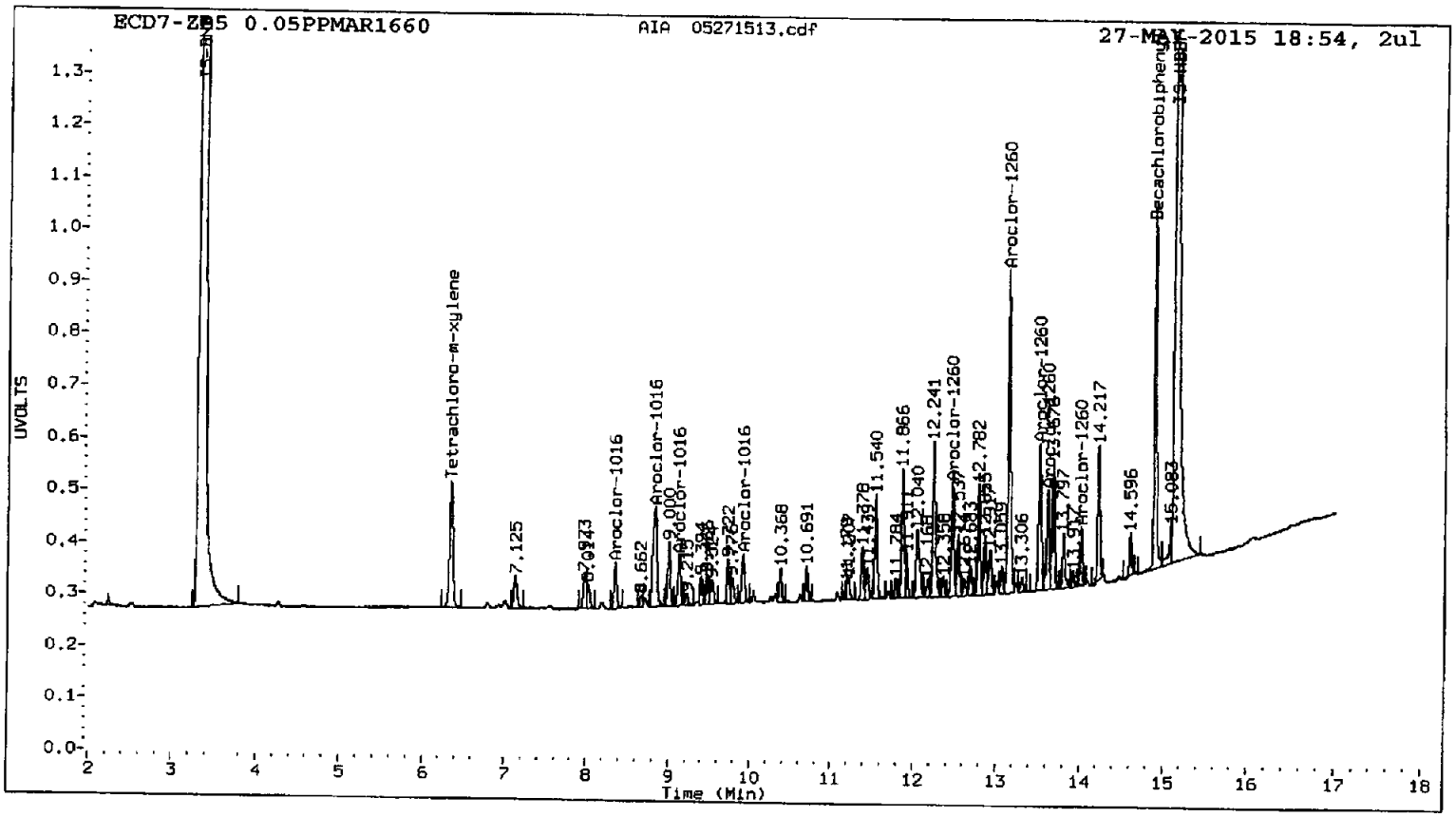
ECD7-ZB35 0.05PPMAR1660
27-MAY-2015 18:54, 2ul
IS-HBBP
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
UVOLTS
Time (Min)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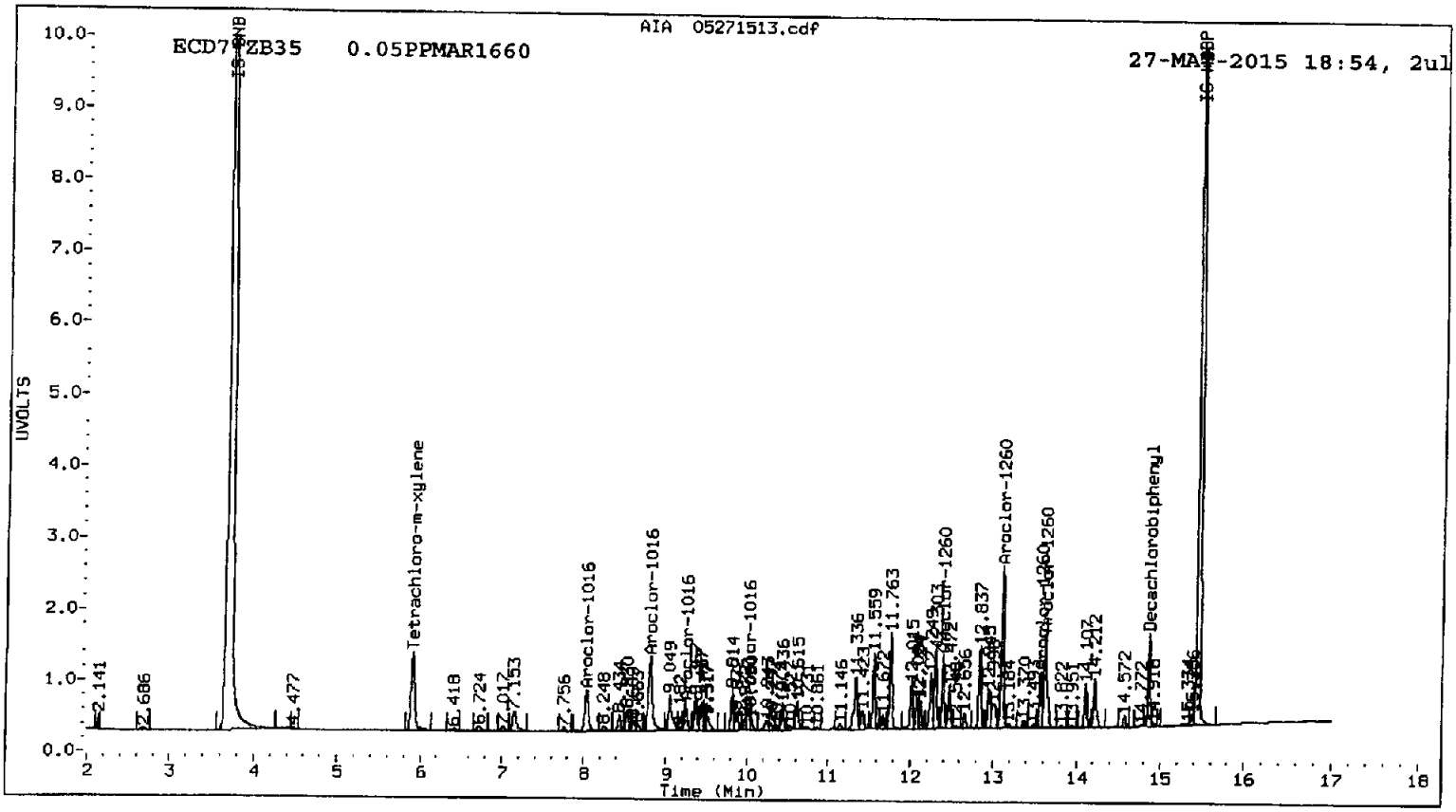
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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27-MAY-2015 18:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271514.d
Data file 2: 20150527.b/ical-2.b/05271514.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:15
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.344	0.000	2882414	5.910	0.002	12810289	87.8	81.7	7.1	Tetrachloro-m-xylene
14.889	0.000	5331373	14.862	0.000	7853980	84.7	76.4	10.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	219.4	204.4
Decachlorobiphenyl	211.8	191.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	4843983	-11.1
Hexabromobiphenyl	5633814	5005102	-11.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	11620227	-11.0
Hexabromobiphenyl	8980422	8524199	-5.1

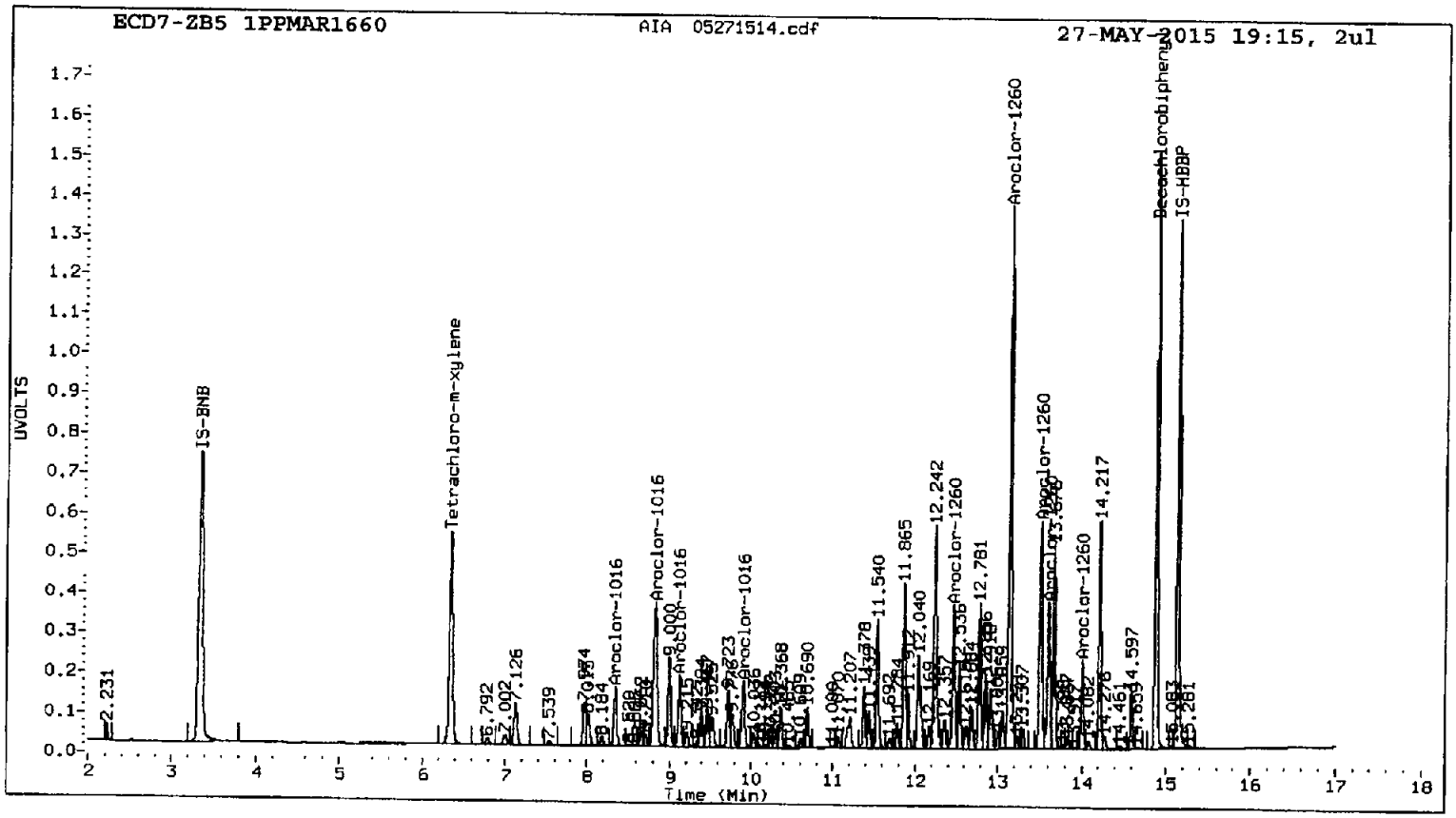
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	741024	951.1	1	8.029	-0.002	5691193	893.5
Aroclor-1016	2	8.831	0.000	2380984	997.1	2	8.805	-0.003	12655187	935.7
Aroclor-1016	3	9.127	-0.002	832842	1019.7	3	9.246	-0.002	3273725	938.3
Aroclor-1016	4	9.912	-0.001	869109	1002.7	4	10.009	-0.001	2316782	940.0
Total Col1Ave (4 peaks):				992.7		Total Col2Ave (4 peaks):			926.9	RPD = 7
Corrected Ave (3 peaks):				983.6		Corrected Ave (3 peaks):			922.5	RPD = 6
CalAmt %D:				-0.7		CalAmt %D:			-7.3	
Aroclor-1260	1	12.468	0.000	1530628	937.4	1	12.394	-0.001	6762544	884.8
Aroclor-1260	2	13.144	-0.001	5809504	1099.3	2	13.100	-0.002	16956803	952.4
Aroclor-1260	3	13.514	0.000	2618806	1066.6	3	13.571	-0.001	4922721	910.6
Aroclor-1260	4	13.612	-0.001	1527909	1031.3	4	13.623	0.000	10850121	925.0
Aroclor-1260	5	14.011	-0.001	872237	1071.3	NS	---			----
Total Col1Ave (5 peaks):				1041.2		Total Col2Ave (4 peaks):			918.2	RPD = 13
Corrected Ave (4 peaks):				1026.7		Corrected Ave (3 peaks):			906.8	RPD = 12
CalAmt %D:				4.1		CalAmt %D:			-8.2	

Total PCB Area Col1 (6.443 - 14.789) = 45014113 Col1 Total PCB = 2.1 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 185578222 Col2 Total PCB = 2.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical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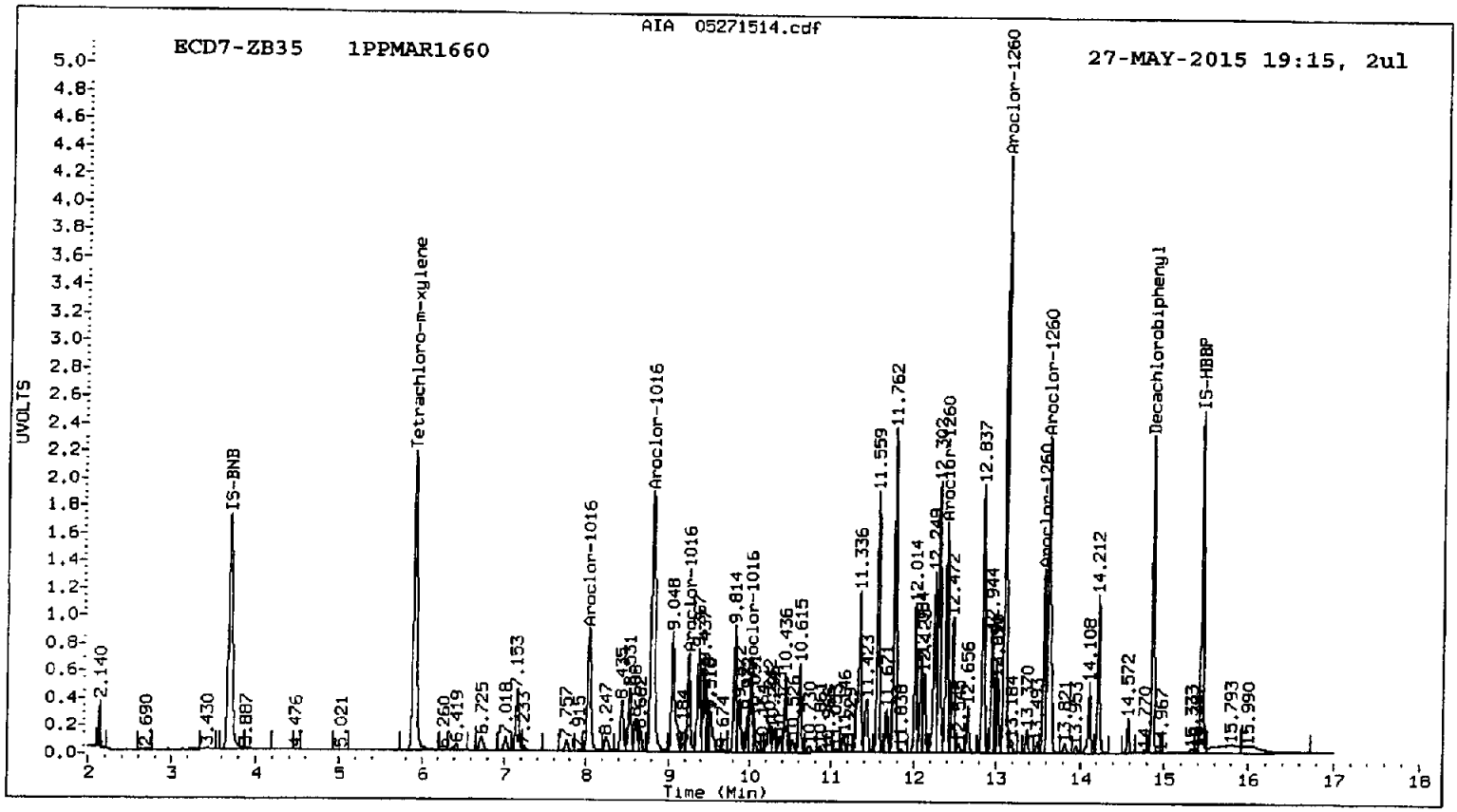
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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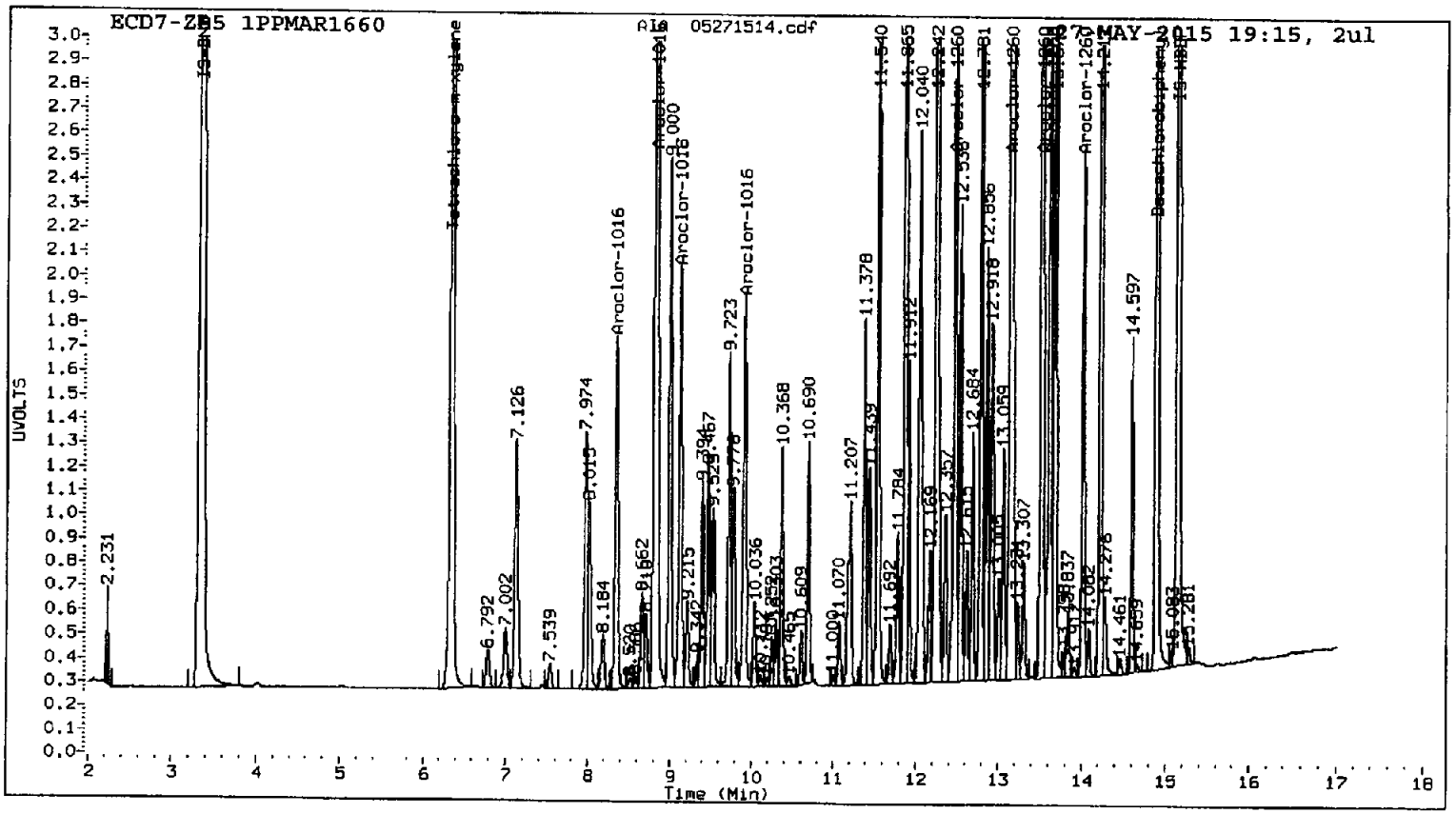
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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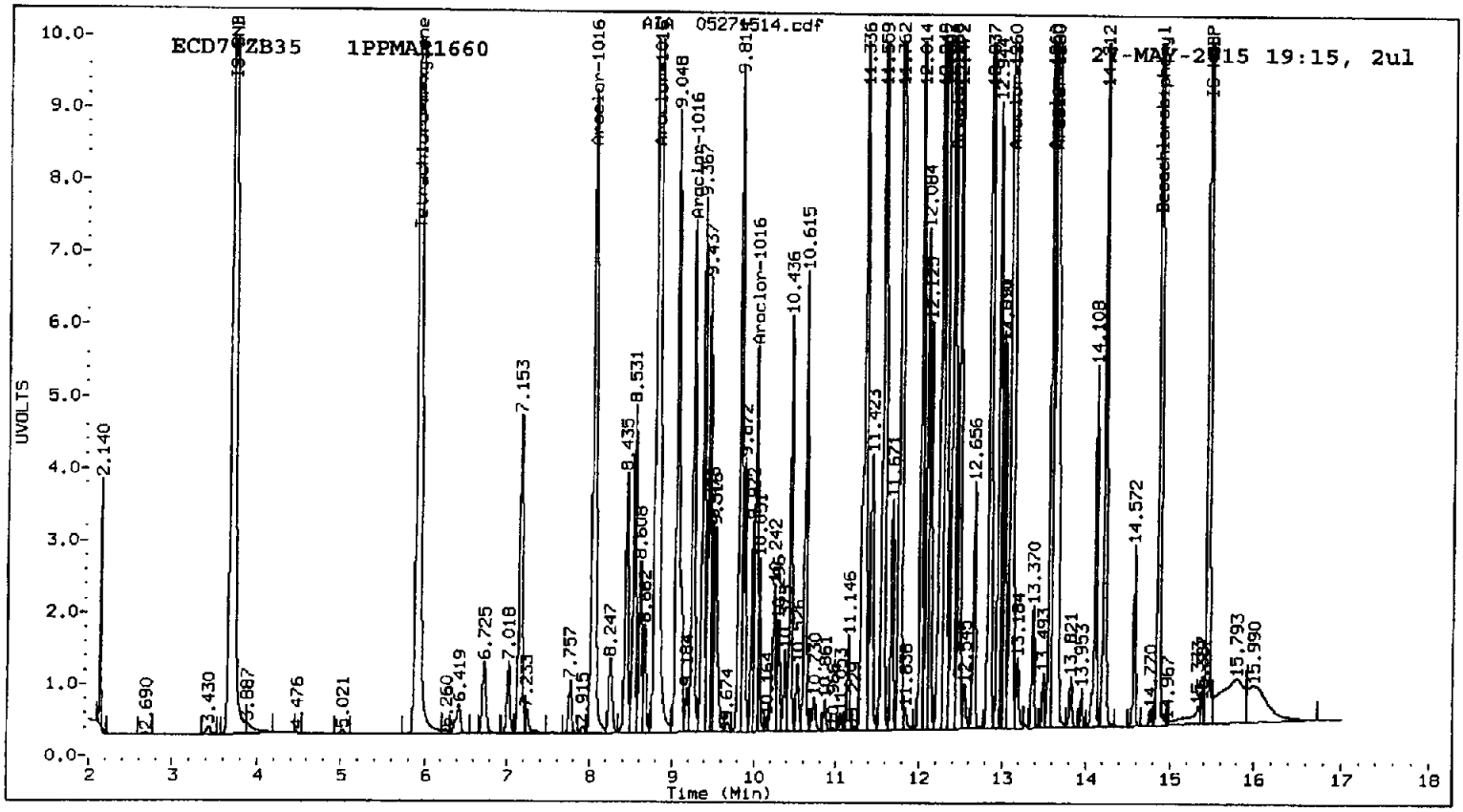
Als 05271514.cdf
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 1PPMAR1660
Als 05271514.cdf
27-MAY-2015 19:15, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271515.d
Data file 2: 20150527.b/ical-2.b/05271515.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:37
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.001	282130	5.910	0.002	1391197	8.1	8.2	1.8	Tetrachloro-m-xylene
14.890	0.001	549031	14.862	-0.001	888566	8.1	8.3	2.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	20.1	20.5
Decachlorobiphenyl	20.3	20.7

M 05/20/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5165460	-5.2
Hexabromobiphenyl	5633814	5387445	-4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12572695	-3.7
Hexabromobiphenyl	8980422	8906734	-0.8

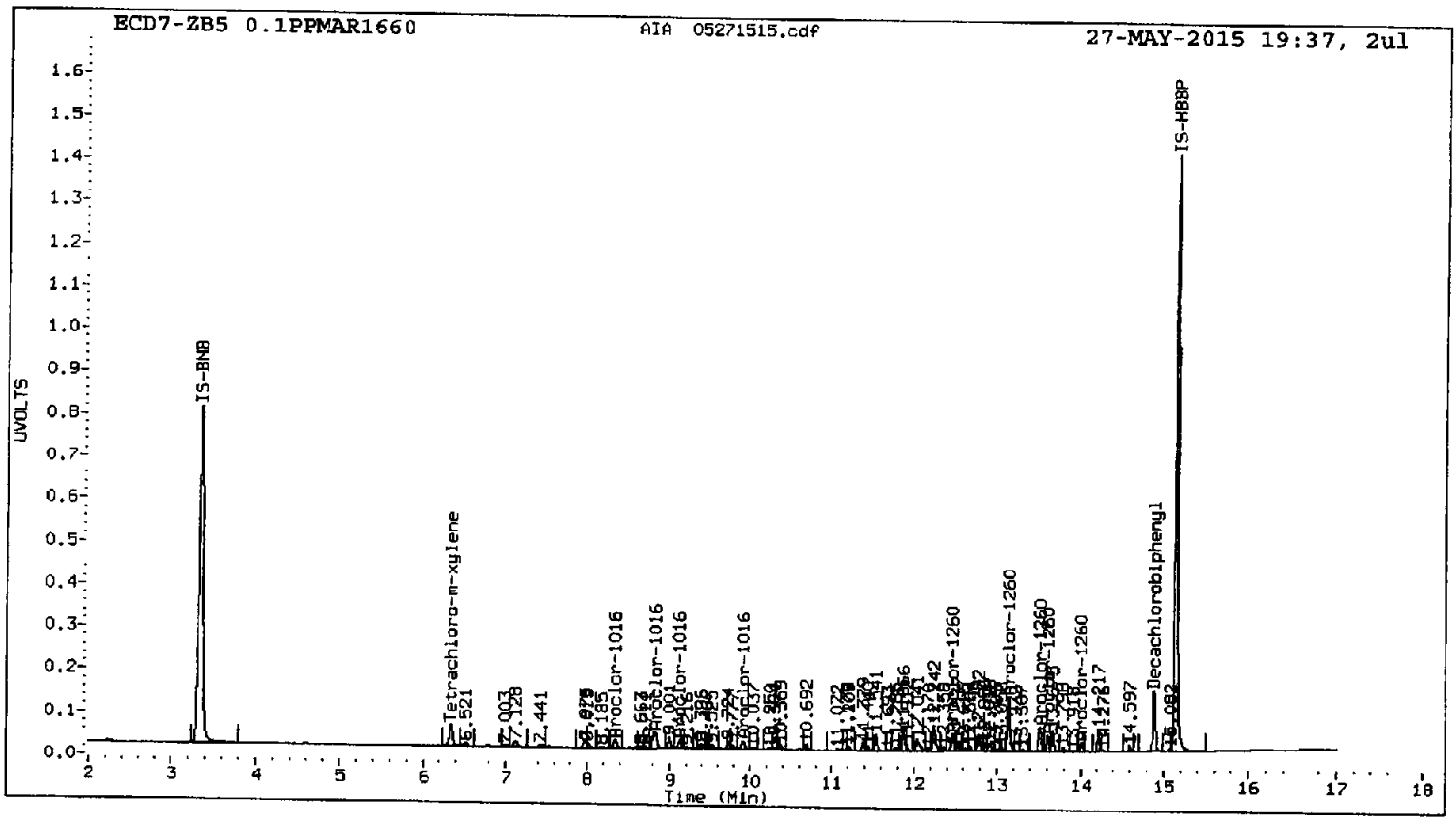
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.347	0.000	87623	105.5	1	8.031	0.000	731291	106.1
Aroclor-1016	2	8.832	0.000	266305	104.6	2	8.809	0.002	1531751	104.7
Aroclor-1016	3	9.128	-0.001	91848	105.5	3	9.248	0.001	396569	105.0
Aroclor-1016	4	9.912	0.000	95672	103.5	4	10.010	0.000	282160	105.8
Total Col1Ave (4 peaks):					104.8	Total Col2Ave (4 peaks):				105.4 RPD = 1
Corrected Ave (3 peaks):					104.5	Corrected Ave (3 peaks):				105.2 RPD = 1
CalAmt %D:					4.8	CalAmt %D:				5.4
Aroclor-1260	1	12.469	0.000	182360	103.8	1	12.395	0.000	834711	104.5
Aroclor-1260	2	13.143	-0.001	573485	100.8	2	13.102	0.000	1926703	103.6
Aroclor-1260	3	13.513	-0.001	268212	101.5	3	13.572	0.000	591076	104.6
Aroclor-1260	4	13.613	0.000	164874	103.4	4	13.623	-0.001	1285567	104.9
Aroclor-1260	5	14.011	-0.001	90413	103.2	NS	---			----
Total Col1Ave (5 peaks):					102.5	Total Col2Ave (4 peaks):				104.4 RPD = 2
Corrected Ave (4 peaks):					102.2	Corrected Ave (3 peaks):				104.2 RPD = 2
CalAmt %D:					2.5	CalAmt %D:				4.4

Total PCB Area Col1 (6.443 - 14.789) = 5050585 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 22891501 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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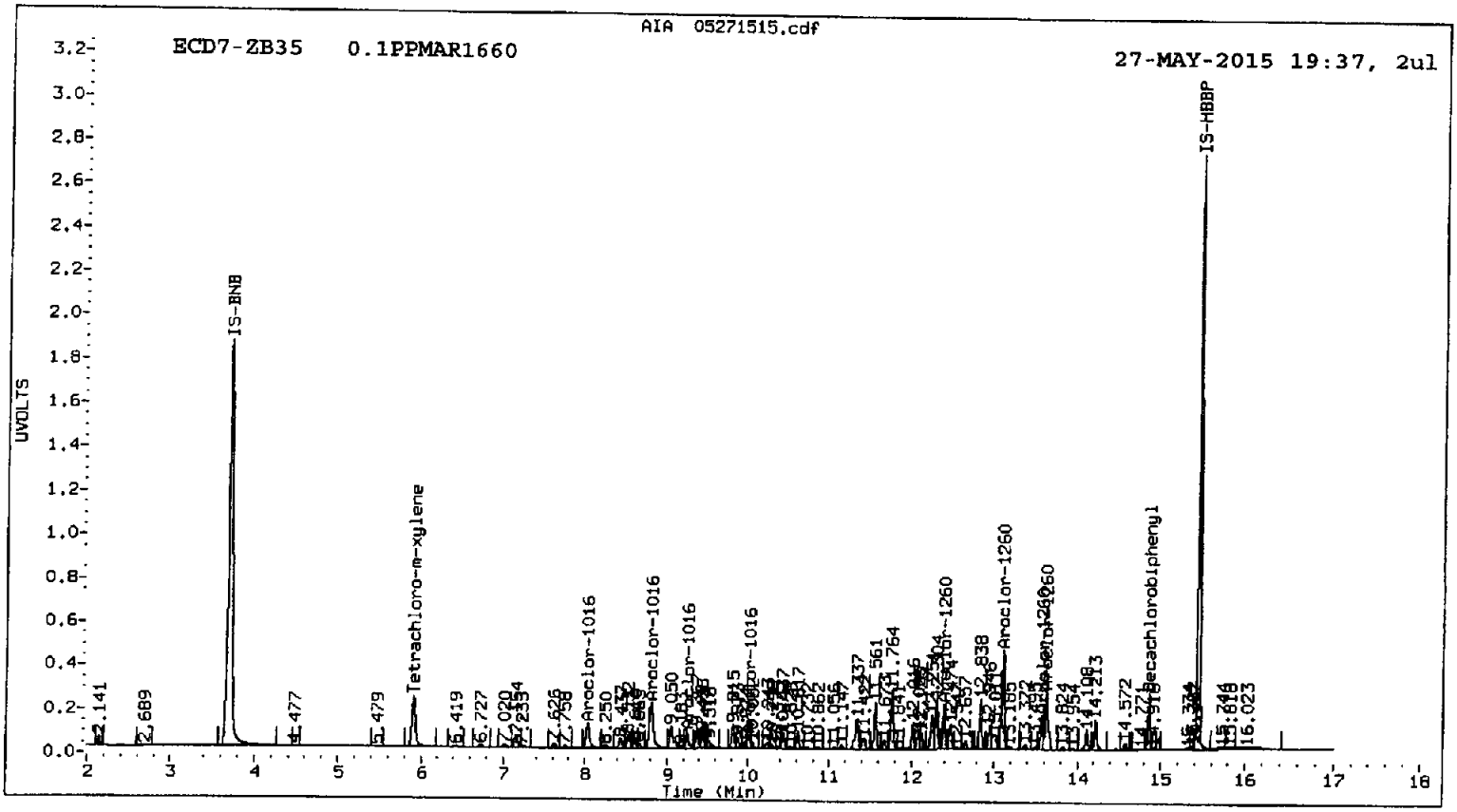
27-MAY-2015 19:37, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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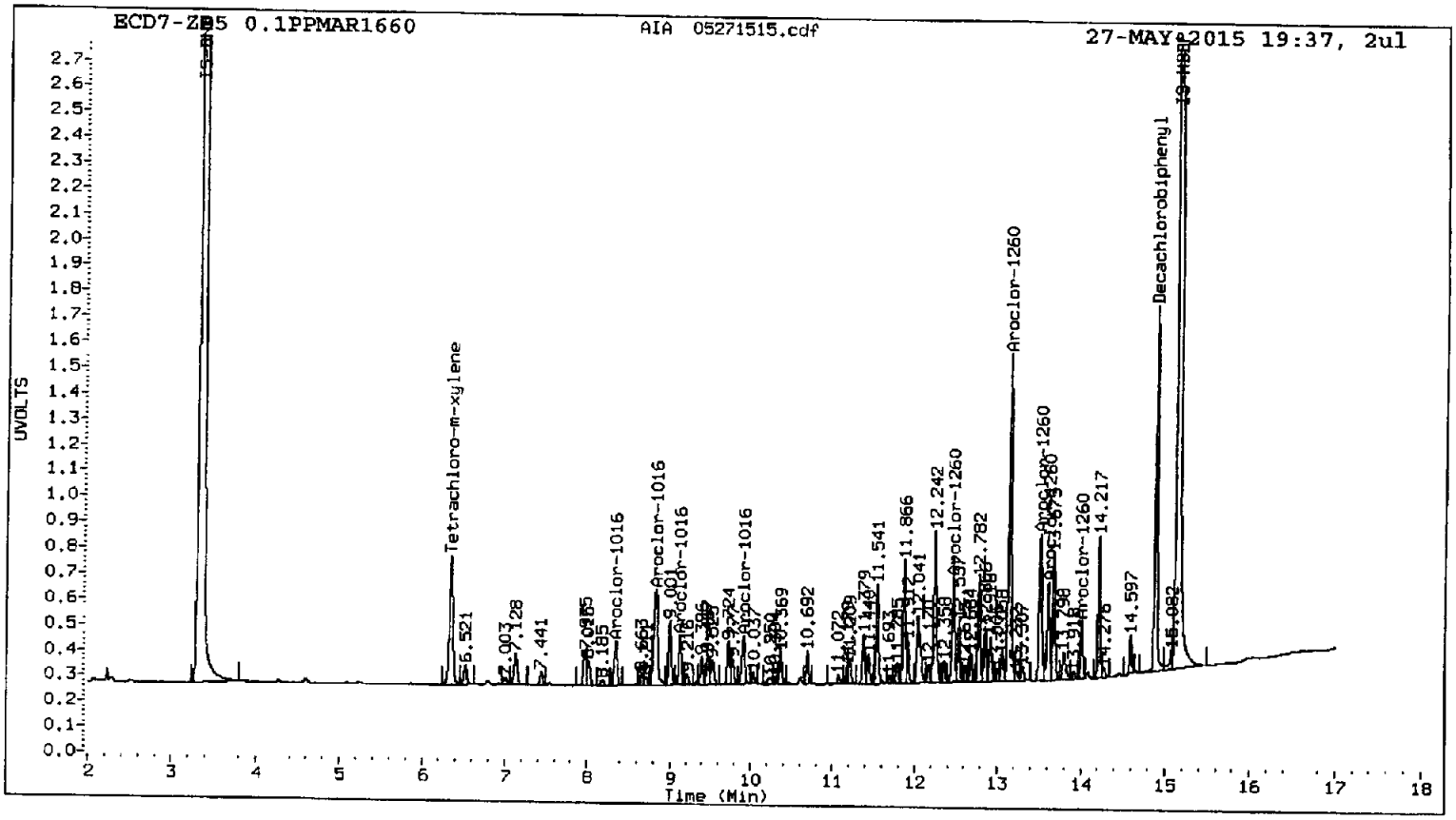
27-MAY-2015 19:37, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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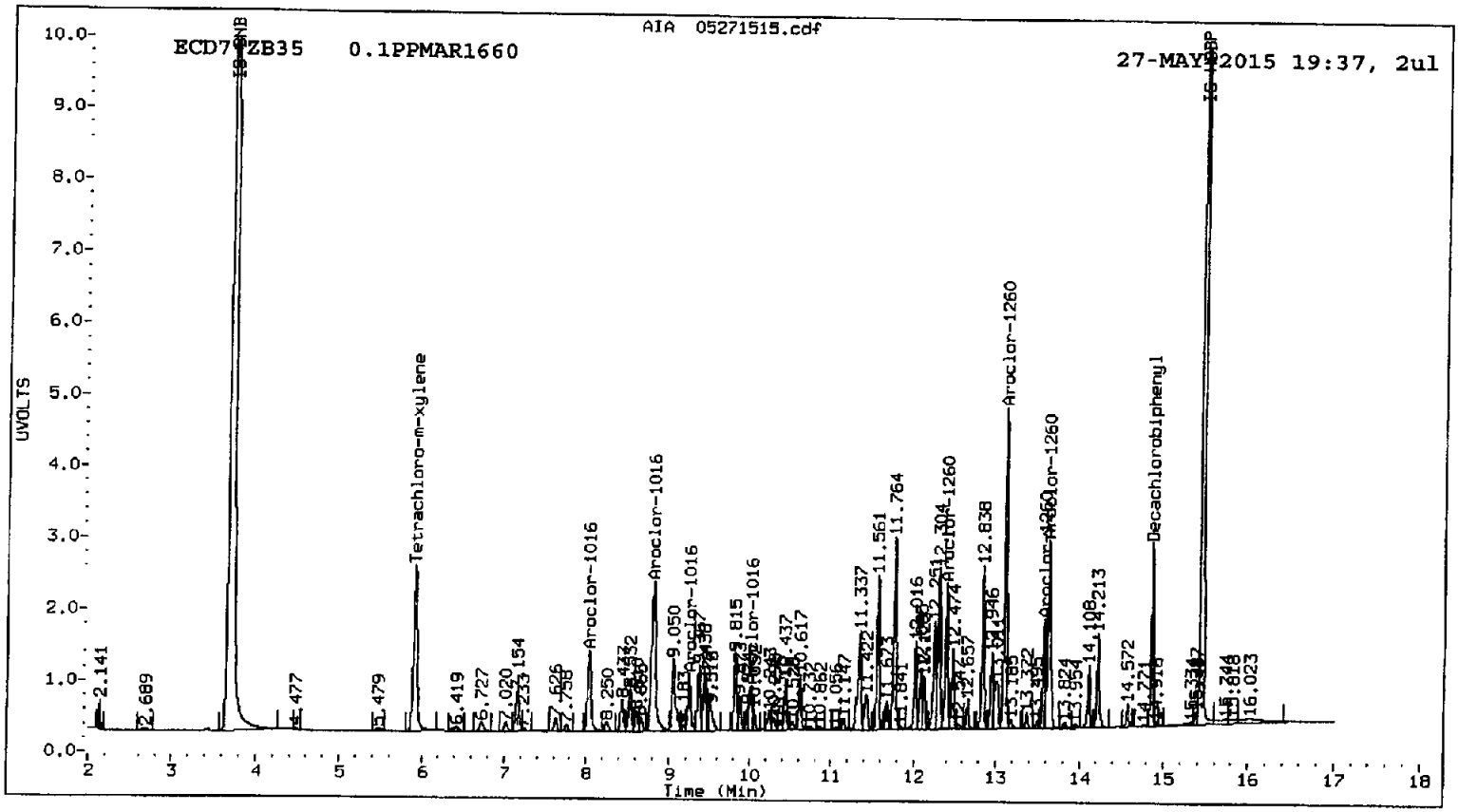
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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ECD7-ZB35 0.1PPMAR1660
27-MAY-2015 19:37, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271516.d
Data file 2: 20150527.b/ical-2.b/05271516.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 27-MAY-2015 19:58
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.002	1405725	5.909	0.001	6638488	40.1	38.8	3.3	Tetrachloro-m-xylene
14.890	0.001	2640170	14.863	0.001	4084650	38.9	37.7	3.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.1	96.9
Decachlorobiphenyl	97.4	94.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5176005	-5.0
Hexabromobiphenyl	5633814	5390218	-4.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12702598	-2.7
Hexabromobiphenyl	8980422	8989742	0.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

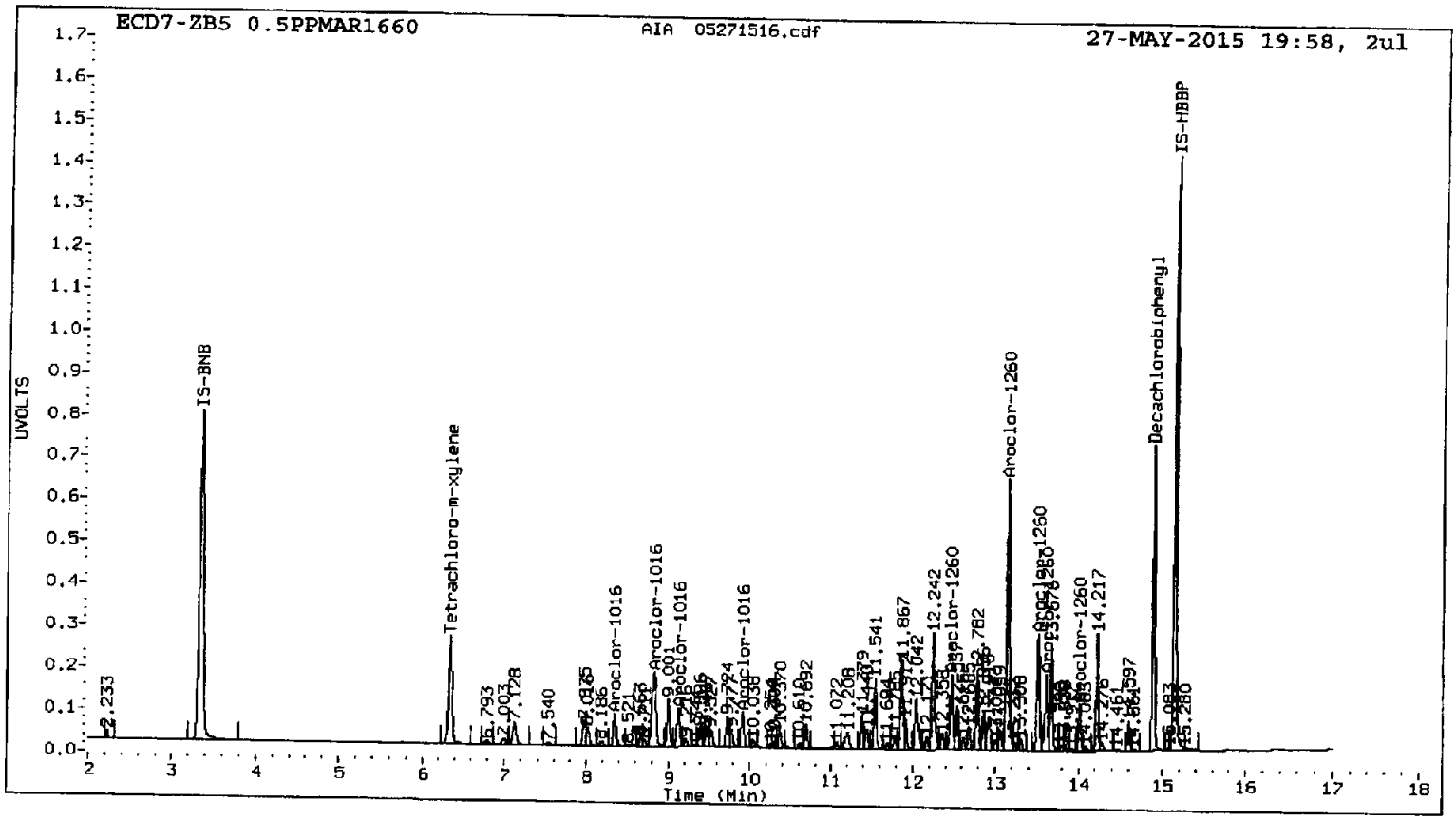
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.347	0.000	389815	468.2	1	8.031	0.000	3100536	445.3
Aroclor-1016	2	8.832	0.000	1204584	472.1	2	8.808	0.000	6720867	454.6
Aroclor-1016	3	9.128	0.000	424170	486.0	3	9.247	0.000	1746398	457.9
Aroclor-1016	4	9.912	0.000	442431	477.7	4	10.010	0.000	1225491	454.9
Total Col1Ave (4 peaks):					476.0	Total Col2Ave (4 peaks):				453.2 RPD = 5
Corrected Ave (3 peaks):					472.7	Corrected Ave (3 peaks):				451.6 RPD = 5
CalAmt %D:					-4.8	CalAmt %D:				-9.4
Aroclor-1260	1	12.469	0.000	791853	450.3	1	12.395	0.000	3573779	443.4
Aroclor-1260	2	13.144	0.000	2834432	498.0	2	13.102	0.000	8795809	468.5
Aroclor-1260	3	13.514	0.000	1298221	491.0	3	13.572	0.000	2619481	459.5
Aroclor-1260	4	13.613	0.000	771860	483.8	4	13.624	0.000	5736997	463.7
Aroclor-1260	5	14.012	0.000	435930	497.2	NS	---			----
Total Col1Ave (5 peaks):					484.0	Total Col2Ave (4 peaks):				458.8 RPD = 5
Corrected Ave (4 peaks):					480.6	Corrected Ave (3 peaks):				455.5 RPD = 5
CalAmt %D:					-3.2	CalAmt %D:				-8.2

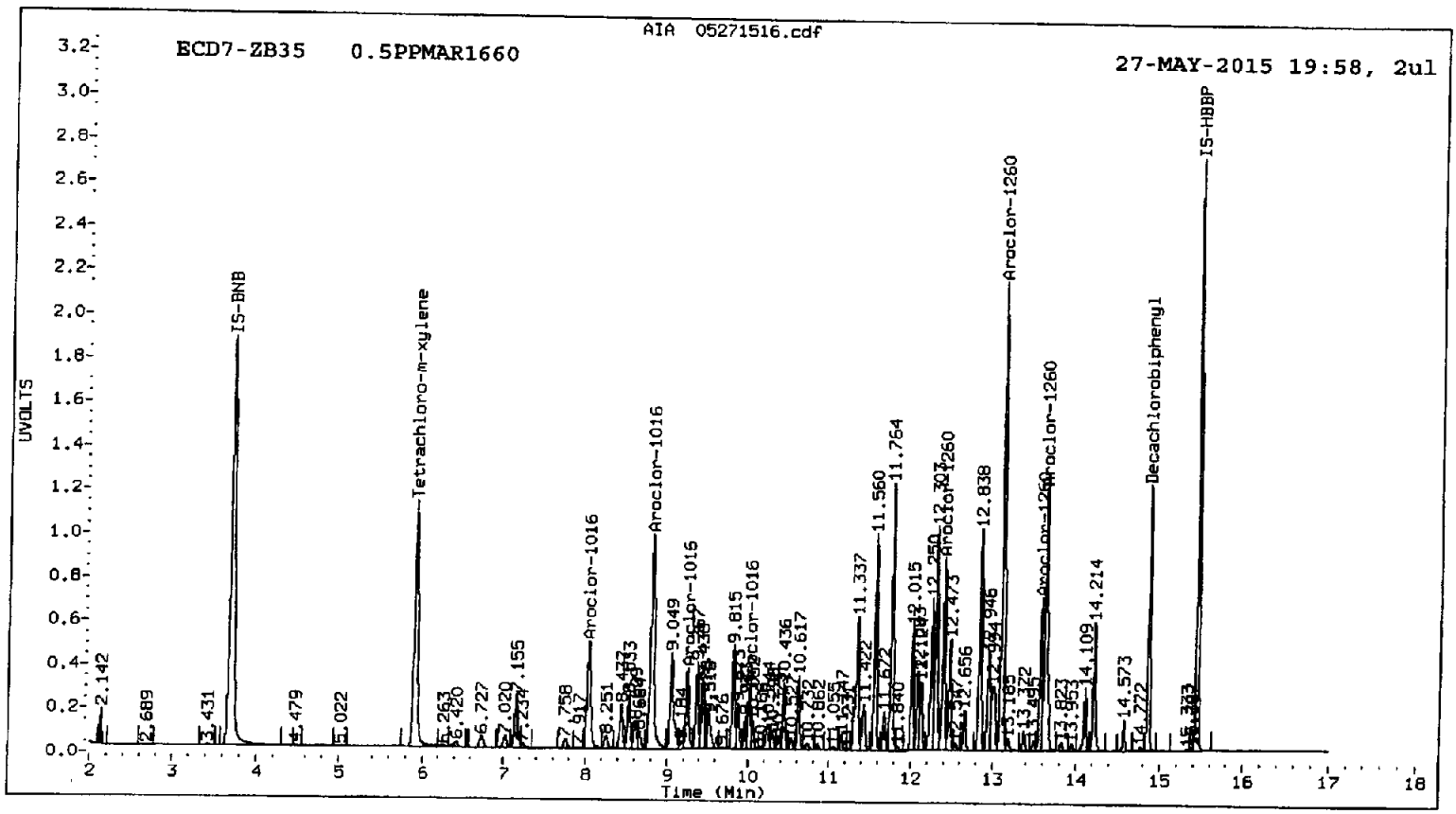
Total PCB Area Col1 (6.443 - 14.789) = 22904862 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 98764106 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGS 00709


ECD7-ZB5 0.5PPMAR1660
AIA 05271516.cdf
27-MAY-2015 19:58, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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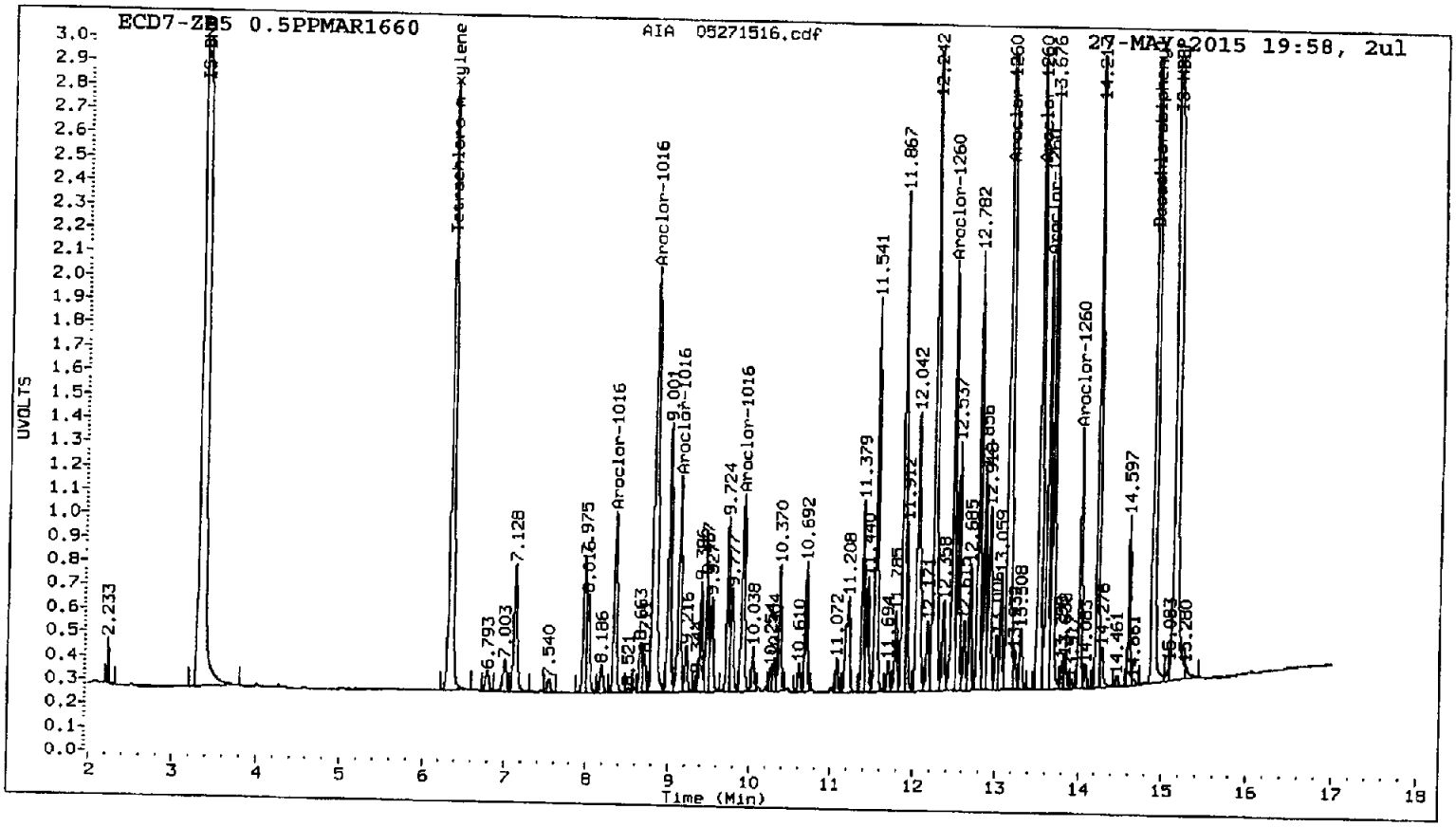
ECD7-ZB35 0.5PPMAR1660
27-MAY-2015 19:58, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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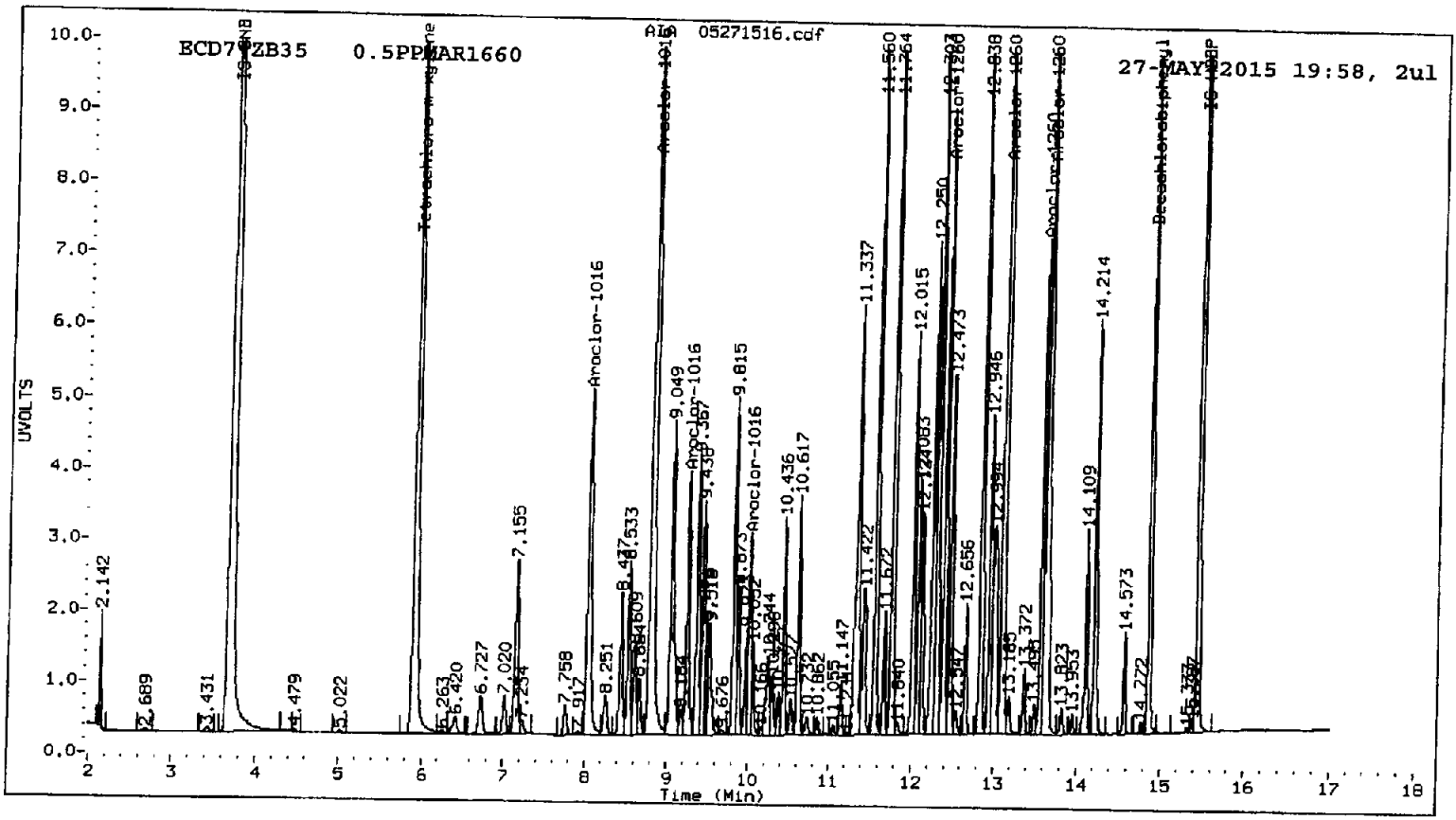
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 0.5PPMAR1660
AIA 05271516.cdf
27-MAY-2015 19:58, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271517.d
Data file 2: 20150527.b/ical-2.b/05271517.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 27-MAY-2015 20:20
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.342	-0.002	1357315	5.907	-0.001	6439566	37.5	36.8	1.8	Tetrachloro-m-xylene
14.890	0.000	2679761	14.862	-0.001	4088443	38.2	36.7	4.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.8	92.1
Decachlorobiphenyl	95.6	91.7

JA 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5337516	-2.1
Hexabromobiphenyl	5633814	5573924	-1.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12964295	-0.7
Hexabromobiphenyl	8980422	9247281	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

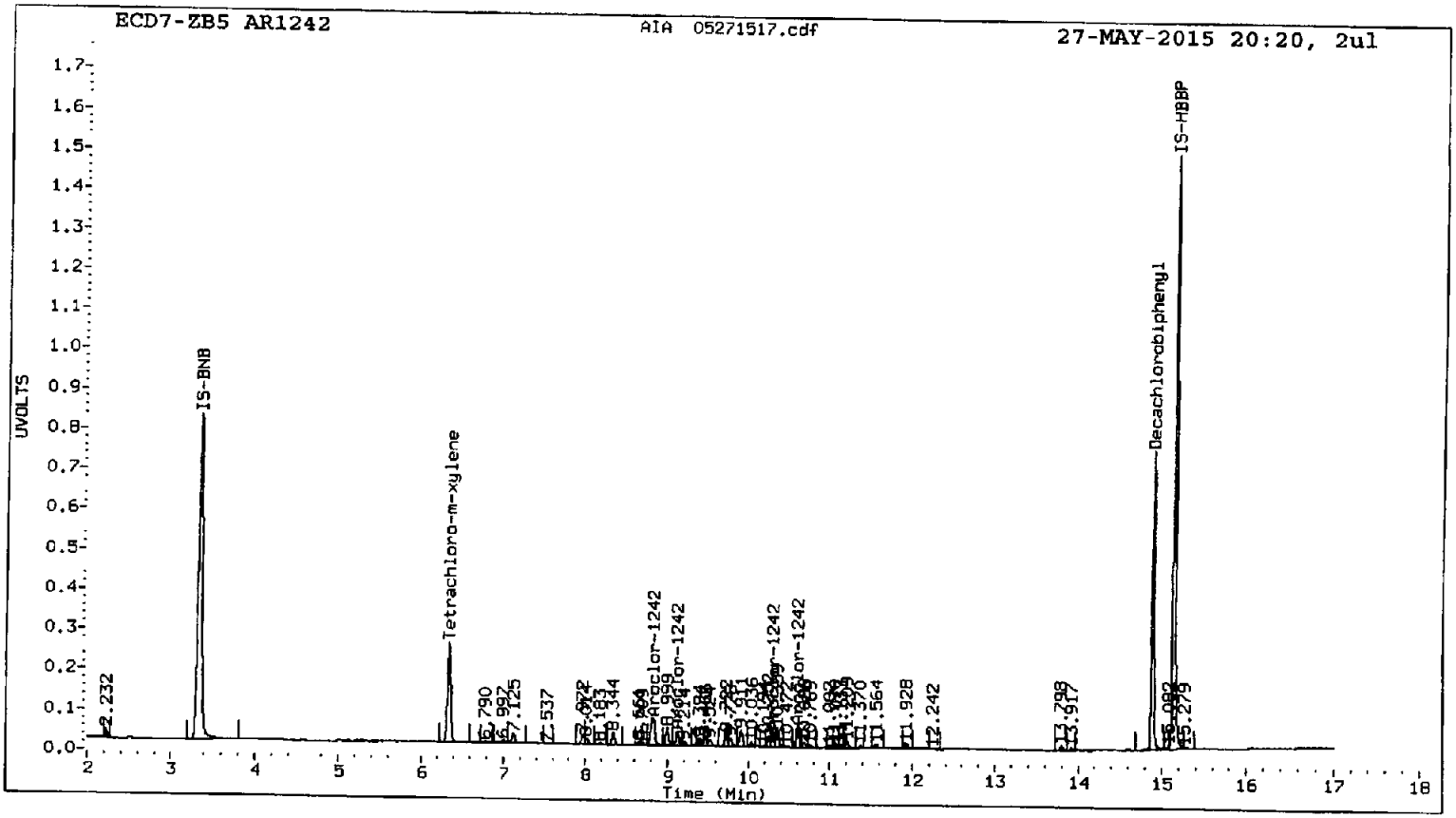
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1242	1	8.829	0.000	481393	250.0	1	8.029	0.000	1303521	250.0
Aroclor-1242	2	9.126	0.000	172377	250.0	2	8.808	0.000	2752038	250.0
Aroclor-1242	3	10.302	0.000	160584	250.0	3	10.374	0.000	958680	250.0
Aroclor-1242	4	10.607	0.000	240586	250.0	4	10.732	0.000	1165956	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

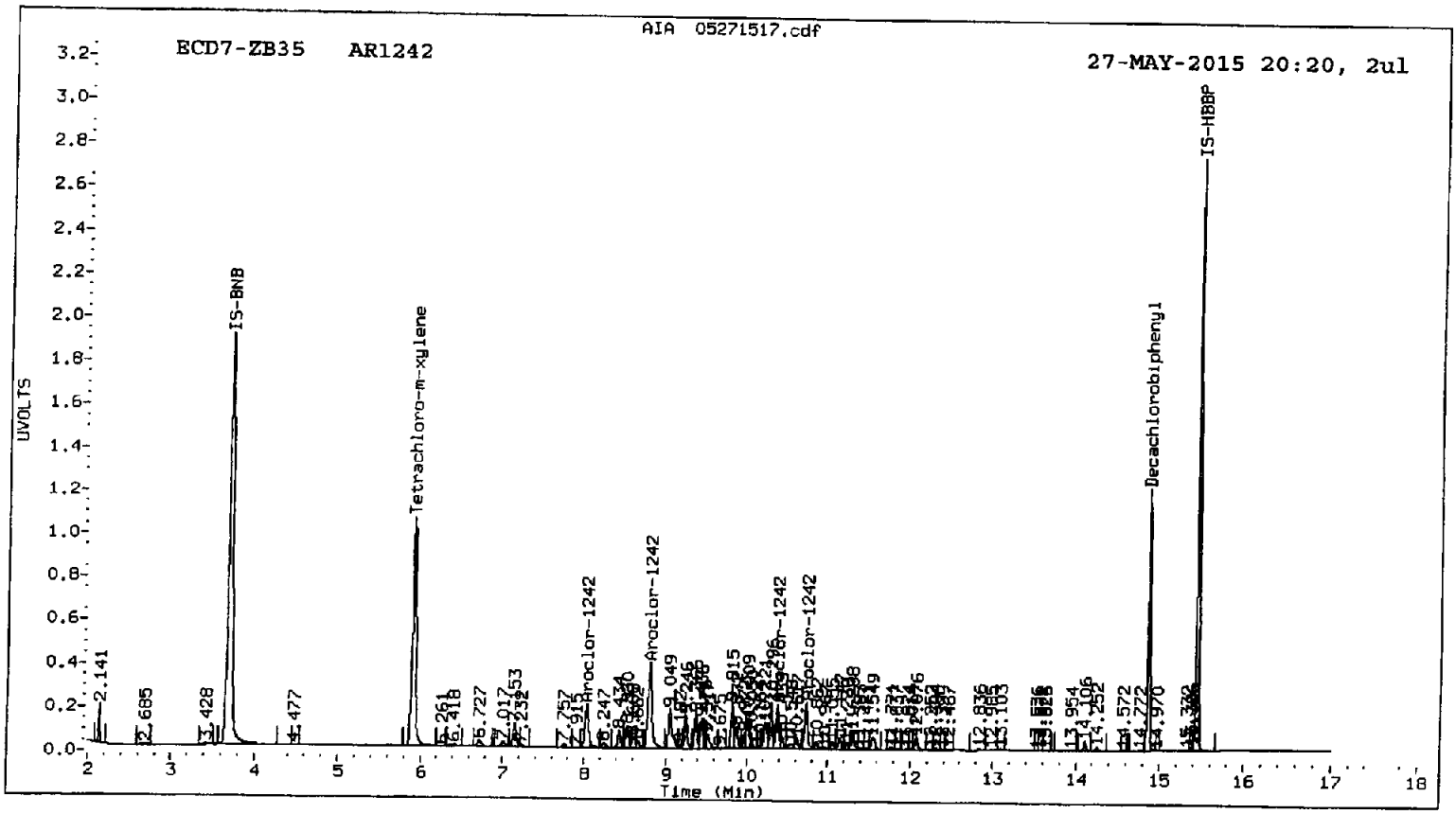
Total PCB Area Col1 (6.443 - 14.789) = 3565925 Col1 Total PCB = 0.2 ppm*

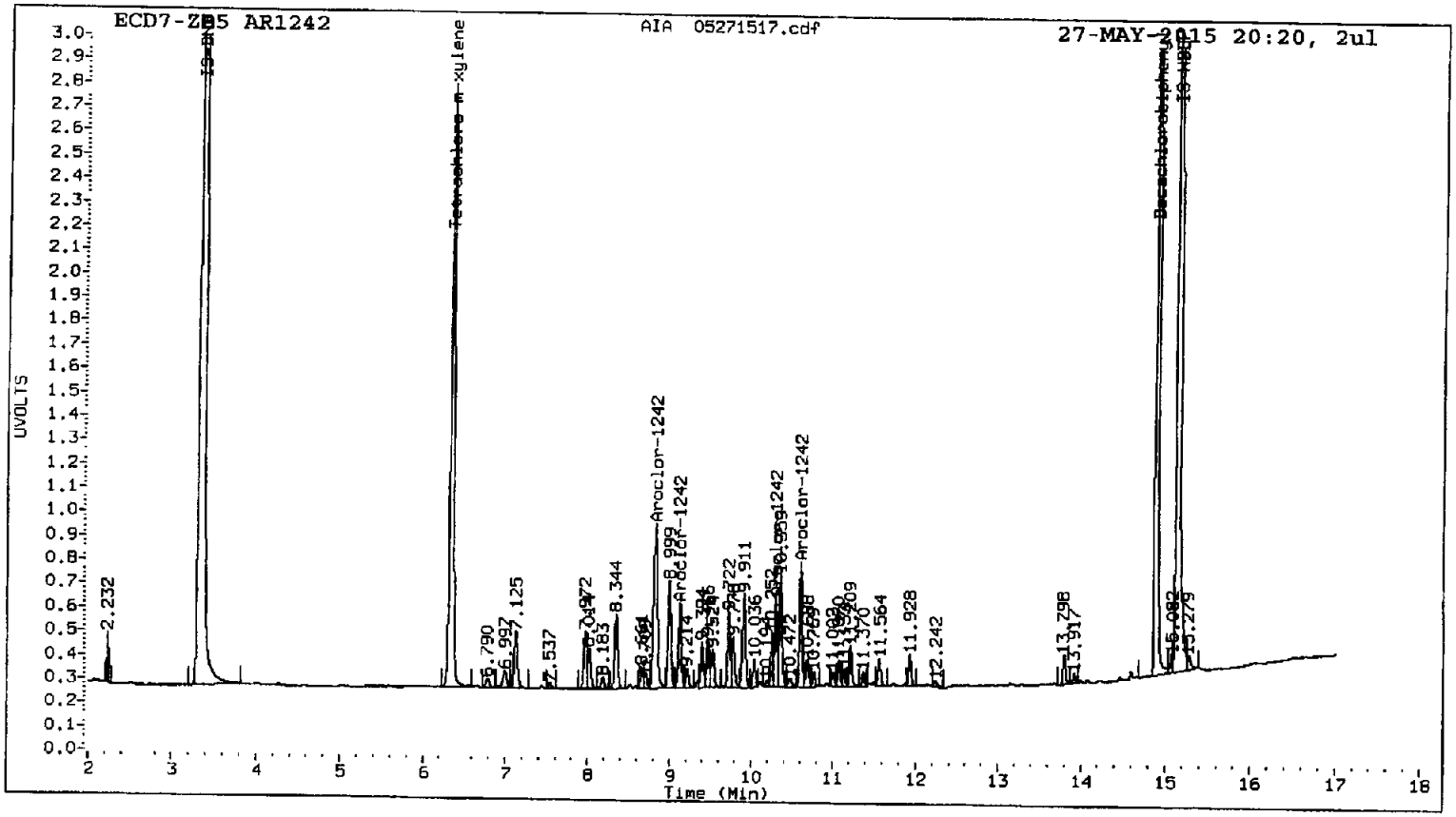
Total PCB Area Col2 (6.008 - 14.762) = 20149285 Col2 Total PCB = 0.2 ppm*

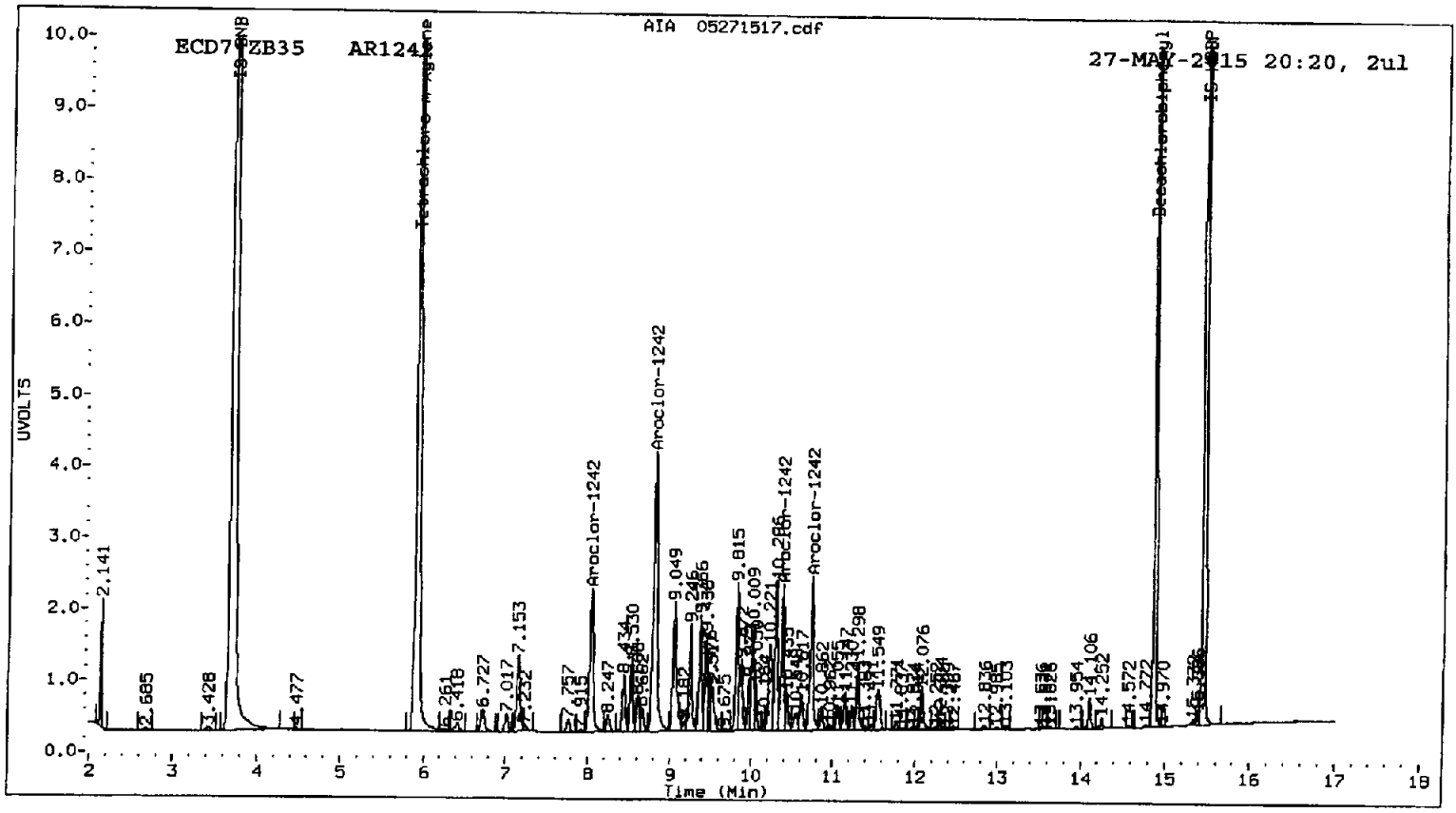
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)


ECD7-ZB35 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)


ECD7-ZB5 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl


ECD7-ZB35 AR1242
AIA 05271517.cdf
27-MAY-2015 20:20, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271518.d
Data file 2: 20150527.b/ical-2.b/05271518.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 27-MAY-2015 20:41
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.002	1350928	5.910	0.002	6411219	37.6	37.1	1.4	Tetrachloro-m-xylene
14.889	0.000	2633172	14.861	-0.001	4093839	37.7	36.6	2.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.0	92.7
Decachlorobiphenyl	94.1	91.6

05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5300438	-2.7
Hexabromobiphenyl	5633814	5560964	-1.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12820555	-1.8
Hexabromobiphenyl	8980422	9271038	3.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	9.395	0.000	152243	250.0	1	8.803	0.000	1766425	250.0
Aroclor-1248	2	9.911	0.000	323695	250.0	2	9.815	0.000	1411453	250.0
Aroclor-1248	3	10.361	0.000	376060	250.0	3	10.373	0.000	1495961	250.0
Aroclor-1248	4	10.606	0.000	380380	250.0	4	10.730	0.000	1931054	250.0

Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

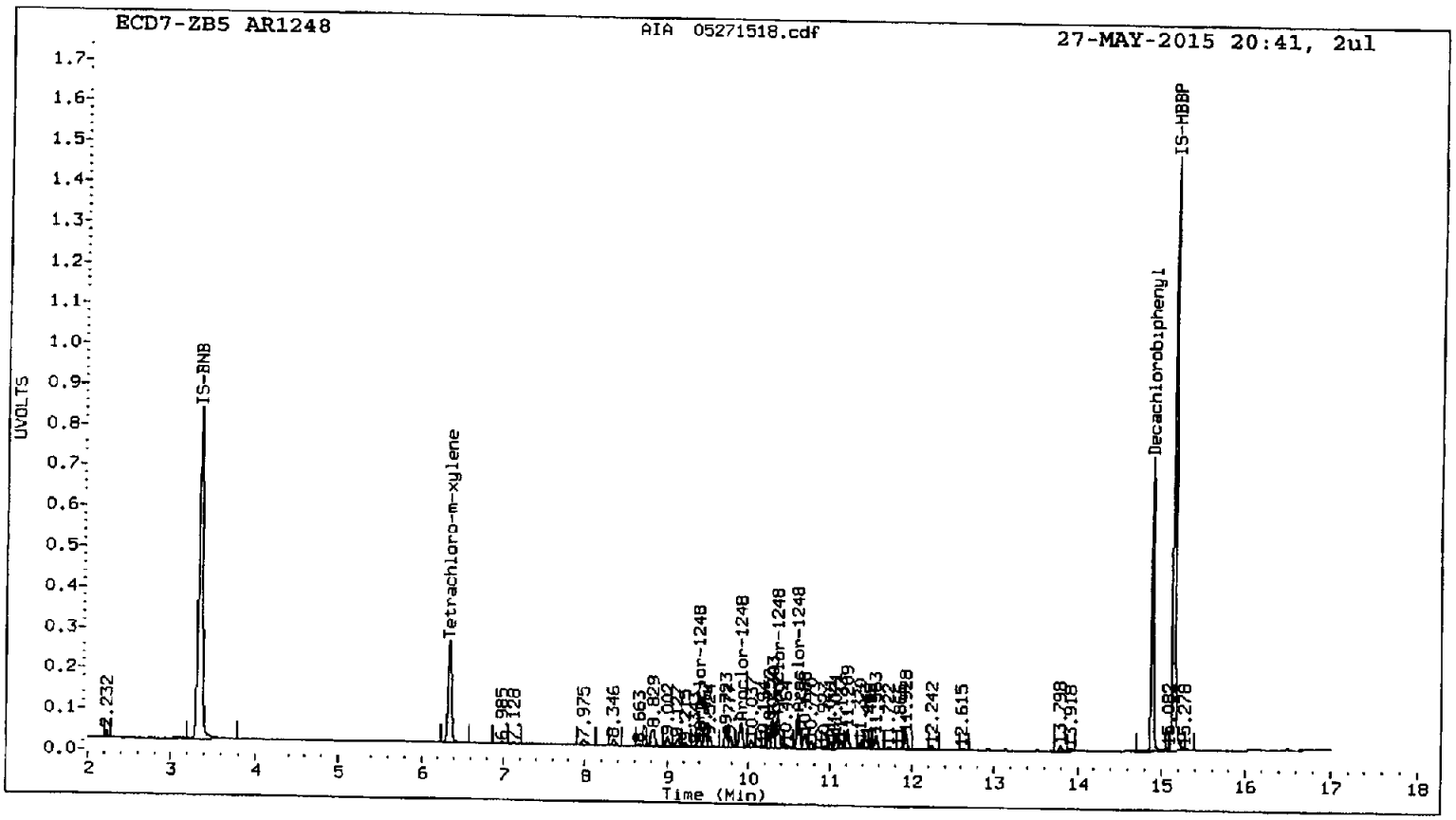
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

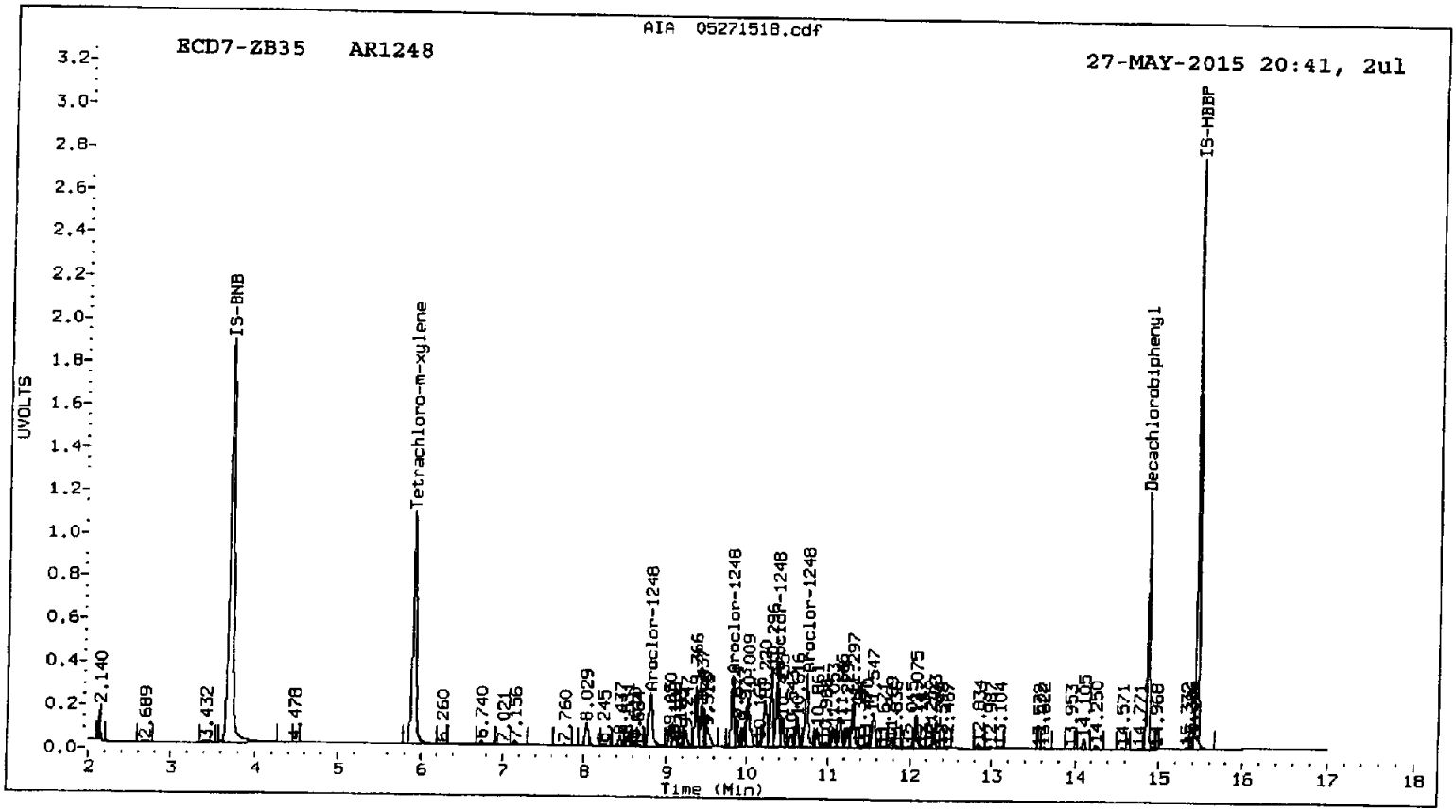
Total PCB Area Col1 (6.443 - 14.789) = 4573831 Col1 Total PCB = 0.2 ppm*

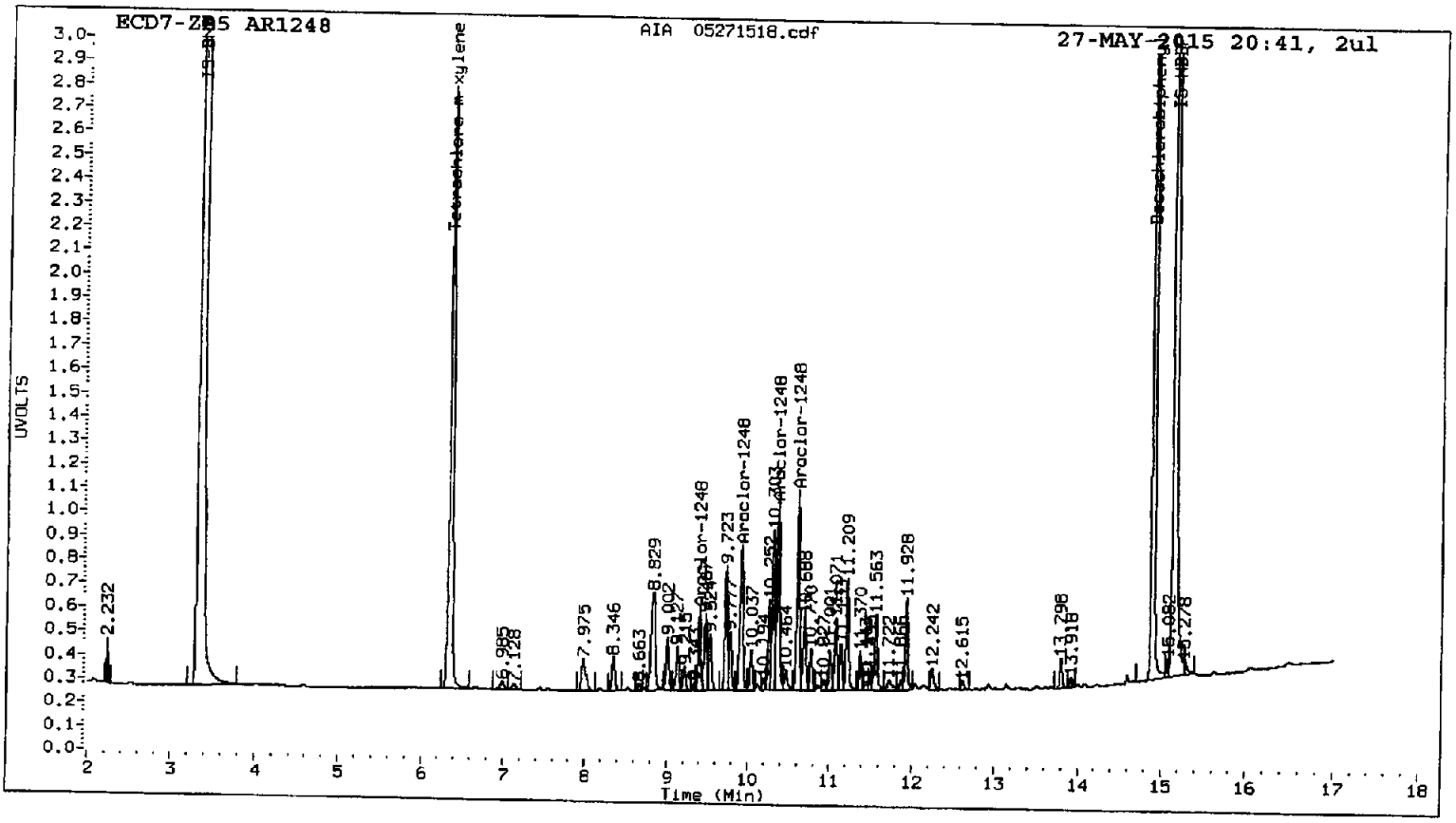
Total PCB Area Col2 (6.008 - 14.762) = 24756093 Col2 Total PCB = 0.2 ppm*

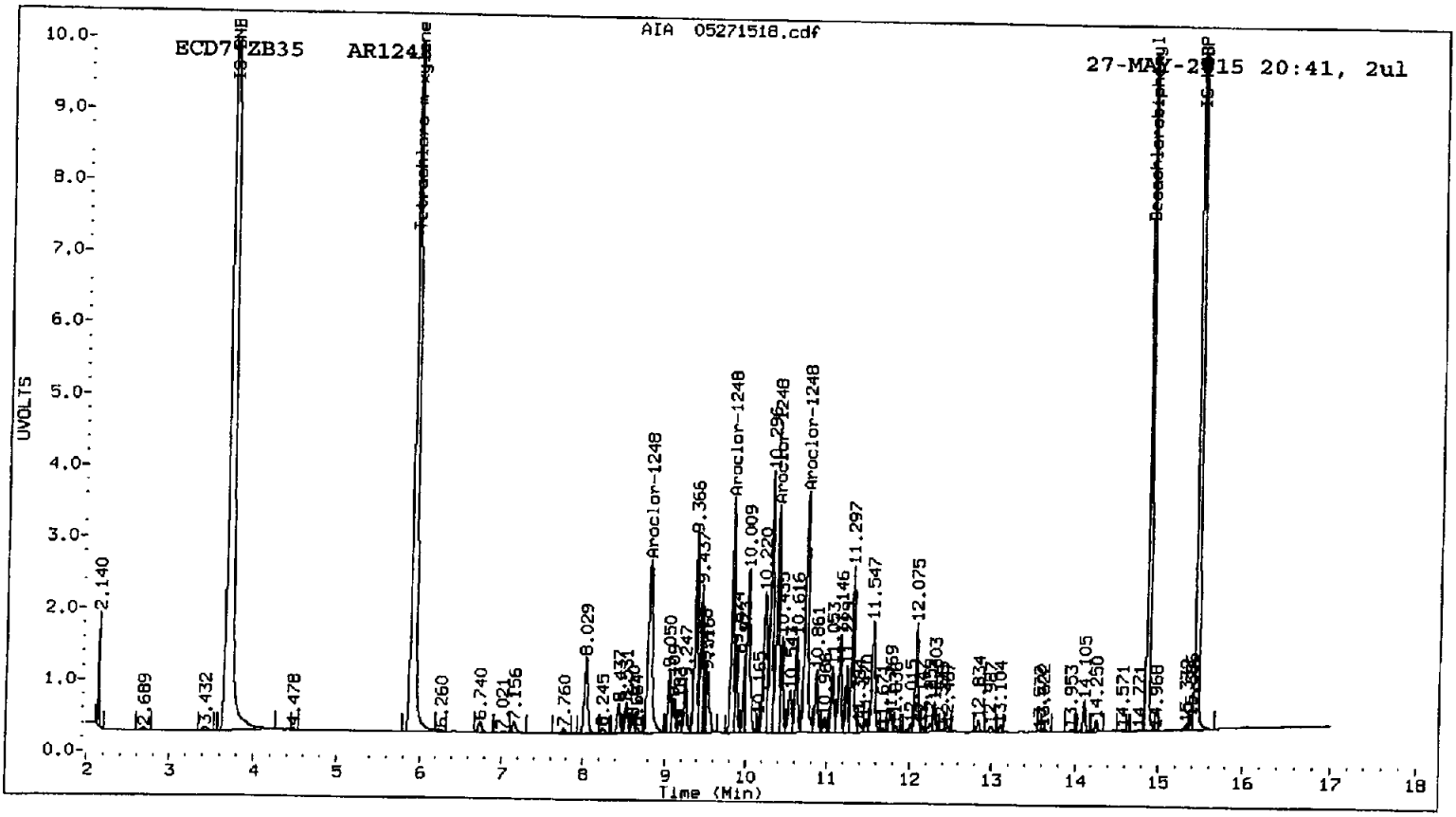
* Quantitated against AR1660 0.25ppm in Ical

AGP 00726


ECD7-ZB5 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1248
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB35 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1248
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB5 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)


ECD7-ZB35 AR1248
AIA 05271518.cdf
27-MAY-2015 20:41, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271519.d
Data file 2: 20150527.b/ical-2.b/05271519.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 27-MAY-2015 21:02
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.341	-0.002	1336926	5.906	-0.002	6393445	37.7	37.4	0.8	Tetrachloro-m-xylene
14.889	0.000	2668224	14.862	-0.001	4168711	39.0	37.9	2.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.2	93.4
Decachlorobiphenyl	97.5	94.8

JL 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5232643	-4.0
Hexabromobiphenyl	5633814	5441303	-3.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12686823	-2.9
Hexabromobiphenyl	8980422	9119341	1.5

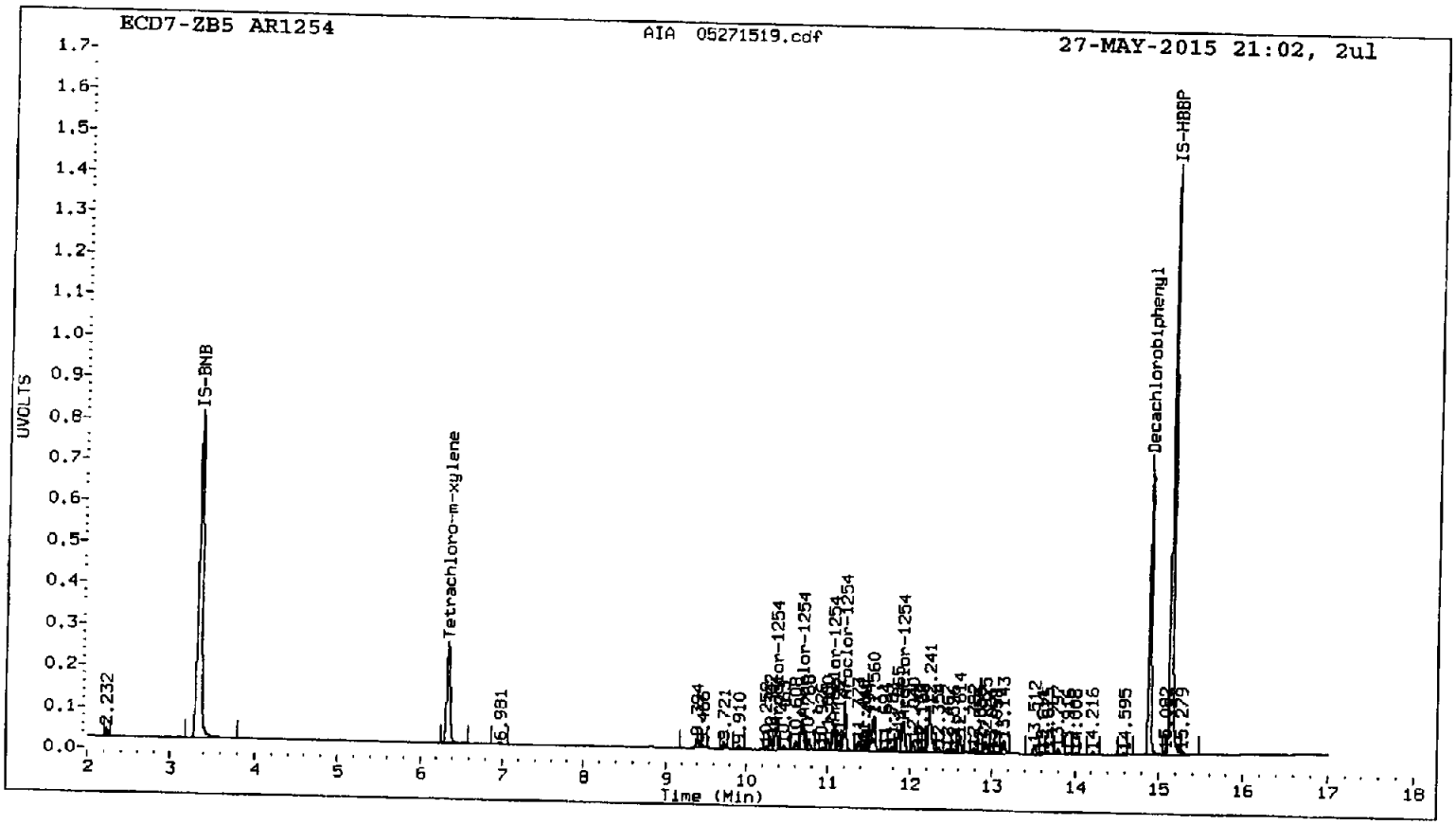
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

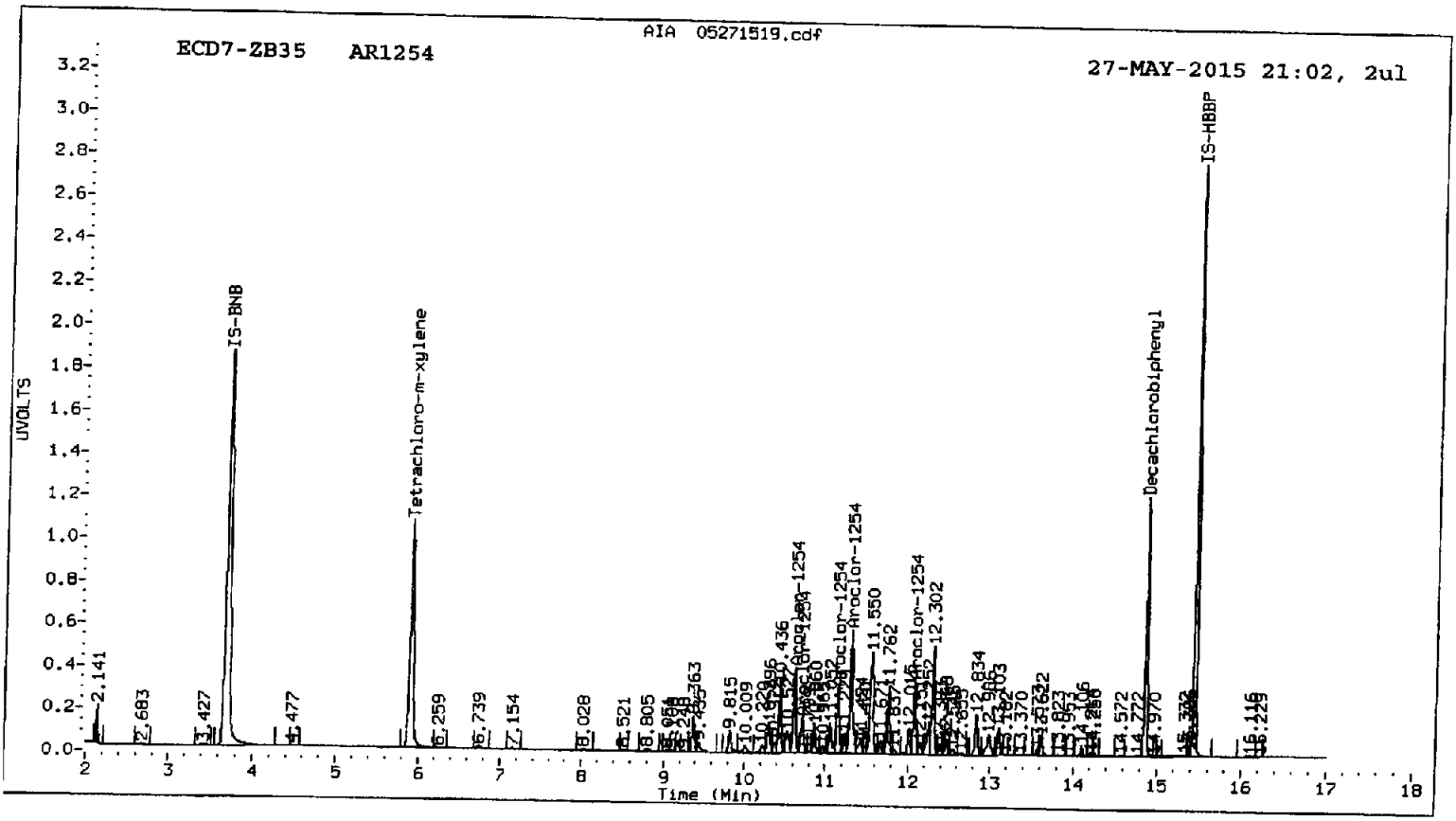
Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.368	0.000	238926	250.0	1	10.615	0.000	1670782	250.0
Aroclor-1254	2	10.689	0.000	341464	250.0	2	10.710	0.000	791751	250.0
Aroclor-1254	3	11.070	0.000	276947	250.0	3	11.145	0.000	1305721	250.0
Aroclor-1254	4	11.208	0.000	522624	250.0	4	11.297	0.000	2785036	250.0
Aroclor-1254	5	11.922	0.000	374654	250.0	5	12.079	0.000	1663907	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):				250.0 RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):				250.0 RPD = 0

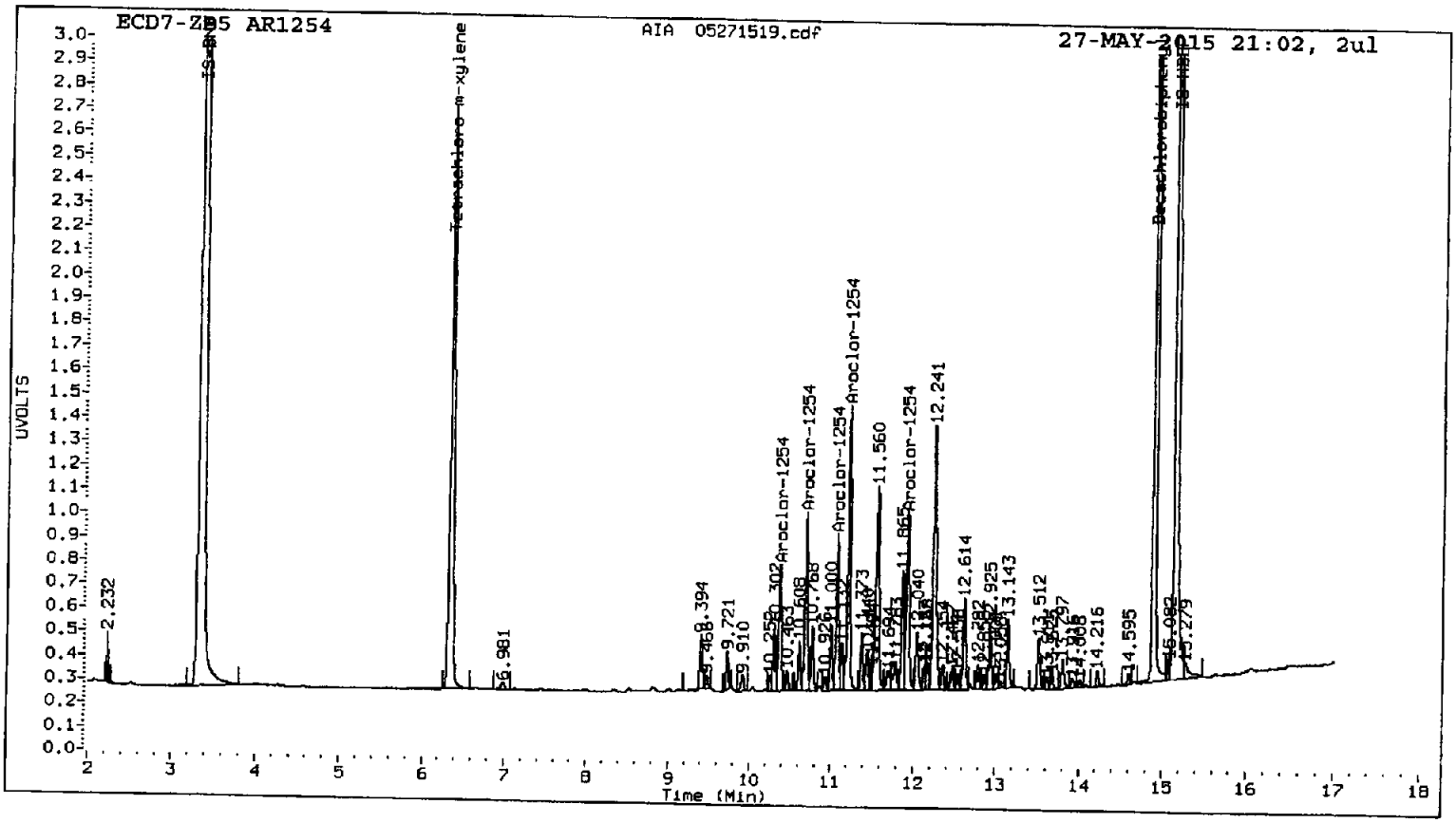
Total PCB Area Col1 (6.443 - 14.789) = 5273972 Col1 Total PCB = 0.2 ppm*

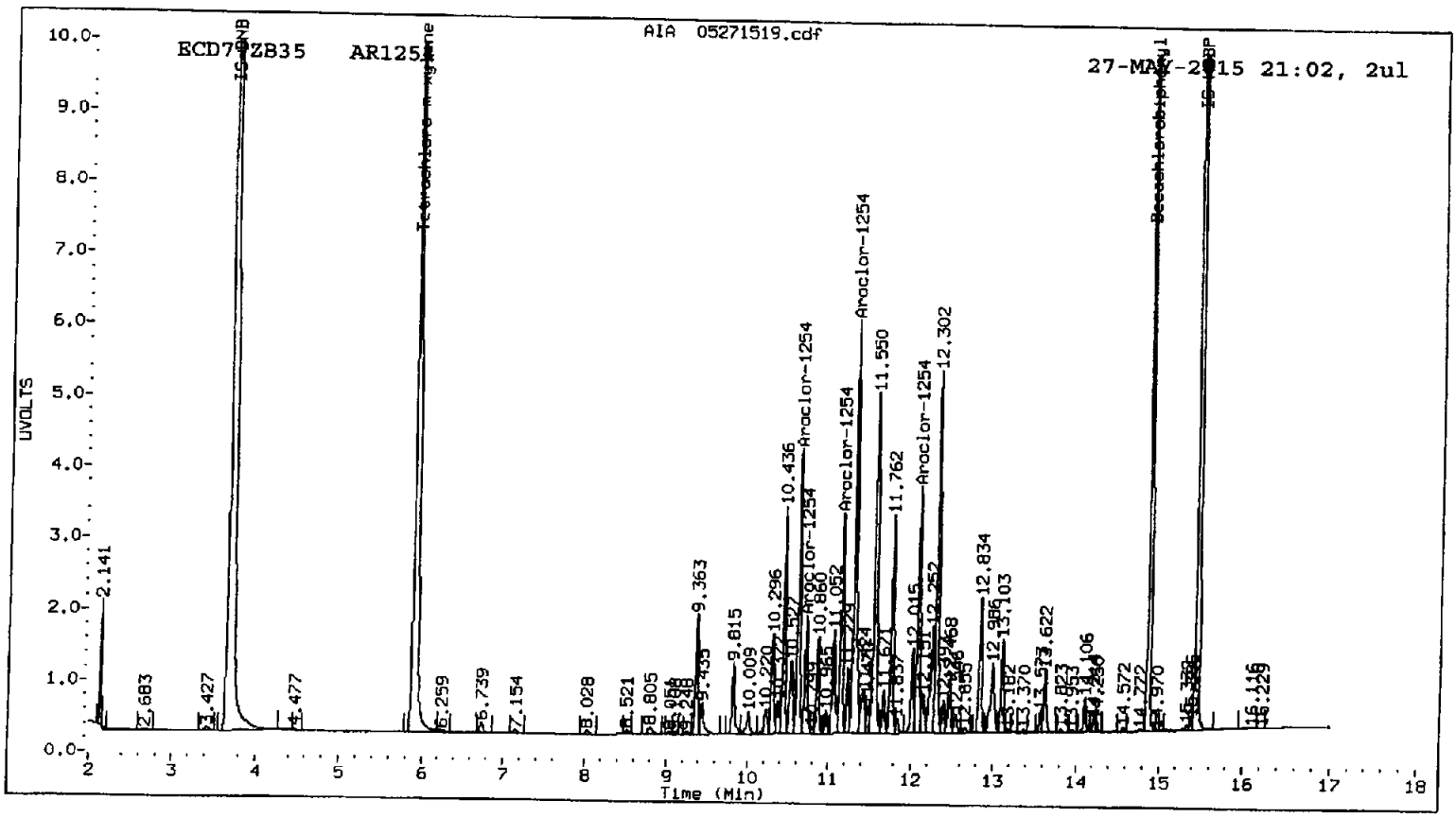
Total PCB Area Col2 (6.008 - 14.762) = 27296317 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB35 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB5 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254


ECD7-ZB35 AR1254
AIA 05271519.cdf
27-MAY-2015 21:02, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271520.d
Data file 2: 20150527.b/ical-2.b/05271520.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-MAY-2015 21:24
Report Date: 05/28/2015 08:37
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.340	-0.003	1377630	5.906	-0.002	6388369	38.5	37.6	2.3	Tetrachloro-m-xylene
14.889	0.000	2652552	14.862	-0.001	4220288	38.0	37.2	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	96.2	94.1
Decachlorobiphenyl	95.1	92.9

JK 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5278972	-3.1
Hexabromobiphenyl	5633814	5544225	-1.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12591250	-3.6
Hexabromobiphenyl	8980422	9419455	4.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

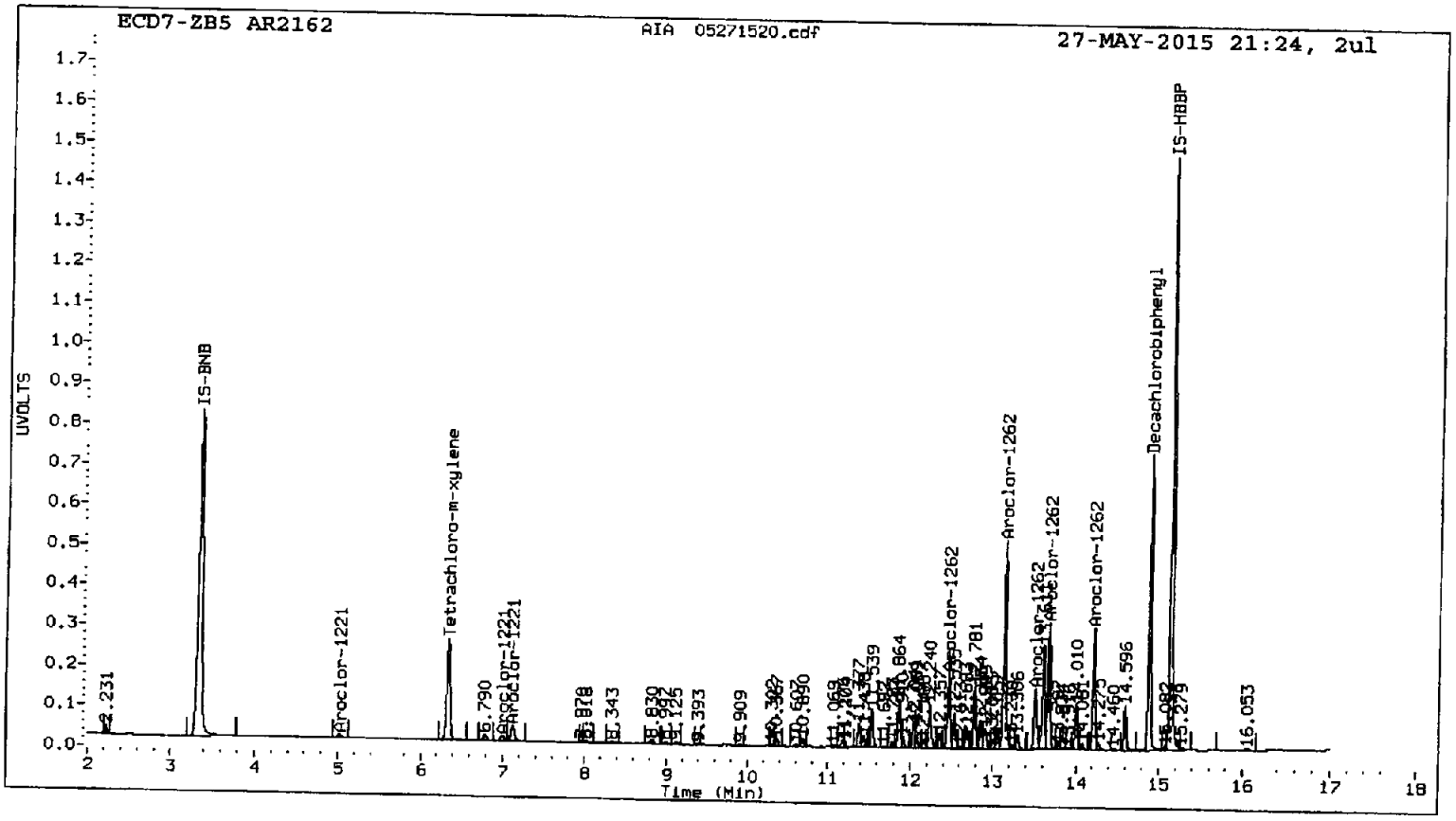
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1221	1	5.023	0.000	53713	250.0	1	5.018	0.000	326848	250.0
Aroclor-1221	2	6.999	0.000	84055	250.0	2	6.720	0.000	546909	250.0
Aroclor-1221	3	7.123	0.000	237232	250.0	3	7.015	0.000	308704	250.0
Aroclor-1221	NS	---			----	4	7.150	0.000	944566	250.0
Total Col1Ave (3 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				250.0
Aroclor-1262	1	12.467	0.000	817204	250.0	1	12.394	0.000	3732561	250.0
Aroclor-1262	2	13.143	0.000	2273520	250.0	2	12.836	0.000	3508085	250.0
Aroclor-1262	3	13.513	0.000	716553	250.0	3	13.100	0.000	7199514	250.0
Aroclor-1262	4	13.675	0.000	1243502	250.0	4	13.570	0.000	3104261	250.0
Aroclor-1262	5	14.216	0.000	1112519	250.0	5	14.212	0.000	2440147	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):				250.0 RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):				250.0 RPD = 0

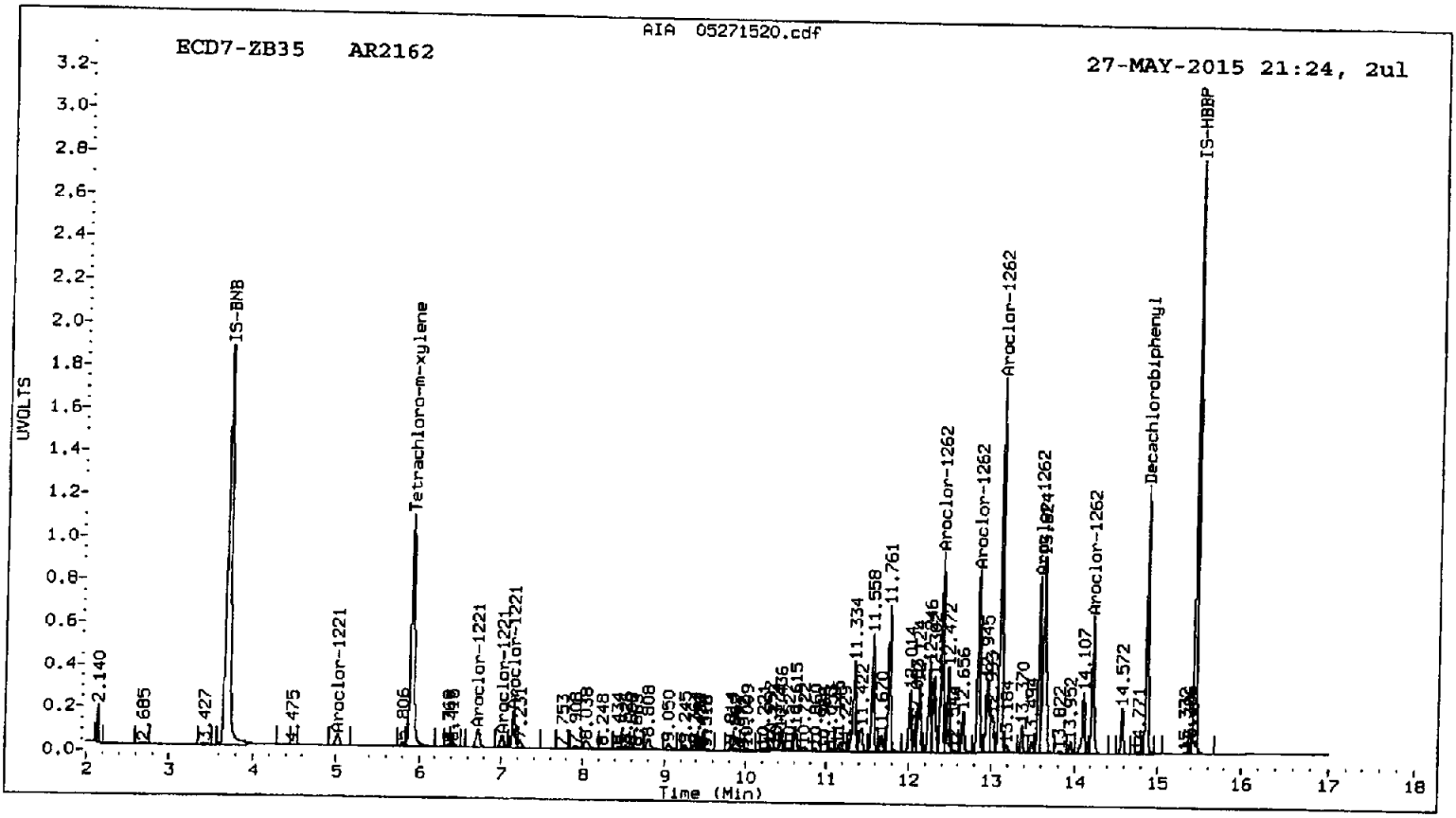
Total PCB Area Col1 (6.443 - 14.789) = 14166242 Col1 Total PCB = 0.6 ppm*

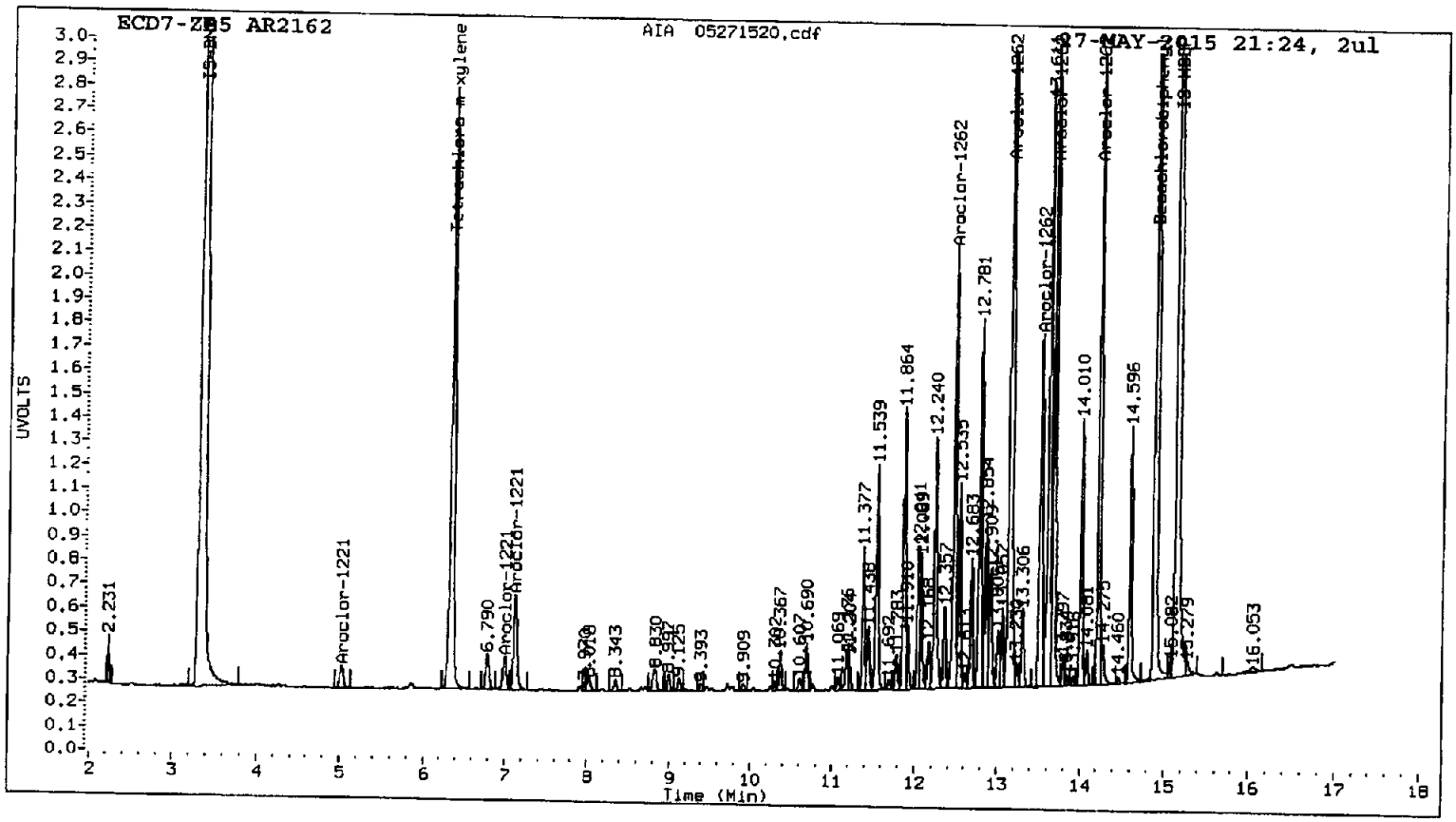
Total PCB Area Col2 (6.008 - 14.762) = 53324743 Col2 Total PCB = 0.5 ppm*

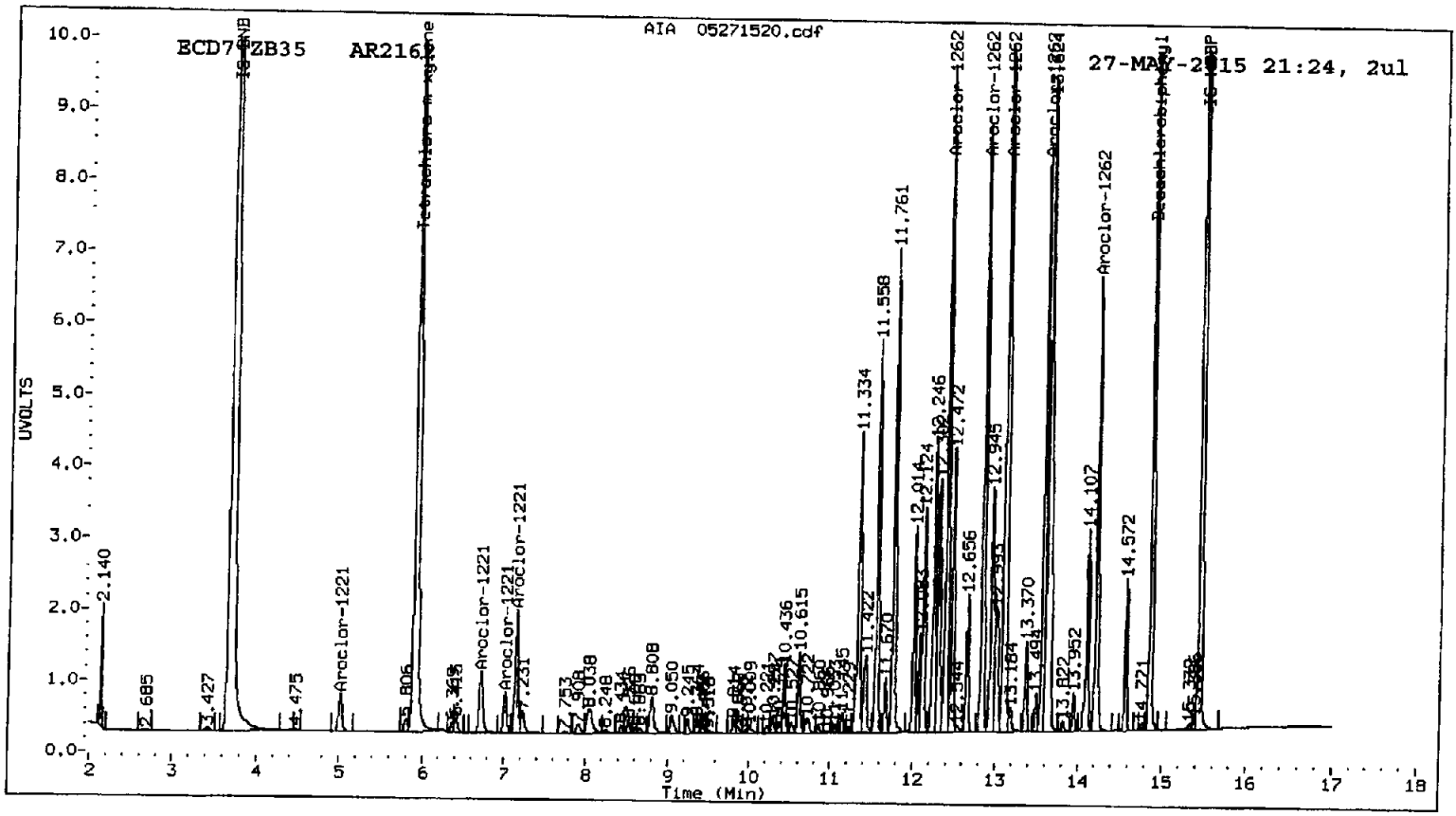
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1262
Decachlorobiphenyl
IS-HBBP


ECD7-ZB35 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1262
Decachlorobiphenyl
IS-HBBP


ECD7-ZB5 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl


ECD7-ZB35 AR2162
AIA 05271520.cdf
27-MAY-2015 21:24, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271521.d
Data file 2: 20150527.b/ical-2.b/05271521.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-MAY-2015 21:45
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.343	0.000	1384607	5.908	0.000	6560313	38.3	37.9	1.1	Tetrachloro-m-xylene
14.889	0.000	4020390	14.862	0.000	6306995	58.1	55.6	4.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	94.7
Decachlorobiphenyl	145.4	138.9

JK 05/20/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5332927	-2.1
Hexabromobiphenyl	5633814	5498000	-2.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12844090	-1.6
Hexabromobiphenyl	8980422	9415095	4.8

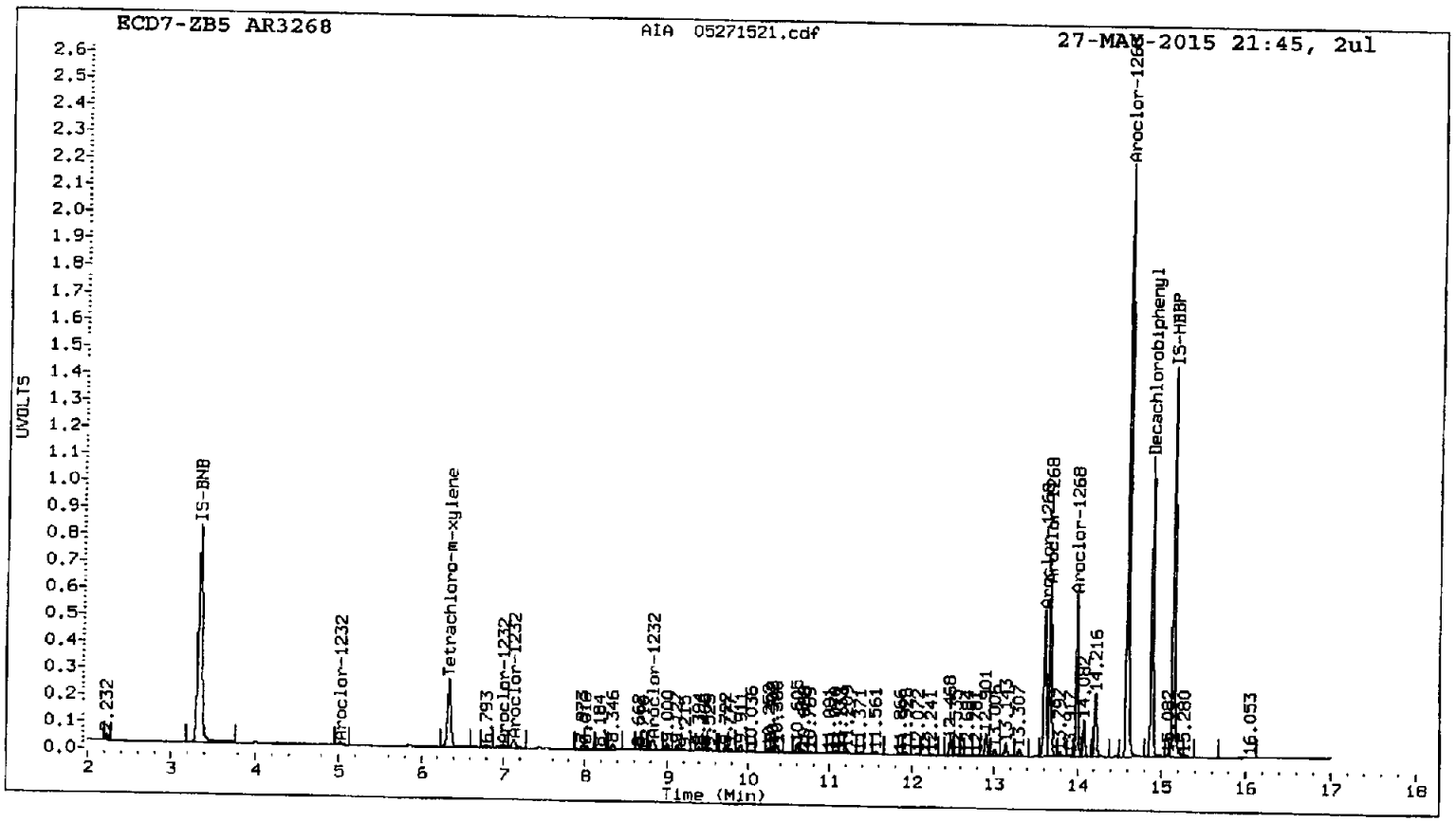
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

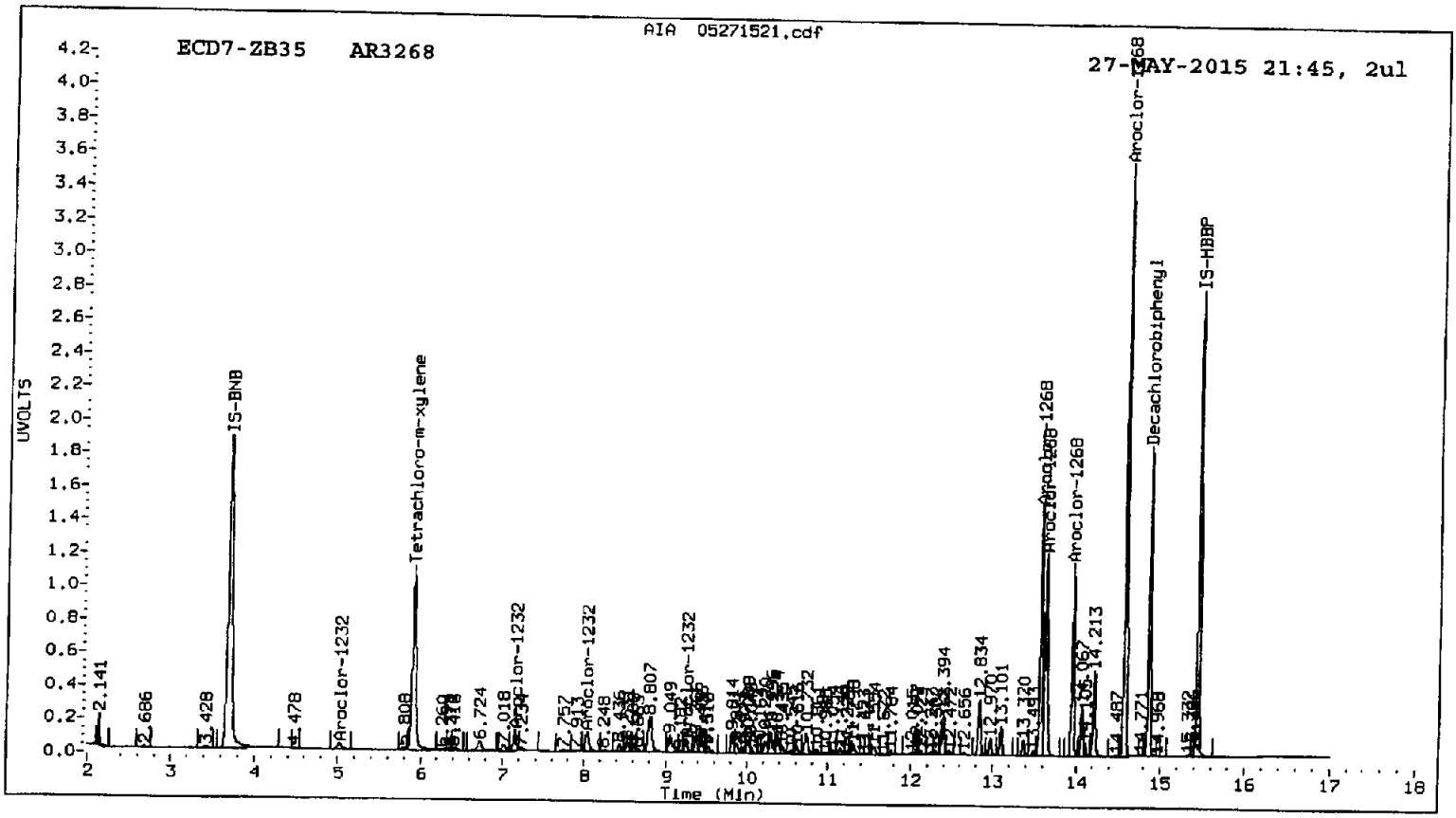
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	5.026	0.000	30871	250.0	1	5.021	0.000	202864	250.0
Aroclor-1232	2	6.999	0.000	58639	250.0	2	7.153	0.000	680303	250.0
Aroclor-1232	3	7.126	0.000	160027	250.0	3	8.029	0.000	797677	250.0
Aroclor-1232	4	8.830	0.000	267459	250.0	4	9.247	0.000	409273	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	13.612	0.000	2130607	250.0	1	13.569	0.000	5515830	250.0
Aroclor-1268	2	13.674	0.000	2497316	250.0	2	13.628	0.000	5211679	250.0
Aroclor-1268	3	13.996	0.000	2232678	250.0	3	13.953	0.000	4199960	250.0
Aroclor-1268	4	14.597	0.000	7805665	250.0	4	14.573	0.000	11841389	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.443 - 14.789) = 19433102 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 47500203 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR3268
AIA 05271521.cdf
27-MAY-2015 21:45, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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AIA 05271521.cdf
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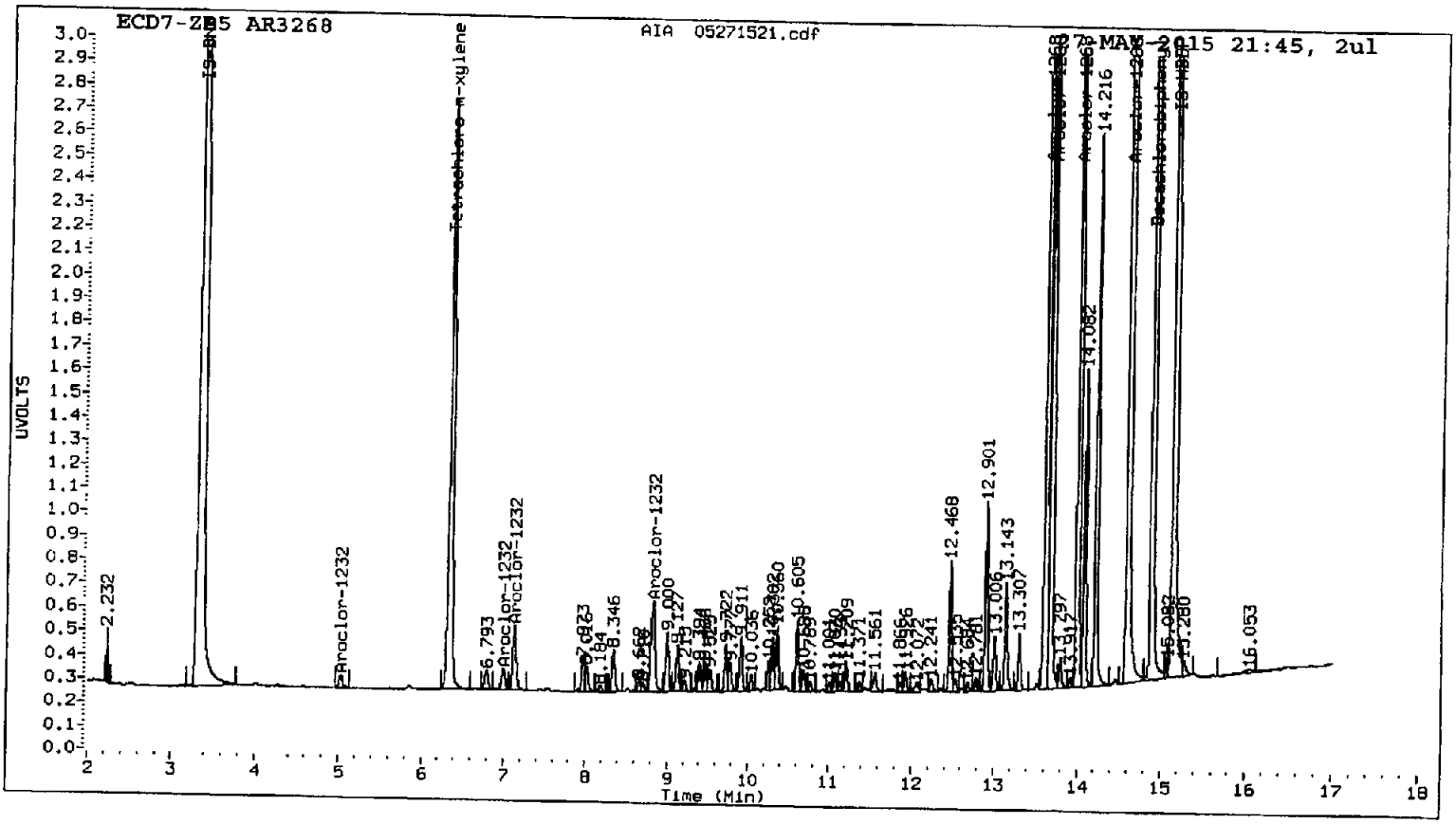
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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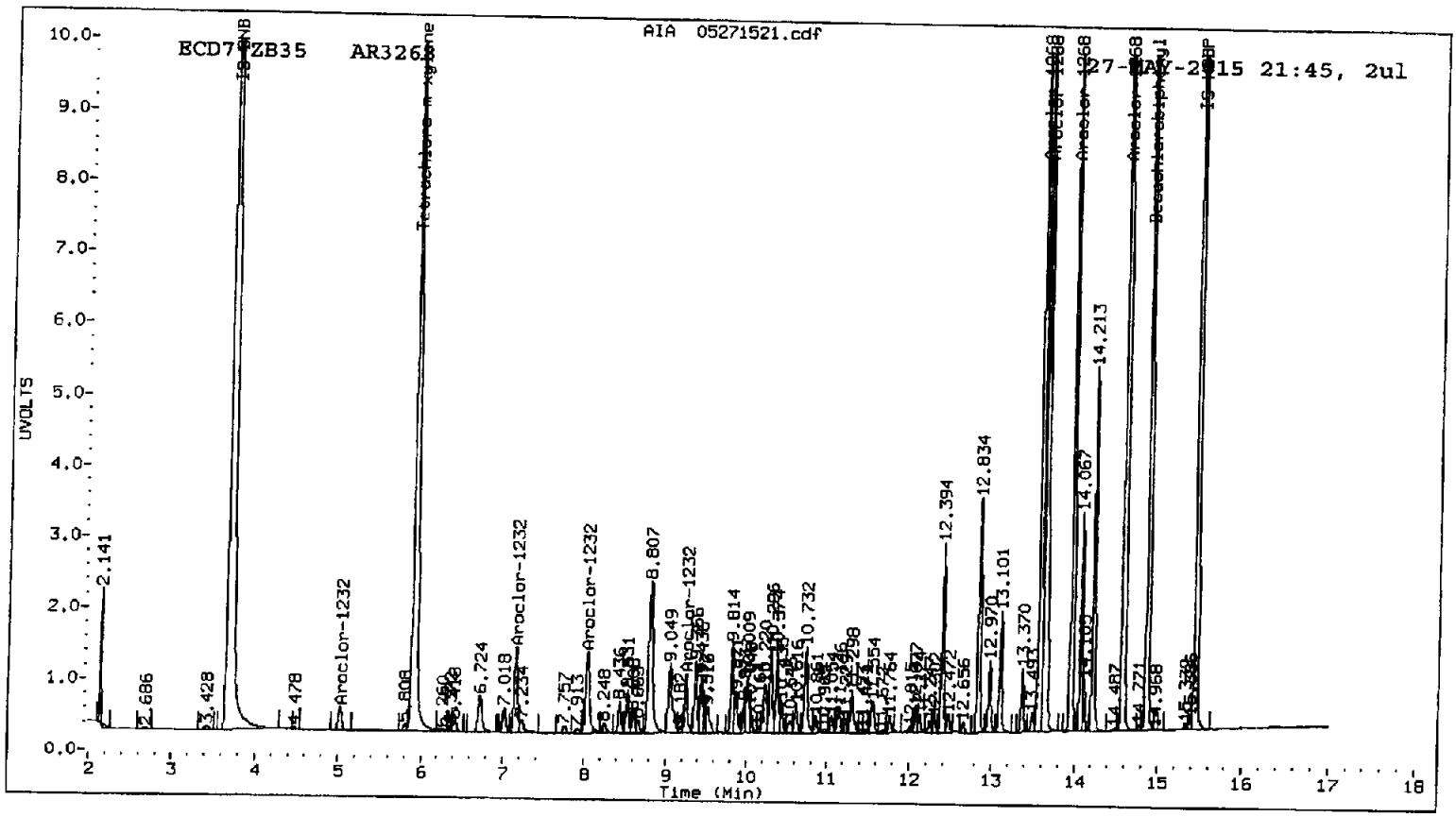
27-MAY-2015 21:45, 2ul
IS-DNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1268
Aroclor-1268
Aroclor-1268
Decachlorobiphenyl
IS-DBP
2.232
6.793
8.346
9.000
10.605
12.468
12.901
13.143
13.307
14.216
14.082
16.053
UVOLTS
Time (Min)


ECD7-ZB35 AR3268
AIA 05271521.cdf
27-MAY-2015 21:45, 2ul
IS-DNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1232
Aroclor-1268
Aroclor-1268
Aroclor-1268
Decachlorobiphenyl
IS-DBP
2.141
6.724
7.018
8.807
9.049
10.732
12.394
12.834
13.101
14.213
14.067
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271522.d
Data file 2: 20150527.b/ical-2.b/05271522.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV
Client ID:
Injection Date: 27-MAY-2015 22:07
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.002	1403919	5.910	0.002	6616925	38.7	37.9	2.1	Tetrachloro-m-xylene
14.890	0.001	2762609	14.863	0.000	4406367	39.0	37.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	96.8	94.8
Decachlorobiphenyl	97.6	94.1

JA 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5348403	-1.9
Hexabromobiphenyl	5633814	5628466	-0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12940835	-0.9
Hexabromobiphenyl	8980422	9714071	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.347	0.000	223069	259.3	1	8.032	0.001	1807447	254.8
Aroclor-1016	2	8.831	-0.001	673141	255.3	2	8.809	0.001	3762564	249.8
Aroclor-1016	3	9.128	0.000	238542	264.5	3	9.247	0.000	989571	254.7
Aroclor-1016	4	9.912	0.000	281445	294.1	4	10.009	0.000	801531	292.0
Total Col1Ave (4 peaks):					268.3	Total Col2Ave (4 peaks):				262.8 RPD = 2
Corrected Ave (3 peaks):					259.7	Corrected Ave (3 peaks):				253.1 RPD = 3
Aroclor-1221	1	---				0.0	1	5.023	0.004	12121	9.0
Aroclor-1221	2	7.001	0.002	57895	170.0	2	6.728	0.009	260200	115.7
Aroclor-1221	3	7.127	0.004	186624	194.1	3	7.019	0.004	190535	150.1
Aroclor-1221	NS	---				----	4	7.155	0.004	823085	212.0
Col1Ave: <3 Quant Peaks						Col2Ave: 121.7					
Aroclor-1232	1	---				0.0	1	5.023	0.002	12121	14.8
Aroclor-1232	2	7.001	0.001	57895	246.1	2	7.155	0.002	823085	300.2
Aroclor-1232	3	7.127	0.001	186624	290.7	3	8.032	0.002	1807447	562.2
Aroclor-1232	4	8.831	0.001	673141	627.4	4	9.247	0.000	989571	599.9
Total Col1Ave (3 peaks):					388.1	Total Col2Ave (4 peaks):				369.3 RPD = 5
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				292.4
Aroclor-1242	1	8.831	0.001	673141	348.9	1	8.032	0.003	1807447	347.3
Aroclor-1242	2	9.128	0.002	238542	345.3	2	8.809	0.001	3762564	342.4
Aroclor-1242	3	10.304	0.002	38794	60.3	3	10.375	0.001	169743	44.3
Aroclor-1242	4	10.610	0.004	23651	24.5	4	10.732	-0.001	73490	15.8
Total Col1Ave (4 peaks):					194.7	Total Col2Ave (4 peaks):				187.5 RPD = 4
Corrected Ave (3 peaks):					143.4	Corrected Ave (3 peaks):				134.2 RPD = 7
Aroclor-1248	1	9.395	0.001	118337	192.6	1	8.809	0.006	3762564	527.6
Aroclor-1248	2	9.912	0.001	281445	215.4	2	9.816	0.001	1219052	213.9
Aroclor-1248	3	10.370	0.009	135317	89.2	3	10.375	0.001	169743	28.1
Aroclor-1248	4	10.610	0.004	23651	15.4	4	10.732	0.001	73490	9.4
Total Col1Ave (4 peaks):					128.1	Total Col2Ave (4 peaks):				194.8 RPD = 41*
Corrected Ave (3 peaks):					99.0	Corrected Ave (3 peaks):				83.8 RPD = 17
Aroclor-1254	1	10.370	0.001	135317	138.5	1	10.616	0.001	751171	110.2
Aroclor-1254	2	10.693	0.004	122809	88.0	2	10.732	0.021	73490	22.7
Aroclor-1254	3	11.071	0.001	24453	21.6	3	11.147	0.002	129565	24.3
Aroclor-1254	4	11.207	-0.001	81477	38.1	4	11.337	0.039	1876257	165.1
Aroclor-1254	5	11.912	-0.011	157951	103.1	5	12.084	0.006	835361	123.0
Total Col1Ave (5 peaks):					77.9	Total Col2Ave (5 peaks):				89.1 RPD = 13
Corrected Ave (4 peaks):					62.7	Corrected Ave (4 peaks):				70.1 RPD = 11
Aroclor-1260	1	12.470	0.001	475964	259.2	1	12.394	-0.001	2156601	247.6
Aroclor-1260	2	13.144	0.000	1633087	274.8	2	13.101	-0.001	5310024	261.7
Aroclor-1260	3	13.514	-0.001	764957	277.1	3	13.572	0.000	1519306	246.6
Aroclor-1260	4	13.612	0.000	420525	252.4	4	13.623	-0.001	3499311	261.8
Aroclor-1260	5	14.012	0.000	249693	272.6	NS	---			----
Total Col1Ave (5 peaks):					267.2	Total Col2Ave (4 peaks):				254.4 RPD = 5
Corrected Ave (4 peaks):					264.8	Corrected Ave (3 peaks):				252.0 RPD = 5
Aroclor-1262	1	12.470	0.003	475964	143.4	1	12.394	0.000	2156601	140.1
Aroclor-1262	2	13.144	0.001	1633087	176.9	2	12.837	0.001	2478885	171.3
Aroclor-1262	3	13.514	0.000	764957	262.9	3	13.101	0.001	5310024	178.8
Aroclor-1262	4	13.676	0.001	553609	109.6	4	13.572	0.001	1519306	118.6
Aroclor-1262	5	14.218	0.002	561821	124.4	5	14.214	0.001	1371663	136.3
Total Col1Ave (5 peaks):					163.4	Total Col2Ave (5 peaks):				149.0 RPD = 9

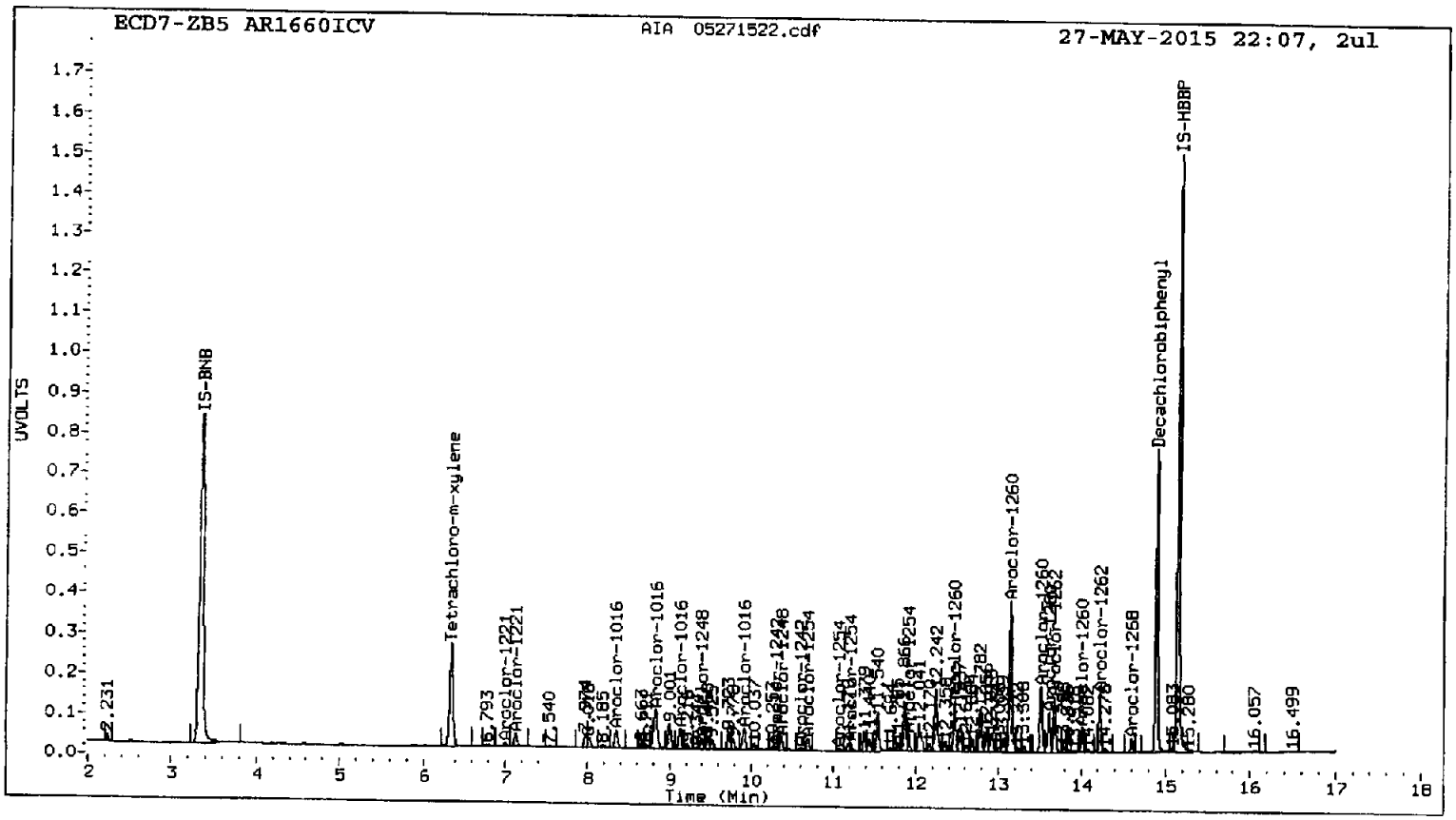
	Corrected Ave (4 peaks):		138.6		Corrected Ave (4 peaks):		141.6	RPD = 2		
Aroclor-1268 1	13.612	0.001	420525	48.2	1	13.572	0.003	1519306	66.7	
Aroclor-1268 2	13.676	0.002	553609	54.1	2	13.623	-0.005	3499311	162.7	
Aroclor-1268 3	14.012	0.015	249593	27.3	3	13.953	0.000	57329	3.3	
Aroclor-1268 4	14.597	0.000	128680	4.0	4	14.572	0.000	262227	5.4	
	Total Col1Ave (4 peaks):		33.4		Total Col2Ave (4 peaks):		59.5	RPD = 56*		
	Corrected Ave (3 peaks):		26.5		Corrected Ave (3 peaks):		25.1	RPD = 5		

Total PCB Area Col1 (6.443 - 14.789) = 13251332 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 58493588 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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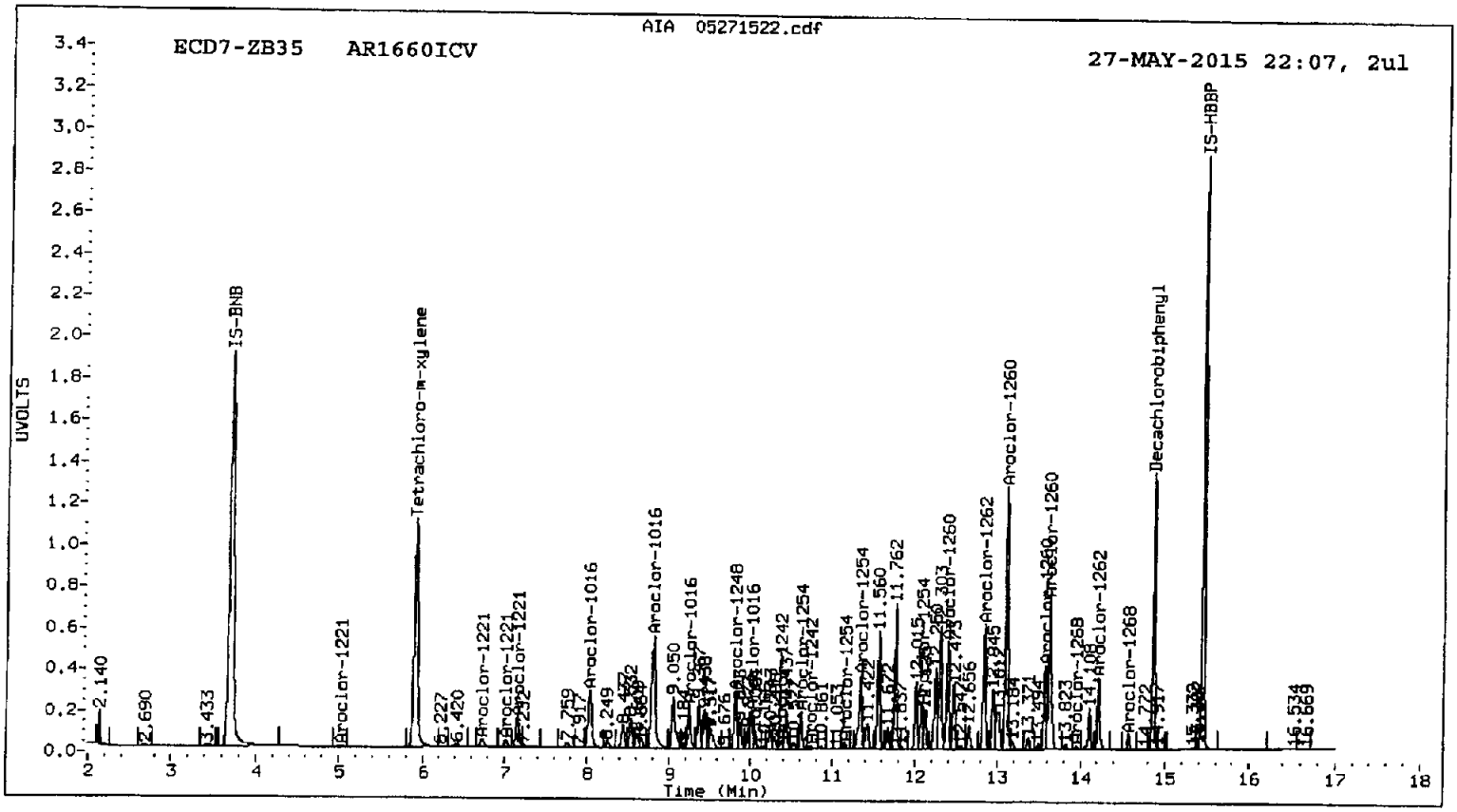
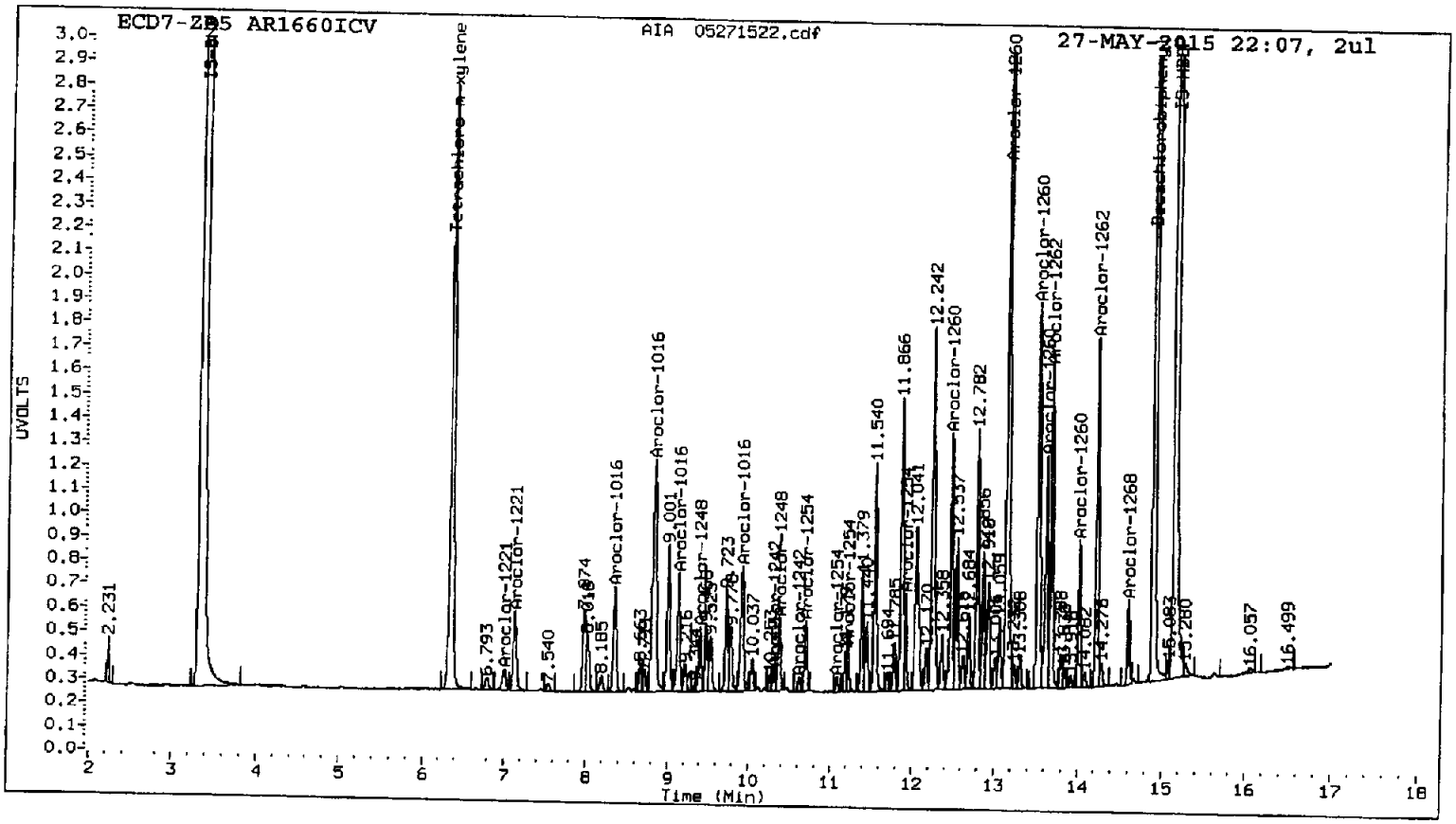
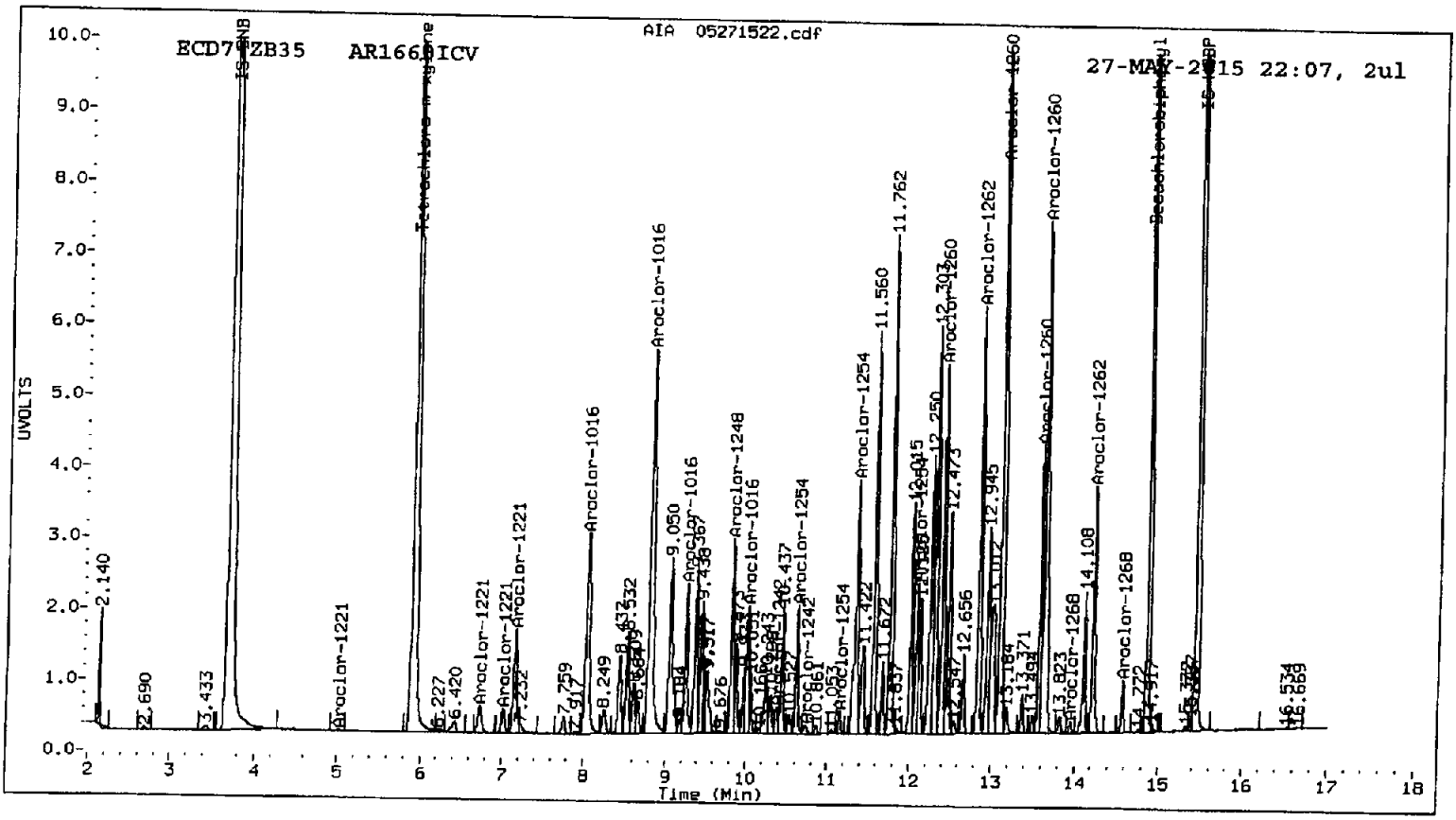
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1260
Time (Min)


ECD7-ZB35 AR1660ICV
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1260
Time (Min)


ECD7-ZB5 AR1660ICV
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl


ECD7-ZB35 AR1660ICV
AIA 05271522.cdf
27-MAY-2015 22:07, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271523.d
Data file 2: 20150527.b/ical-2.b/05271523.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 27-MAY-2015 22:28
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.343	0.000	1373297	5.908	0.000	6395999	38.1	37.3	2.3	Tetrachloro-m-xylene
14.889	0.000	2722859	14.862	0.000	4336792	39.7	37.2	6.5	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.3	93.1
Decachlorobiphenyl	99.3	93.1

JL 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5313543	-2.5
Hexabromobiphenyl	5633814	5448595	-3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12729044	-2.5
Hexabromobiphenyl	8980422	9658995	7.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.345	-0.002	164046	191.9	1	8.029	-0.003	1321301	189.4
Aroclor-1016	2	8.829	-0.002	488134	186.4	2	8.807	-0.001	2736648	184.7
Aroclor-1016	3	9.126	-0.003	172293	192.3	3	9.246	-0.001	723186	189.2
Aroclor-1016	4	9.910	-0.002	219680	231.0	4	10.008	-0.002	642177	237.9
Total Col1Ave (4 peaks):					200.4	Total Col2Ave (4 peaks):				200.3 RPD = 0
Corrected Ave (3 peaks):					190.2	Corrected Ave (3 peaks):				187.8 RPD = 1
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.997	-0.001	46710	138.0	2	6.728	0.009	208567	94.3
Aroclor-1221	3	7.125	0.002	135489	141.9	3	7.018	0.003	137235	109.9
Aroclor-1221	NS	---			----	4	7.153	0.002	600495	157.2
Col1Ave: <3 Quant Peaks						Col2Ave: 120.5				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.997	-0.002	46710	199.9	2	7.153	0.000	600495	222.7
Aroclor-1232	3	7.125	-0.001	135489	212.4	3	8.029	-0.001	1321301	417.9
Aroclor-1232	4	8.829	-0.001	488134	457.9	4	9.246	-0.001	723186	445.7
Total Col1Ave (3 peaks):					290.1	Total Col2Ave (3 peaks):				362.1 RPD = 22
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.829	0.000	488134	254.6	1	8.029	0.000	1321301	258.1
Aroclor-1242	2	9.126	-0.001	172293	251.0	2	8.807	-0.001	2736648	253.2
Aroclor-1242	3	10.302	0.000	160105	250.4	3	10.373	0.000	897475	238.4
Aroclor-1242	4	10.606	-0.001	234997	245.3	4	10.732	0.000	1137199	248.3
Total Col1Ave (4 peaks):					250.3	Total Col2Ave (4 peaks):				249.5 RPD = 0
Corrected Ave (3 peaks):					248.9	Corrected Ave (3 peaks):				246.6 RPD = 1
Aroclor-1248	1	9.394	-0.001	92077	150.8	1	8.807	0.004	2736648	390.1
Aroclor-1248	2	9.910	-0.001	219680	169.2	2	9.815	0.000	937026	167.2
Aroclor-1248	3	10.360	-0.001	224035	148.6	3	10.373	0.000	897475	151.1
Aroclor-1248	4	10.606	-0.001	234997	154.1	4	10.732	0.002	1137199	148.3
Total Col1Ave (4 peaks):					155.7	Total Col2Ave (4 peaks):				214.2 RPD = 32
Corrected Ave (3 peaks):					151.2	Corrected Ave (3 peaks):				155.5 RPD = 3
Aroclor-1254	1	10.360	-0.008	224035	230.8	1	10.615	0.000	348230	51.9
Aroclor-1254	2	10.688	-0.001	84336	60.8	2	10.732	0.022	1137199	357.9
Aroclor-1254	3	11.070	0.000	70049	62.3	3	11.146	0.001	324847	62.0
Aroclor-1254	4	11.209	0.001	110807	52.2	4	11.298	0.001	541760	48.5
Aroclor-1254	5	11.927	0.004	83629	55.0	5	12.077	-0.002	351024	52.6
Total Col1Ave (5 peaks):					92.2	Total Col2Ave (5 peaks):				114.6 RPD = 22
Corrected Ave (4 peaks):					57.6	Corrected Ave (4 peaks):				53.7 RPD = 7
Aroclor-1260	1	---			0.0	1	12.467	0.072	39557	4.6
Aroclor-1260	2	---			0.0	2	13.103	0.001	28728	1.4
Aroclor-1260	3	---			0.0	3	13.622	0.051	15301	2.5
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 2.8				
Aroclor-1262	1	---			0.0	1	12.467	0.073	39557	2.6
Aroclor-1262	2	---			0.0	2	12.834	-0.002	77205	5.4
Aroclor-1262	3	---			0.0	3	13.103	0.003	28728	1.0
Aroclor-1262	4	---			0.0	4	13.622	0.052	15301	1.2
Aroclor-1262	5	---			0.0	5	14.251	0.038	90443	9.0
Col1Ave: <3 Quant Peaks						Col2Ave: 3.8				

Aroclor-1268	1	---			0.0	1	13.622	0.053	15301	0.7
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	13.917	-0.080	23283	2.6	3	13.953	0.001	9516	0.6
Aroclor-1268	4	14.594	-0.003	10910	0.4	4	14.571	-0.002	29723	0.6

Col1Ave: <3 Quant Peaks

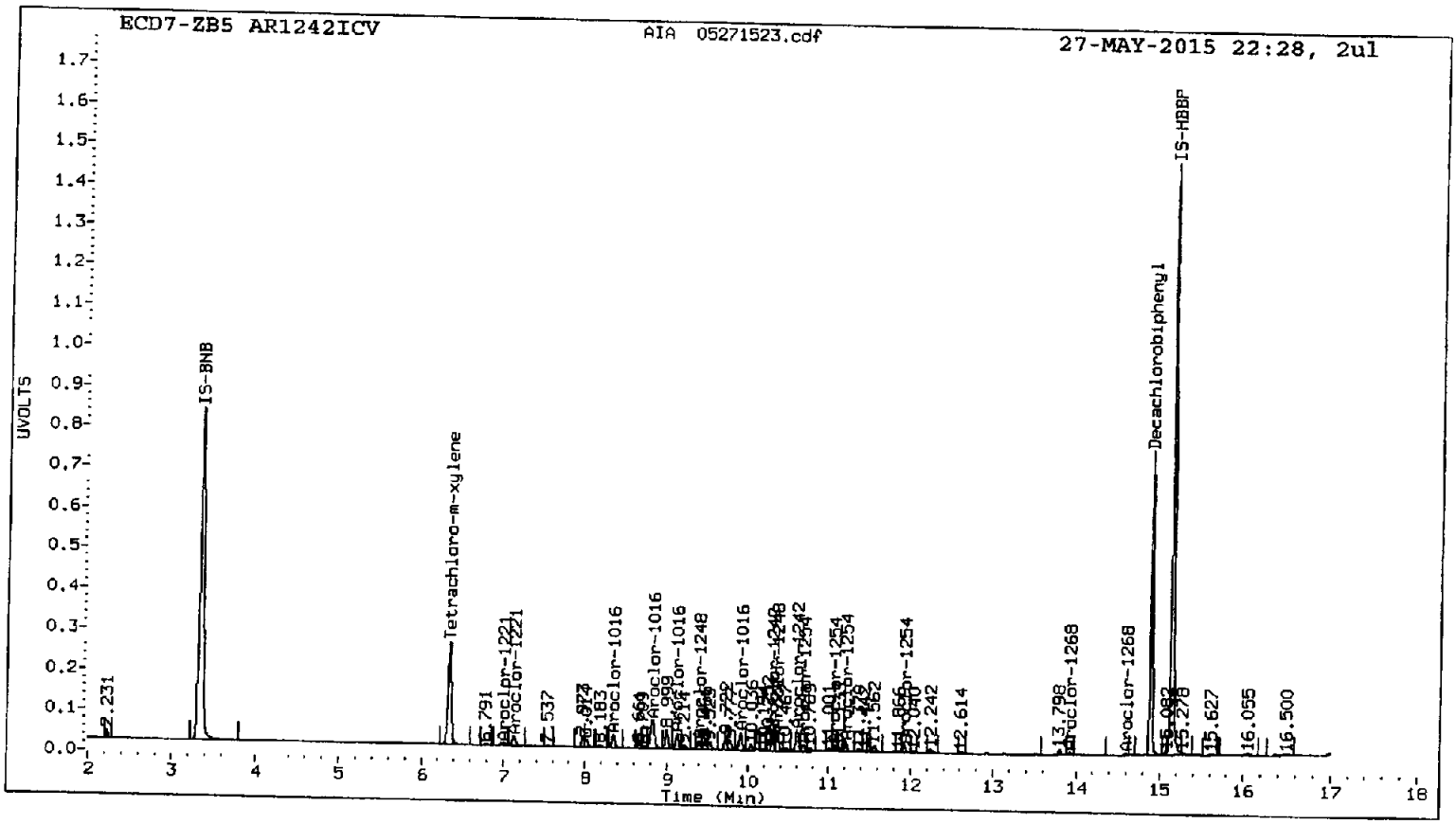
Col2Ave: 0.6

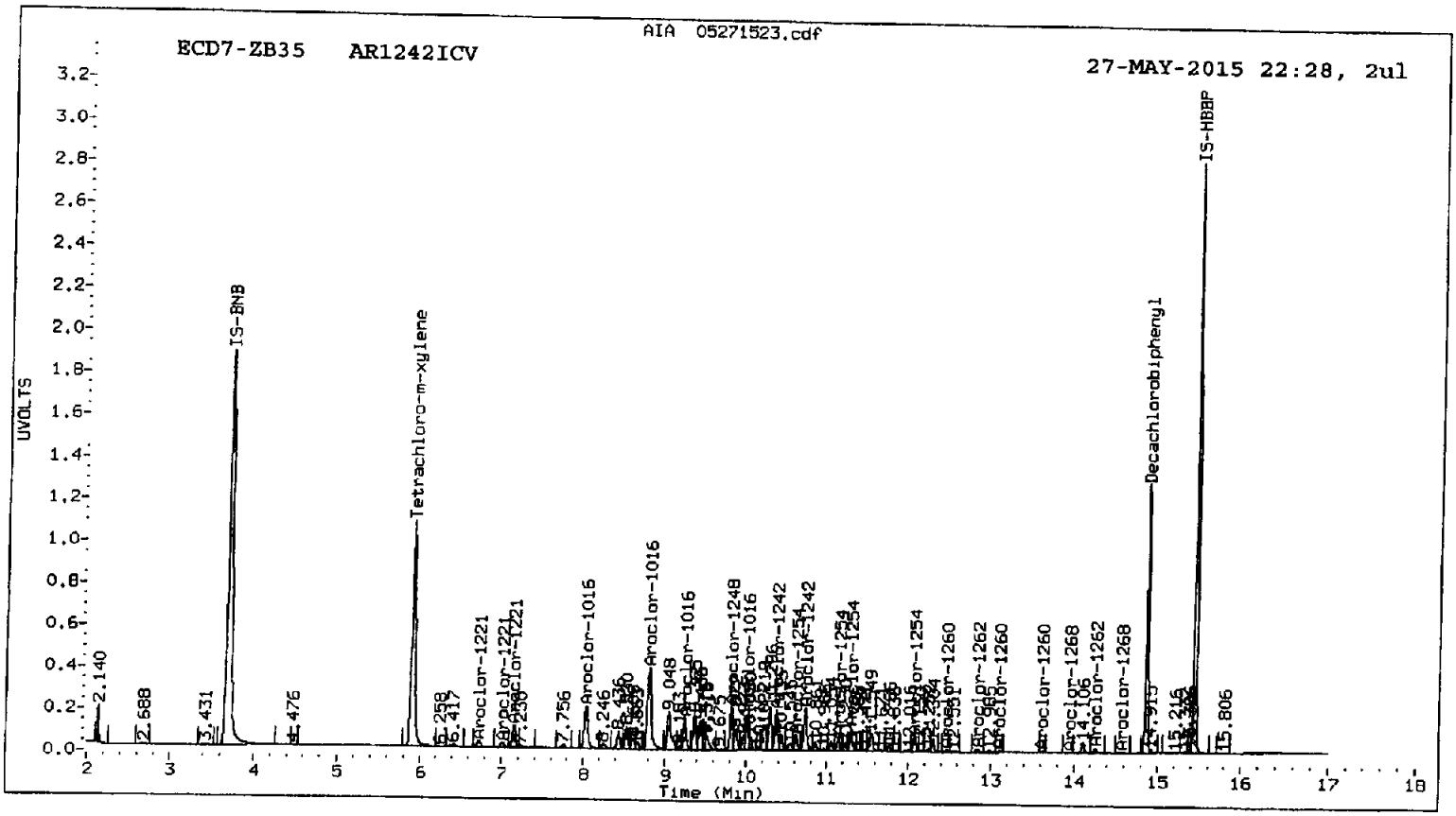
Total PCB Area Col1 (6.443 - 14.789) = 3966417 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 21531185 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1242ICV
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Time (Min)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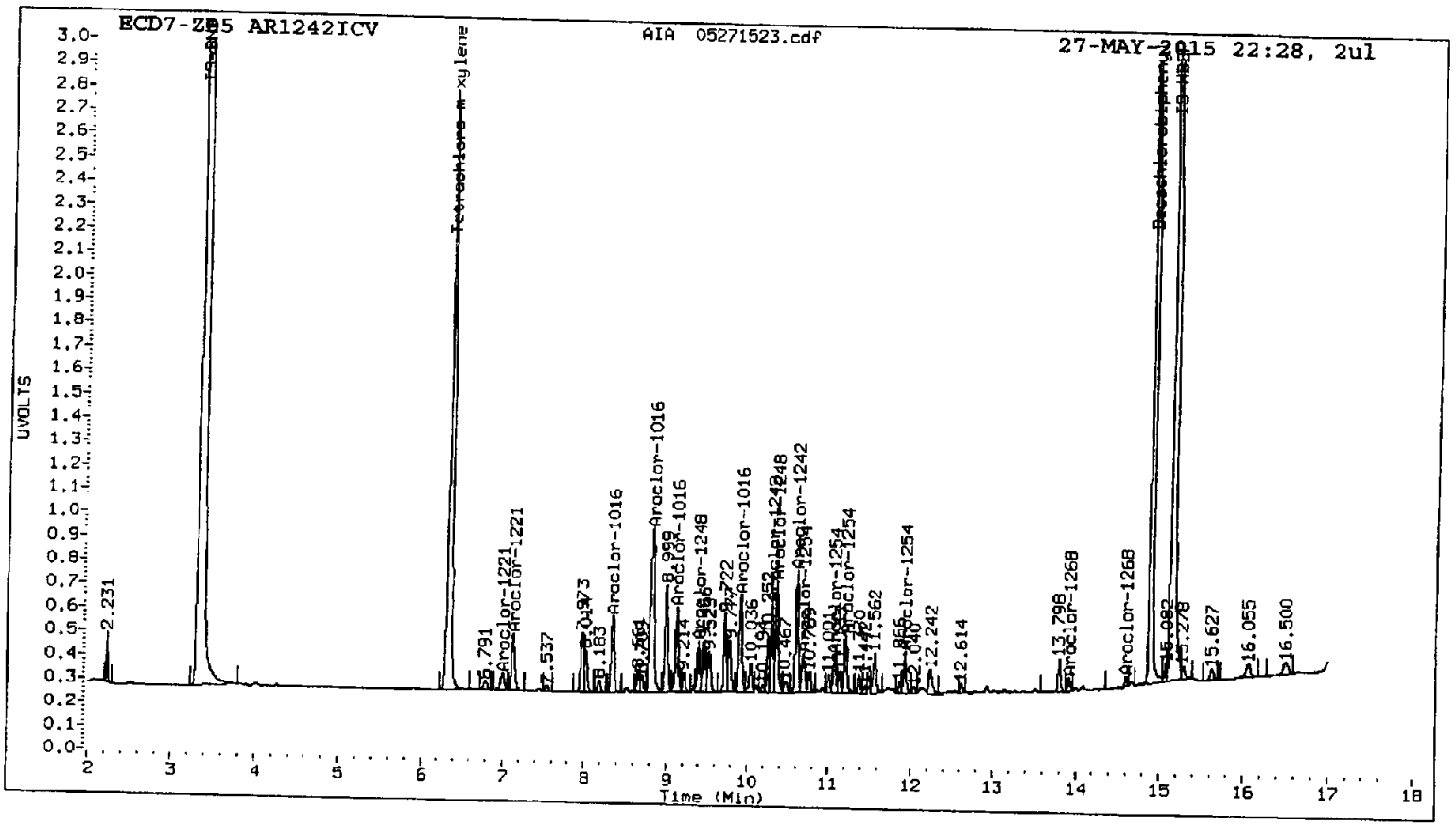
27-MAY-2015 22:28, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Time (Min)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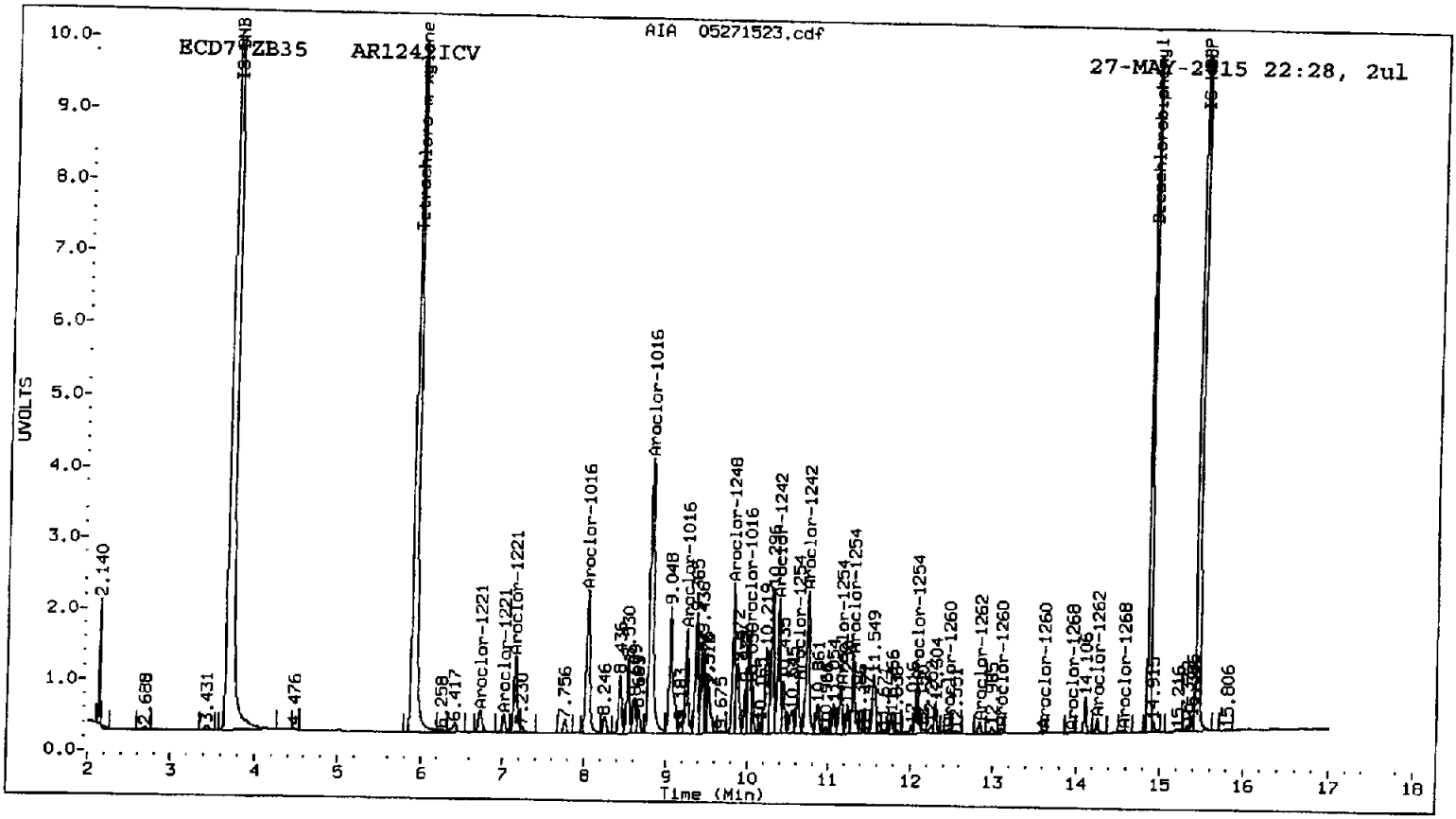
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.231
5.791
7.537
8.183
8.999
9.214
9.722
10.036
11.562
12.242
12.614
13.798
15.082
15.278
15.627
16.055
16.500


ECD7-ZB35 AR1242ICV
AIA 05271523.cdf
27-MAY-2015 22:28, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.140
2.688
3.431
4.476
5.417
7.230
7.756
8.246
9.048
10.219
11.549
14.106
14.915
15.806

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271524.d
Data file 2: 20150527.b/ical-2.b/05271524.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 27-MAY-2015 22:49
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.345	0.001	1372749	5.908	0.000	6495842	38.3	37.6	1.9	Tetrachloro-m-xylene
14.890	0.000	2782245	14.862	0.000	4405933	39.8	37.7	5.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.8	94.0
Decachlorobiphenyl	99.4	94.2

JH 05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5283025	-3.1
Hexabromobiphenyl	5633814	5563146	-1.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12806439	-1.9
Hexabromobiphenyl	8980422	9699512	8.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.345	-0.002	83806	98.6	1	8.028	-0.003	731380	104.2
Aroclor-1016	2	8.828	-0.003	334047	128.3	2	8.805	-0.003	1917899	128.7
Aroclor-1016	3	9.127	-0.002	105954	118.9	3	9.247	0.000	428522	111.4
Aroclor-1016	4	9.911	-0.001	328510	347.5	4	10.009	-0.001	1307433	481.3
Total Col1Ave (4 peaks):					173.3	Total Col2Ave (4 peaks):				206.4 RPD = 17
Corrected Ave (3 peaks):					115.3	Corrected Ave (3 peaks):				114.8 RPD = 0
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	6.986	-0.013	24669	73.3	2	6.739	0.020	109652	49.3
Aroclor-1221	3	7.127	0.004	27566	29.0	3	7.019	0.004	26120	20.8
Aroclor-1221	NS	---			----	4	7.154	0.003	162372	42.3
Col1Ave: <3 Quant Peaks						Col2Ave:				37.4
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	6.986	-0.014	24669	106.2	2	7.154	0.001	162372	59.8
Aroclor-1232	3	7.127	0.001	27566	43.5	3	8.028	-0.001	731380	229.9
Aroclor-1232	4	8.828	-0.002	334047	315.2	4	9.247	0.000	428522	262.5
Total Col1Ave (3 peaks):					154.9	Total Col2Ave (3 peaks):				184.1 RPD = 17
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.828	-0.001	334047	175.3	1	8.028	-0.001	731380	142.0
Aroclor-1242	2	9.127	0.000	105954	155.3	2	8.805	-0.003	1917899	176.4
Aroclor-1242	3	10.303	0.001	284558	447.6	3	10.373	-0.001	1469700	388.0
Aroclor-1242	4	10.606	0.000	377646	396.5	4	10.730	-0.002	1905061	413.5
Total Col1Ave (4 peaks):					293.6	Total Col2Ave (4 peaks):				280.0 RPD = 5
Corrected Ave (3 peaks):					242.3	Corrected Ave (3 peaks):				235.5 RPD = 3
Aroclor-1248	1	9.395	0.000	159302	262.5	1	8.805	0.002	1917899	271.7
Aroclor-1248	2	9.911	0.000	328510	254.6	2	9.814	-0.001	1440471	255.4
Aroclor-1248	3	10.361	0.000	378534	252.5	3	10.373	0.000	1469700	245.9
Aroclor-1248	4	10.606	0.000	377646	249.0	4	10.730	0.000	1905061	246.9
Total Col1Ave (4 peaks):					254.6	Total Col2Ave (4 peaks):				255.0 RPD = 0
Corrected Ave (3 peaks):					252.0	Corrected Ave (3 peaks):				249.4 RPD = 1
Aroclor-1254	1	10.361	-0.007	378534	392.3	1	10.617	0.002	622883	92.3
Aroclor-1254	2	10.688	0.000	163701	118.7	2	10.730	0.020	1905061	595.9
Aroclor-1254	3	11.071	0.001	138140	123.5	3	11.147	0.001	640322	121.5
Aroclor-1254	4	11.209	0.001	215720	102.2	4	11.297	0.000	1053092	93.6
Aroclor-1254	5	11.928	0.005	170898	112.9	5	12.075	-0.004	751458	111.9
Total Col1Ave (5 peaks):					169.9	Total Col2Ave (5 peaks):				203.0 RPD = 18
Corrected Ave (4 peaks):					114.3	Corrected Ave (4 peaks):				104.8 RPD = 9
Aroclor-1260	1	---			0.0	1	12.395	0.000	35747	4.1
Aroclor-1260	2	13.144	0.000	15836	2.7	2	13.103	0.001	71803	3.5
Aroclor-1260	3	---			0.0	3	13.571	-0.001	29190	4.7
Aroclor-1260	4	---			0.0	4	13.626	0.002	49852	3.7
Aroclor-1260	5	13.917	-0.094	19639	21.7	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:				4.0
Aroclor-1262	1	---			0.0	1	12.395	0.001	35747	2.3
Aroclor-1262	2	---			0.0	2	12.835	-0.001	96707	6.7
Aroclor-1262	3	---			0.0	3	13.103	0.003	71803	2.4
Aroclor-1262	4	---			0.0	4	13.571	0.001	29190	2.3
Aroclor-1262	5	---			0.0	5	14.215	0.003	19226	1.9
Col1Ave: <3 Quant Peaks						Col2Ave:				3.1

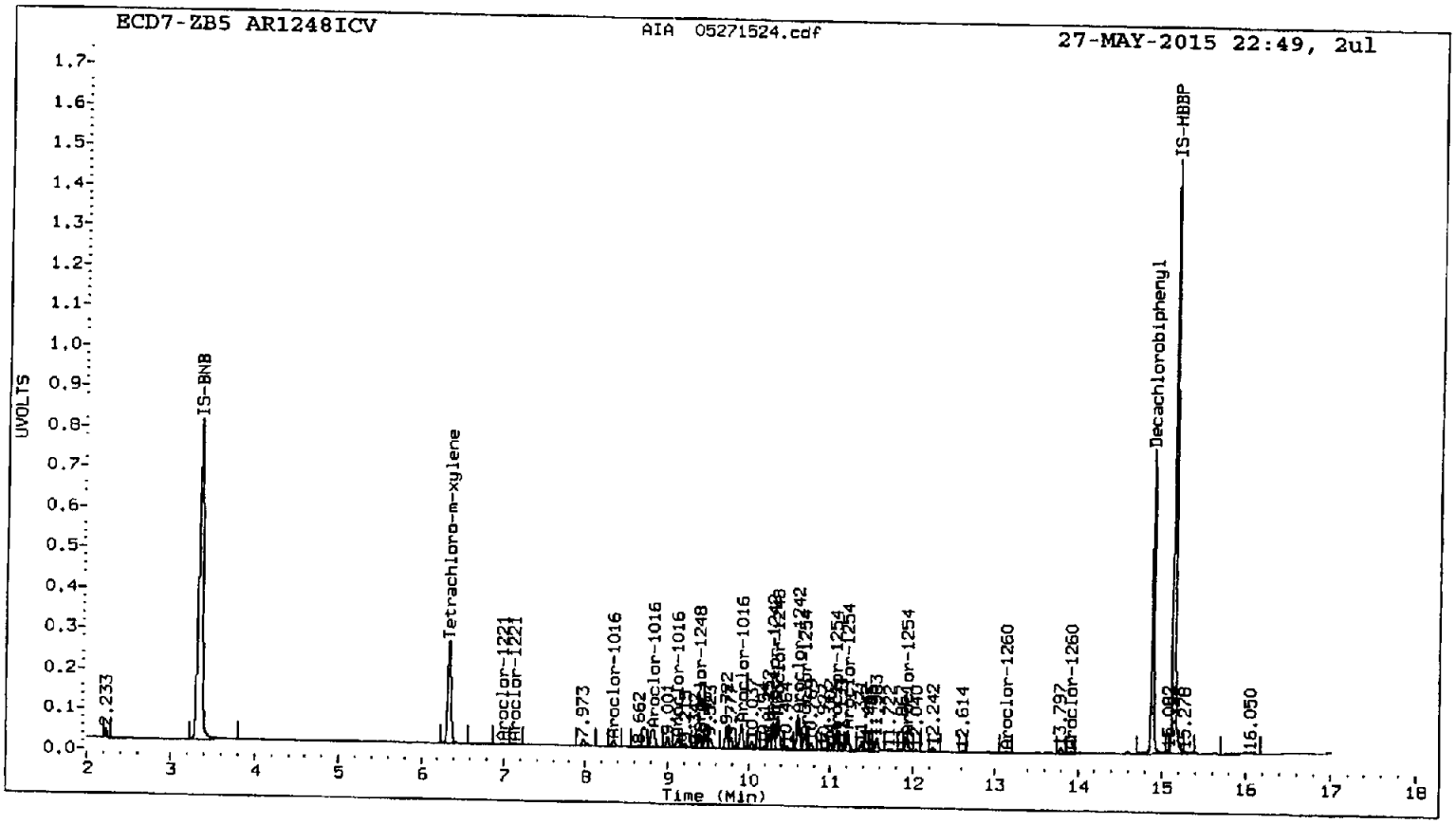
Aroclor-1268 1	---	0.0	1	13.571	0.002	29190	1.3
Aroclor-1268 2	---	0.0	2	13.626	-0.003	49852	2.3
Aroclor-1268 3	---	0.0	3	13.953	0.000	11731	0.7
Aroclor-1268 4	---	0.0	4	14.573	0.000	19293	0.4
Col1Ave: <3 Quant Peaks			Col2Ave:		1.2		

Total PCB Area Col1 (6.443 - 14.789) = 4802811 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 25794953 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
2.233
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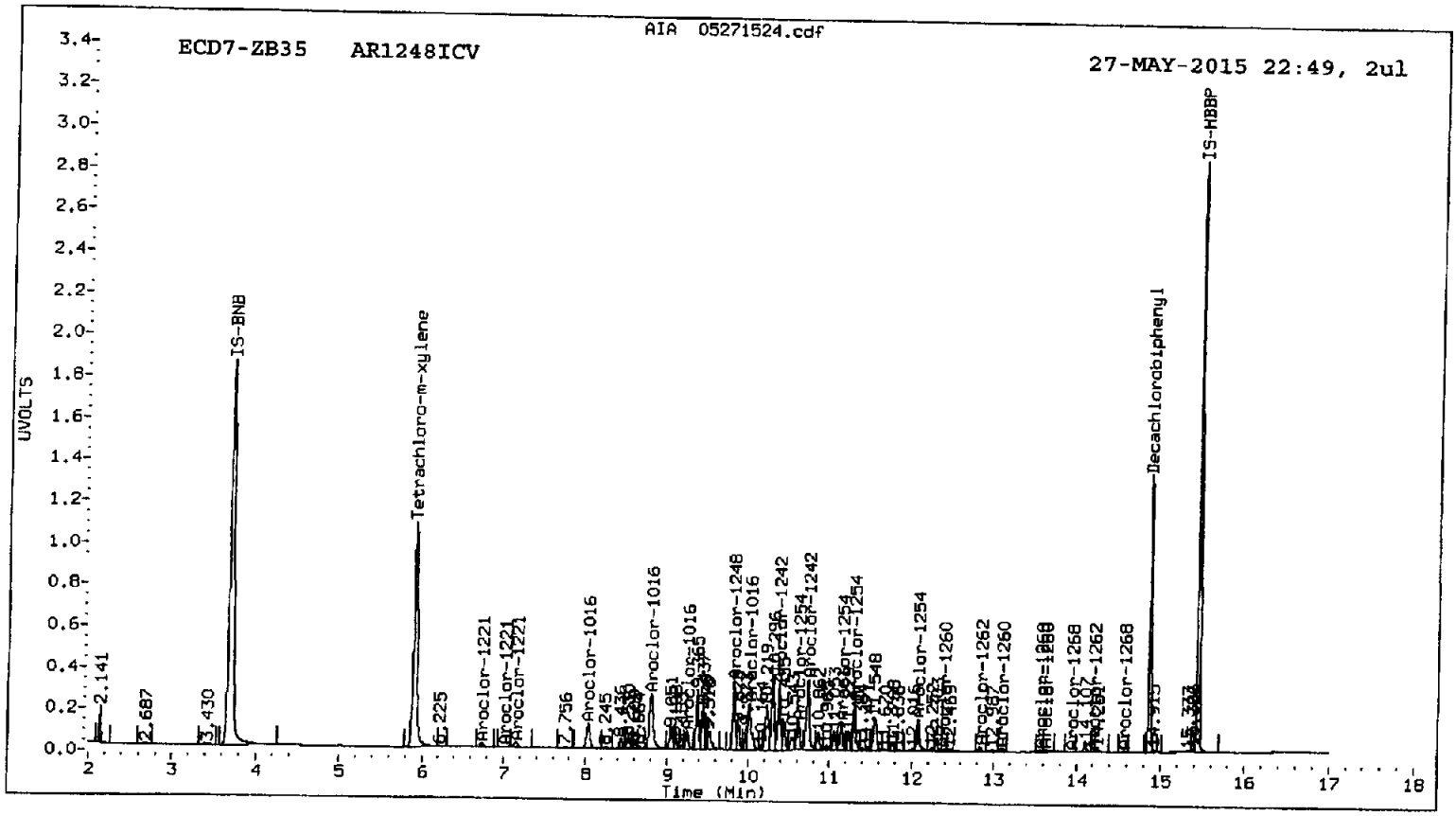
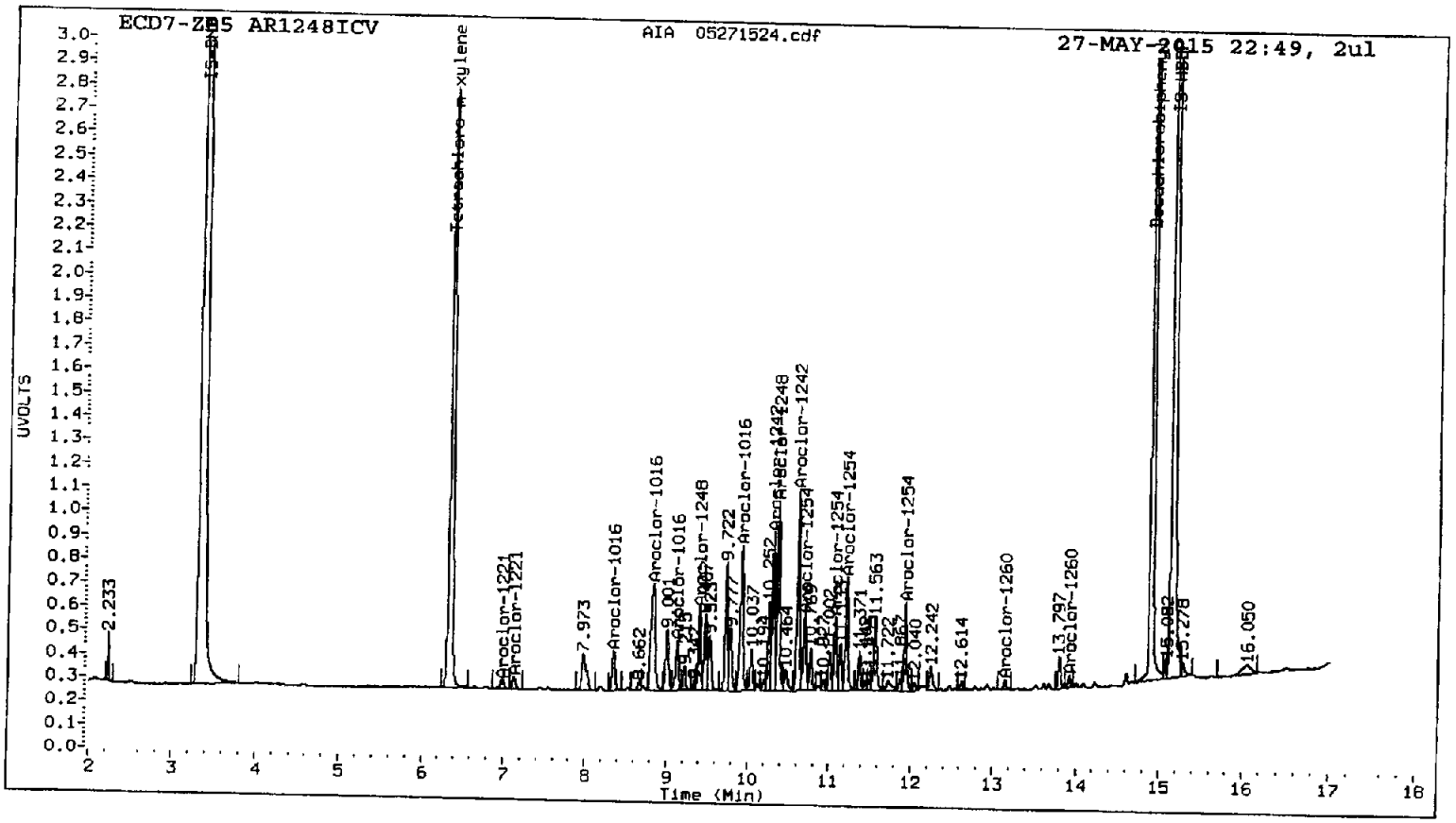
13.792
16.050


ECD7-ZB35 AR1248ICV
AIA 05271524.cdf
27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.141
2.687
3.430
6.225
7.756
8.245


ECD7-ZB5 AR1248ICV
AIA 05271524.cdf
27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
2.233
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11.563
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12.614
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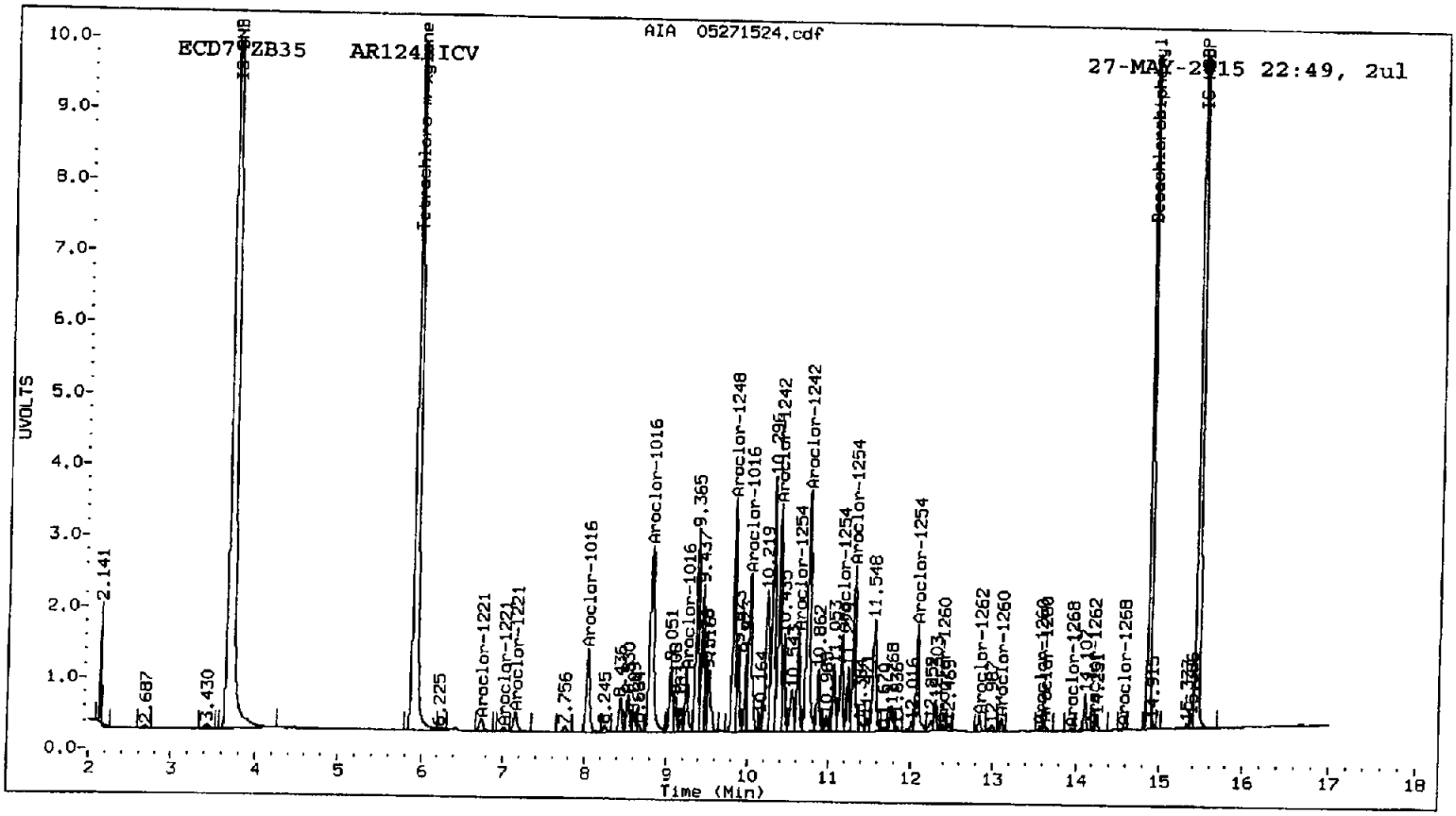
15.082
15.278
15.050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27-MAY-2015 22:49, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
2.141
2.687
3.430
6.225
7.756
9.245
9.365
10.164
10.219
10.862
11.548
12.016

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271525.d
Data file 2: 20150527.b/ical-2.b/05271525.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 27-MAY-2015 23:11
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.344	0.001	1320945	5.909	0.001	6287870	37.3	36.7	1.6	Tetrachloro-m-xylene
14.889	0.000	2629296	14.862	-0.001	4291412	38.2	37.3	2.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.3	91.8
Decachlorobiphenyl	95.5	93.2

1 05/20/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5217434	-4.3
Hexabromobiphenyl	5633814	5473683	-2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12694649	-2.8
Hexabromobiphenyl	8980422	9548705	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

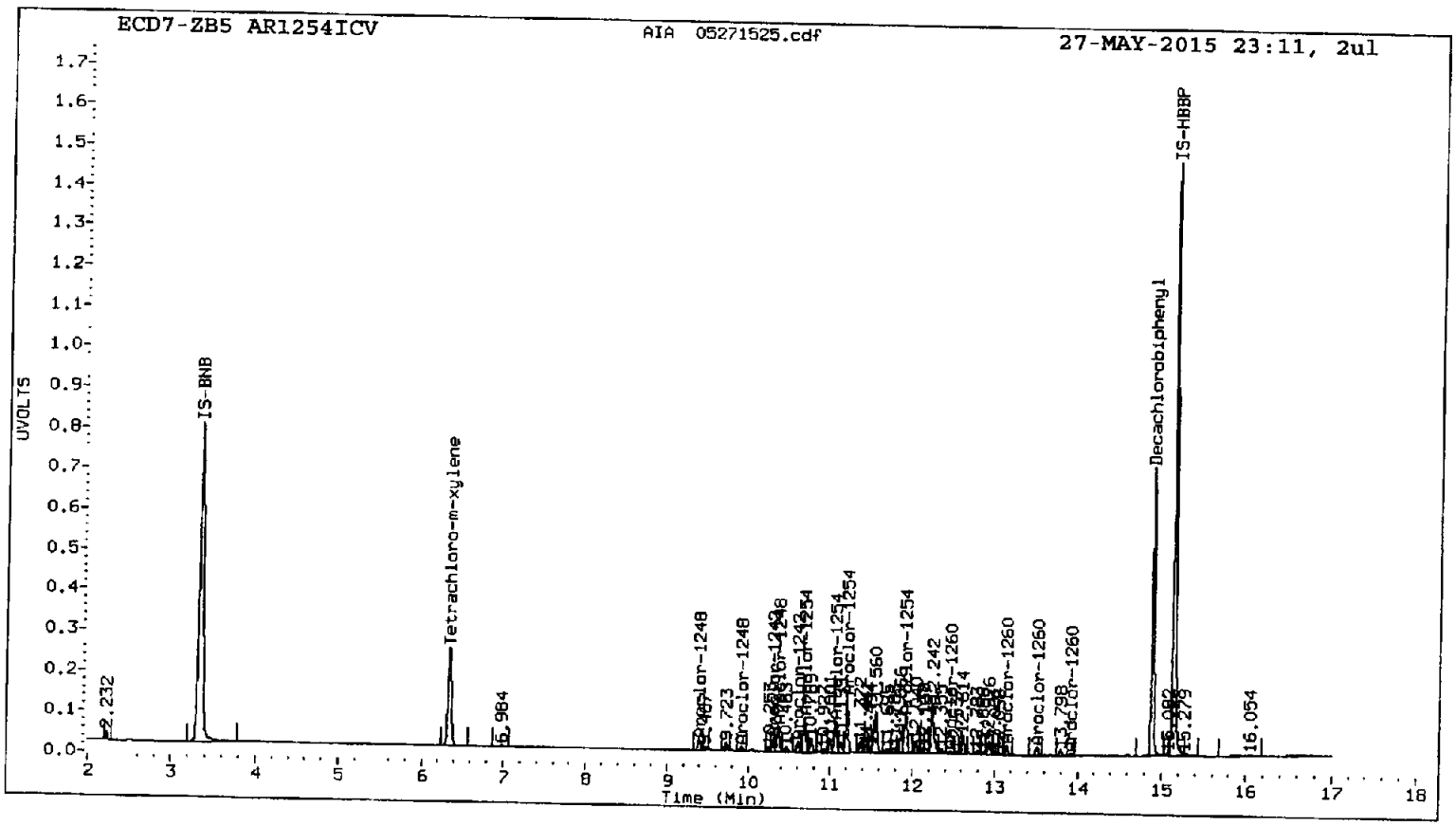
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	8.029	-0.002	22476	3.2
Aroclor-1016	2	---			0.0	2	8.804	-0.004	66635	4.5
Aroclor-1016	3	---			0.0	3	9.249	0.002	9392	2.5
Aroclor-1016	4	---			0.0	4	10.010	0.000	262158	97.4
	Col1Ave: <3 Quant Peaks						Col2Ave:	26.9		
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.741	0.022	87190	39.5
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.157	0.007	24081	6.3
	Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.157	0.004	24081	9.0
Aroclor-1232	3	---			0.0	3	8.029	-0.001	22476	7.1
Aroclor-1232	4	---			0.0	4	9.249	0.002	9392	5.8
	Col1Ave: <3 Quant Peaks						Col2Ave:	7.3		
Aroclor-1242	1	---			0.0	1	8.029	0.000	22476	4.4
Aroclor-1242	2	---			0.0	2	8.804	-0.004	66635	6.2
Aroclor-1242	3	10.303	0.001	137350	218.8	3	10.373	-0.001	280722	74.8
Aroclor-1242	4	10.609	0.002	104658	111.3	4	10.711	-0.022	1001083	219.2
	Col1Ave: <3 Quant Peaks						Col2Ave:	76.1		
Aroclor-1248	1	9.395	0.000	110618	184.5	1	8.804	0.001	66635	9.5
Aroclor-1248	2	9.911	0.000	45926	36.0	2	9.816	0.001	508784	91.0
Aroclor-1248	3	10.368	0.008	275981	186.4	3	10.373	-0.001	280722	47.4
Aroclor-1248	4	10.609	0.003	104658	69.9	4	10.711	-0.019	1001083	130.9
	Total Col1Ave (4 peaks):			119.2			Total Col2Ave (4 peaks):		69.7	RPD = 52*
	Corrected Ave (3 peaks):			96.8			Corrected Ave (3 peaks):		49.3	RPD = 65*
Aroclor-1254	1	10.368	0.000	275981	289.6	1	10.616	0.001	1899574	284.1
Aroclor-1254	2	10.690	0.001	392347	288.1	2	10.711	0.001	1001083	315.9
Aroclor-1254	3	11.070	0.000	331868	300.5	3	11.146	0.001	1535885	293.9
Aroclor-1254	4	11.208	0.000	591784	283.9	4	11.298	0.001	3094756	277.6
Aroclor-1254	5	11.923	0.001	451454	302.1	5	12.079	0.000	1943546	291.8
	Total Col1Ave (5 peaks):			292.8			Total Col2Ave (5 peaks):		292.7	RPD = 0
	Corrected Ave (4 peaks):			290.5			Corrected Ave (4 peaks):		286.9	RPD = 1
Aroclor-1260	1	12.466	-0.002	34513	19.3	1	12.395	0.000	148371	17.3
Aroclor-1260	2	13.143	-0.001	97879	16.9	2	13.102	0.000	492592	24.7
Aroclor-1260	3	13.513	-0.002	93396	34.8	3	13.575	0.003	64475	10.6
Aroclor-1260	4	---			0.0	4	13.622	-0.002	342216	26.0
Aroclor-1260	5	13.916	-0.095	18875	21.2	NS	---			----
	Total Col1Ave (4 peaks):			23.1			Total Col2Ave (4 peaks):		19.7	RPD = 16
	Corrected Ave (3 peaks):			19.2			Corrected Ave (3 peaks):		17.6	RPD = 9
Aroclor-1262	1	12.466	-0.001	34513	10.7	1	12.395	0.000	148371	9.8
Aroclor-1262	2	13.143	0.000	97879	10.9	2	12.833	-0.003	897076	63.1
Aroclor-1262	3	13.513	-0.001	93396	33.0	3	13.102	0.002	492592	16.9
Aroclor-1262	4	---			0.0	4	13.575	0.004	64475	5.1
Aroclor-1262	5	---			0.0	5	14.251	0.038	90228	9.1
	Total Col1Ave (3 peaks):			18.2			Total Col2Ave (5 peaks):		20.8	RPD = 13
	Corrected Ave: < 3 Peaks						Corrected Ave (4 peaks):		10.2	
Aroclor-1268	1	13.513	-0.099	93396	11.0	1	13.575	0.006	64475	2.9

Aroclor-1268 2	---			0.0	2	13.622	-0.007	342216	16.2
Aroclor-1268 3	13.916	-0.080	18875	2.1	3	13.953	0.001	10086	0.6
Aroclor-1268 4	---			0.0	4	14.572	-0.001	10949	0.2
Col1Ave: <3 Quant Peaks					Col2Ave:		5.0		

Total PCB Area Col1 (6.443 - 14.789) = 5975320 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 31021818 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical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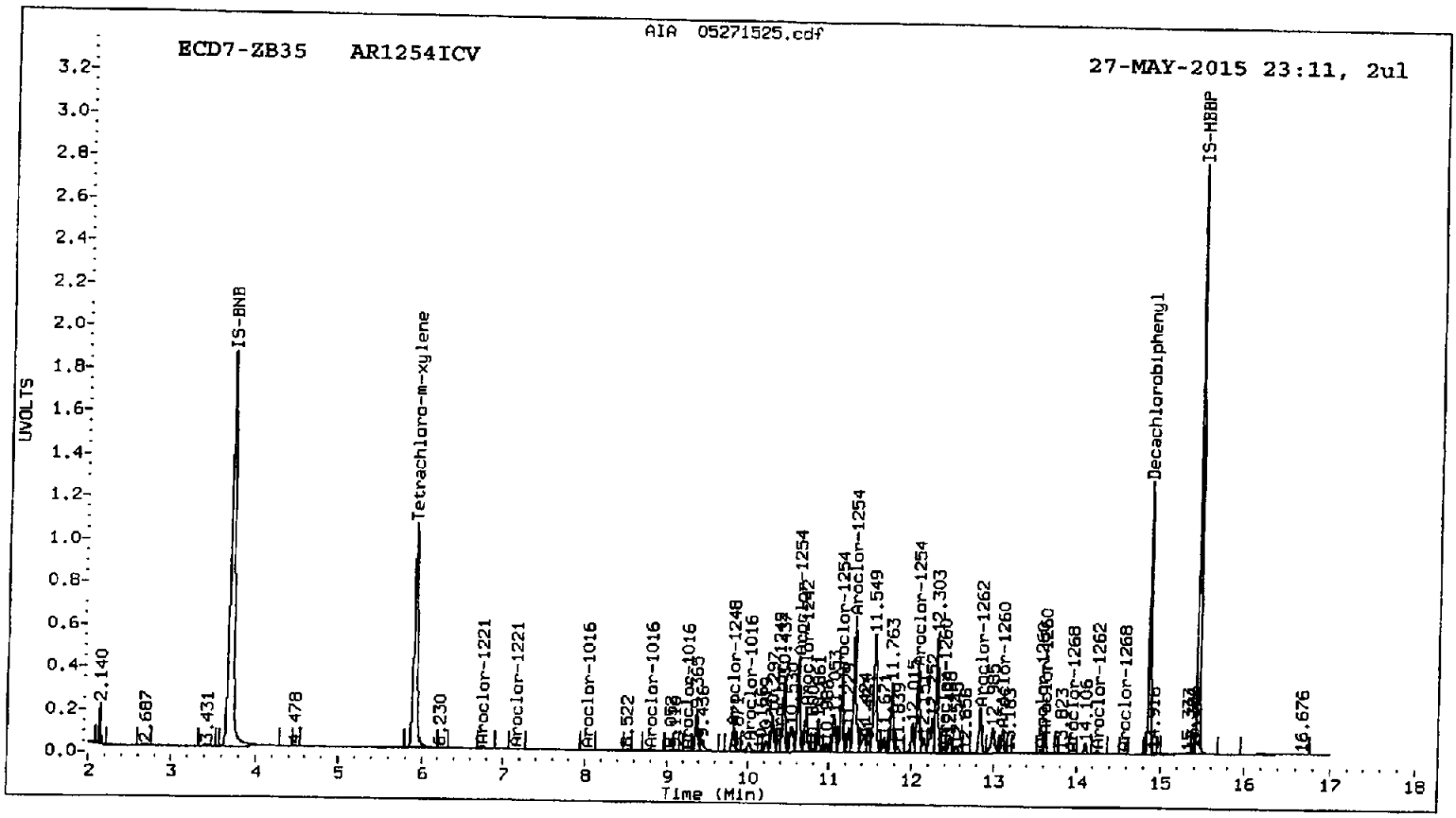
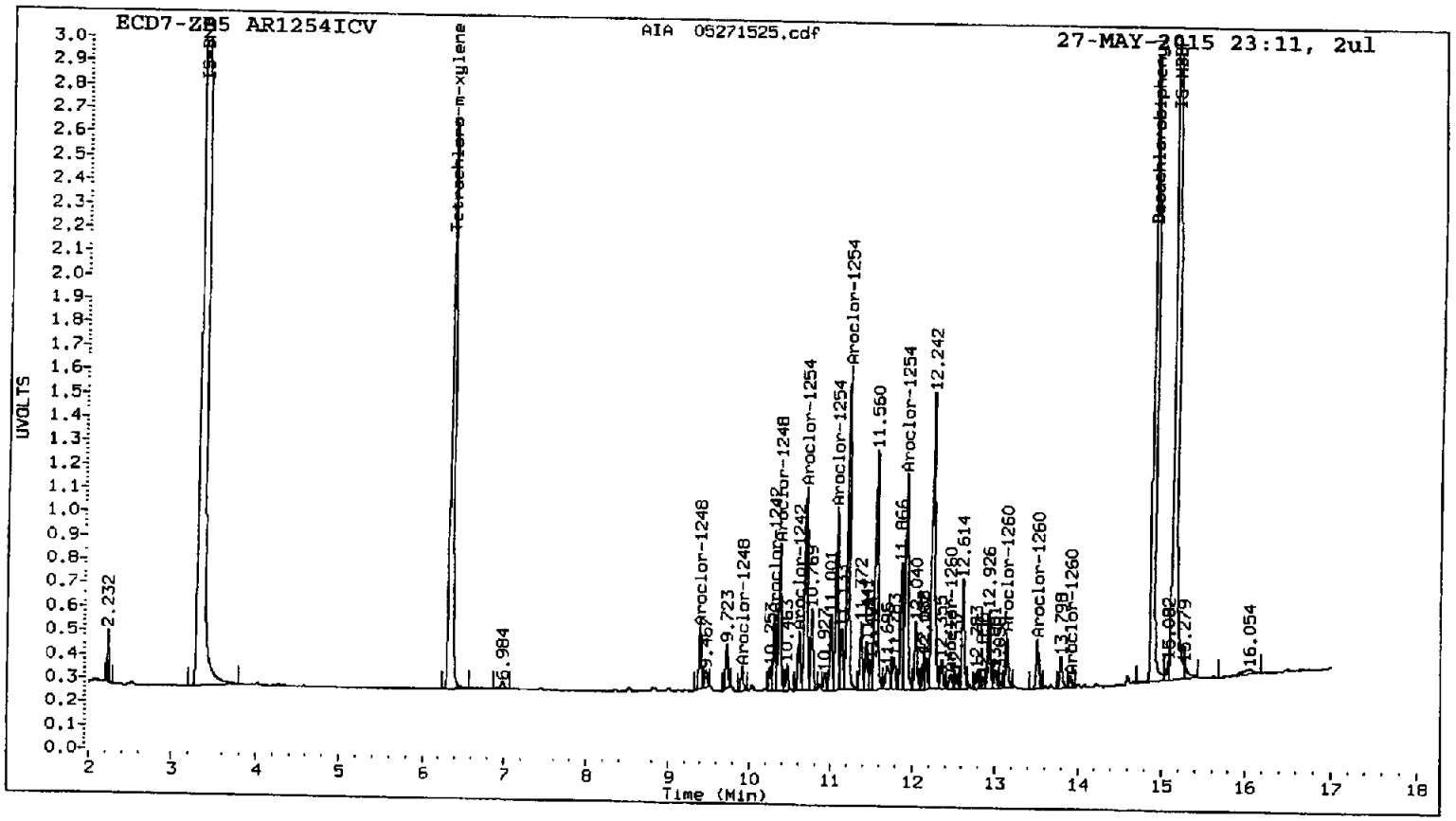
AIA 05271525.cdf
27-MAY-2015 23:11, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)


ECD7-ZB35 AR1254ICV
AIA 05271525.cdf
27-MAY-2015 23:11, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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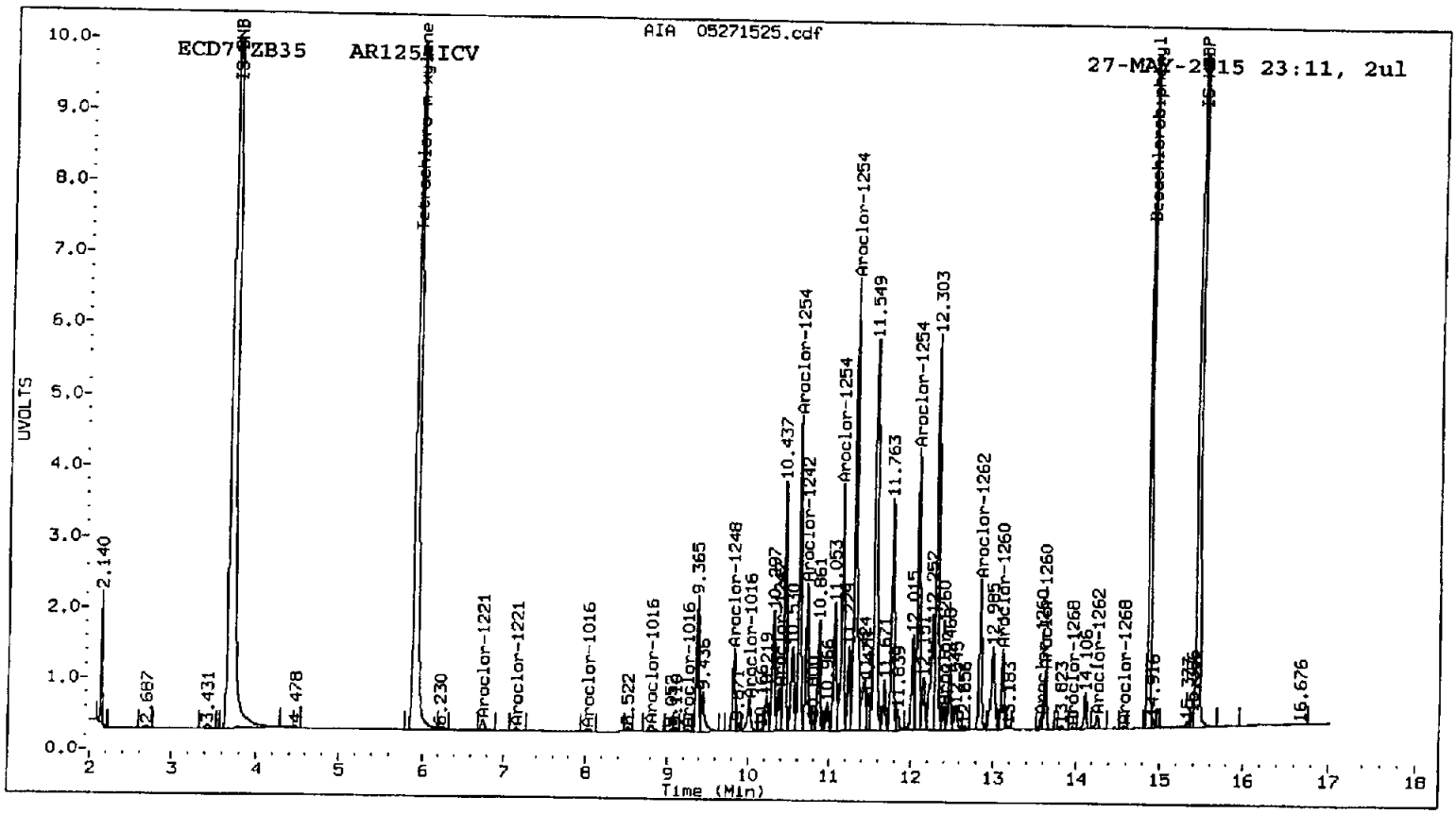
AIA 05271525.cdf
27-MAY-2015 23:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248
Aroclor-1254
Aroclor-1260
2.232
6.984
9.723
11.560
12.242
16.054


ECD7-ZB35 AR1254ICV
AIA 05271525.cdf
27-MAY-2015 23:11, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
2.140
6.230
9.365
10.437
11.549
11.763
12.303
16.676

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271526.d
Data file 2: 20150527.b/ical-2.b/05271526.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-MAY-2015 23:32
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.344	0.000	1382746	5.908	0.000	6443536	38.3	37.4	2.3	Tetrachloro-m-xylene
14.889	0.000	2692283	14.862	-0.001	4385330	38.8	37.7	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	93.6
Decachlorobiphenyl	97.1	94.4

JK 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5327597	-2.2
Hexabromobiphenyl	5633814	5510995	-2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12767315	-2.2
Hexabromobiphenyl	8980422	9637779	7.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.346	-0.001	20219	23.6	1	8.045	0.014	337516	48.2
Aroclor-1016	2	8.832	0.000	56437	21.5	2	8.808	0.000	348325	23.4
Aroclor-1016	3	9.128	-0.001	19204	21.4	3	9.248	0.000	99666	26.0
Aroclor-1016	4	9.911	-0.001	11804	12.4	4	10.010	0.000	73498	27.1
Total Col1Ave (4 peaks):					19.7	Total Col2Ave (4 peaks):				31.2 RPD = 45*
Corrected Ave (3 peaks):					18.4	Corrected Ave (3 peaks):				25.5 RPD = 32
Aroclor-1221	1	5.027	0.004	54107	249.5	1	5.021	0.003	329530	248.6
Aroclor-1221	2	7.002	0.003	84140	248.0	2	6.722	0.003	548041	247.1
Aroclor-1221	3	7.127	0.004	235925	246.4	3	7.019	0.004	308355	246.3
Aroclor-1221	NS	---				----	4	7.153	0.003	936478	244.4
Total Col1Ave (3 peaks):					248.0	Total Col2Ave (4 peaks):				246.6 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				245.9
Aroclor-1232	1	5.027	0.001	54107	438.6	1	5.021	0.001	329530	408.5
Aroclor-1232	2	7.002	0.003	84140	359.1	2	7.153	0.000	936478	346.2
Aroclor-1232	3	7.127	0.001	235925	368.9	3	8.045	0.016	337516	106.4
Aroclor-1232	4	8.832	0.001	56437	52.8	4	9.248	0.001	99666	61.2
Total Col1Ave (4 peaks):					304.9	Total Col2Ave (4 peaks):				230.6 RPD = 28
Corrected Ave (3 peaks):					260.3	Corrected Ave (3 peaks):				171.3 RPD = 41*
Aroclor-1242	1	8.832	0.002	56437	29.4	1	8.045	0.016	337516	65.7
Aroclor-1242	2	9.128	0.001	19204	27.9	2	8.808	0.000	348325	32.1
Aroclor-1242	3	10.303	0.001	13822	21.6	3	10.376	0.002	61775	16.4
Aroclor-1242	4	10.608	0.002	18445	19.2	4	10.724	-0.008	126821	27.6
Total Col1Ave (4 peaks):					24.5	Total Col2Ave (4 peaks):				35.5 RPD = 37
Corrected Ave (3 peaks):					22.9	Corrected Ave (3 peaks):				25.4 RPD = 10
Aroclor-1248	1	---				0.0	1	8.808	0.005	348325	49.5
Aroclor-1248	2	9.911	0.000	11804	9.1	2	9.816	0.001	82118	14.6
Aroclor-1248	3	10.369	0.008	62019	41.0	3	10.376	0.003	61775	10.4
Aroclor-1248	4	10.608	0.002	18445	12.1	4	10.724	-0.006	126821	16.5
Total Col1Ave (3 peaks):					20.7	Total Col2Ave (4 peaks):				22.7 RPD = 9
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				13.8
Aroclor-1254	1	10.369	0.001	62019	63.7	1	10.616	0.001	409946	61.0
Aroclor-1254	2	10.691	0.002	66732	48.0	2	10.724	0.014	126821	39.8
Aroclor-1254	3	11.070	0.000	20800	18.4	3	11.147	0.001	106664	20.3
Aroclor-1254	4	11.205	-0.002	44296	20.8	4	11.337	0.039	1671829	149.1
Aroclor-1254	5	11.912	-0.010	91535	60.0	5	12.084	0.005	429209	64.1
Total Col1Ave (5 peaks):					42.2	Total Col2Ave (5 peaks):				66.8 RPD = 45*
Corrected Ave (4 peaks):					36.8	Corrected Ave (4 peaks):				46.3 RPD = 23
Aroclor-1260	1	12.468	-0.001	678613	377.4	1	12.394	-0.001	3063987	354.6
Aroclor-1260	2	13.143	-0.001	1817124	312.3	2	13.101	-0.001	5826325	289.4
Aroclor-1260	3	13.514	-0.001	579044	214.2	3	13.571	-0.001	2631515	430.6
Aroclor-1260	4	13.612	-0.001	892097	546.9	4	13.625	0.001	3976008	299.8
Aroclor-1260	5	14.010	-0.002	399684	445.8	NS	---			----
Total Col1Ave (5 peaks):					379.3	Total Col2Ave (4 peaks):				343.6 RPD = 10
Corrected Ave (4 peaks):					337.4	Corrected Ave (3 peaks):				314.6 RPD = 7
Aroclor-1262	1	12.468	0.001	678613	208.9	1	12.394	0.000	3063987	200.6
Aroclor-1262	2	13.143	0.000	1817124	201.0	2	12.837	0.000	2980147	207.6
Aroclor-1262	3	13.514	0.000	579044	203.2	3	13.101	0.001	5826325	197.7
Aroclor-1262	4	13.675	0.000	1030376	208.4	4	13.571	0.000	2631515	207.1
Aroclor-1262	5	14.216	0.000	894994	202.3	5	14.213	0.000	2107678	211.0

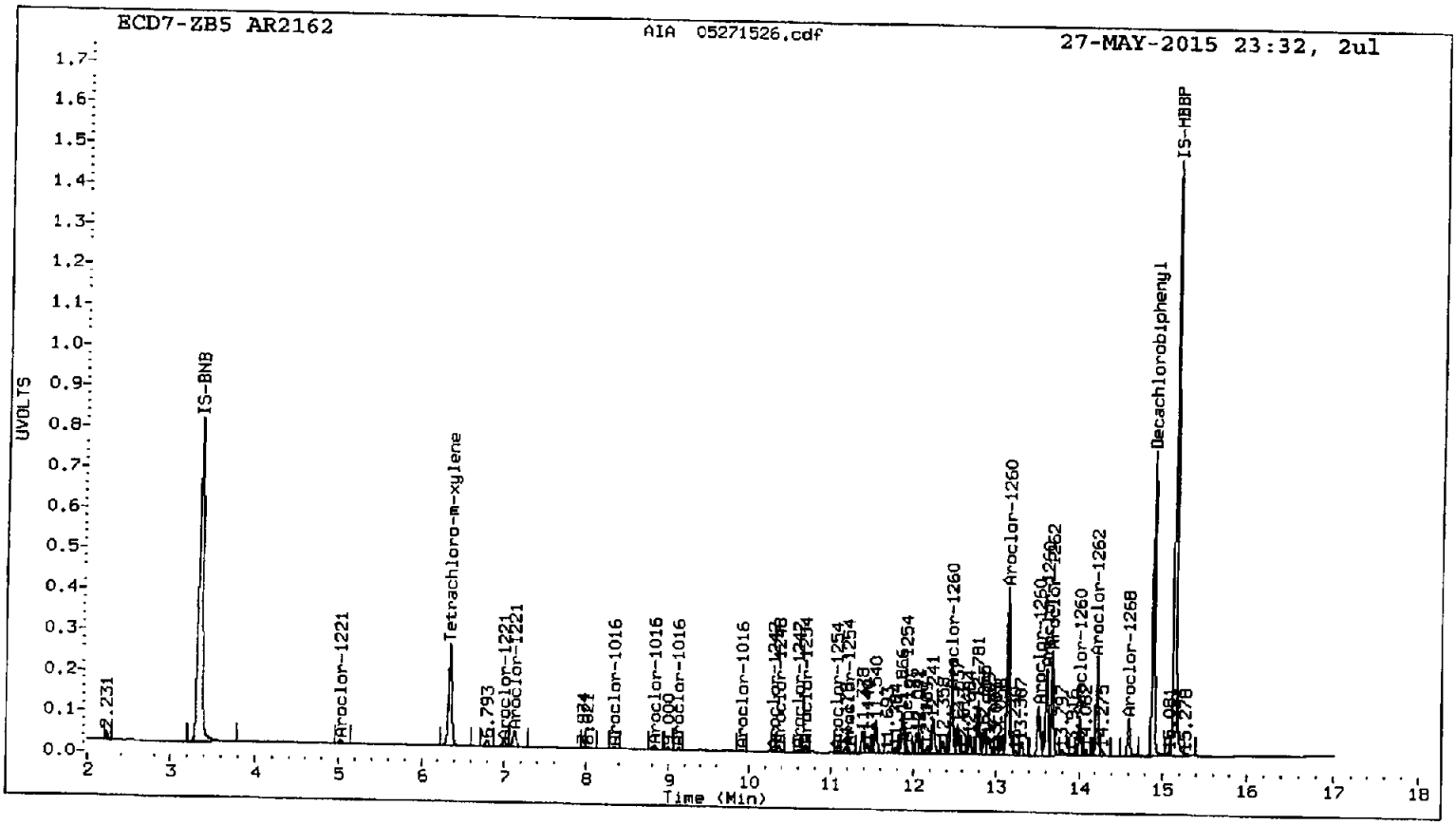
Total Col1Ave (5 peaks):			204.8		Total Col2Ave (5 peaks):			204.8	RPD = 0
Corrected Ave (4 peaks):			203.7		Corrected Ave (4 peaks):			203.2	RPD = 0
Aroclor-1268 1	13.612	0.000	892097	104.4	1	13.571	0.002	2631515	116.5
Aroclor-1268 2	13.675	0.001	1030376	102.9	2	13.625	-0.003	3976008	186.3
Aroclor-1268 3	14.010	0.013	399684	44.6	3	13.952	-0.001	180307	10.5
Aroclor-1268 4	14.596	-0.001	357240	11.4	4	14.572	0.000	685627	14.1
Total Col1Ave (4 peaks):			65.8		Total Col2Ave (4 peaks):			81.9	RPD = 22
Corrected Ave (3 peaks):			53.0		Corrected Ave (3 peaks):			47.0	RPD = 12

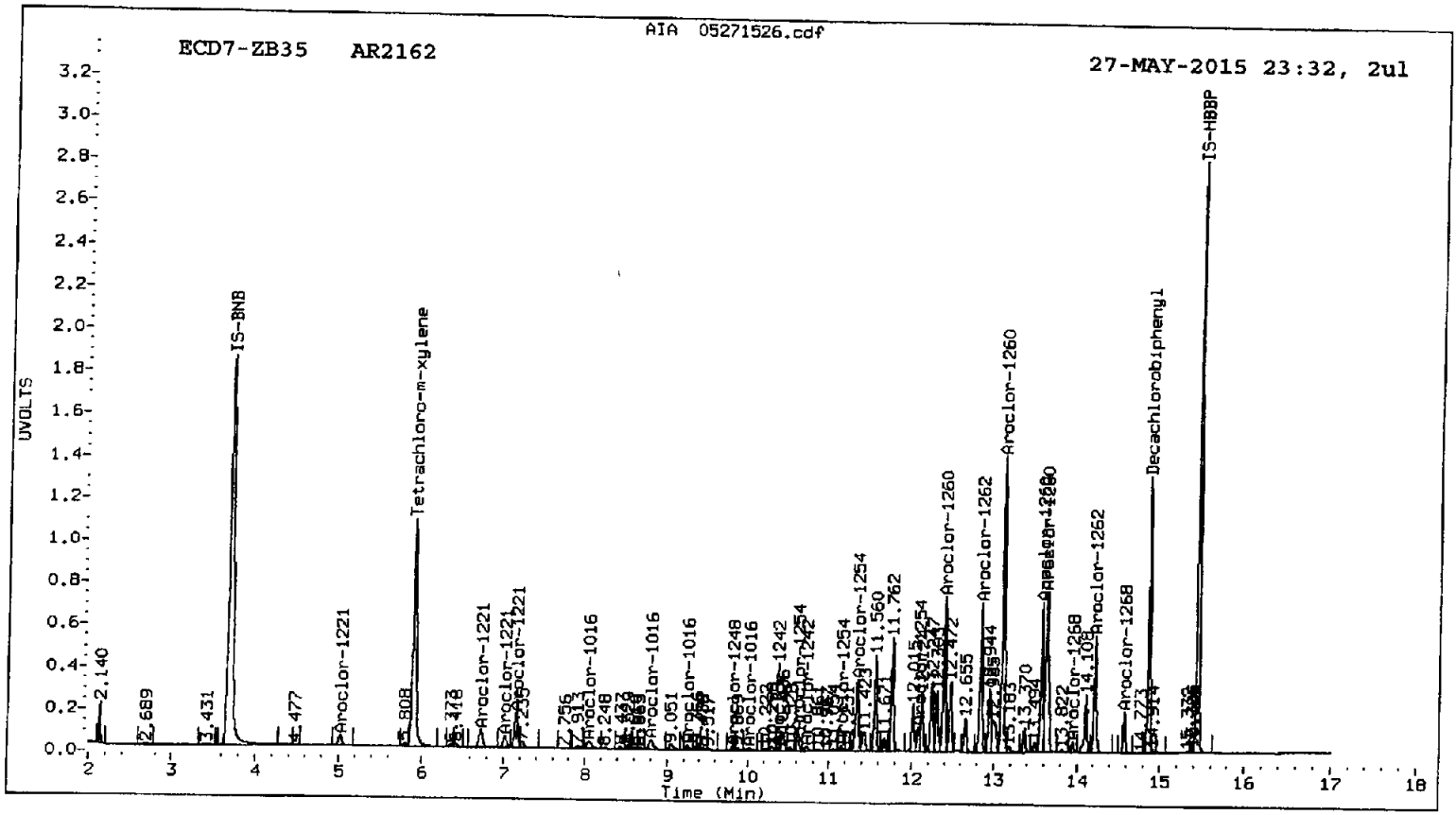
Total PCB Area Col1 (6.443 - 14.789) = 11814979 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.008 - 14.762) = 45029798 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR2162
AIA 05271526.cdf
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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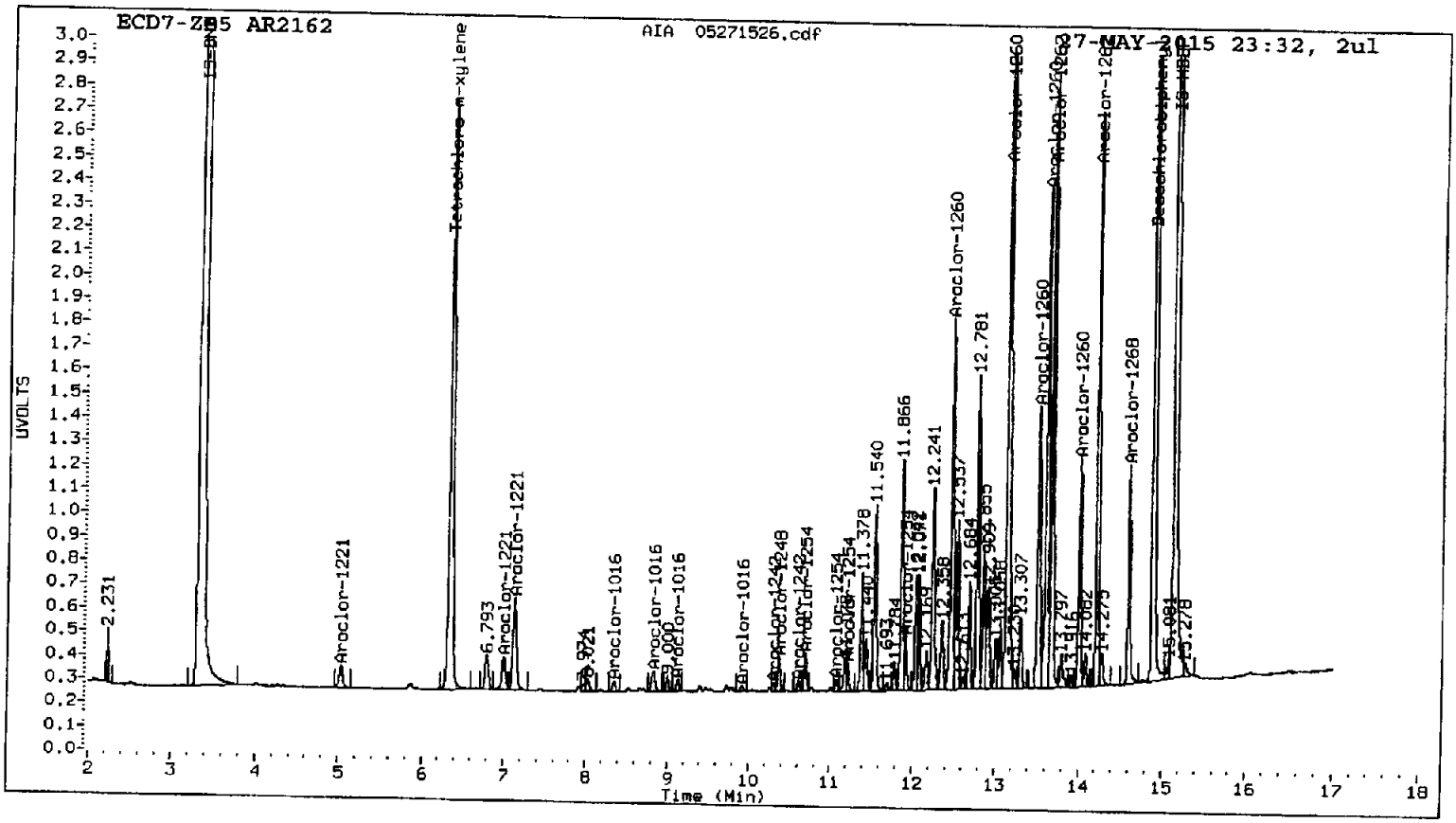
AIA 05271526.cdf
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1016
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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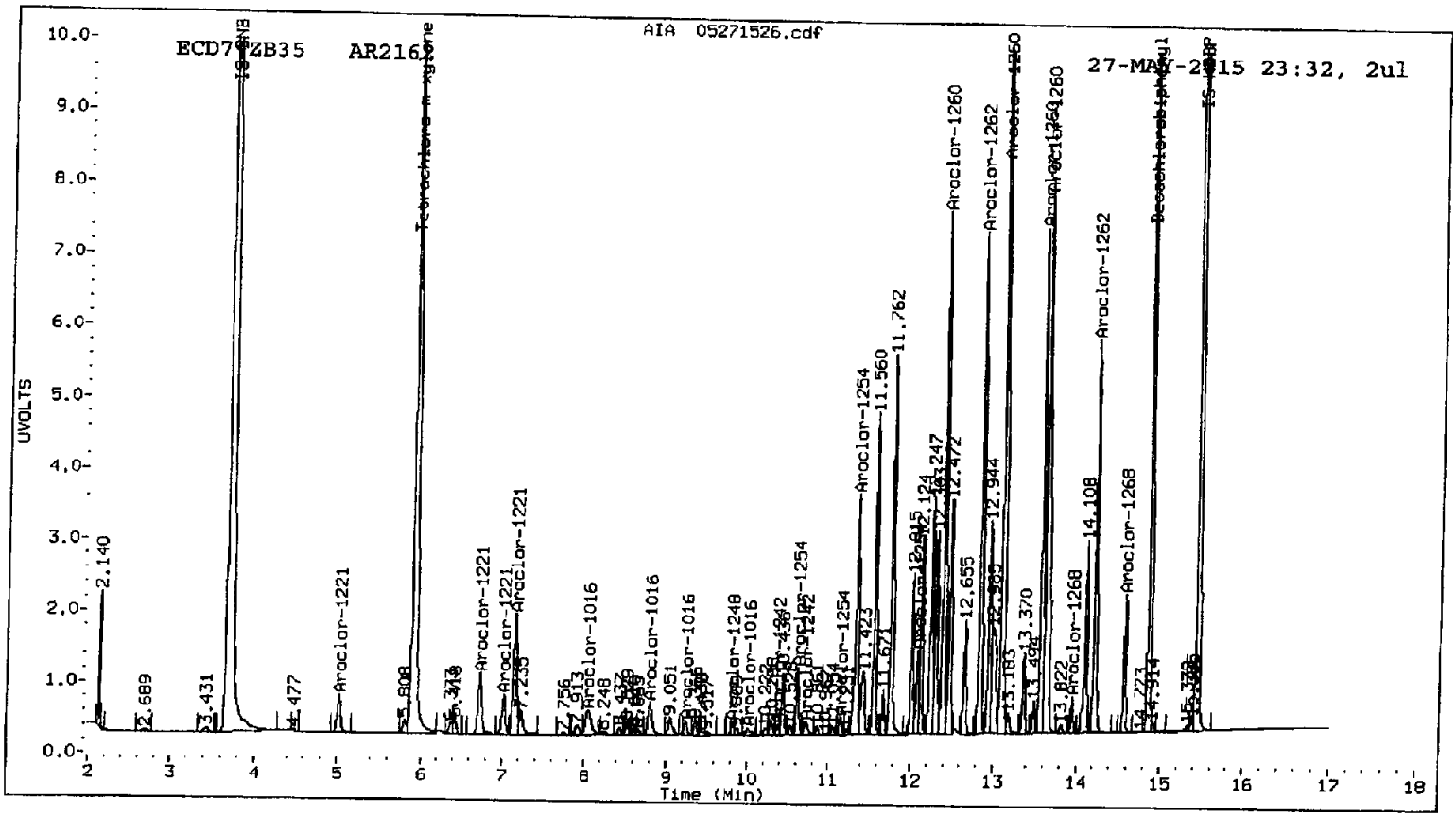
AIA 05271526.cdf
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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AIA 05271526.cdf
27-MAY-2015 23:32, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/ical-1.b/05271527.d
Data file 2: 20150527.b/ical-2.b/05271527.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-MAY-2015 23:54
Report Date: 05/28/2015 08:38
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.343	-0.001	1373585	5.907	-0.001	6451755	38.3	37.4	2.2	Tetrachloro-m-xylene
14.889	-0.001	3809967	14.861	-0.001	6207583	55.3	53.2	3.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.7	93.6
Decachlorobiphenyl	138.3	133.1

JK 05/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5291377	-2.9
Hexabromobiphenyl	5633814	5478047	-2.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12775400	-2.2
Hexabromobiphenyl	8980422	9670669	7.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

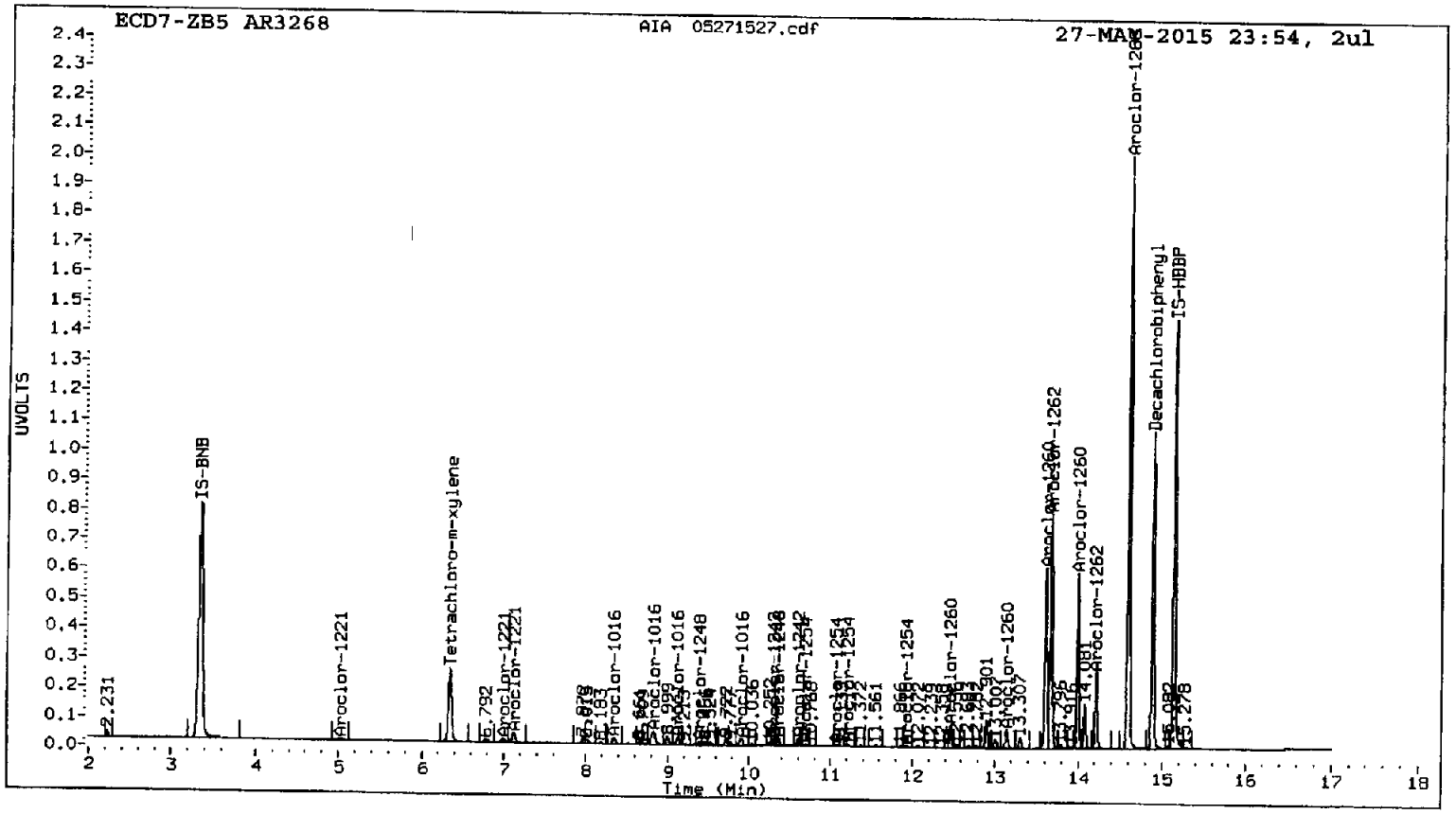
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount	
Aroclor-1016	1	8.345	-0.002	97763	114.9	1	8.030	-0.001	868019	124.0	
Aroclor-1016	2	8.831	-0.001	287339	110.2	2	8.807	0.000	1651626	111.1	
Aroclor-1016	3	9.126	-0.002	102629	115.0	3	9.246	-0.001	445873	116.2	
Aroclor-1016	4	9.910	-0.002	113422	119.8	4	10.009	-0.001	336874	124.3	
Total Col1Ave (4 peaks):					115.0	Total Col2Ave (4 peaks):				118.9	RPD = 3
Corrected Ave (3 peaks):					113.4	Corrected Ave (3 peaks):				117.1	RPD = 3
Aroclor-1221	1	5.025	0.002	30557	141.9	1	5.020	0.002	204357	154.1	
Aroclor-1221	2	6.999	0.001	63850	189.5	2	6.723	0.004	377335	170.0	
Aroclor-1221	3	7.125	0.002	187458	197.1	3	7.018	0.003	219699	175.4	
Aroclor-1221	NS	---			----	4	7.152	0.002	788493	205.7	
Total Col1Ave (3 peaks):					176.1	Total Col2Ave (4 peaks):				176.3	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				166.5	
Aroclor-1232	1	5.025	0.000	30557	249.4	1	5.020	-0.001	204357	253.2	
Aroclor-1232	2	6.999	0.000	63850	274.4	2	7.152	-0.001	788493	291.3	
Aroclor-1232	3	7.125	-0.001	187458	295.2	3	8.030	0.000	868019	273.5	
Aroclor-1232	4	8.831	0.000	287339	270.7	4	9.246	-0.001	445873	273.8	
Total Col1Ave (4 peaks):					272.4	Total Col2Ave (4 peaks):				273.0	RPD = 0
Corrected Ave (3 peaks):					264.8	Corrected Ave (3 peaks):				266.8	RPD = 1
Aroclor-1242	1	8.831	0.001	287339	150.5	1	8.030	0.001	868019	168.9	
Aroclor-1242	2	9.126	0.000	102629	150.1	2	8.807	0.000	1651626	152.3	
Aroclor-1242	3	10.302	0.001	83038	130.4	3	10.374	0.001	514854	136.2	
Aroclor-1242	4	10.606	-0.001	122978	128.9	4	10.732	-0.001	615063	133.8	
Total Col1Ave (4 peaks):					140.0	Total Col2Ave (4 peaks):				147.8	RPD = 5
Corrected Ave (3 peaks):					136.5	Corrected Ave (3 peaks):				140.8	RPD = 3
Aroclor-1248	1	9.394	-0.001	47205	77.6	1	8.807	0.004	1651626	234.6	
Aroclor-1248	2	9.910	-0.001	113422	87.7	2	9.814	-0.001	518251	92.1	
Aroclor-1248	3	10.359	-0.002	109807	73.1	3	10.374	0.001	514854	86.3	
Aroclor-1248	4	10.606	0.000	122978	81.0	4	10.732	0.001	615063	79.9	
Total Col1Ave (4 peaks):					79.9	Total Col2Ave (4 peaks):				123.2	RPD = 43*
Corrected Ave (3 peaks):					77.2	Corrected Ave (3 peaks):				86.1	RPD = 11
Aroclor-1254	1	10.359	-0.009	109807	113.6	1	10.616	0.001	135006	20.1	
Aroclor-1254	2	10.688	-0.001	30767	22.3	2	10.732	0.021	615063	192.9	
Aroclor-1254	3	11.070	0.000	23630	21.1	3	11.146	0.000	121301	23.1	
Aroclor-1254	4	11.209	0.001	36712	17.4	4	11.300	0.002	235541	21.0	
Aroclor-1254	5	11.926	0.004	24011	15.8	5	12.077	-0.001	106039	15.8	
Total Col1Ave (5 peaks):					38.0	Total Col2Ave (5 peaks):				54.6	RPD = 36
Corrected Ave (4 peaks):					19.1	Corrected Ave (4 peaks):				20.0	RPD = 4
Aroclor-1260	1	12.467	-0.002	331568	185.5	1	12.395	-0.001	1494740	172.4	
Aroclor-1260	2	13.142	-0.002	288852	49.9	2	13.100	-0.002	1013508	50.2	
Aroclor-1260	3	13.611	0.097	2356554	876.9	3	13.569	-0.003	6054415	987.2	
Aroclor-1260	4	---			0.0	4	13.628	0.004	6340962	476.5	
Aroclor-1260	5	13.996	-0.016	2185566	2452.6	NS	---			----	
Total Col1Ave (4 peaks):					891.3	Total Col2Ave (4 peaks):				421.6	RPD = 72*
Corrected Ave (3 peaks):					370.8	Corrected Ave (3 peaks):				233.0	RPD = 46*
Aroclor-1262	1	12.467	0.000	331568	102.7	1	12.395	0.000	1494740	97.5	
Aroclor-1262	2	13.142	-0.001	288852	32.1	2	12.834	-0.002	1679120	116.6	
Aroclor-1262	3	13.611	0.098	2356554	832.1	3	13.100	0.000	1013508	34.3	
Aroclor-1262	4	13.674	-0.001	3071285	624.9	4	13.569	-0.001	6054415	474.9	
Aroclor-1262	5	14.216	0.000	967420	220.0	5	14.212	-0.001	2135592	213.1	

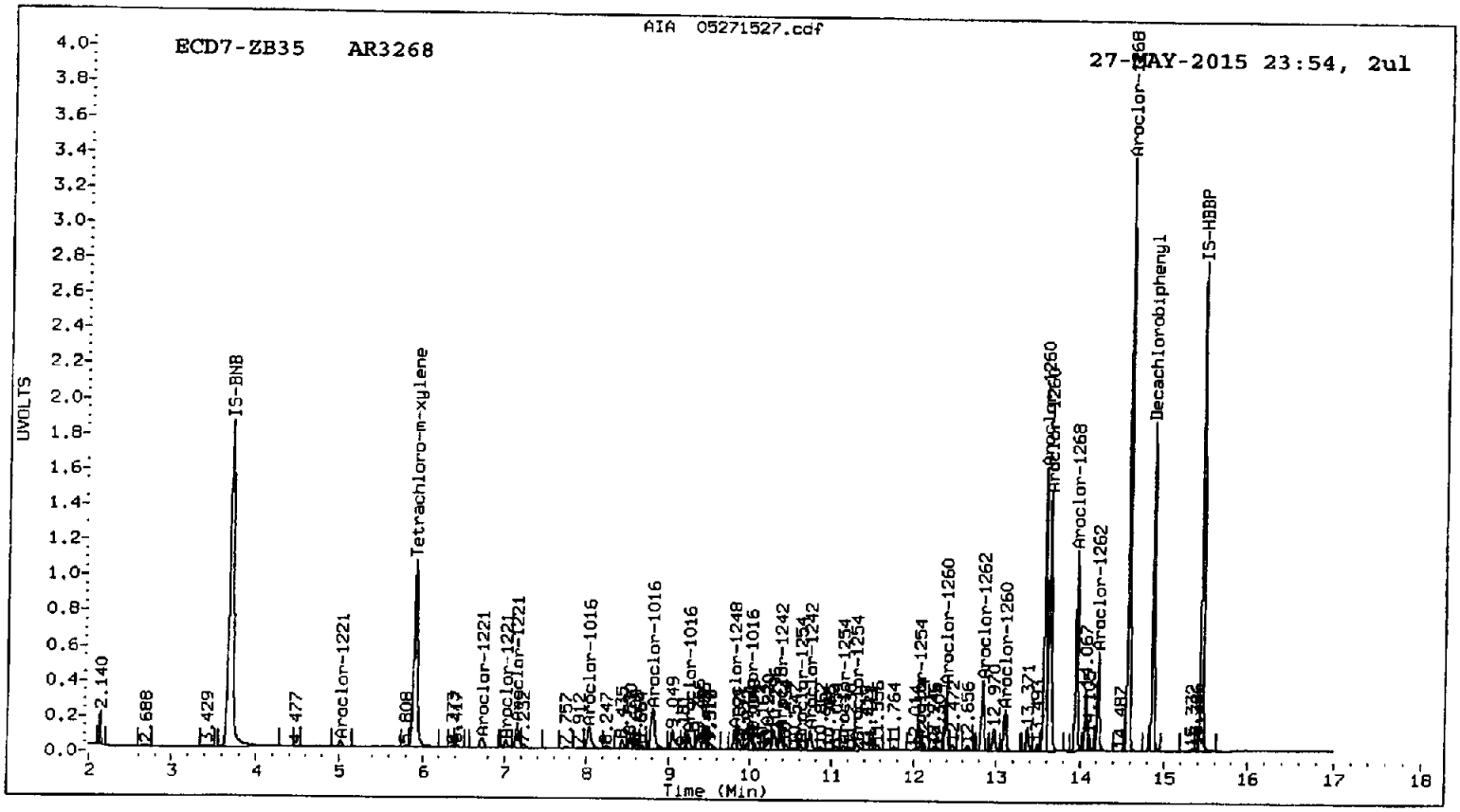
Total Col1Ave (5 peaks):			362.4		Total Col2Ave (5 peaks):			187.3	RPD = 64*	
Corrected Ave (4 peaks):			244.9		Corrected Ave (4 peaks):			115.4	RPD = 72*	
Aroclor-1268 1	13.611	0.000	2356554	277.5	1	13.569	0.000	6054415	267.2	
Aroclor-1268 2	13.674	0.000	3071285	308.6	2	13.628	0.000	6340962	296.1	
Aroclor-1268 3	13.996	-0.001	2166566	245.6	3	13.952	0.000	4165195	241.4	
Aroclor-1268 4	14.597	0.000	7107314	228.5	4	14.572	-0.001	11237357	231.0	
Total Col1Ave (4 peaks):			265.0		Total Col2Ave (4 peaks):			258.9	RPD = 2	
Corrected Ave (3 peaks):			250.5		Corrected Ave (3 peaks):			246.5	RPD = 2	

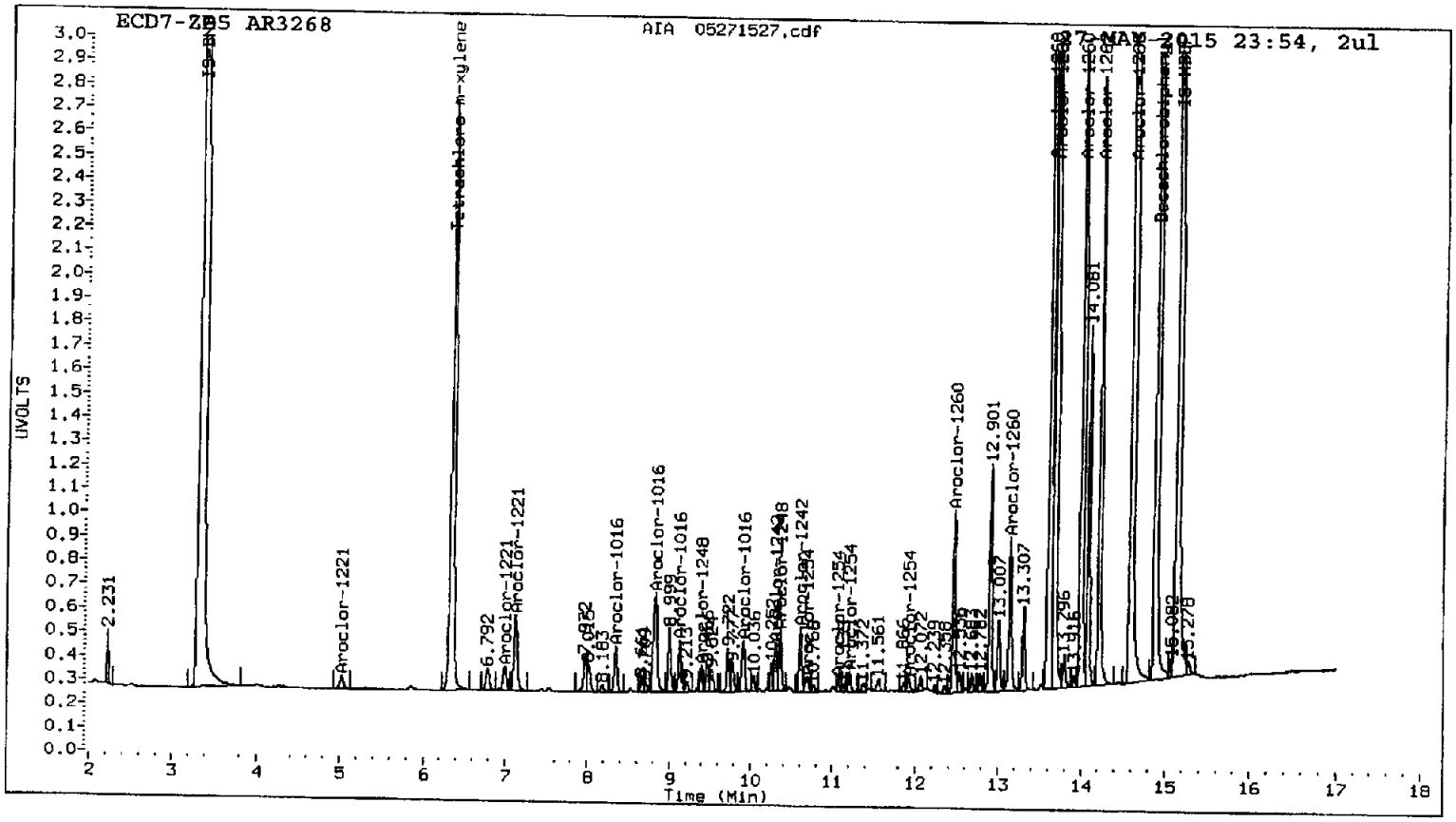
Total PCB Area Col1 (6.443 - 14.789) = 19957685 Col1 Total PCB = 0.9 ppm*

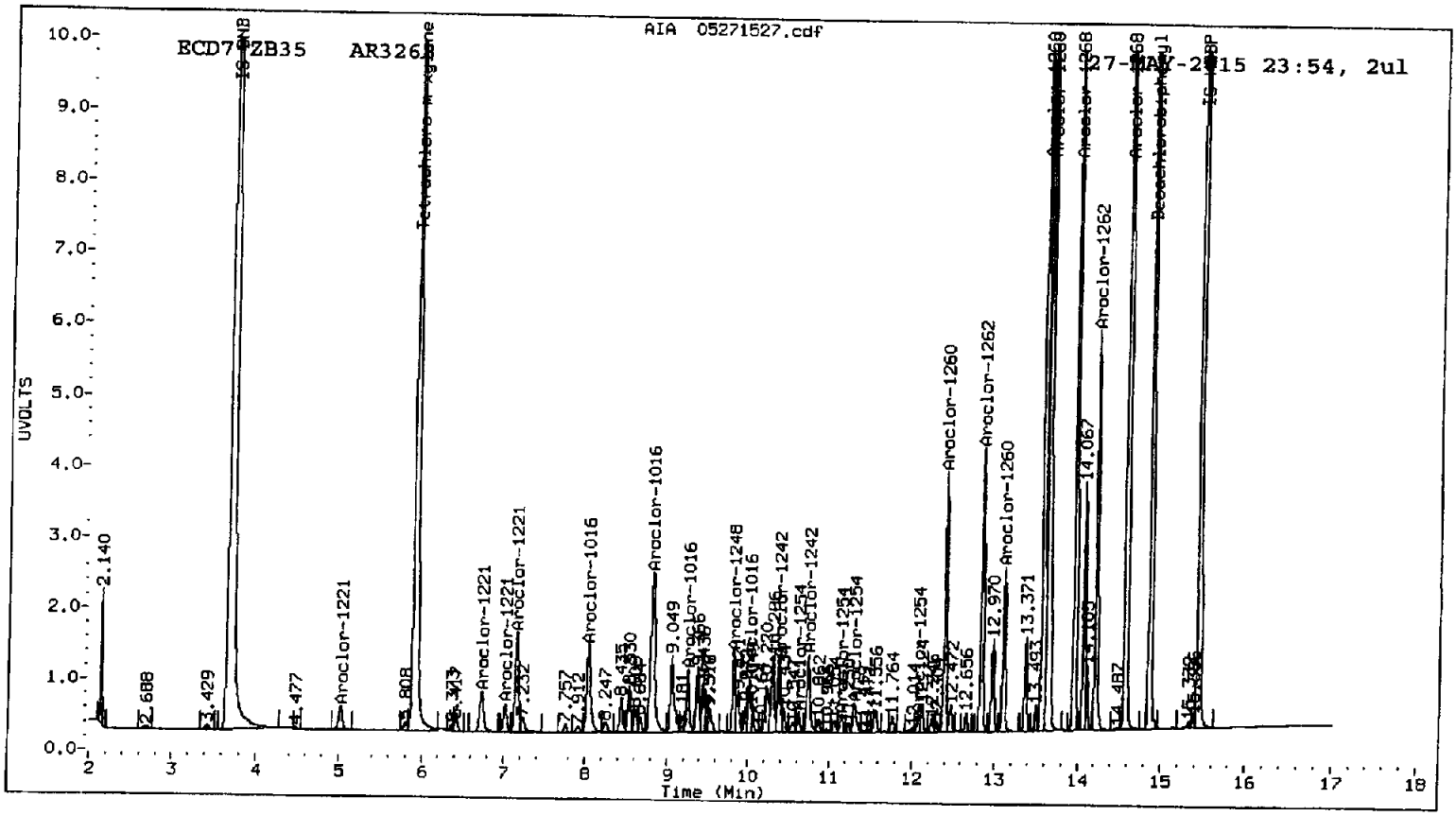
Total PCB Area Col2 (6.008 - 14.762) = 49988046 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR3268
AIA 05271527.cdf
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP


ECD7-ZB35 AR3268
AIA 05271527.cdf
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP


ECD7-ZB5 AR3268
AIA 05271527.cdf
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 AR3268
AIA 05271527.cdf
27-MAY-2015 23:54, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Decachlorobiphenyl

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150527.b/ddt-1.b/05271528.d ARI ID: 0.1 PPM DDT

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.653	0.000	3634692	10.701	0.000	9112156	0.100	0.100	0.0	2,4-DDE
11.212	0.000	3536757	11.090	0.000	14216632	0.100	0.100	0.0	2,4-DDD
11.721	0.000	4611378	11.849	0.000	21253119	0.100	0.200#	66.7*	2,4-DDT
11.089	0.000	6669098	11.391	0.000	8572434	0.100	0.100	0.0	4,4-DDE
11.664	0.000	5389895	11.849	0.000	21253119	0.100	0.200#	66.7*	4,4-DDD
12.177	0.000	5527060	12.280	0.000	12284932	0.100	0.100	0.0	4,4-DDT

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

jk 05/28/15

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150527.b/ddt-1.b/05271529.d ARI ID: DDT BD

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
10.651	-0.001	44200	10.701	0.000	45772	0.001	0.001	82.5*	2,4-DDE
11.211	-0.001	20081	11.090	0.001	297169	0.001	0.002	115.0*	2,4-DDD
11.720	-0.001	62197	11.856	0.007	1445156	0.001	0.014#	164.1*	2,4-DDT
11.088	-0.001	109222	11.392	0.001	135426	0.002	0.002	3.0	4,4-DDE
11.667	0.002	239295	11.856	0.007	1445156	0.004	0.014#	102.0*	4,4-DDD
12.177	0.000	5522384	12.281	0.001	14452257	0.100	0.119	16.9	4,4-DDT

\# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

p 05/28/15

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-ECD

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code Comments: *YD00030*	YES	JGR	04/28/2015
2	ICal meets 20 %RSD, LR COD, and QR COD limits	YES	JGR	04/28/2015
3	Manual integrations include before/after pictures	NA	JGR	04/28/2015
4	Internal Standard areas within 50-200% from reference	YES	JGR	04/28/2015
5	All SCV within +/- 20% (DOD)	YES	JGR	04/28/2015
6	All SCV within +/- 30%	YES	JGR	04/28/2015
7	NO Linear or Quadratic Fits Used	YES	JGR	04/28/2015
8	NO Calibration points dropped	YES	JGR	04/28/2015
9	Additional Notes	NA	BB	04/29/2015
10	Reviewer Approval (Reviewer)	YES	BB	04/29/2015

* = Indicates Automated Response from Element DataSyst

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ical-1.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	27-APR-2015 16:47	04271509.d	1	IB	
2	27-APR-2015 17:08	04271510.d	1	0.25PPMAR1660	
3	27-APR-2015 17:29	04271511.d	1	0.02PPMAR1660	
4	27-APR-2015 17:51	04271512.d	1	0.05PPMAR1660	
5	27-APR-2015 18:12	04271513.d	1	1PPMAR1660	
6	27-APR-2015 18:34	04271514.d	1	0.1PPMAR1660	
7	27-APR-2015 18:55	04271515.d	1	0.5PPMAR1660	
8	27-APR-2015 19:17	04271516.d	1	AR1242	
9	27-APR-2015 19:38	04271517.d	1	AR1248	
10	27-APR-2015 20:00	04271518.d	1	AR1254	
11	27-APR-2015 20:21	04271519.d	1	AR2162	
12	27-APR-2015 20:42	04271520.d	1	AR3268	
13	27-APR-2015 21:04	04271521.d	1	AR1660ICV	
14	27-APR-2015 21:25	04271522.d	1	AR1242ICV	
15	27-APR-2015 21:47	04271523.d	1	AR1248ICV	
16	27-APR-2015 22:08	04271524.d	1	AR1254ICV	
17	27-APR-2015 22:29	04271525.d	1	AR2162ICV	
18	27-APR-2015 22:51	04271526.d	1	AR3268ICV	
19	27-APR-2015 23:12	04271527.d	1	0.1 PPM DDT	
20	27-APR-2015 23:34	04271528.d	1	DDT BD	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ddt-1.b

ARI Job No.: 0.1 Method: PCB1.m Instrument: ecd7.i Date: 27-APR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2312	04271527.d	0.1 PPM DDT		1	NO MANUAL INTEGRATION
2334	04271528.d	DDT BD		1	NO MANUAL INTEGRATION
1647	04271509.d	IB		1	NO MANUAL INTEGRATION
1708	04271510.d	0.25PPMAR1660		1	NO MANUAL INTEGRATION
1729	04271511.d	0.02PPMAR1660		1	NO MANUAL INTEGRATION
1751	04271512.d	0.05PPMAR1660		1	NO MANUAL INTEGRATION
1812	04271513.d	1PPMAR1660		1	NO MANUAL INTEGRATION
1834	04271514.d	0.1PPMAR1660		1	NO MANUAL INTEGRATION
1855	04271515.d	0.5PPMAR1660		1	NO MANUAL INTEGRATION
1917	04271516.d	AR1242		1	NO MANUAL INTEGRATION
1938	04271517.d	AR1248		1	NO MANUAL INTEGRATION
2000	04271518.d	AR1254		1	NO MANUAL INTEGRATION
2021	04271519.d	AR2162		1	NO MANUAL INTEGRATION
2042	04271520.d	AR3268		1	NO MANUAL INTEGRATION
2104	04271521.d	AR1660ICV		1	NO MANUAL INTEGRATION
2125	04271522.d	AR1242ICV		1	NO MANUAL INTEGRATION
2147	04271523.d	AR1248ICV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150427.b/ical-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2208	04271524.d	AR1254ICV		1	NO MANUAL INTEGRATION
2229	04271525.d	AR2162ICV		1	NO MANUAL INTEGRATION
2251	04271526.d	AR3268ICV		1	NO MANUAL INTEGRATION

Report Date : 28-Apr-2015 10:26

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB1.m
Batch File: /chem2/ecd7.i/20150427.b/ical-1.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	04271510	04271511	04271512	04271513	04271514	04271515
INJ.DATE:	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015
INJ.TIME:	17:08	17:29	17:51	18:12	18:34	18:55

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	3.375	3.370	3.377	3.376	3.376	3.378	3.377	3.277-3.477	3.375	0.003
$ 1 Tetrachloro-m-xylene	6.368	6.371	6.375	6.374	6.373	6.372	6.372	6.272-6.472	6.372	0.003
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.055	4.955-5.155	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.851	8.751-8.951	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.055	4.955-5.155	+++++	+++++
7 Aroclor-1016	8.366	8.370	8.372	8.371	8.371	8.370	8.370	8.270-8.470	8.370	0.002
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	9.415	9.315-9.515	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.386	10.286-10.486	+++++	+++++
9 Aroclor-1260	12.479	12.481	12.481	12.480	12.481	12.480	12.480	12.380-12.580	12.481	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.479	12.380-12.579	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.621	13.521-13.721	+++++	+++++
$ 13 Decachlorobiphenyl	14.896	14.896	14.896	14.897	14.896	14.897	14.897	14.797-14.997	14.896	0.000
* 12 IS-HBBP	15.149	15.149	15.149	15.149	15.149	15.149	15.148	15.048-15.248	15.149	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.668	10.618-10.718	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.226	11.176-11.276	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.733	11.683-11.783	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.103	11.003-11.203	+++++	+++++

Reviewer 1 _____ Date: 4/29/15
Reviewer 2 _____ Date: 4/29/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB1.m
Batch File: /chem2/ecd7.i/20150427.b/ical-1.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.677	11.577-11.777	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.188	12.088-12.288	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB2.m
Batch File: /chem2/ecd7.i/20150427.b/ical-2.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	04271510	04271511	04271512	04271513	04271514	04271515
INJ.DATE:	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015	27-APR-2015
INJ.TIME:	17:08	17:29	17:51	18:12	18:34	18:55

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 40 IS-BNB	3.716	3.713	3.720	3.719	3.719	3.720	3.719	3.619-3.819	3.718	0.003
$ 2 Tetrachloro-m-xylene	5.925	5.928	5.932	5.932	5.932	5.931	5.930	5.830-6.030	5.930	0.003
1 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	5.042	4.942-5.142	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	5.042	4.942-5.142	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	8.047	7.947-8.147	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	8.819	8.719-8.919	+++++	+++++
7 Aroclor-1016	8.043	8.047	8.049	8.049	8.049	8.047	8.047	7.947-8.147	8.047	0.002
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	10.627	10.527-10.727	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	12.402	12.302-12.502	+++++	+++++
9 Aroclor-1260	12.401	12.403	12.403	12.402	12.403	12.403	12.403	12.303-12.503	12.402	0.001
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	13.576	13.476-13.676	+++++	+++++
$ 13 Decachlorobiphenyl	14.867	14.868	14.868	14.868	14.868	14.867	14.866	14.766-14.966	14.867	0.001
* 12 IS-HBBP	15.450	15.450	15.450	15.449	15.450	15.450	15.449	15.349-15.549	15.450	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	10.711	10.661-10.761	+++++	+++++
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	11.100	11.050-11.150	+++++	+++++
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	11.400	11.300-11.500	+++++	+++++
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	11.861	11.761-11.961	+++++	+++++

Reviewer 1 _____ Date: 04/28/15
Reviewer 2 _____ Date: 4/29/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/ecd7.i/20150427.b/PCB2.m
Batch File: /chem2/ecd7.i/20150427.b/ical-2.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	12.288	12.188-12.388	+++++	+++++
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.703	1.603-1.803	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	7.117	7.017-7.217	+++++	+++++

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

YD 00030

SDD0056

Calibration File Names:
Level 1: /chem2/ecd7.i/20150427.b/ical-1.b/04271511.d
Level 2: /chem2/ecd7.i/20150427.b/ical-1.b/04271512.d
Level 3: /chem2/ecd7.i/20150427.b/ical-1.b/04271514.d
Level 4: /chem2/ecd7.i/20150427.b/ical-1.b/04271510.d
Level 5: /chem2/ecd7.i/20150427.b/ical-1.b/04271515.d
Level 6: /chem2/ecd7.i/20150427.b/ical-1.b/04271513.d
Level 7: /chem2/ecd7.i/20150427.b/ical-1.b/04271520.d
Level 8: /chem2/ecd7.i/20150427.b/ddt-1.b/04271527.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.00344	+++++	0.00344	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.00513	+++++	0.00513	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01478	+++++	0.01478	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.03020	+++++	0.03020	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.01091	+++++	0.01091	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.01022	+++++	0.01022	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01545	+++++					0.01545	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00197	+++++					0.00197	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00350	+++++					0.00350	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00991	+++++					0.00991	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01645	+++++					0.01645	0.000
7 Aroclor-1016(1)	0.01430	0.01377	0.01480	0.01294	0.01245	0.01176		
	+++++	+++++					0.01334	8.687
(2)	0.04296	0.04136	0.04381	0.03906	0.03832	0.03755		
	+++++	+++++					0.04051	6.363
(3)	0.01309	0.01423	0.01539	0.01383	0.01363	0.01327		
	+++++	+++++					0.01391	5.981
(4)	0.01535	0.01572	0.01660	0.01475	0.01433	0.01389		
	+++++	+++++					0.01511	6.530

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01051	+++++					0.01051	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02062	+++++					0.02062	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02370	+++++					0.02370	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02427	+++++					0.02427	0.000
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01499	+++++					0.01499	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02157	+++++					0.02157	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01766	+++++					0.01766	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03305	+++++					0.03305	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02415	+++++					0.02415	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
9 Aroclor-1260(1)	0.03998	0.03694	0.03880	0.03558	0.03256	0.03069		
	+++++	+++++					0.03576	10.039
(2)	0.12457	0.11342	0.11916	0.11649	0.11410	0.11316		
	+++++	+++++					0.11682	3.789
(3)	0.05222	0.05202	0.05681	0.05479	0.05268	0.05222		
	+++++	+++++					0.05346	3.619
(4)	0.03212	0.03162	0.03462	0.03280	0.03090	0.02963		
	+++++	+++++					0.03195	5.324
(5)	0.01572	0.01587	0.01905	0.01825	0.01748	0.01712		
	+++++	+++++					0.01725	7.579
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06292	+++++					0.06292	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.17097	+++++					0.17097	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05543	+++++					0.05543	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09437	+++++					0.09437	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.08054	+++++					0.08054	0.000
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.15620	+++++					0.15620	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.18684	+++++					0.18684	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.16612	+++++					0.16612	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.54220	+++++					0.54220	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	779					779	0.000
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	864					864	0.000
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	370					370	0.000
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1421					1421	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB1.m
Cal Date : 28-Apr-2015 09:52 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1453					1453	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	291					291	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 1 Tetrachloro-m-xylene	0.55658	0.53237	0.58521	0.54551	0.55700	0.56458		
	+++++	+++++					0.55688	3.204
$ 13 Decachlorobiphenyl	1.29982	1.17313	1.27272	1.17332	1.18208	1.17857		
	+++++	+++++					1.21327	4.722

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Calibration File Names:
Level 1: /chem2/ecd7.i/20150427.b/ical-2.b/04271511.d
Level 2: /chem2/ecd7.i/20150427.b/ical-2.b/04271512.d
Level 3: /chem2/ecd7.i/20150427.b/ical-2.b/04271514.d
Level 4: /chem2/ecd7.i/20150427.b/ical-2.b/04271510.d
Level 5: /chem2/ecd7.i/20150427.b/ical-2.b/04271515.d
Level 6: /chem2/ecd7.i/20150427.b/ical-2.b/04271513.d
Level 7: /chem2/ecd7.i/20150427.b/ical-2.b/04271520.d
Level 8: /chem2/ecd7.i/20150427.b/ddt-2.b/04271527.d

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
1 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00875	+++++					0.00875	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01422	+++++					0.01422	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00814	+++++					0.00814	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02423	+++++					0.02423	0.000
4 Aroclor-1232(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00535	+++++					0.00535	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01730	+++++					0.01730	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02020	+++++					0.02020	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01046	+++++					0.01046	0.000
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03310	+++++					0.03310	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.06906	+++++					0.06906	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02430	+++++					0.02430	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02953	+++++					0.02953	0.000
6 Aroclor-1248(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04536	+++++					0.04536	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03622	+++++					0.03622	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03807	+++++					0.03807	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	250.000 Level 7	0.000e+00 Level 8	RRF	% RSD
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.04914	+++++	0.04914	0.000
7 Aroclor-1016(1)	0.05509	0.04904	0.04987	0.04266	0.03976	0.03657	+++++	+++++	0.04550	15.363
(2)	0.11347	0.09950	0.10221	0.08929	0.08533	0.08053	+++++	+++++	0.09505	12.873
(3)	0.02999	0.02680	0.02730	0.02384	0.02256	0.02101	+++++	+++++	0.02525	13.280
(4)	0.02124	0.01884	0.01933	0.01668	0.01583	0.01488	+++++	+++++	0.01780	13.524
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++	0.04189	+++++	0.04189	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++	0.02010	+++++	0.02010	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++	0.03291	+++++	0.03291	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++	0.07016	+++++	0.07016	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04262	+++++					0.04262	0.000
10 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14805	+++++					0.14805	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.14007	+++++					0.14007	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.28348	+++++					0.28348	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.12337	+++++					0.12337	0.000
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.09633	+++++					0.09633	0.000
9 Aroclor-1260(1)	0.09778	0.09052	0.09146	0.08109	0.07430	0.06968		
	+++++	+++++					0.08414	12.973
(2)	0.20658	0.20164	0.20863	0.19137	0.18134	0.17464		
	+++++	+++++					0.19403	7.187
(3)	0.07418	0.06729	0.06695	0.05894	0.05666	0.05163		
	+++++	+++++					0.06261	13.251

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
(4)	0.14699	0.13781	0.14319	0.12696	0.12005	0.11410		
	+++++	+++++					0.13152	10.033
11 Aroclor-1268(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.21210	+++++					0.21210	0.000
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.20009	+++++					0.20009	0.000
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.16377	+++++					0.16377	0.000
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.44872	+++++					0.44872	0.000
41 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	722					722	0.000
42 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	1192					1192	0.000
44 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	860					860	0.000
45 4,4-DDD/2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	824					824	0.000

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-APR-2015 17:08
End Cal Date : 27-APR-2015 23:12
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP Genie
Method file : /chem2/ecd7.i/20150427.b/PCB2.m
Cal Date : 28-Apr-2015 09:35 jrains
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	250.000 Level 7	0.000e+00 Level 8						
46 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	286					286	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 2 Tetrachloro-m-xylene	1.17808	1.07819	1.15100	1.04797	1.04194	1.01047		
	+++++	+++++					1.08461	6.094
$ 13 Decachlorobiphenyl	1.24646	1.16244	1.20801	1.08278	1.03581	0.98916		
	+++++	+++++					1.12078	9.022

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271509.d
Data file 2: 20150427.b/ical-2.b/04271509.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: IB
Client ID:
Injection Date: 27-APR-2015 16:47
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.360	-0.012	789605	5.918	-0.012	3279365	21.5	19.6	9.4	Tetrachloro-m-xylene
14.896	-0.001	2957109	14.865	-0.001	4641766	49.2	45.2	8.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	53.8	48.9
Decachlorobiphenyl	122.9	113.0

04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5272828	1.5
Hexabromobiphenyl	3879663	3965772	2.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12357625	0.4
Hexabromobiphenyl	7233601	7327952	1.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

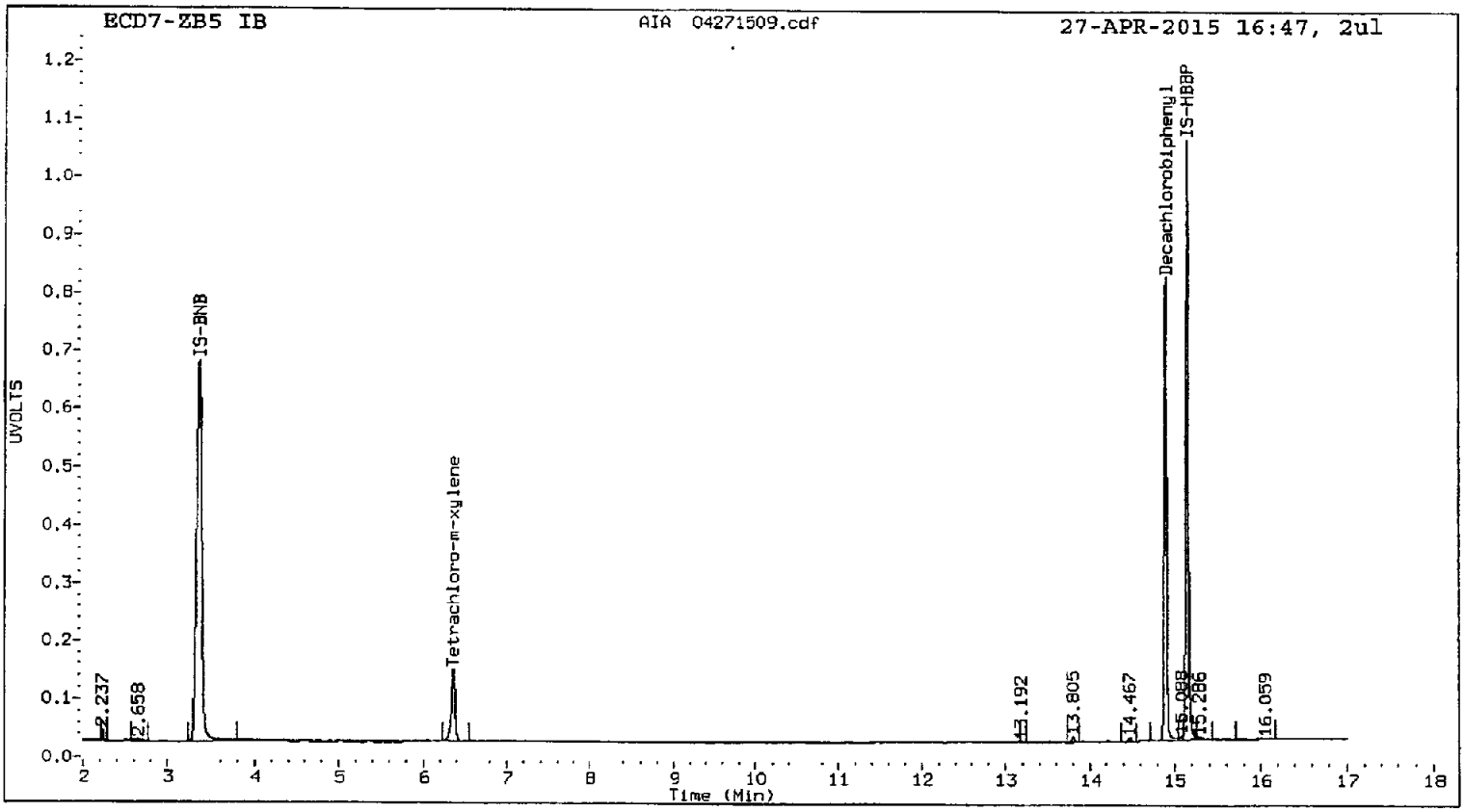
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	---			0.0
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	12.428	0.025	30175	3.9
Aroclor-1260	2	---			0.0	2	13.106	-0.002	21410	1.2
Aroclor-1260	3	---			0.0	3	13.537	-0.041	55832	9.7
Aroclor-1260	4	---			0.0	4	13.626	-0.002	15421	1.3
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: 4.0				
Aroclor-1262	1	---			0.0	1	12.428	0.026	30175	2.2
Aroclor-1262	2	---			0.0	2	12.843	-0.001	13535	1.1
Aroclor-1262	3	---			0.0	3	13.106	-0.002	21410	0.8
Aroclor-1262	4	---			0.0	4	13.537	-0.041	55832	4.9
Aroclor-1262	5	---			0.0	5	14.254	0.036	33000	3.7
	Col1Ave: <3 Quant Peaks					Col2Ave: 2.6				
Aroclor-1268	1	---			0.0	1	13.537	-0.039	55832	2.9
Aroclor-1268	2	---			0.0	2	13.626	-0.007	15421	0.8
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	14.532	-0.045	18595	0.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.4				

Total PCB Area Col1 (6.472 - 14.797) = 74491 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 708443 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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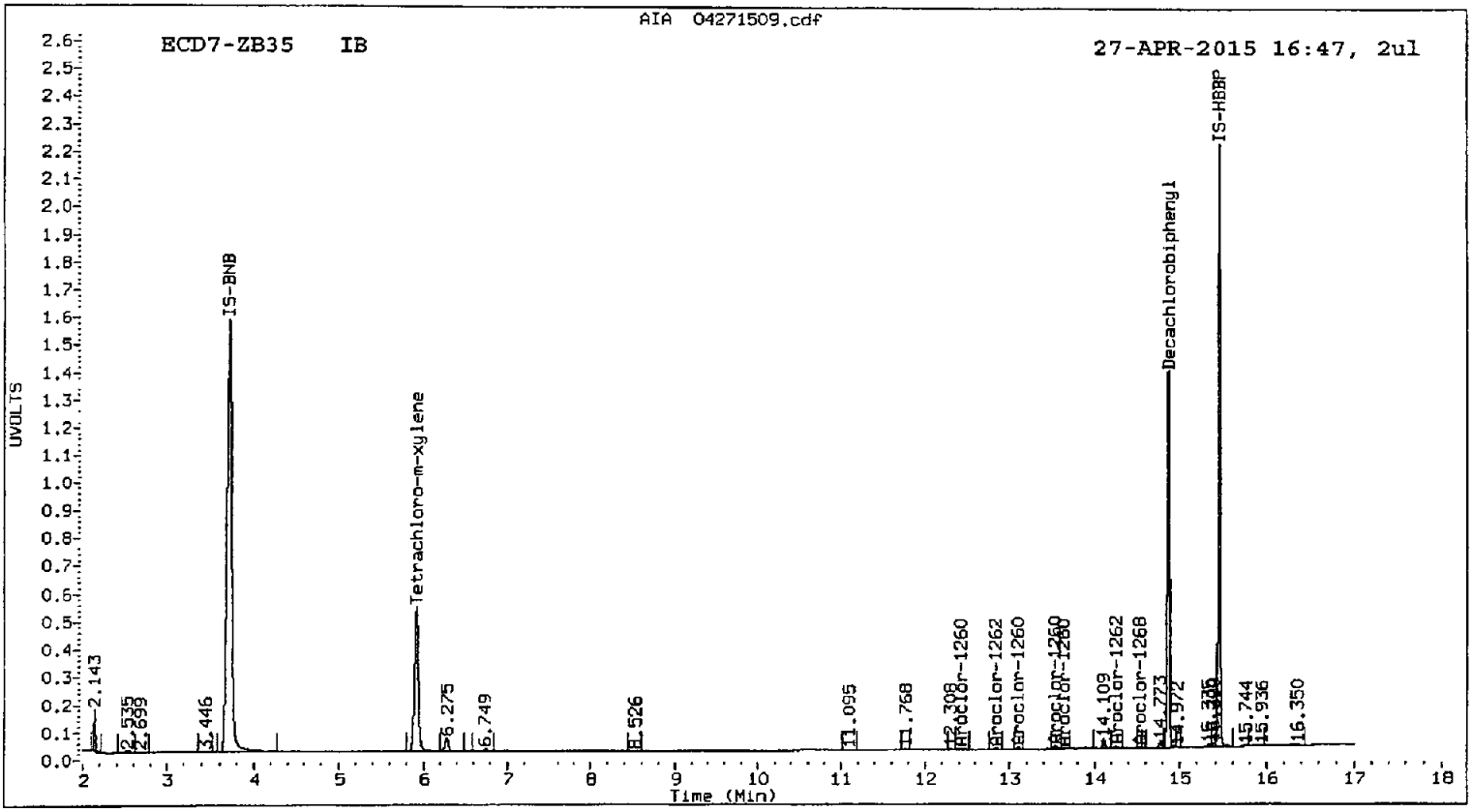
AIA 04271509.cdf
27-APR-2015 16:47, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.237
2.658
13.192
13.805
14.467
16.059
Time (Min)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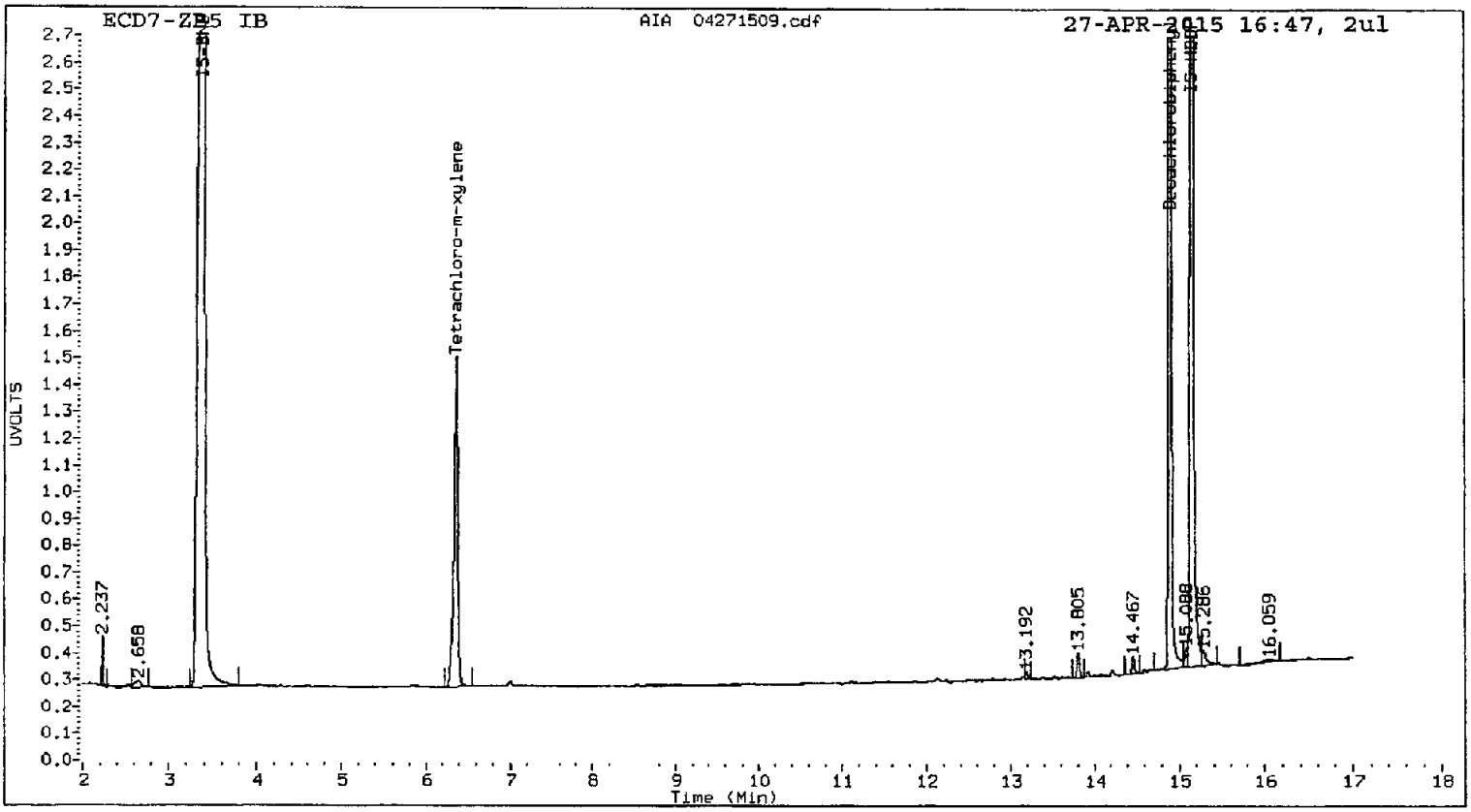
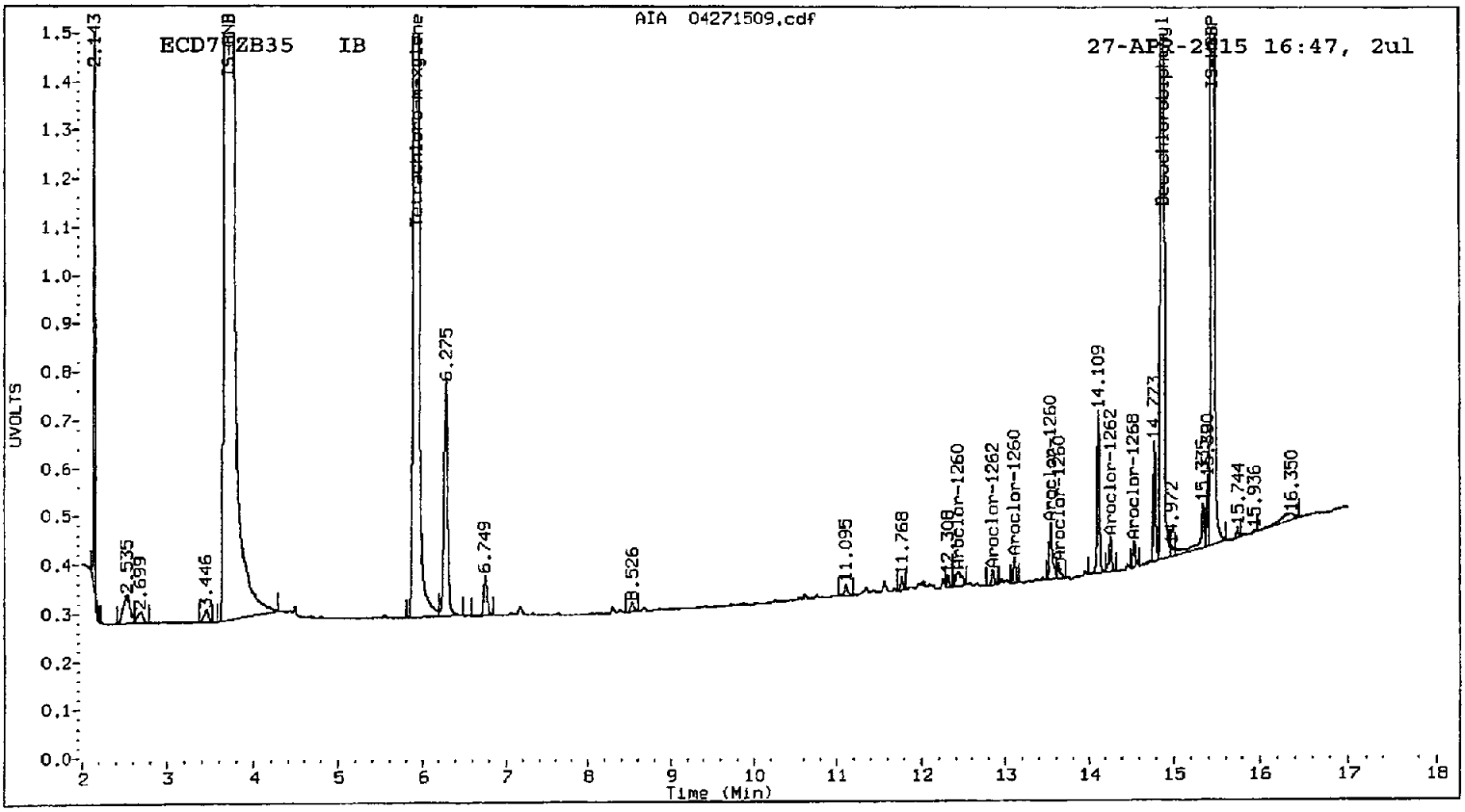
ECD7-ZB35 IB
27-APR-2015 16:47, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
2.143
3.446
6.275
6.749
8.526
11.095
11.768
Aroclor-1260
Aroclor-1262
Aroclor-1260
Aroclor-1260
Aroclor-1262
Aroclor-1268
14.109
14.723
14.972
15.744
15.936
16.350
Time (Min)


ECD7-ZB35 IB
AIA 04271509.cdf
27-APR-2015 16:47, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
2.237
2.658
13.192
13.805
14.467
15.088
15.286
16.059


ECD7-ZB35 IB
AIA 04271509.cdf
27-APR-2015 16:47, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
2.143
2.535
2.699
3.446
6.275
6.749
8.526
11.095
11.768
12.308
Aroclor-1260
Aroclor-1262
Aroclor-1260
Aroclor-1260
Aroclor-1262
Aroclor-1268
14.223
14.972
15.390
15.744
15.936
16.350

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271510.d
Data file 2: 20150427.b/ical-2.b/04271510.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.25PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:08
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.368	-0.004	708585	5.925	-0.005	3223365	19.6	19.3	1.4	Tetrachloro-m-xylene
14.896	0.000	1138023	14.867	0.001	1958100	19.3	19.3	0.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	49.0	48.3
Decachlorobiphenyl	48.4	48.3

A 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5195722	0.0
Hexabromobiphenyl	3879663	3879663	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12303253	0.0
Hexabromobiphenyl	7233601	7233601	0.0

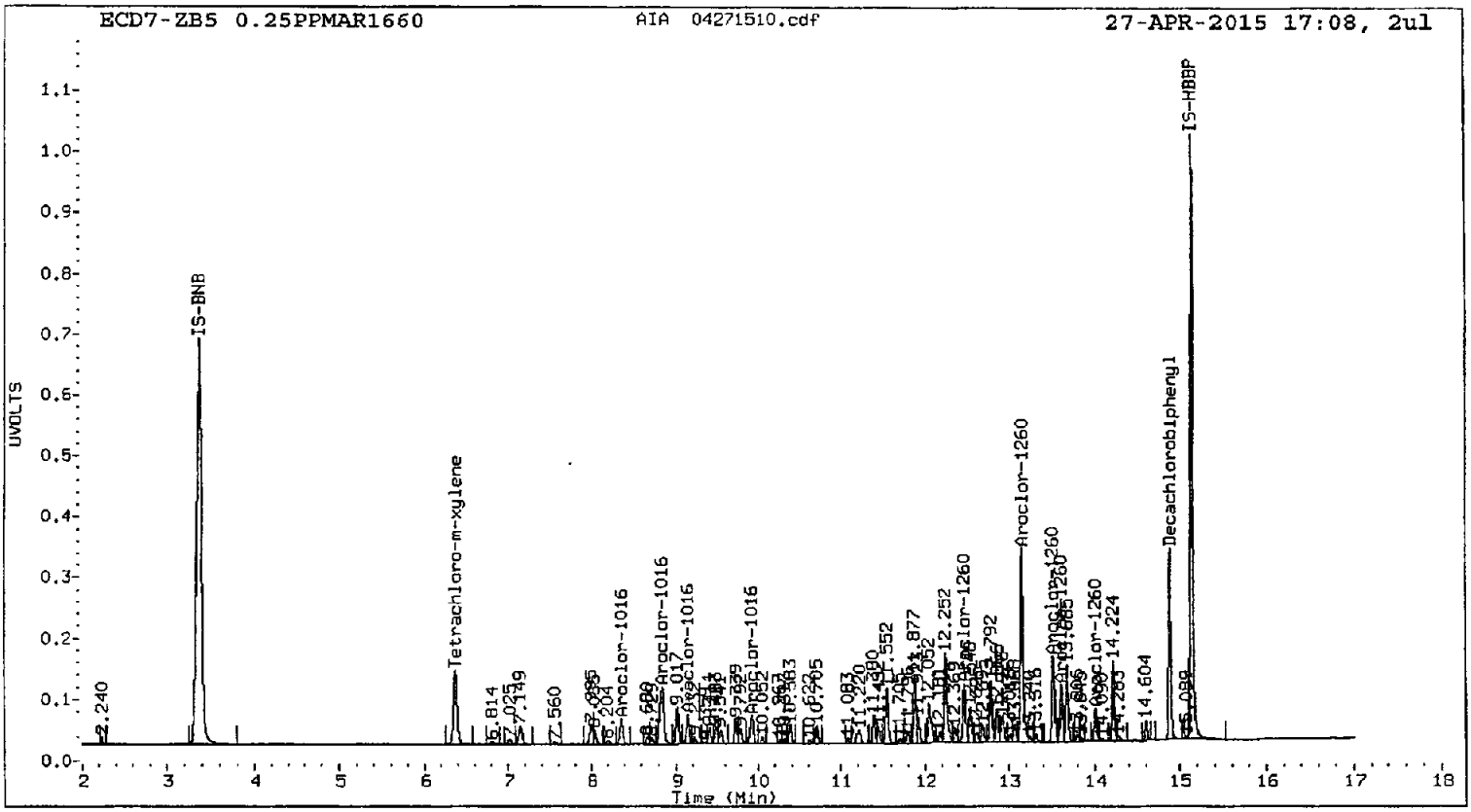
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.366	-0.004	210144	242.6	1	8.043	-0.004	1640344	234.4
Aroclor-1016	2	8.849	-0.004	634152	241.0	2	8.818	-0.005	3433141	234.8
Aroclor-1016	3	9.144	-0.004	224494	248.5	3	9.256	-0.004	916458	236.0
Aroclor-1016	4	9.927	-0.003	239556	244.2	4	10.018	-0.002	641343	234.3
Total Col1Ave (4 peaks):					244.1	Total Col2Ave (4 peaks):				234.9 RPD = 4
Corrected Ave (3 peaks):					242.6	Corrected Ave (3 peaks):				234.5 RPD = 3
CalAmt %D:					-2.4	CalAmt %D:				-6.0
Aroclor-1260	1	12.479	-0.001	431425	248.8	1	12.401	-0.002	1833042	240.9
Aroclor-1260	2	13.153	-0.001	1412301	249.3	2	13.107	0.000	4326022	246.6
Aroclor-1260	3	13.522	-0.001	664321	256.2	3	13.577	0.000	1332443	235.4
Aroclor-1260	4	13.621	0.000	397627	256.7	4	13.628	0.000	2870012	241.3
Aroclor-1260	5	14.019	-0.001	221203	264.5	NS	---			----
Total Col1Ave (5 peaks):					255.1	Total Col2Ave (4 peaks):				241.1 RPD = 6
Corrected Ave (4 peaks):					252.7	Corrected Ave (3 peaks):				239.2 RPD = 5
CalAmt %D:					2.0	CalAmt %D:				-3.6

Total PCB Area Col1 (6.472 - 14.797) = 12071203 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 51400931 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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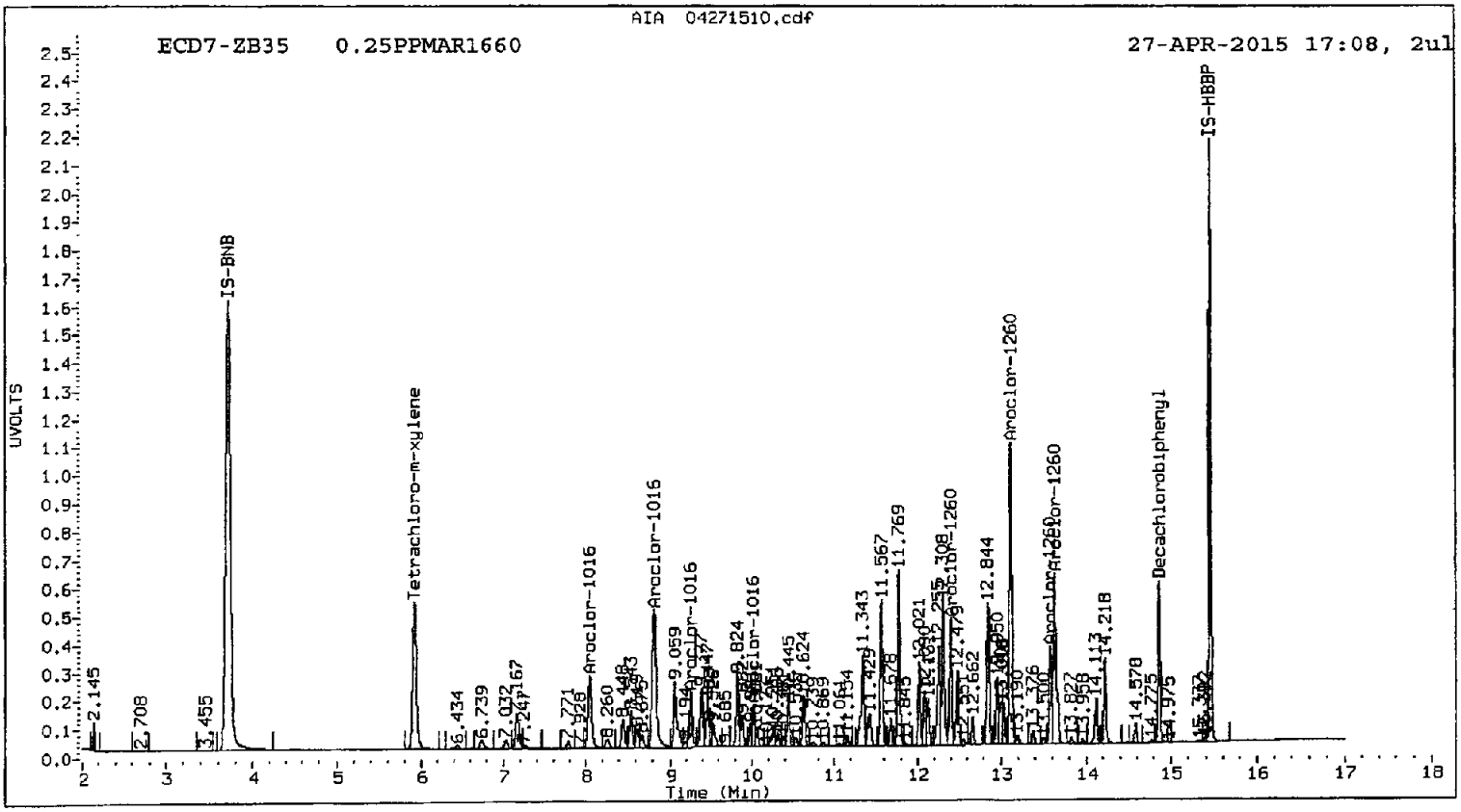
27-APR-2015 17:08, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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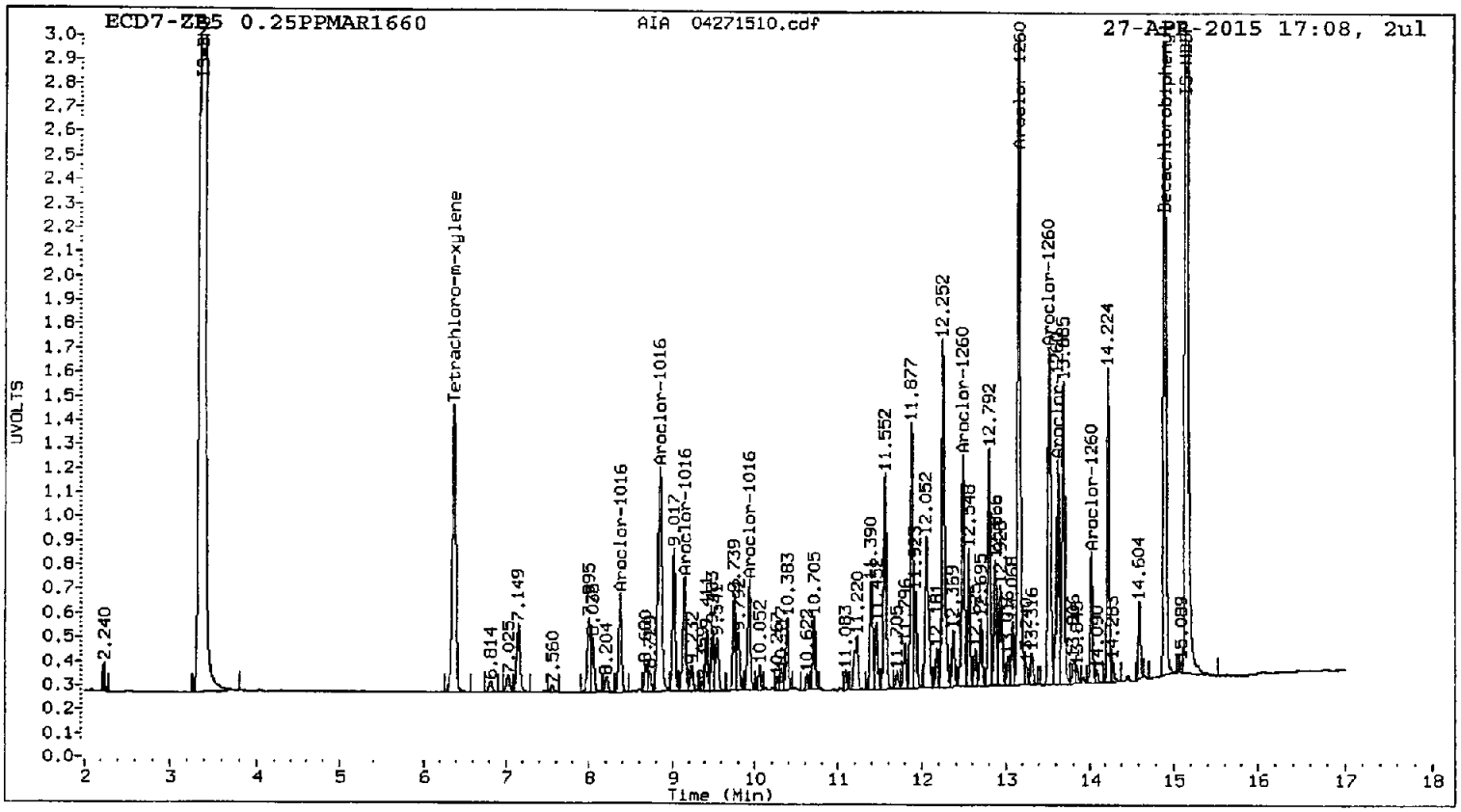
27-APR-2015 17:08, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)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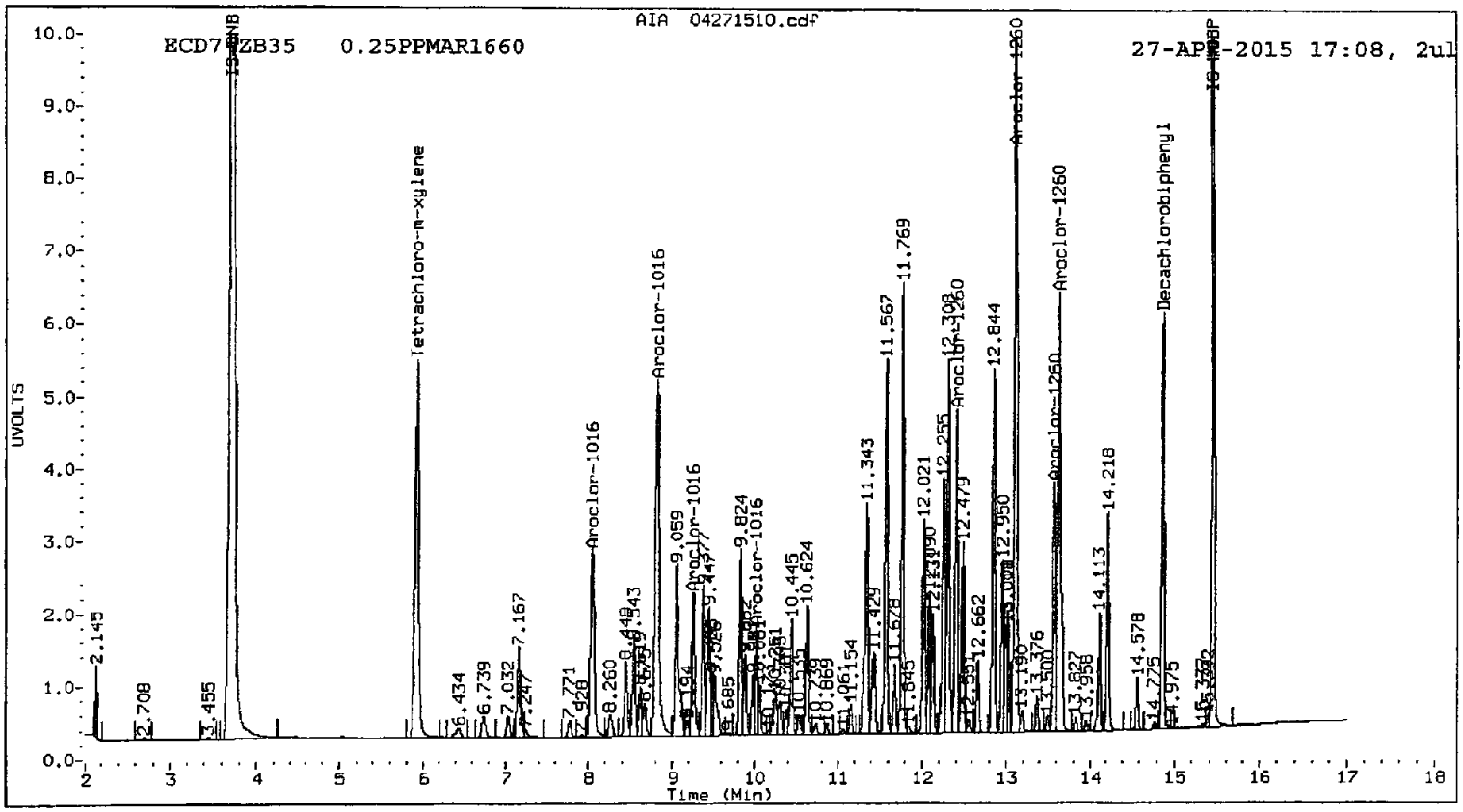
AIA 04271510.cdf
27-APR-2015 17:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


ECD7-ZB35 0.25PPMAR1660
AIA 04271510.cdf
27-APR-2015 17:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271511.d
Data file 2: 20150427.b/ical-2.b/04271511.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.02PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:29
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.371	-0.002	58074	5.928	-0.002	291095	1.6	1.7	8.3	Tetrachloro-m-xylene
14.896	0.000	111497	14.868	0.001	197717	1.7	1.8	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	4.0	4.3
Decachlorobiphenyl	4.3	4.4

4/13/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5217021	0.4
Hexabromobiphenyl	3879663	4288955	10.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12354652	0.4
Hexabromobiphenyl	7233601	7931151	9.6

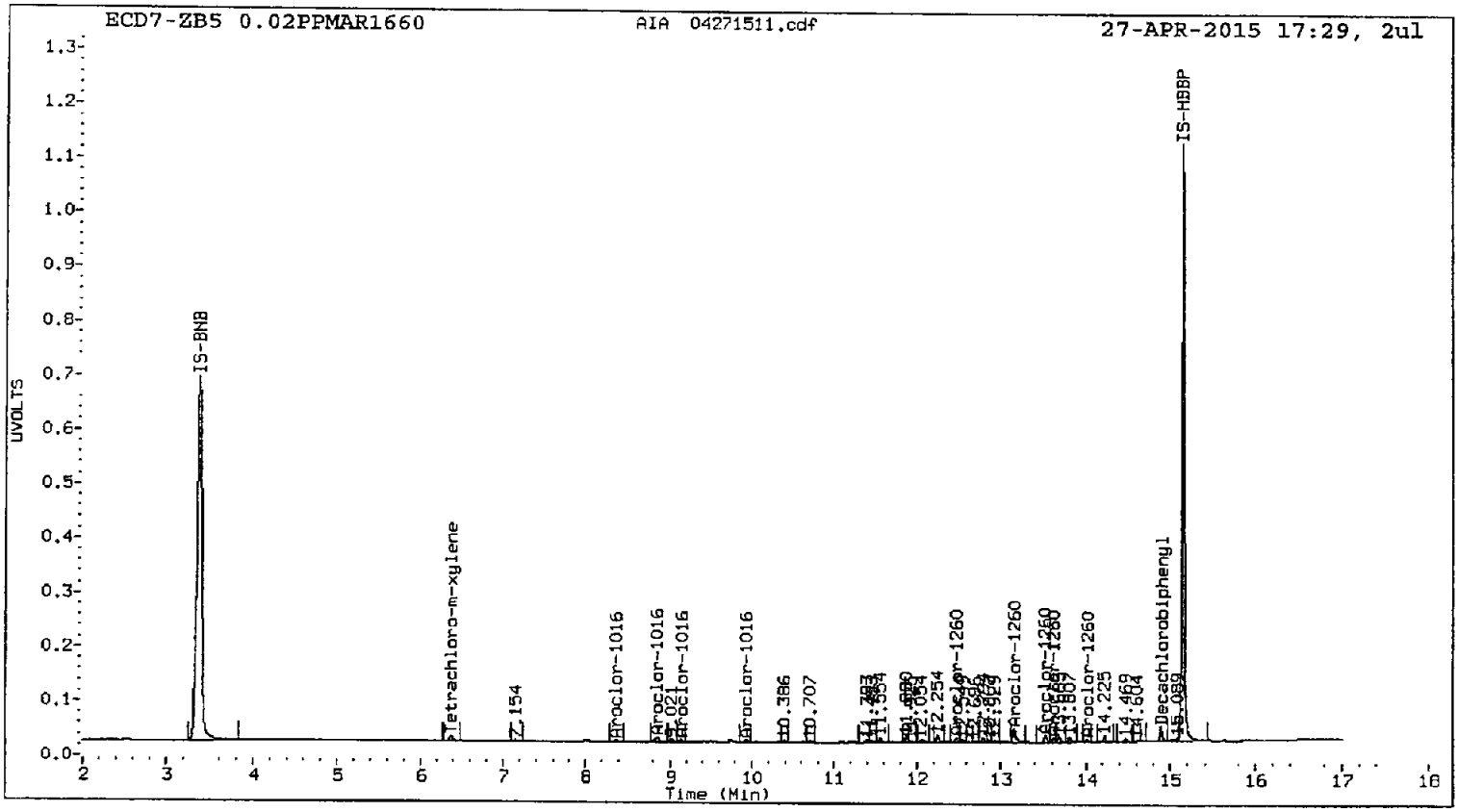
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

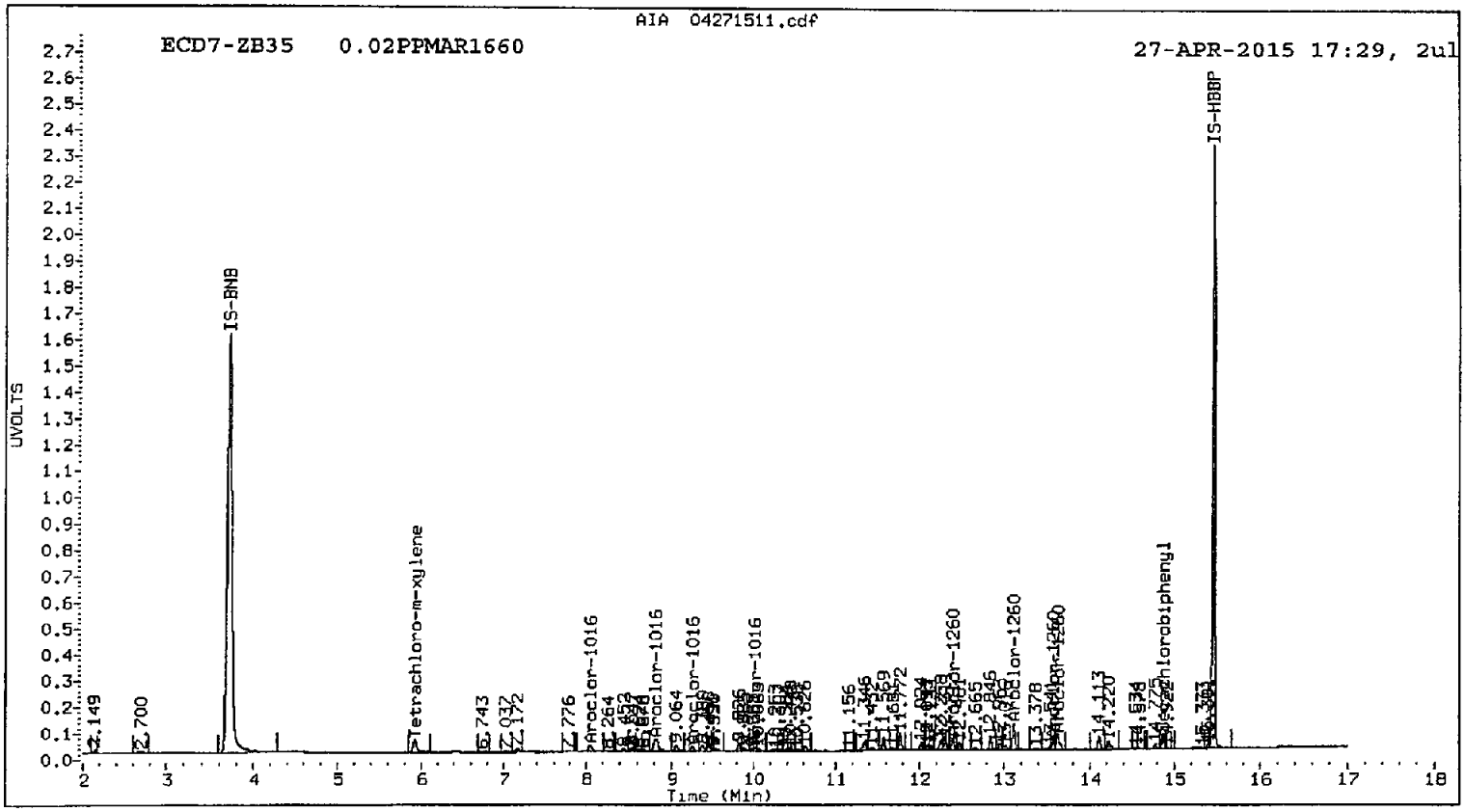
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.370	0.000	18653	21.4	1	8.047	0.000	170141	24.2
Aroclor-1016	2	8.853	0.000	56025	21.2	2	8.822	-0.001	350464	23.9
Aroclor-1016	3	9.148	0.000	17074	18.8	3	9.260	0.000	92627	23.8
Aroclor-1016	4	9.929	0.000	20015	20.3	4	10.021	0.000	65602	23.9
Total Col1Ave (4 peaks):					20.4	Total Col2Ave (4 peaks):			23.9	RPD = 16
Corrected Ave (3 peaks):					20.1	Corrected Ave (3 peaks):			23.8	RPD = 17
CalAmt %D:					2.2	CalAmt %D:			19.6	
Aroclor-1260	1	12.481	0.001	42871	22.4	1	12.403	0.000	193886	23.2
Aroclor-1260	2	13.155	0.000	133564	21.3	2	13.110	0.002	409602	21.3
Aroclor-1260	3	13.523	0.000	55991	19.5	3	13.579	0.001	147081	23.7
Aroclor-1260	4	13.622	0.000	34436	20.1	4	13.630	0.002	291450	22.4
Aroclor-1260	5	14.020	0.001	16852	18.2	NS	---			----
Total Col1Ave (5 peaks):					20.3	Total Col2Ave (4 peaks):			22.6	RPD = 11
Corrected Ave (4 peaks):					19.8	Corrected Ave (3 peaks):			22.3	RPD = 12
CalAmt %D:					1.6	CalAmt %D:			13.2	

Total PCB Area Col1 (6.472 - 14.797) = 962296 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 5328740 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 0.02PPMAR1660
AIA 04271511.cdf
27-APR-2015 17:29, 2ul
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
UVOLTS
Time (Min)


AIA 04271511.cdf
ECD7-ZB35 0.02PPMAR1660
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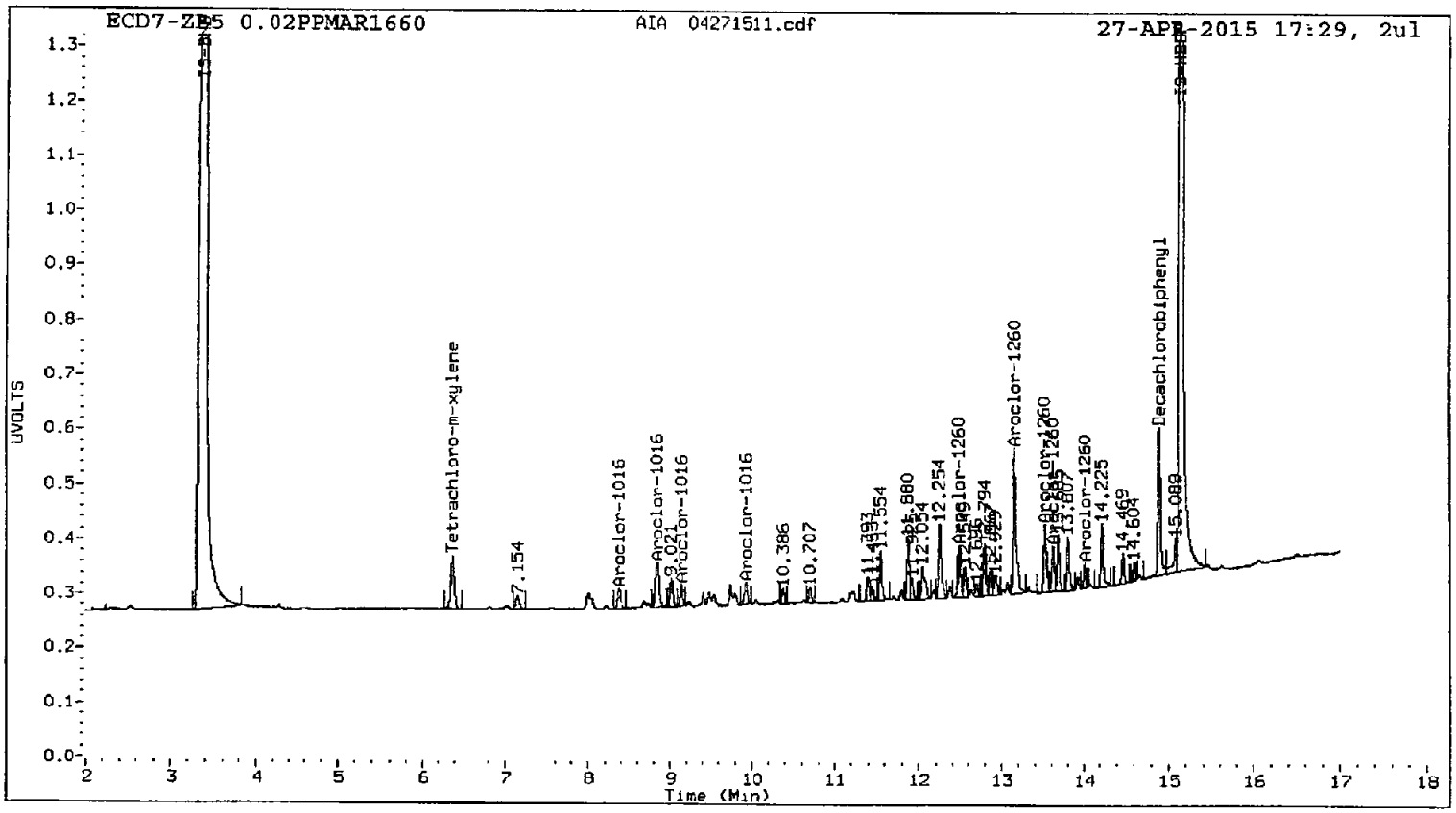
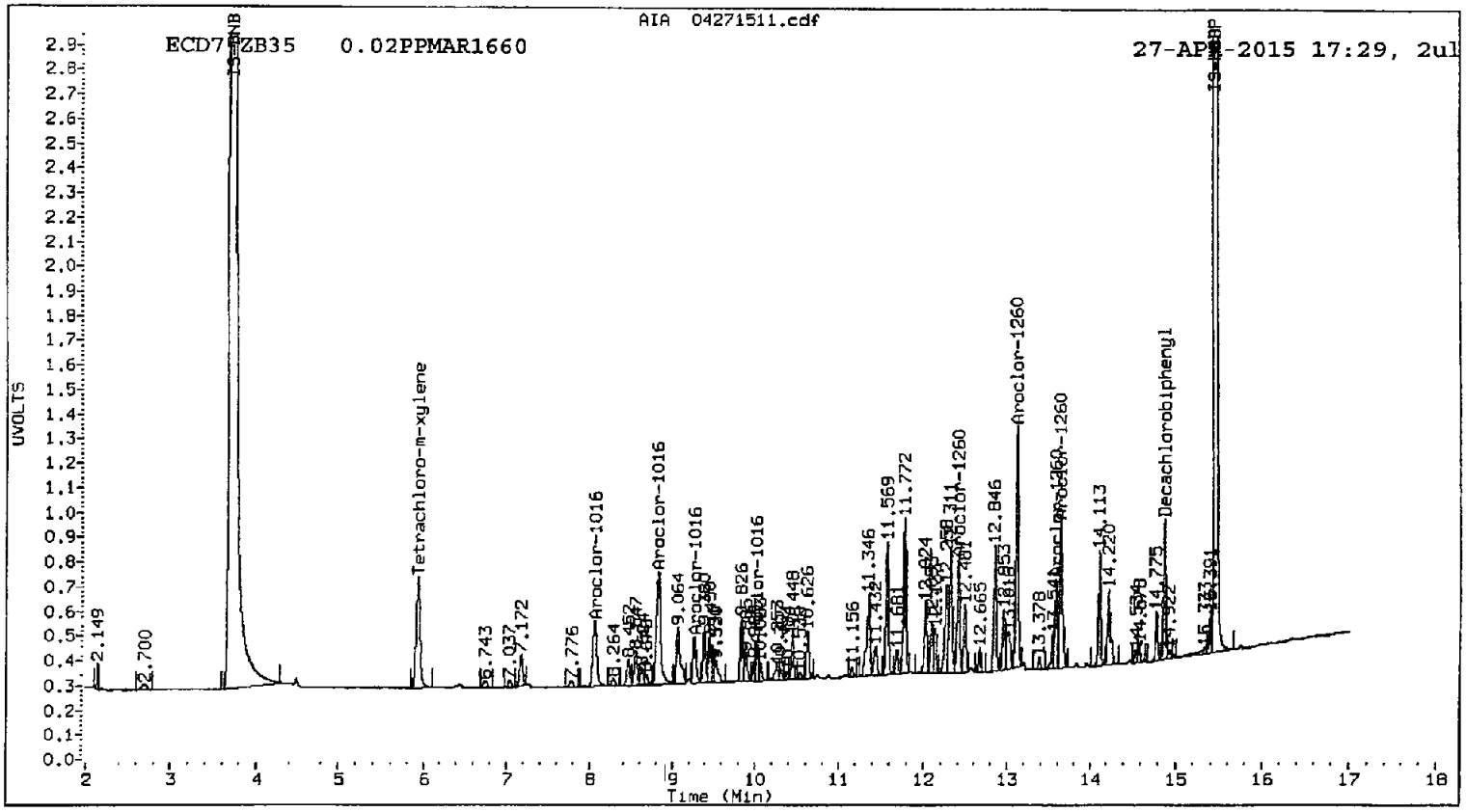
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
UVOLTS
Time (Min)


ECD7-ZB5 0.02PPMAR1660
AIA 04271511.cdf
27-APR-2015 17:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl


AIA 04271511.cdf
ECD7-ZB35 0.02PPMAR1660
27-APR-2015 17:29, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271512.d
Data file 2: 20150427.b/ical-2.b/04271512.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.05PPMAR1660
Client ID:
Injection Date: 27-APR-2015 17:51
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.375	0.003	141314	5.932	0.002	682562	3.8	4.0	3.9	Tetrachloro-m-xylene
14.896	0.000	251070	14.868	0.002	450422	3.9	4.1	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	9.6	9.9
Decachlorobiphenyl	9.7	10.4

A 4/23/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5308836	2.2
Hexabromobiphenyl	3879663	4280352	10.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12661301	2.9
Hexabromobiphenyl	7233601	7749625	7.1

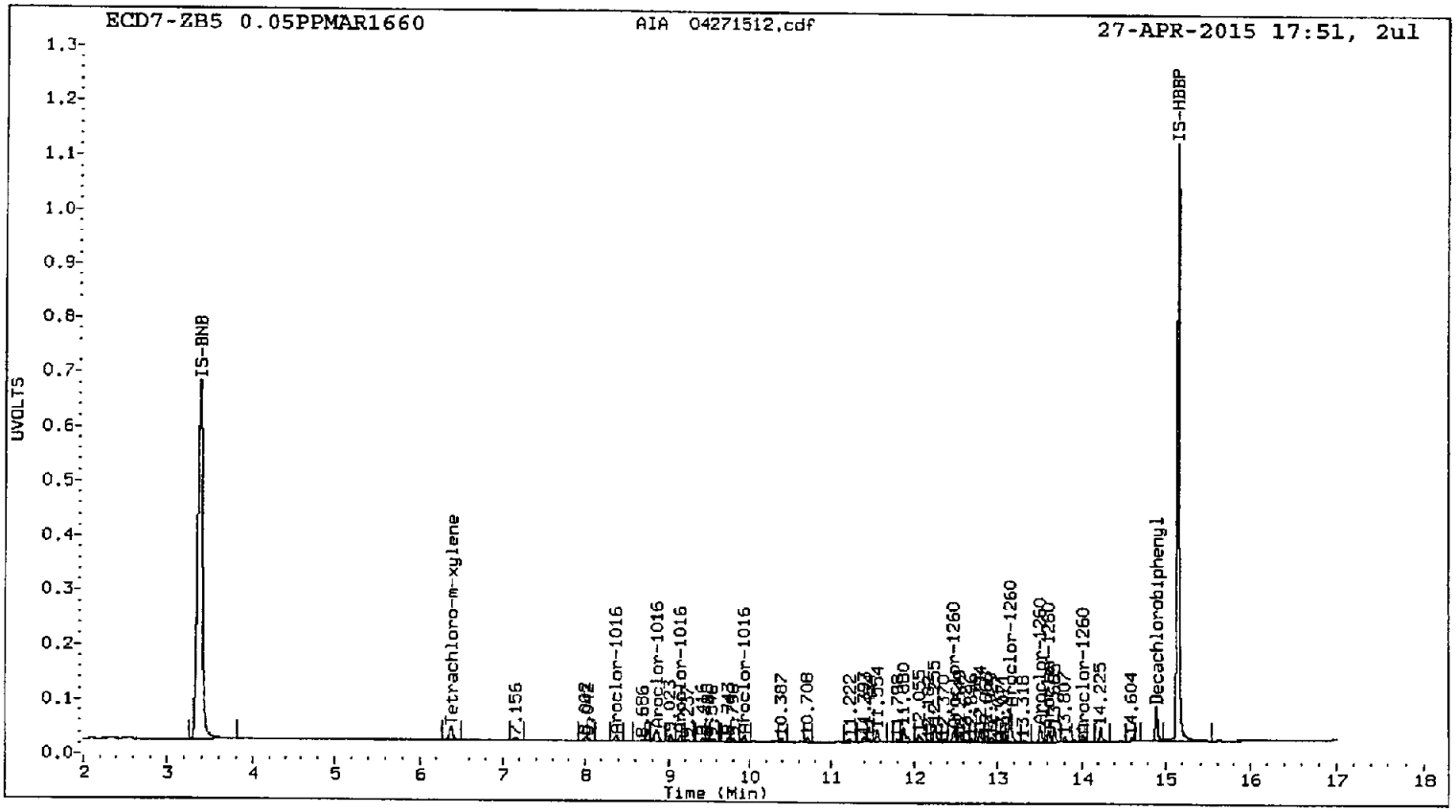
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.372	0.002	45698	51.6	1	8.049	0.002	388069	53.9
Aroclor-1016	2	8.855	0.002	137231	51.1	2	8.824	0.000	787373	52.3
Aroclor-1016	3	9.150	0.002	47213	51.2	3	9.262	0.002	212042	53.1
Aroclor-1016	4	9.930	0.001	52143	52.0	4	10.022	0.001	149123	52.9
Total Col1Ave (4 peaks):					51.5	Total Col2Ave (4 peaks):				53.1 RPD = 3
Corrected Ave (3 peaks):					51.3	Corrected Ave (3 peaks):				52.8 RPD = 3
CalAmt %D:					2.9	CalAmt %D:				6.1
Aroclor-1260	1	12.481	0.001	98821	51.6	1	12.403	0.000	438452	53.8
Aroclor-1260	2	13.155	0.000	303418	48.5	2	13.109	0.002	976632	52.0
Aroclor-1260	3	13.524	0.001	139178	48.7	3	13.578	0.001	325939	53.7
Aroclor-1260	4	13.622	0.000	84585	49.5	4	13.630	0.002	667474	52.4
Aroclor-1260	5	14.020	0.000	42462	46.0	NS	---			----
Total Col1Ave (5 peaks):					48.9	Total Col2Ave (4 peaks):				53.0 RPD = 8
Corrected Ave (4 peaks):					48.2	Corrected Ave (3 peaks):				52.7 RPD = 9
CalAmt %D:					-2.3	CalAmt %D:				5.9

Total PCB Area Col1 (6.472 - 14.797) = 2569804 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 12131112 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical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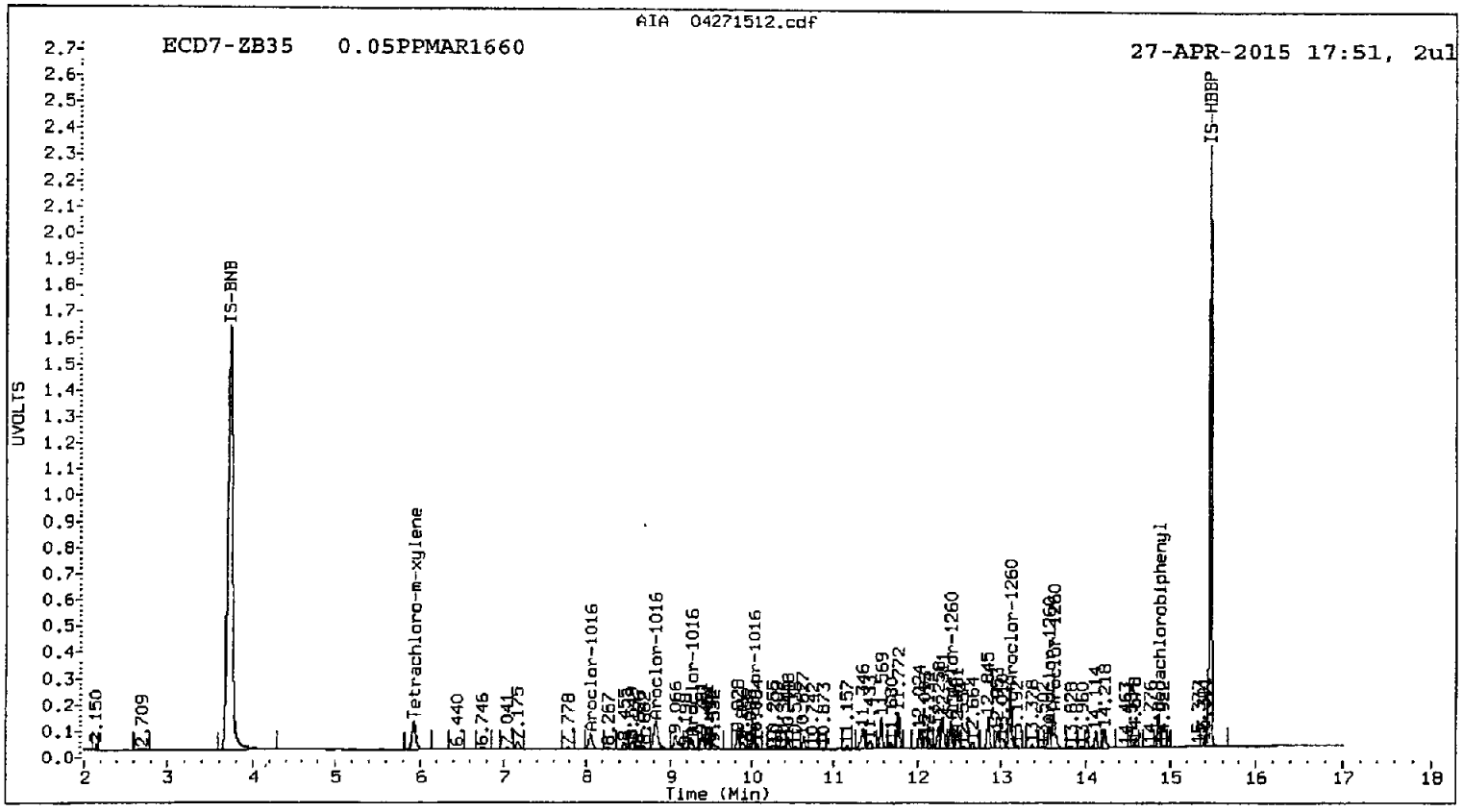
27-APR-2015 17:51, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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27-APR-2015 17:51, 2ul
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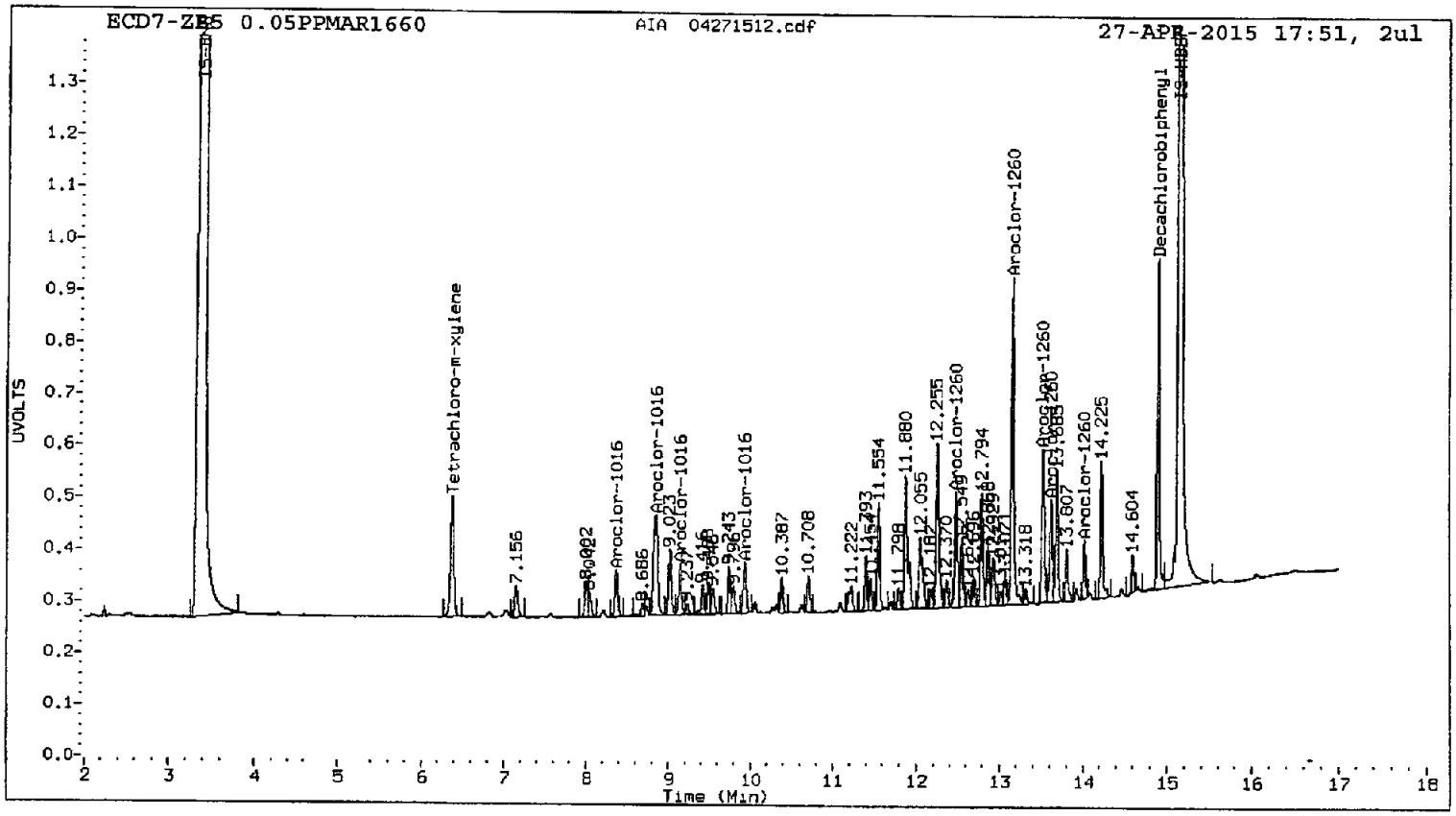
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
IS-HBBP
UVOLTS
Time (Min)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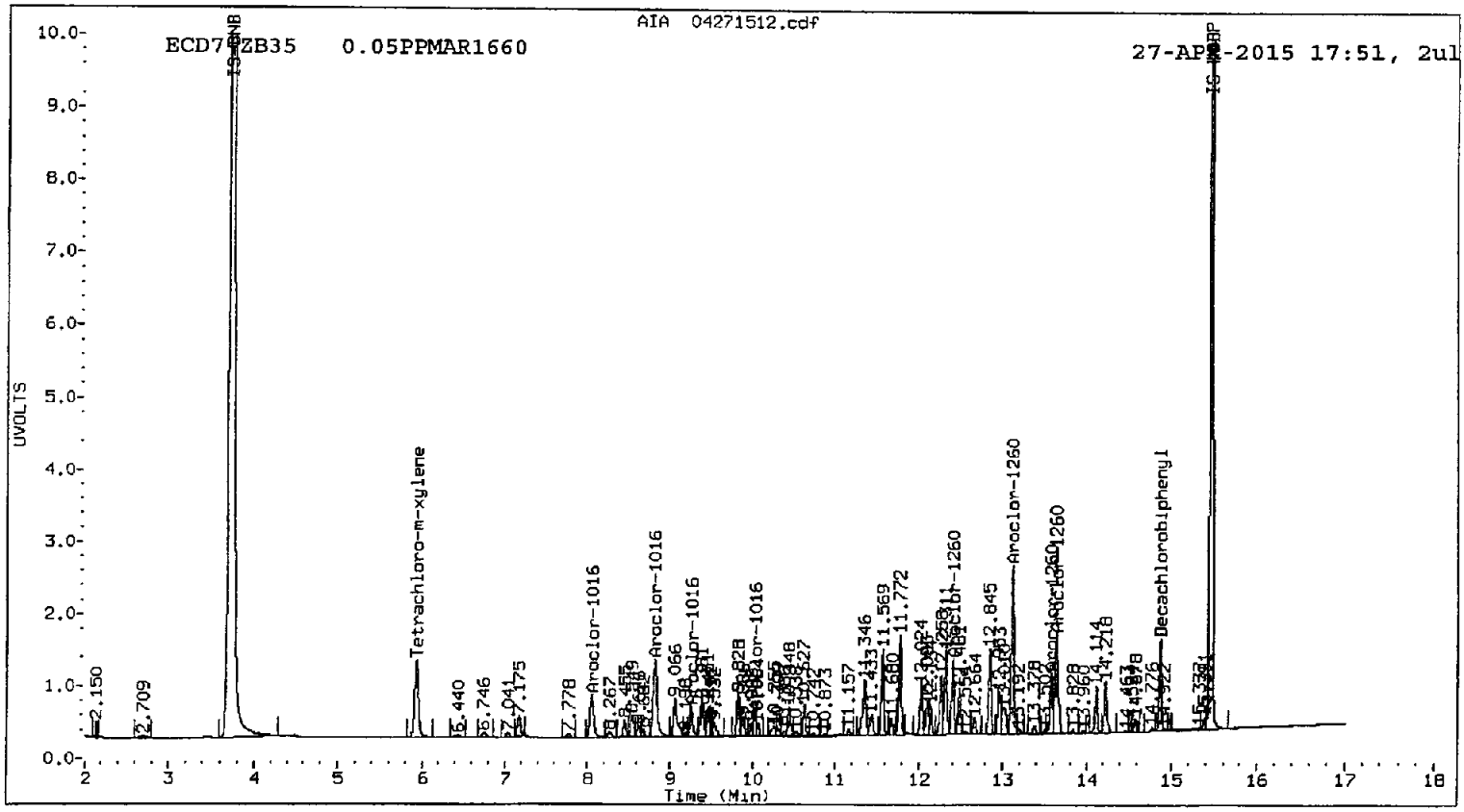
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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ECD7-ZB35 0.05PPMAR1660
27-APR-2015 17:51, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271513.d
Data file 2: 20150427.b/ical-2.b/04271513.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 1PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:12
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.374	0.001	2827092	5.932	0.002	12107698	81.1	74.5	8.4	Tetrachloro-m-xylene
14.897	0.000	4705250	14.868	0.002	7328492	77.7	70.6	9.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	202.8	186.3
Decachlorobiphenyl	194.3	176.5

4/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5007410	-3.6
Hexabromobiphenyl	3879663	3992327	2.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	11982299	-2.6
Hexabromobiphenyl	7233601	7408818	2.4

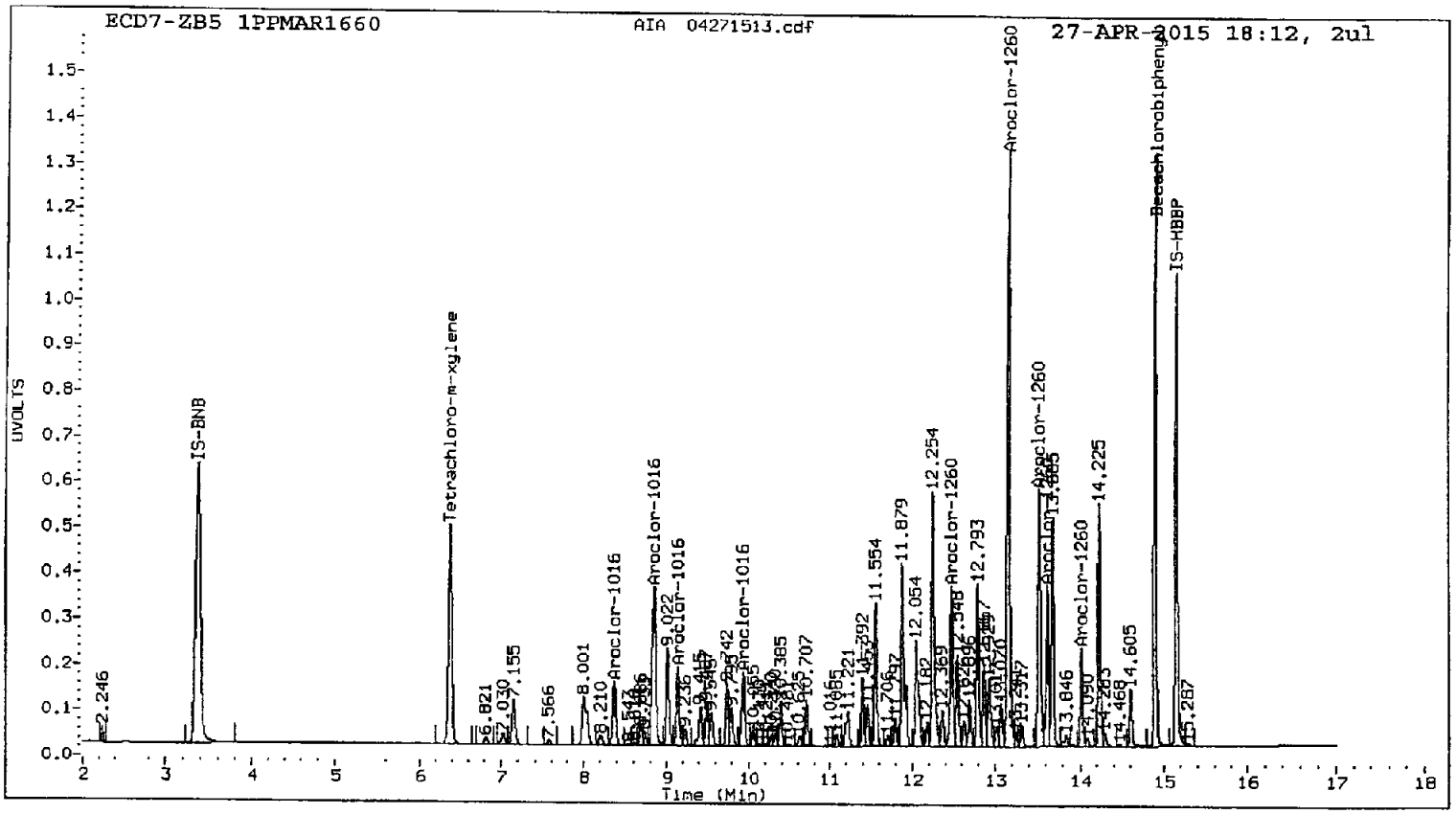
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.371	0.001	735912	881.5	1	8.049	0.002	5476771	803.7
Aroclor-1016	2	8.853	0.000	2350515	927.0	2	8.823	-0.001	12062193	847.2
Aroclor-1016	3	9.149	0.001	830801	954.4	3	9.260	0.000	3147313	832.2
Aroclor-1016	4	9.930	0.000	869548	919.6	4	10.021	0.001	2228009	835.7
Total Col1Ave (4 peaks):					920.6	Total Col2Ave (4 peaks):				829.7 RPD = 10
Corrected Ave (3 peaks):					909.4	Corrected Ave (3 peaks):				823.9 RPD = 10
CalAmt %D:					-7.9	CalAmt %D:				-17.0
Aroclor-1260	1	12.480	0.000	1531628	858.2	1	12.402	0.000	6453289	828.2
Aroclor-1260	2	13.154	0.000	5647146	968.7	2	13.107	0.000	16173567	900.1
Aroclor-1260	3	13.523	0.000	2605977	976.8	3	13.578	0.001	4781067	824.6
Aroclor-1260	4	13.622	0.000	1478537	927.4	4	13.629	0.001	10567228	867.6
Aroclor-1260	5	14.019	0.000	854414	992.7	NS	---			----
Total Col1Ave (5 peaks):					944.8	Total Col2Ave (4 peaks):				855.1 RPD = 10
Corrected Ave (4 peaks):					932.8	Corrected Ave (3 peaks):				840.1 RPD = 10
CalAmt %D:					-5.5	CalAmt %D:				-14.5

Total PCB Area Col1 (6.472 - 14.797) = 44631808 Col1 Total PCB = 1.9 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 178830029 Col2 Total PCB = 1.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical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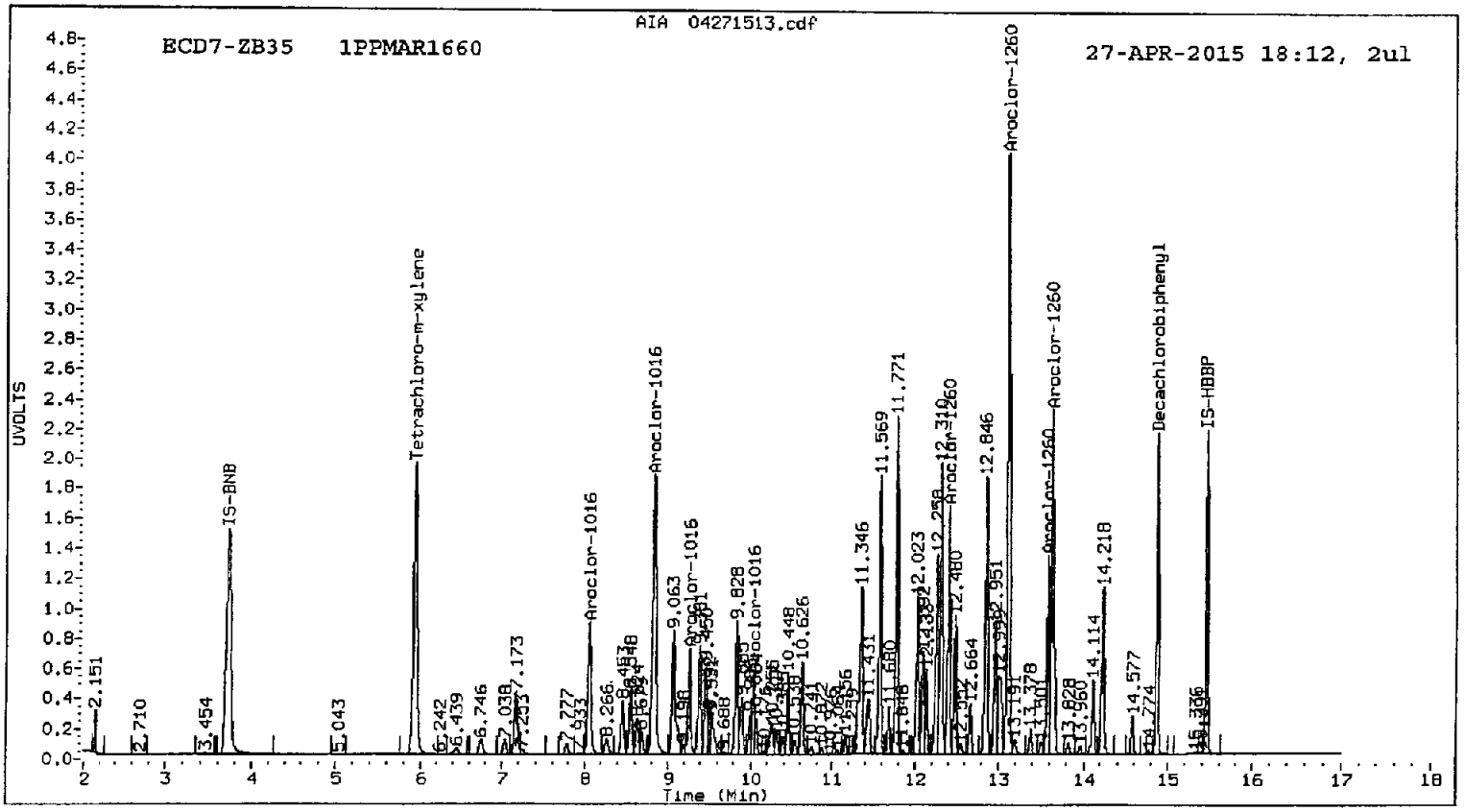
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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UVOLTS
Time (Min)
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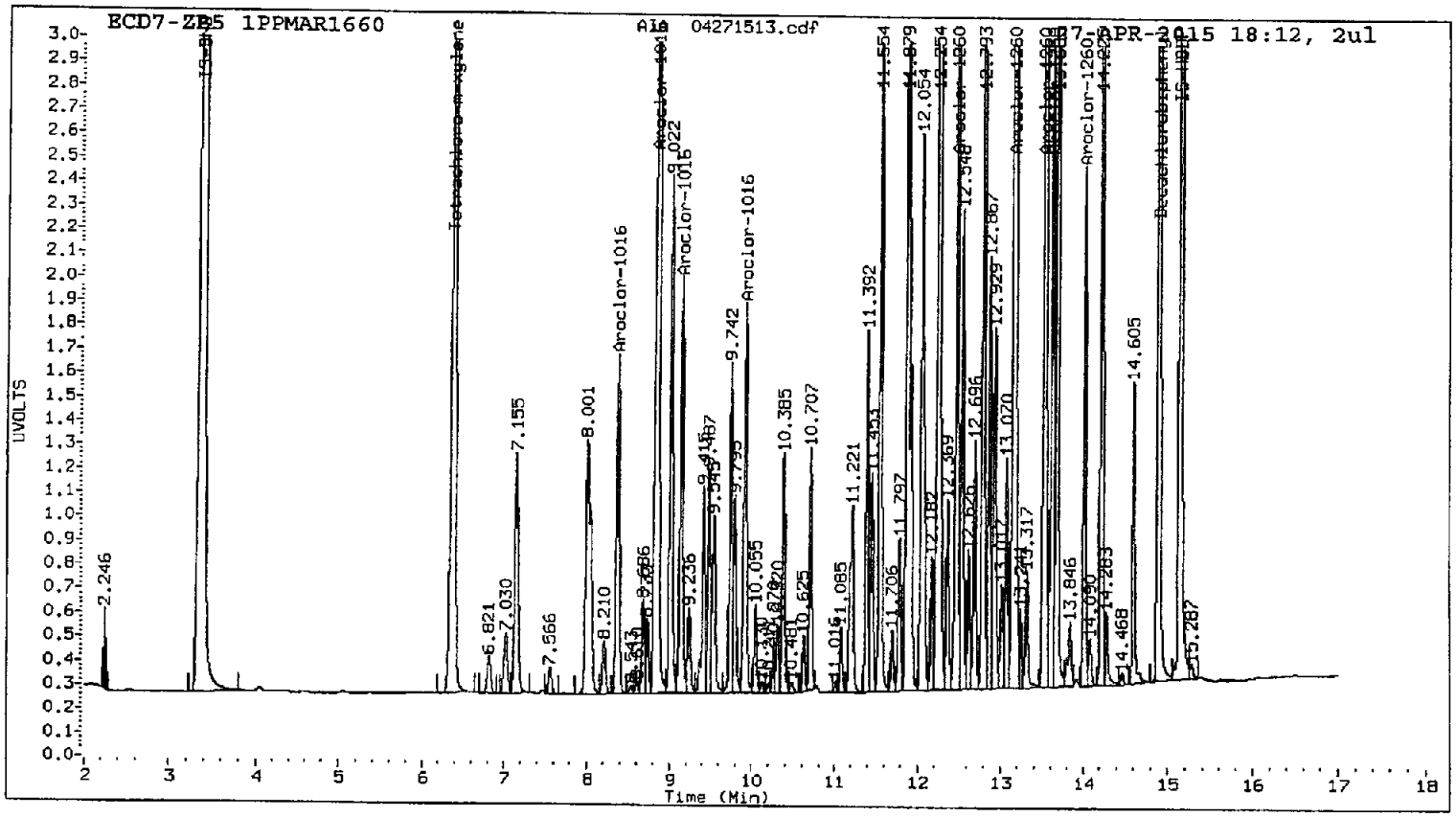
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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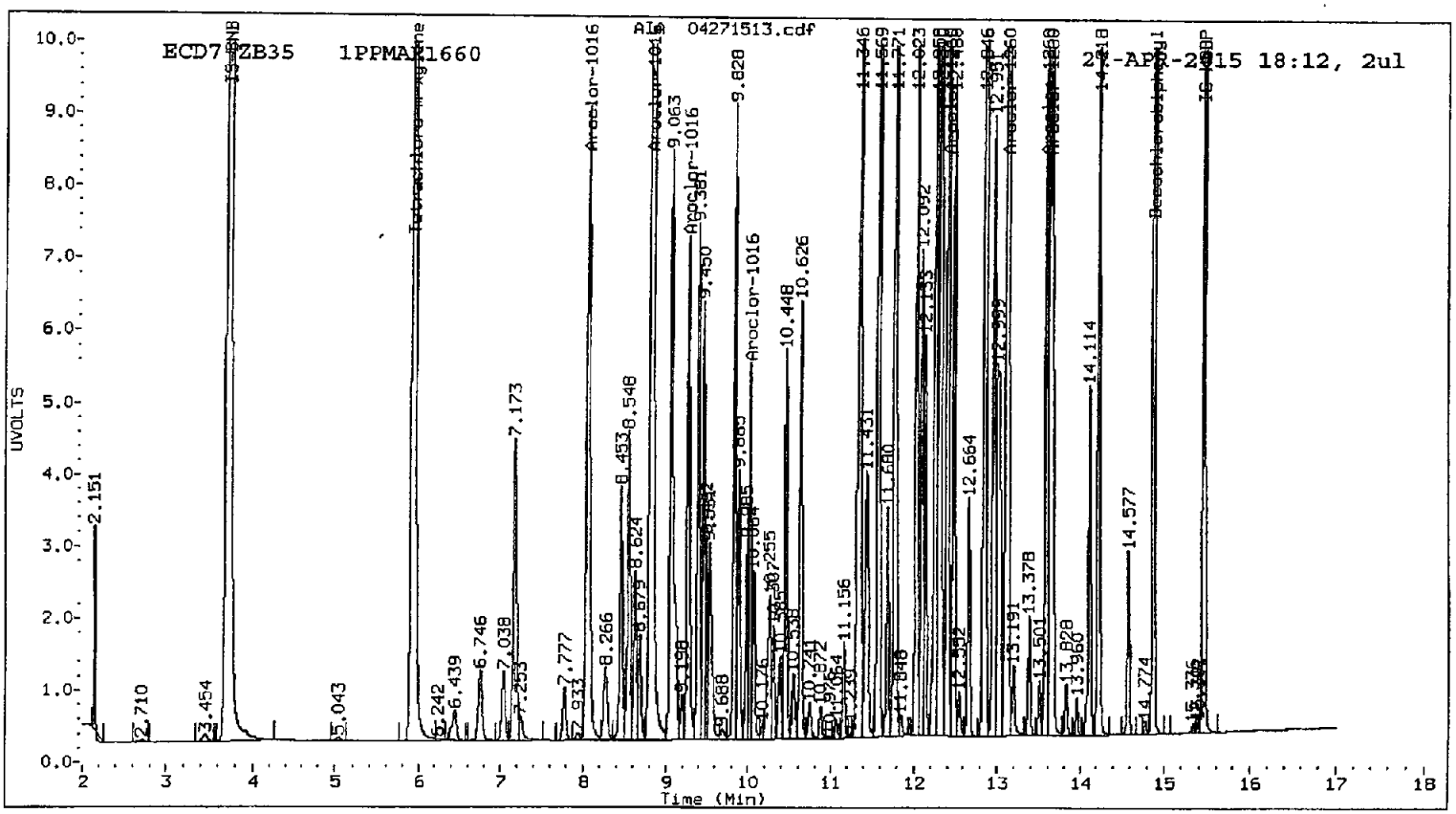
Als 04271513.cdf
27-APR-2015 18:12, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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Als 04271513.cdf
27-APR-2015 18:12, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271514.d
Data file 2: 20150427.b/ical-2.b/04271514.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.1PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:34
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.373	0.001	285896	5.932	0.002	1343154	8.4	8.5	1.0	Tetrachloro-m-xylene
14.896	0.000	493872	14.868	0.002	873326	8.4	8.6	2.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	21.0	21.2
Decachlorobiphenyl	21.0	21.6

JL 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	4885318	-6.0
Hexabromobiphenyl	3879663	3880445	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	11669466	-5.2
Hexabromobiphenyl	7233601	7229444	-0.1

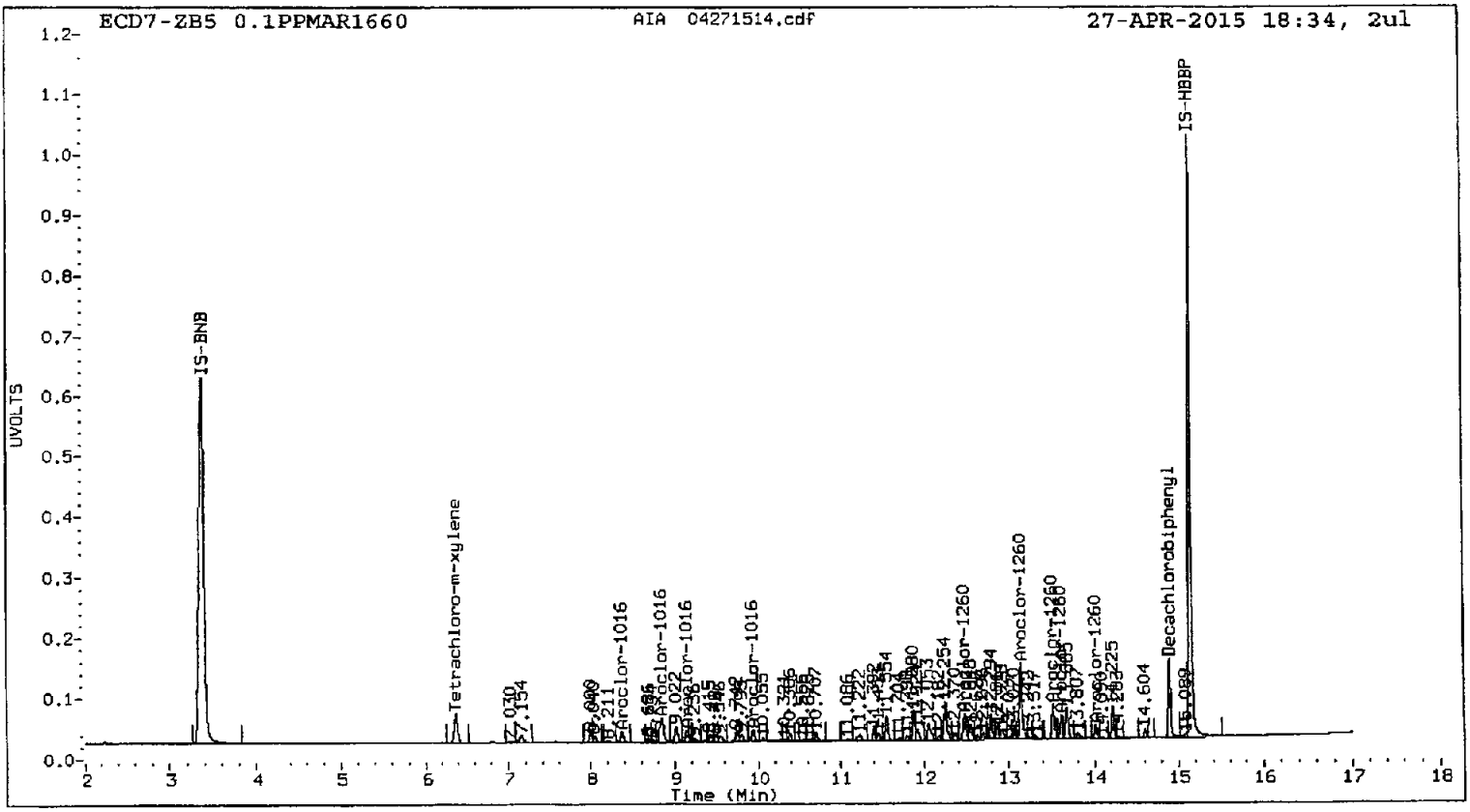
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.371	0.001	90406	111.0	1	8.049	0.002	727379	109.6
Aroclor-1016	2	8.853	0.001	267509	108.1	2	8.825	0.001	1490877	107.5
Aroclor-1016	3	9.149	0.002	93998	110.7	3	9.262	0.002	398245	108.1
Aroclor-1016	4	9.929	0.000	101382	109.9	4	10.022	0.001	281977	108.6
Total Col1Ave (4 peaks):					109.9	Total Col2Ave (4 peaks):				108.5 RPD = 1
Corrected Ave (3 peaks):					109.6	Corrected Ave (3 peaks):				108.1 RPD = 1
CalAmt %D:					9.9	CalAmt %D:				8.5
Aroclor-1260	1	12.481	0.000	188223	108.5	1	12.403	0.000	826494	108.7
Aroclor-1260	2	13.155	0.000	577992	102.0	2	13.109	0.002	1885337	107.5
Aroclor-1260	3	13.523	0.000	275543	106.3	3	13.579	0.001	605036	106.9
Aroclor-1260	4	13.622	0.000	167905	108.4	4	13.630	0.002	1293953	108.9
Aroclor-1260	5	14.020	0.000	92396	110.4	NS	---			----
Total Col1Ave (5 peaks):					107.1	Total Col2Ave (4 peaks):				108.0 RPD = 1
Corrected Ave (4 peaks):					106.3	Corrected Ave (3 peaks):				107.7 RPD = 1
CalAmt %D:					7.1	CalAmt %D:				8.0

Total PCB Area Col1 (6.472 - 14.797) = 5151080 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 22982872 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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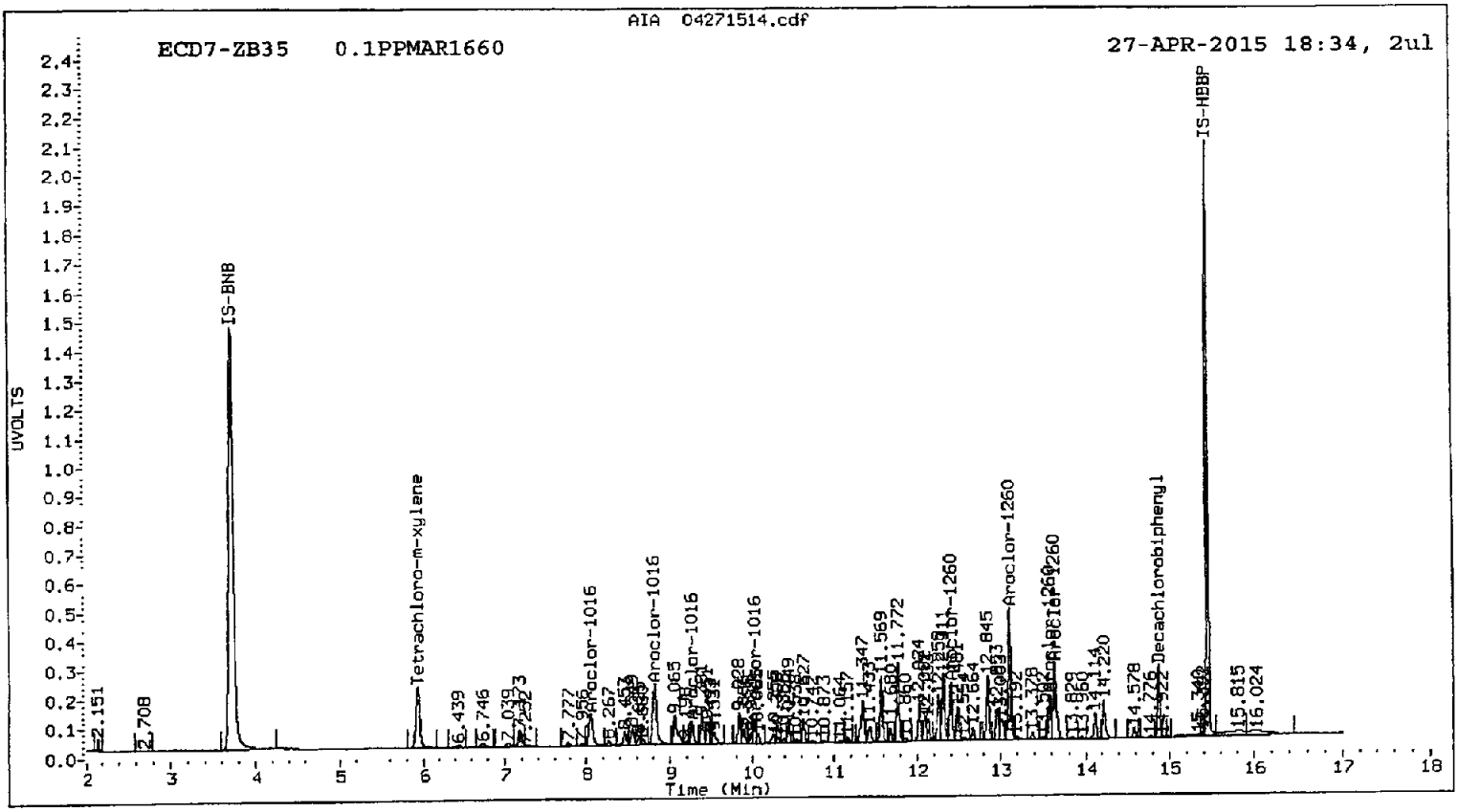
27-APR-2015 18:34, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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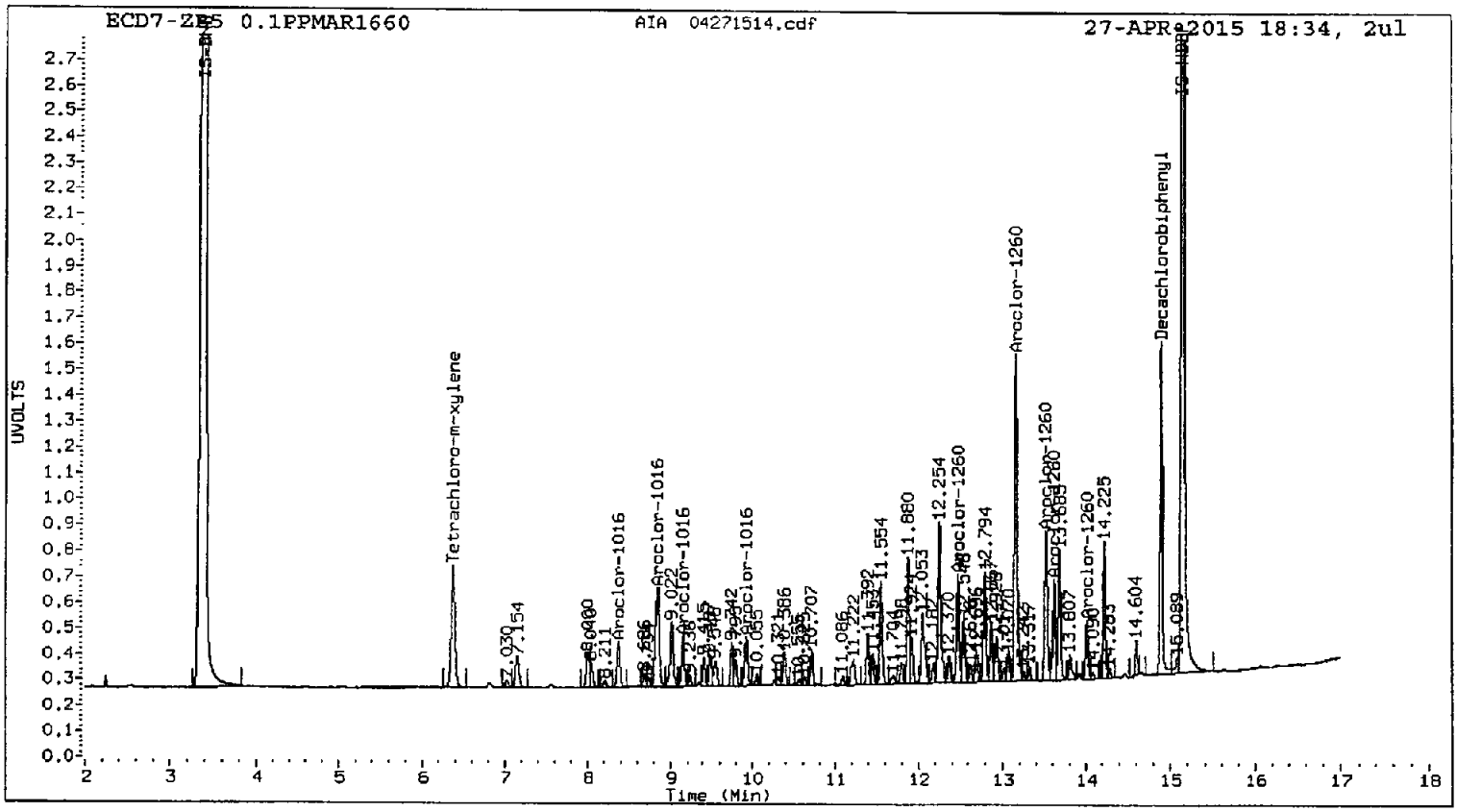
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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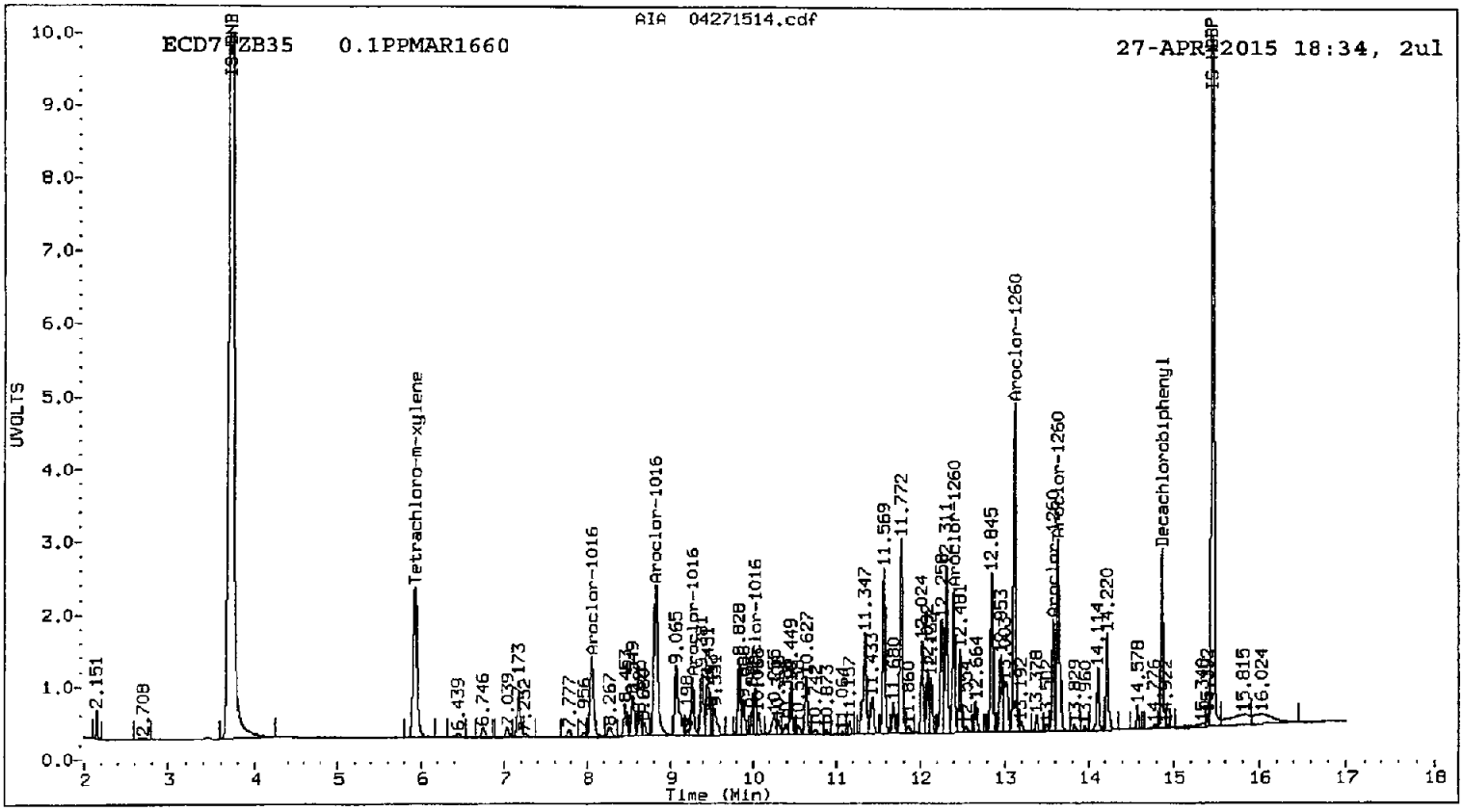
AIA 04271514.cdf
27-APR-2015 18:34, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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27-APR-2015 18:34, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271515.d
Data file 2: 20150427.b/ical-2.b/04271515.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 0.5PPMAR1660
Client ID:
Injection Date: 27-APR-2015 18:55
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1411333	5.931	0.001	6308520	40.0	38.4	4.0	Tetrachloro-m-xylene
14.897	0.000	2360029	14.867	0.000	3892470	39.0	37.0	5.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.0	96.1
Decachlorobiphenyl	97.4	92.4

A 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5067653	-2.5
Hexabromobiphenyl	3879663	3993020	2.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12109167	-1.6
Hexabromobiphenyl	7233601	7515798	3.9

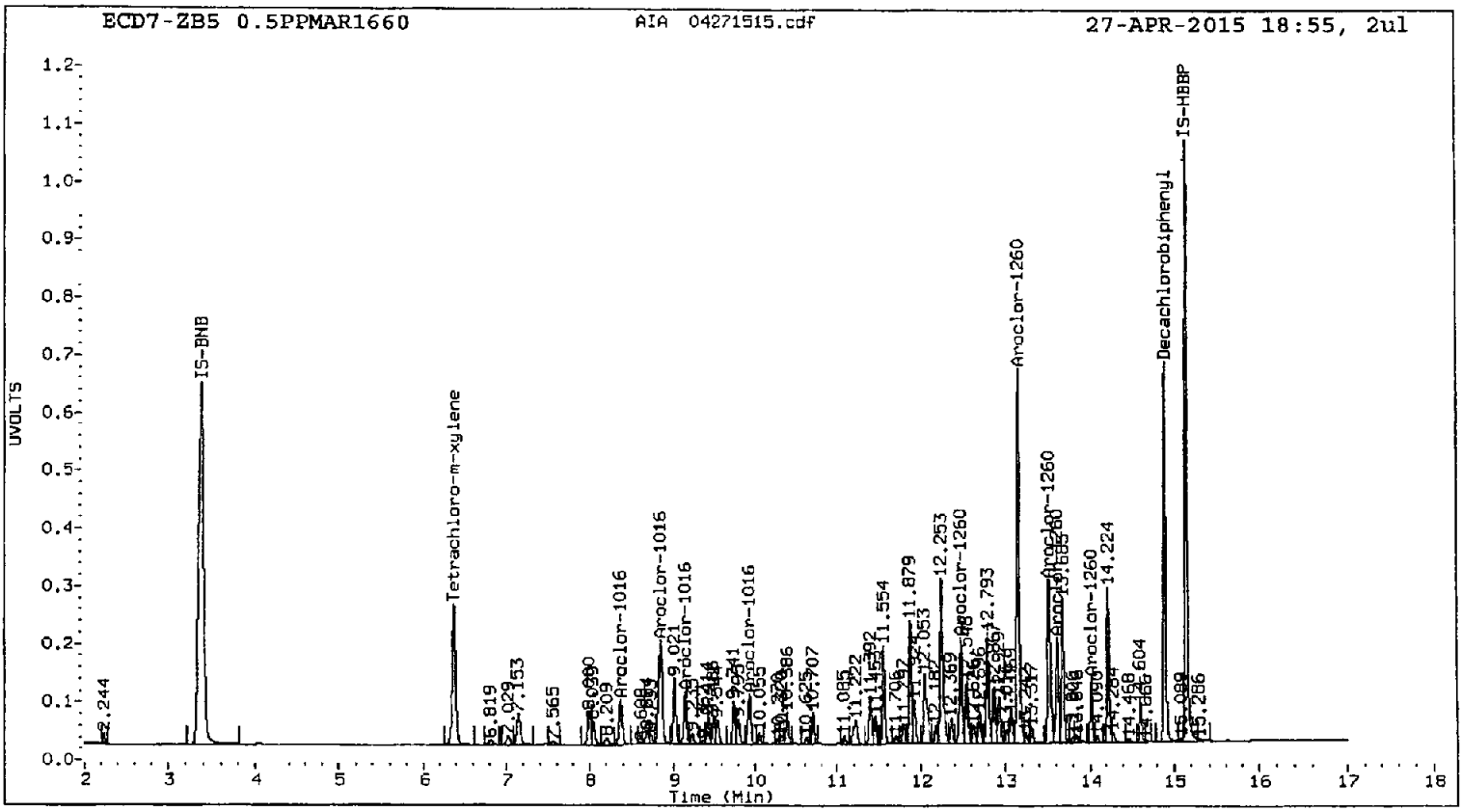
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.370	0.000	394310	466.7	1	8.047	0.000	3009229	437.0
Aroclor-1016	2	8.853	0.000	1213732	473.0	2	8.823	0.000	6457653	448.8
Aroclor-1016	3	9.148	0.000	431816	490.1	3	9.260	0.000	1707713	446.8
Aroclor-1016	4	9.929	0.000	453873	474.3	4	10.021	0.000	1197689	444.5
Total Col1Ave (4 peaks):				476.0		Total Col2Ave (4 peaks):			444.3	RPD = 7
Corrected Ave (3 peaks):				471.3		Corrected Ave (3 peaks):			442.8	RPD = 6
CalAmt %D:				-4.8		CalAmt %D:			-11.1	
Aroclor-1260	1	12.480	0.000	812618	455.3	1	12.403	0.000	3489945	441.5
Aroclor-1260	2	13.155	0.000	2847542	488.4	2	13.108	0.000	8518379	467.3
Aroclor-1260	3	13.523	0.000	1314826	492.8	3	13.577	0.000	2661403	452.5
Aroclor-1260	4	13.622	0.000	771104	483.6	4	13.628	0.000	5639426	456.4
Aroclor-1260	5	14.019	0.000	436271	506.8	NS	---			----
Total Col1Ave (5 peaks):				485.4		Total Col2Ave (4 peaks):			454.4	RPD = 7
Corrected Ave (4 peaks):				480.0		Corrected Ave (3 peaks):			450.1	RPD = 6
CalAmt %D:				-2.9		CalAmt %D:			-9.1	

Total PCB Area Col1 (6.472 - 14.797) = 23295047 Col1 Total PCB = 1.0 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 97106239 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical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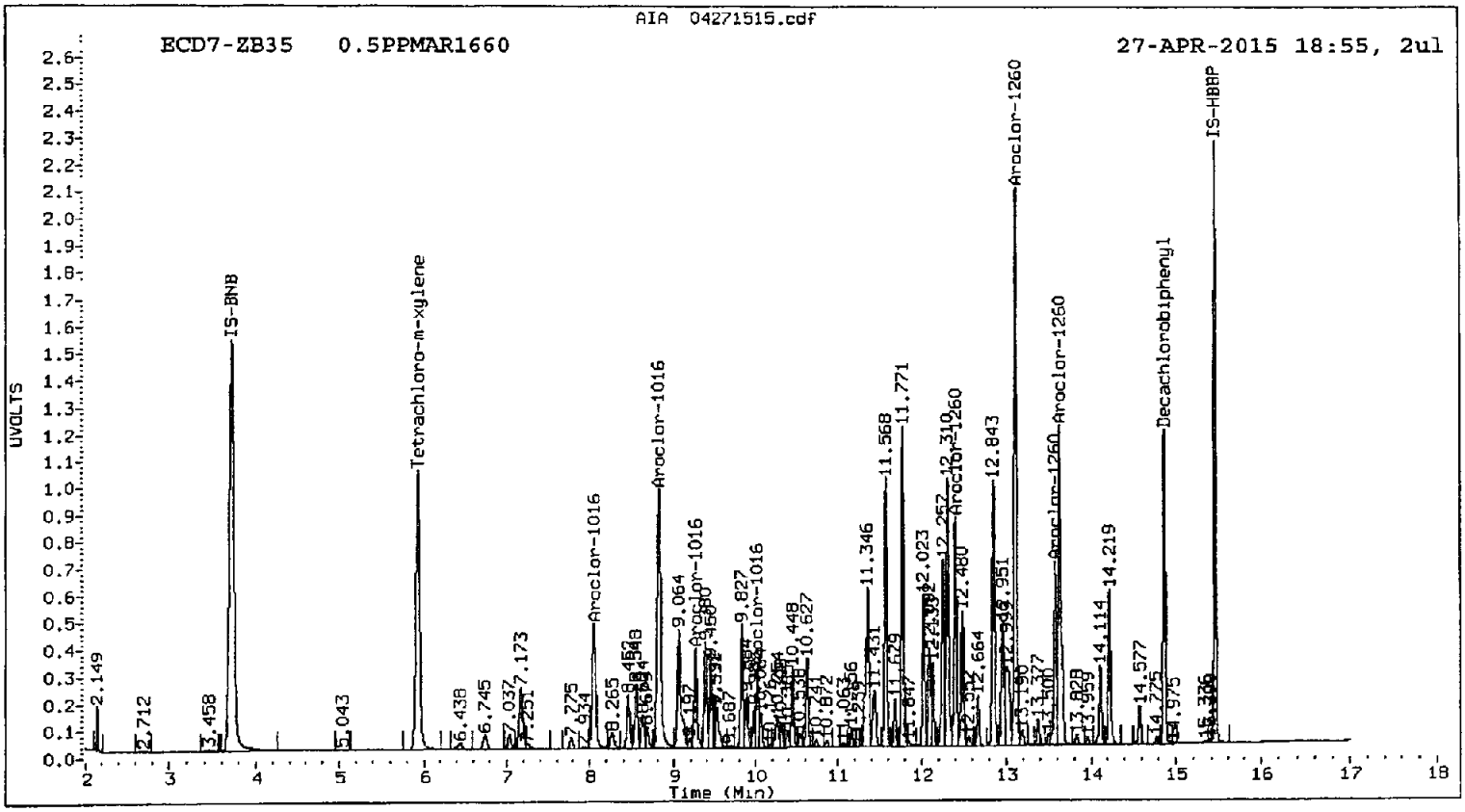
27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
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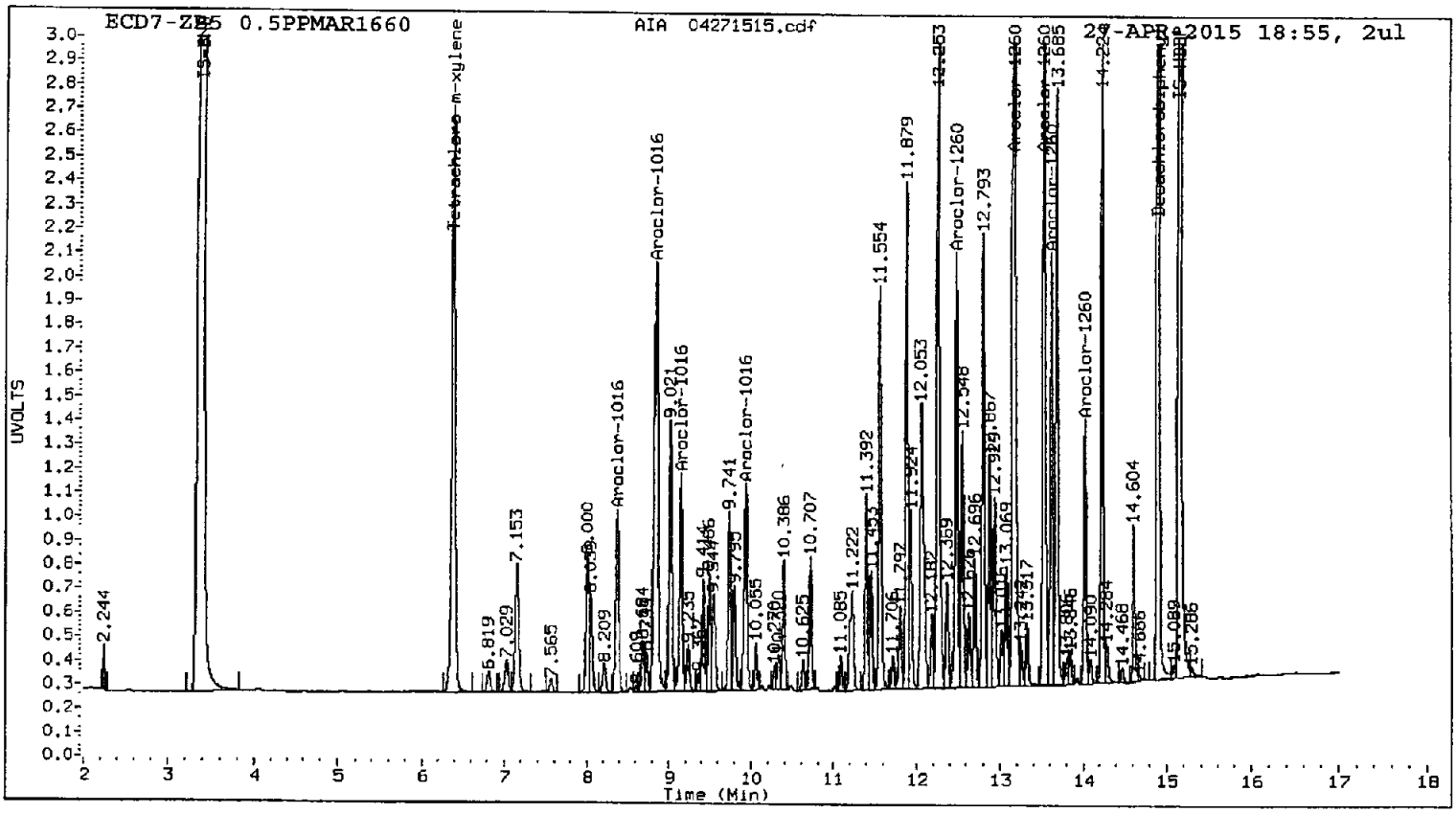
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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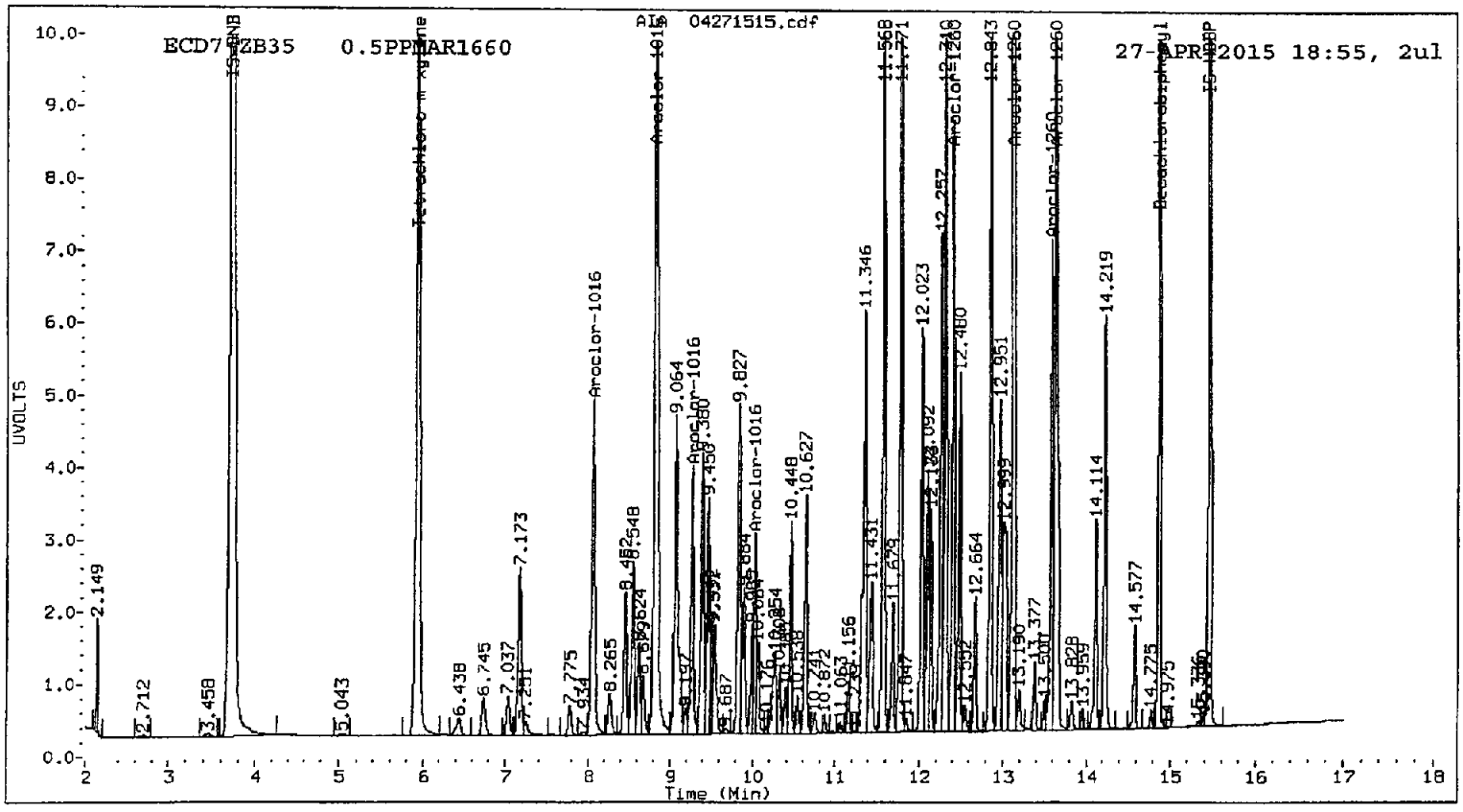
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl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AIA 04271515.cdf
27-APR-2015 18:55, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271516.d
Data file 2: 20150427.b/ical-2.b/04271516.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 27-APR-2015 19:17
Report Date: 04/28/2015 10:23
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.371	-0.001	1339821	5.929	-0.001	6093731	37.6	36.6	2.7	Tetrachloro-m-xylene
14.896	0.000	2423893	14.867	0.001	4026203	37.6	36.7	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.1	91.5
Decachlorobiphenyl	94.0	91.8

M 04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5115818	-1.5
Hexabromobiphenyl	3879663	4250356	9.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12274107	-0.2
Hexabromobiphenyl	7233601	7823510	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1242	1	8.851	0.000	482876	250.0	1	8.047	0.000	1269737	250.0
Aroclor-1242	2	9.148	0.000	174468	250.0	2	8.823	0.000	2648853	250.0
Aroclor-1242	3	10.319	0.000	163352	250.0	3	10.384	0.000	932201	250.0
Aroclor-1242	4	10.622	0.000	246972	250.0	4	10.742	0.000	1132566	250.0

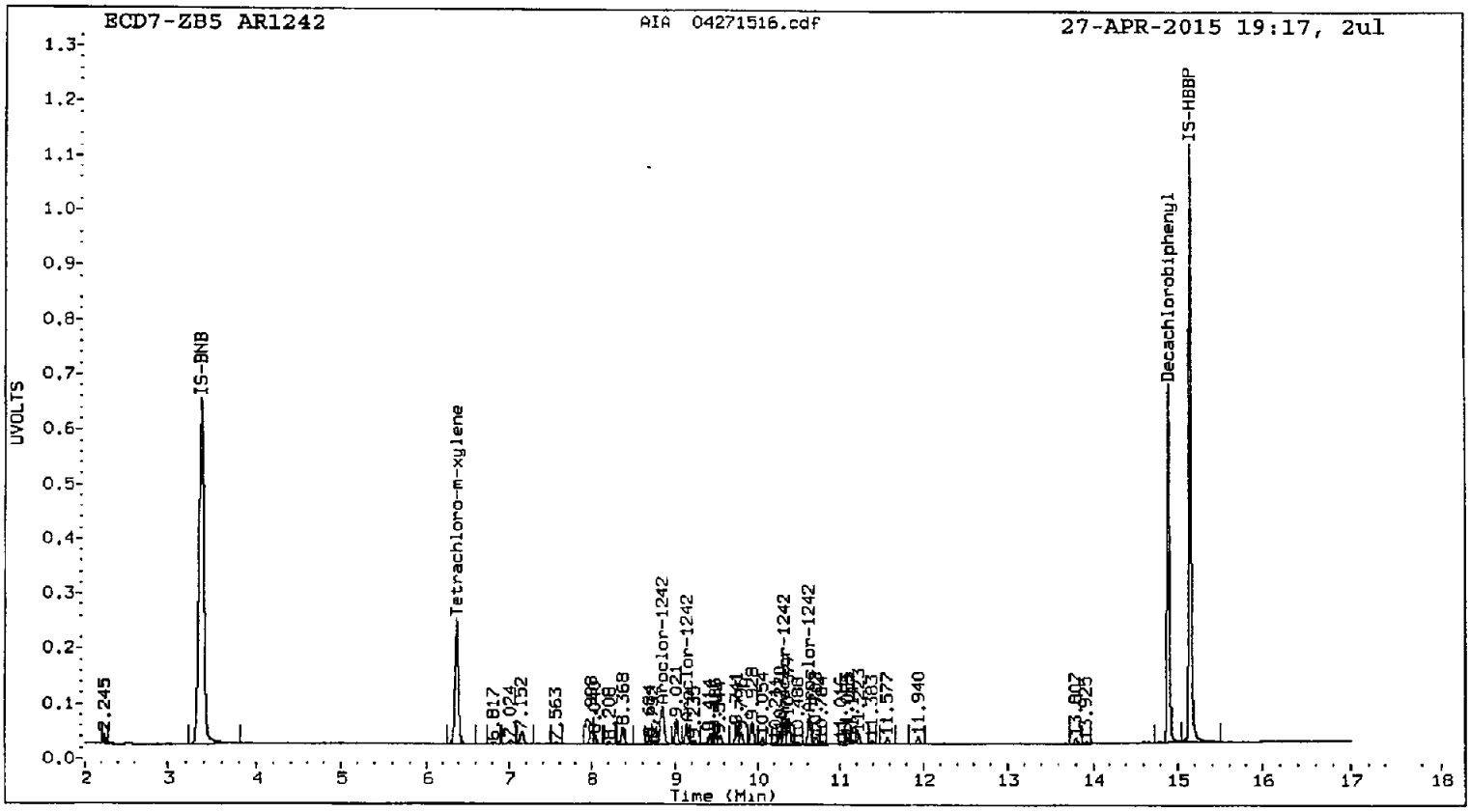
Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 3622286 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 19827909 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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27-APR-2015 19:17, 2ul
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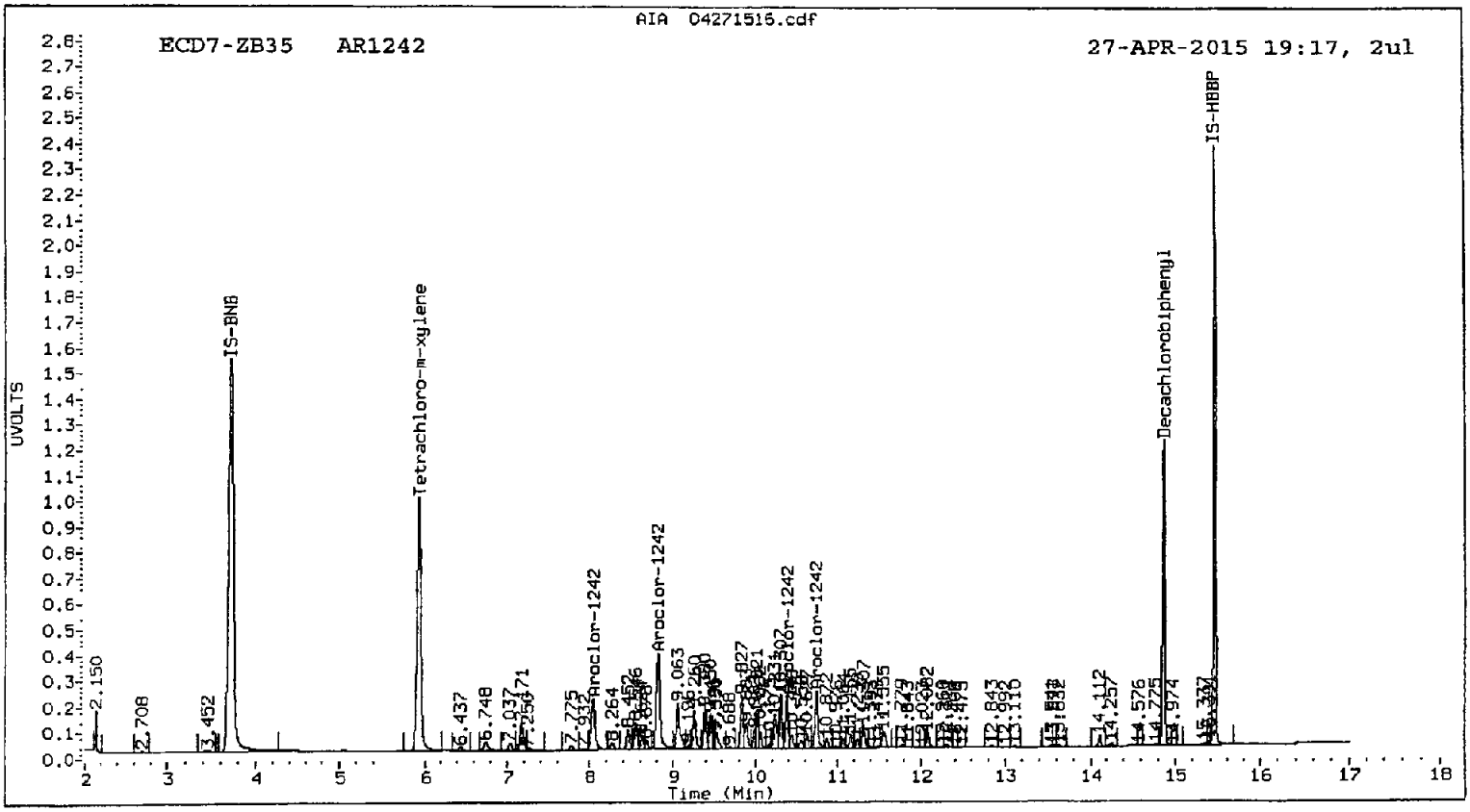
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1242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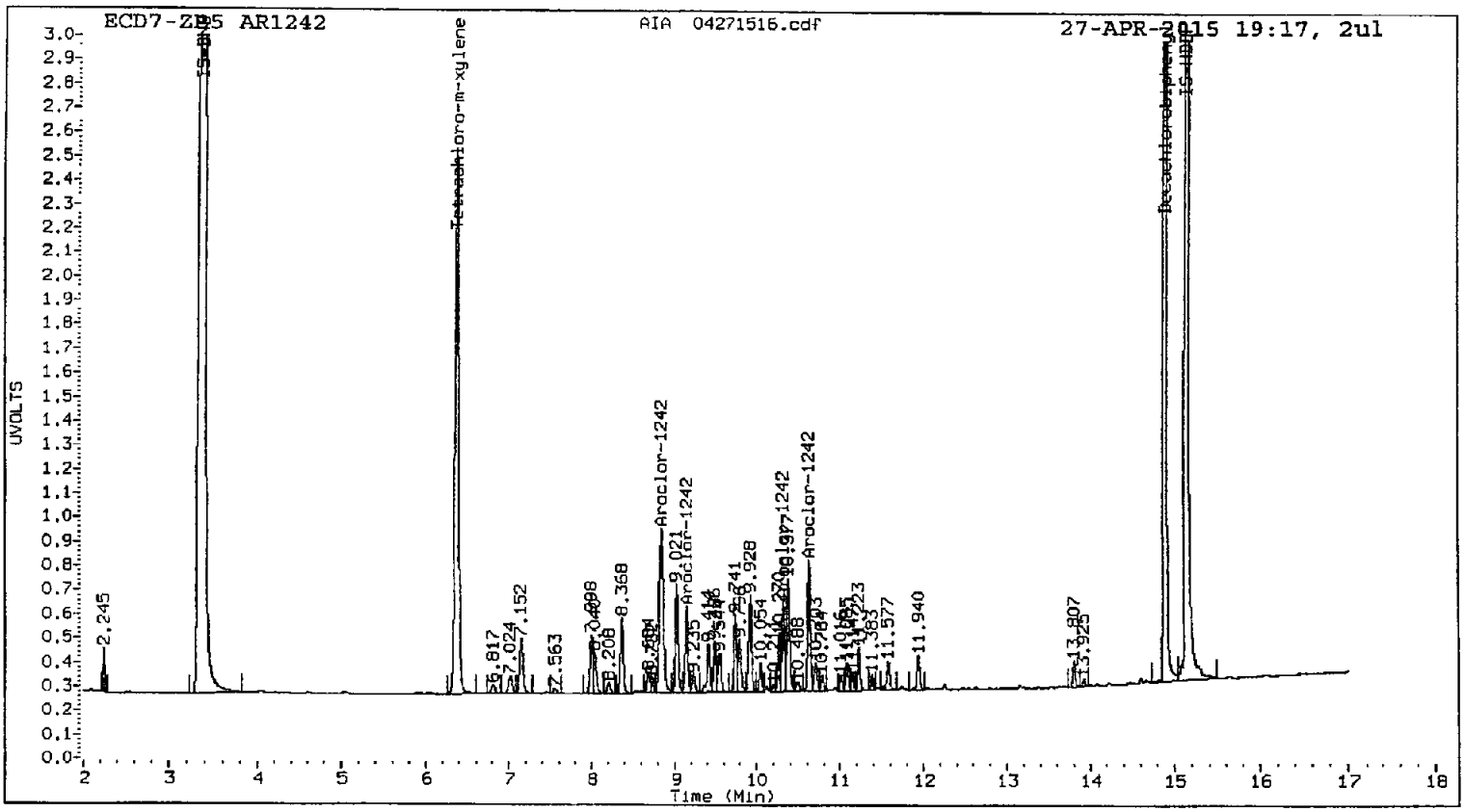
ECD7-ZB35 AR1242
27-APR-2015 19:17, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1242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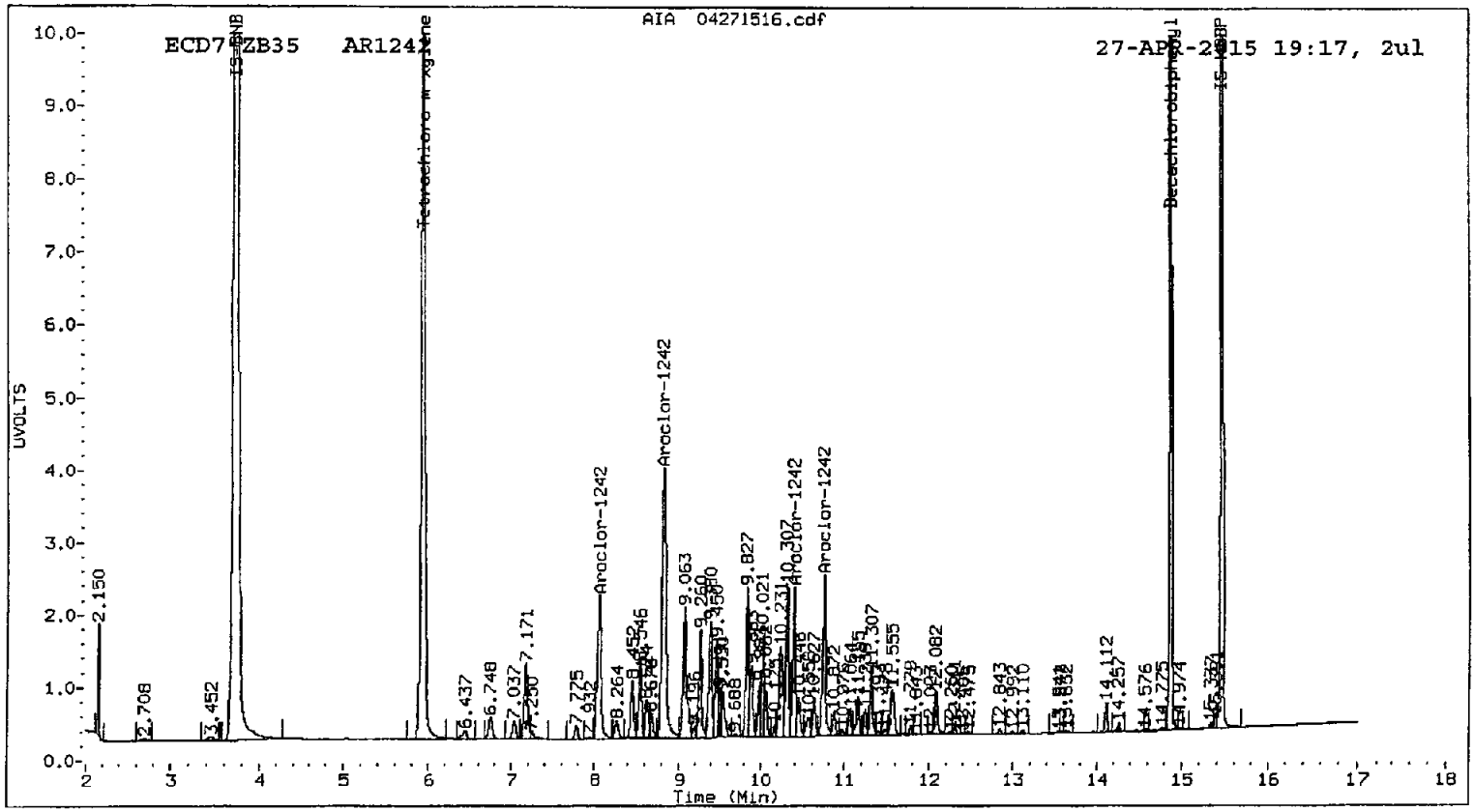
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1242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ECD7-ZB35 AR1242
27-APR-2015 19:17, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1242

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271517.d
Data file 2: 20150427.b/ical-2.b/04271517.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 27-APR-2015 19:38
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.374	0.001	1341704	5.932	0.002	6150543	37.8	37.0	2.2	Tetrachloro-m-xylene
14.897	0.000	2363201	14.867	0.001	3888600	37.3	36.0	3.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.6	92.5
Decachlorobiphenyl	93.2	90.0

JC 04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5095789	-1.9
Hexabromobiphenyl	3879663	4179102	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12259029	-0.4
Hexabromobiphenyl	7233601	7714095	6.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	9.415	0.000	167416	250.0	1	8.819	0.000	1737887	250.0
Aroclor-1248	2	9.929	0.000	328380	250.0	2	9.828	0.000	1387523	250.0
Aroclor-1248	3	10.378	0.000	377337	250.0	3	10.385	0.000	1458440	250.0
Aroclor-1248	4	10.622	0.000	386494	250.0	4	10.741	0.000	1882393	250.0

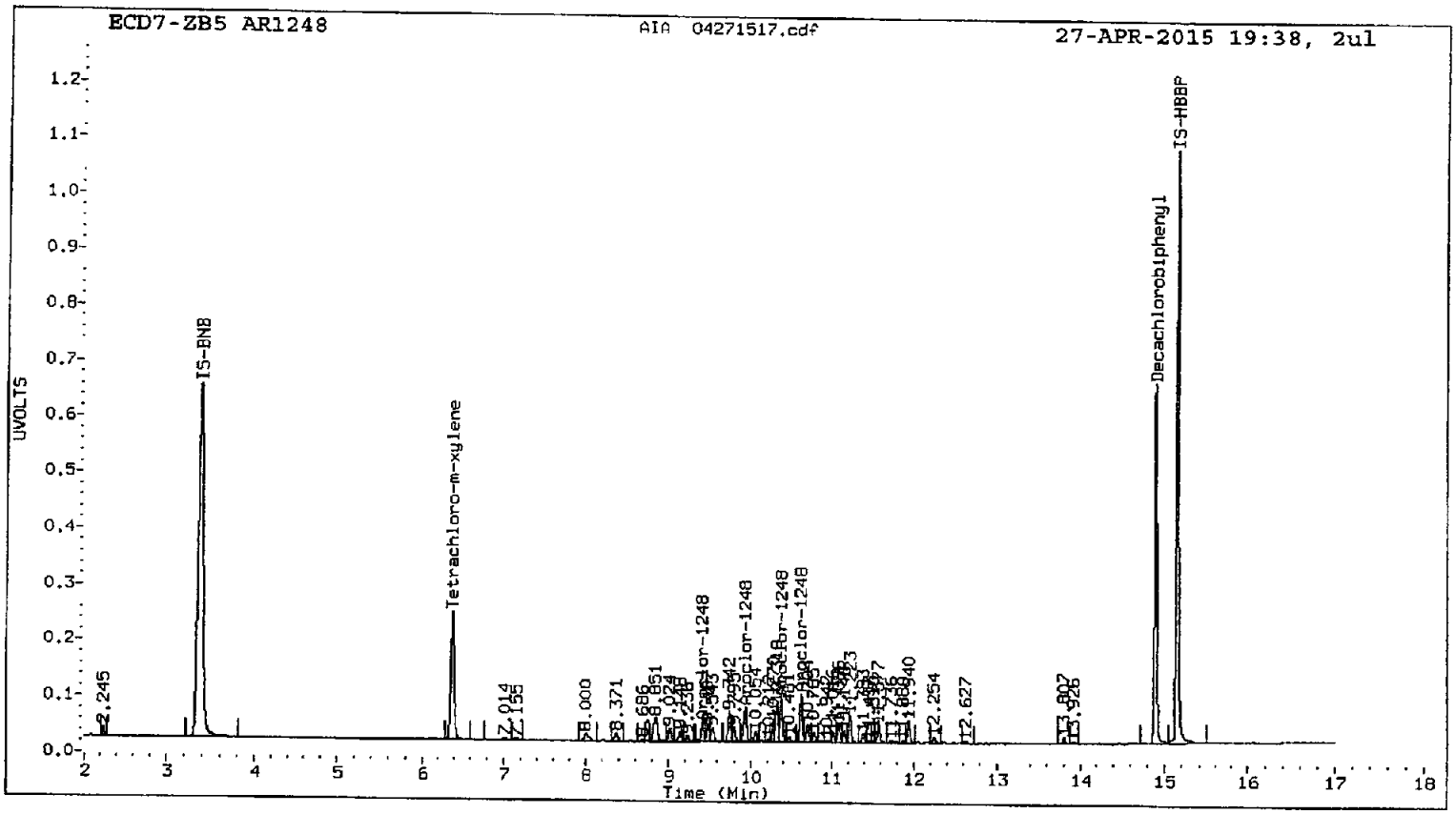
Total Col1Ave (4 peaks): 250.0 Total Col2Ave (4 peaks): 250.0 RPD = 0

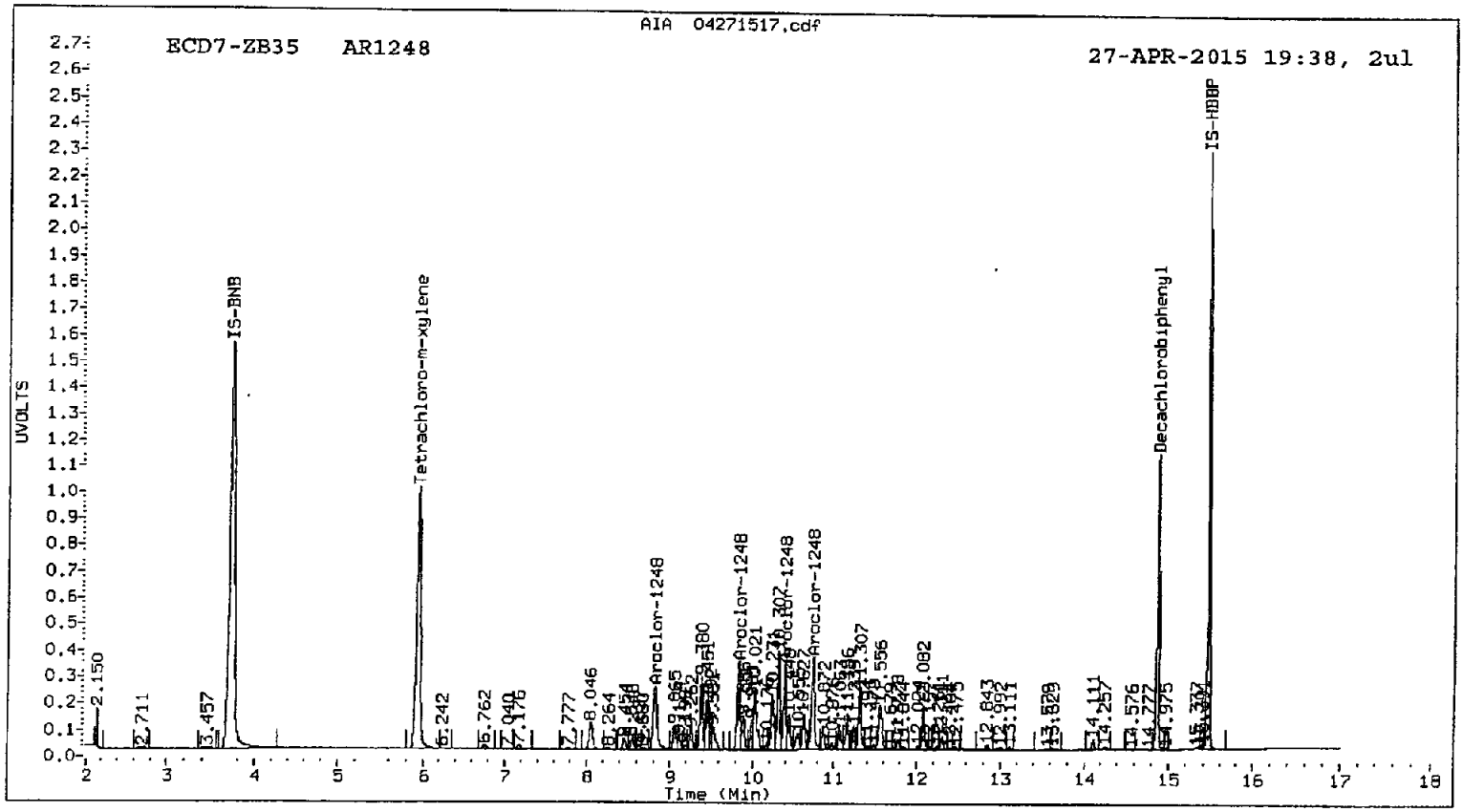
Corrected Ave (3 peaks): 250.0 Corrected Ave (3 peaks): 250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 4591461 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 24608858 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1248
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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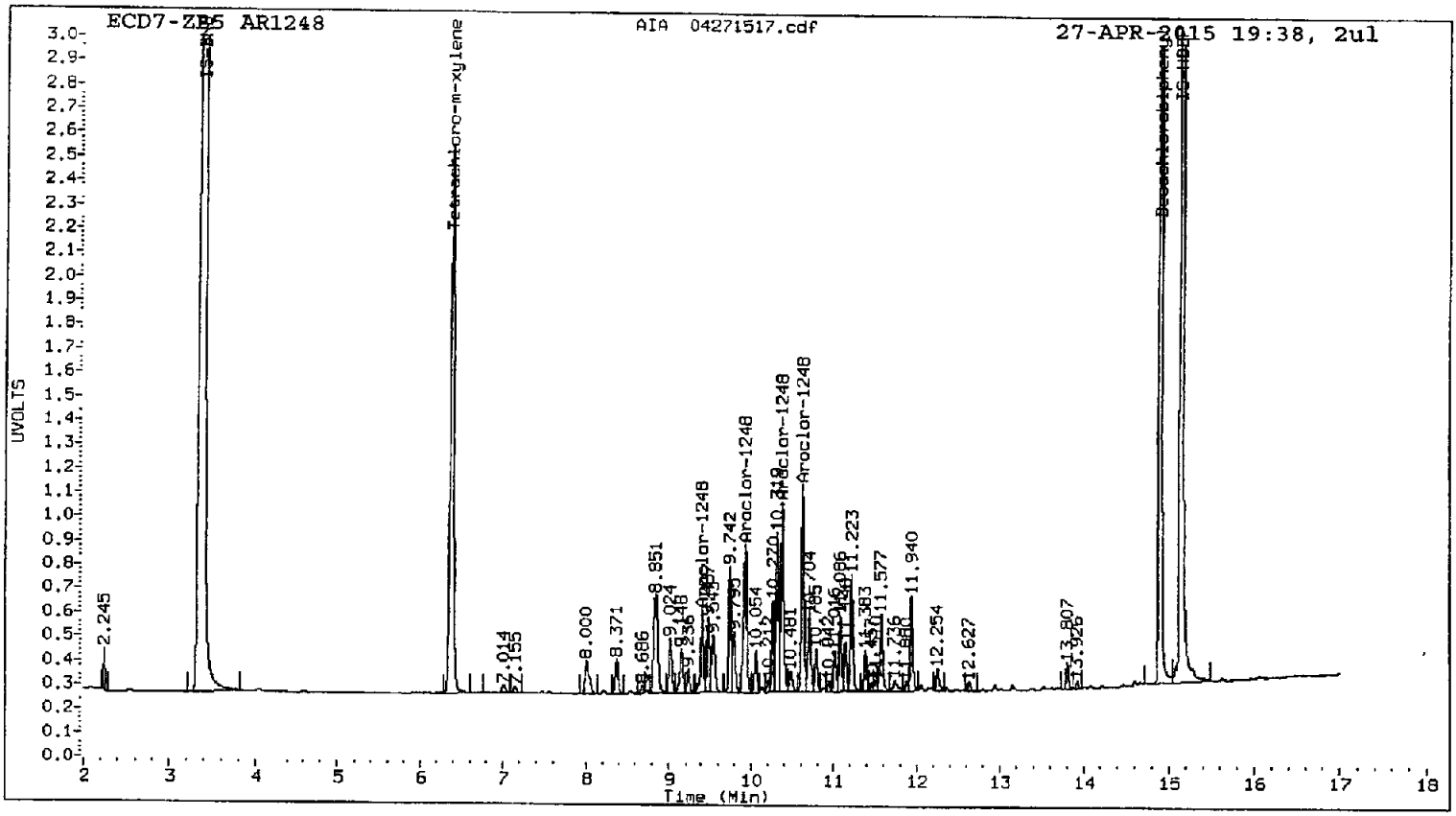
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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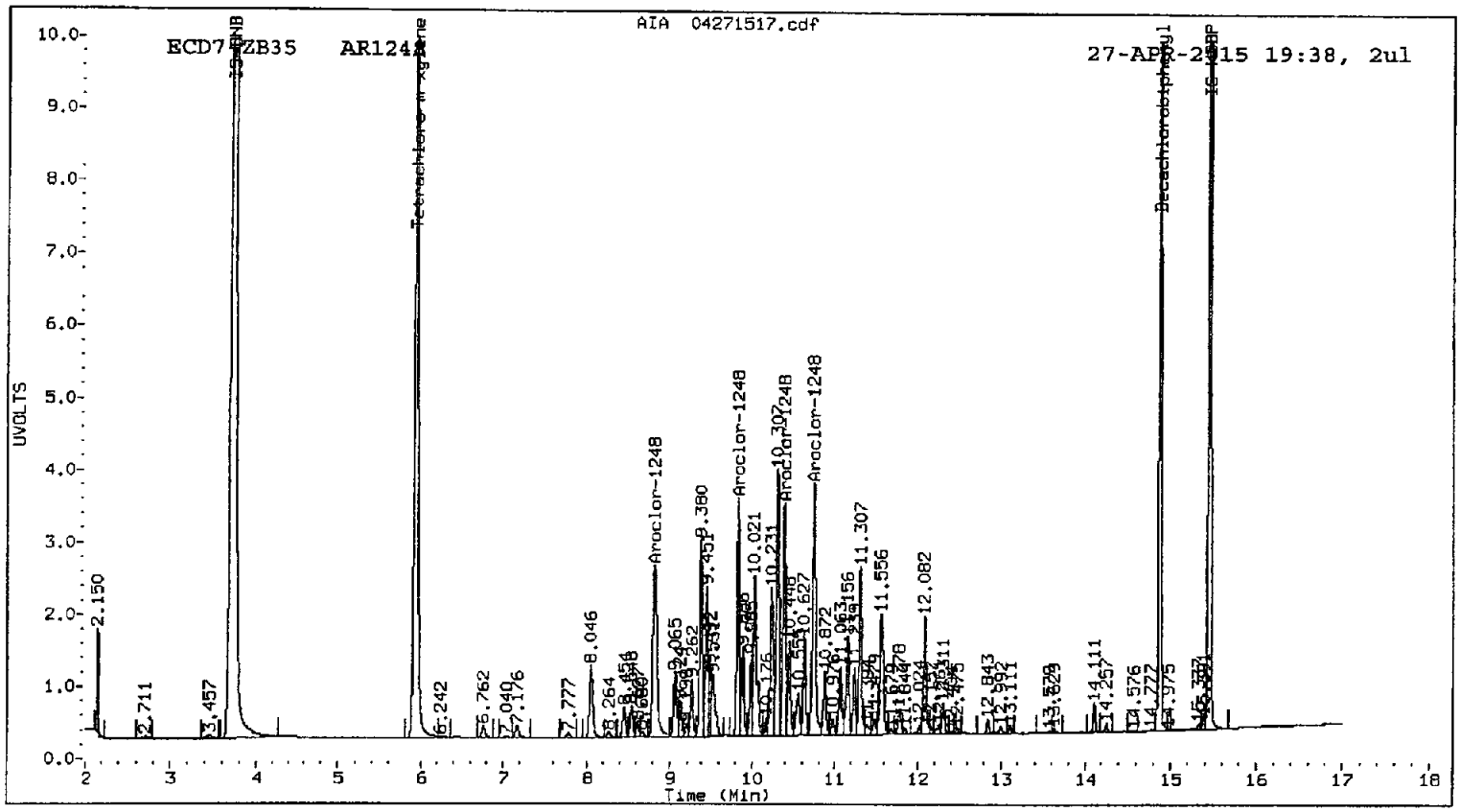
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248


ECD7-ZB35 AR1248
AIA 04271517.cdf
27-APR-2015 19:38, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1248

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271518.d
Data file 2: 20150427.b/ical-2.b/04271518.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 27-APR-2015 20:00
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.374	0.001	1322985	5.932	0.001	6057991	37.2	36.5	1.9	Tetrachloro-m-xylene
14.896	0.000	2345268	14.867	0.001	3913370	38.7	37.2	4.0	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.0	91.2
Decachlorobiphenyl	96.7	93.0

JK 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5110771	-1.6
Hexabromobiphenyl	3879663	3997604	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12249361	-0.4
Hexabromobiphenyl	7233601	7512512	3.9

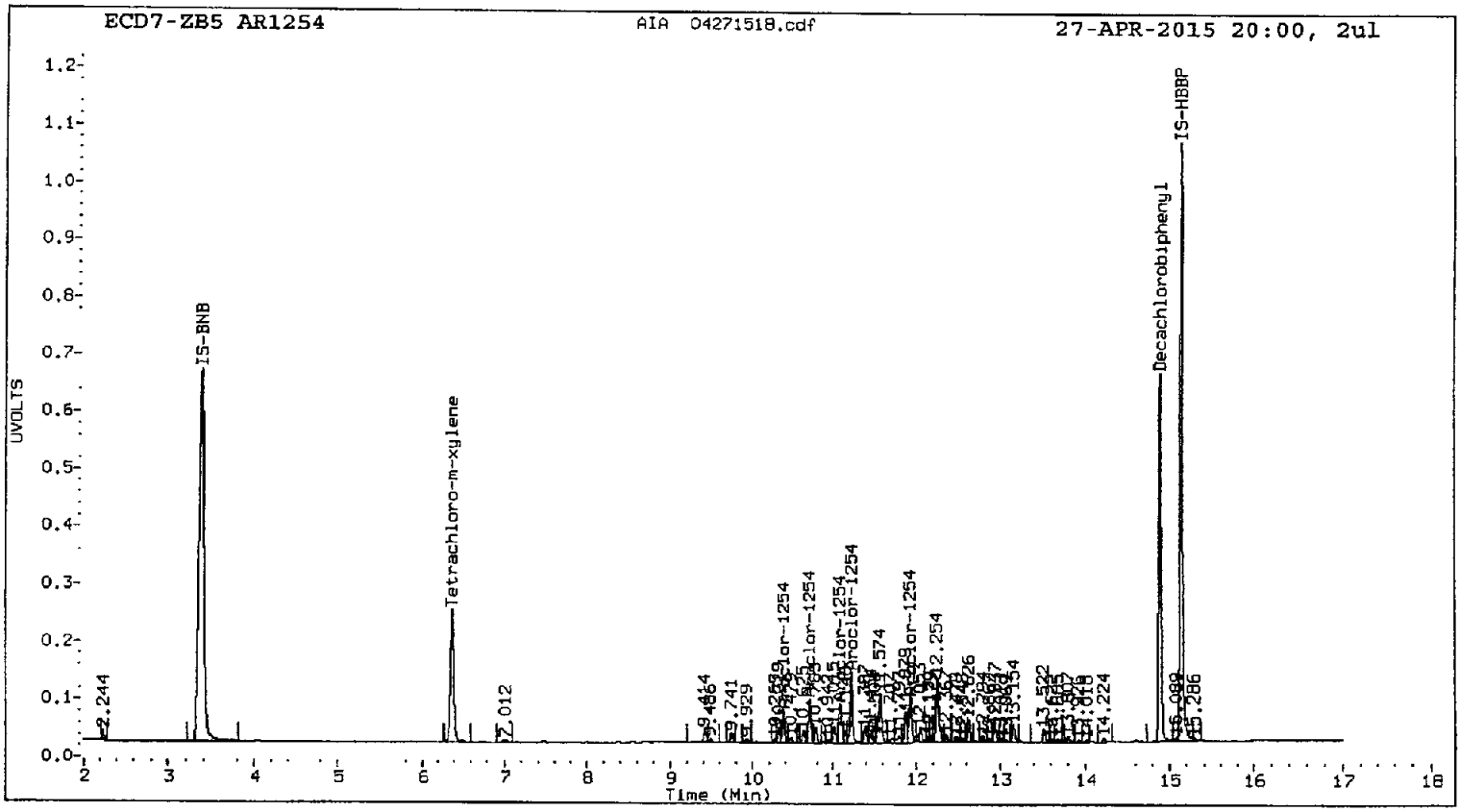
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

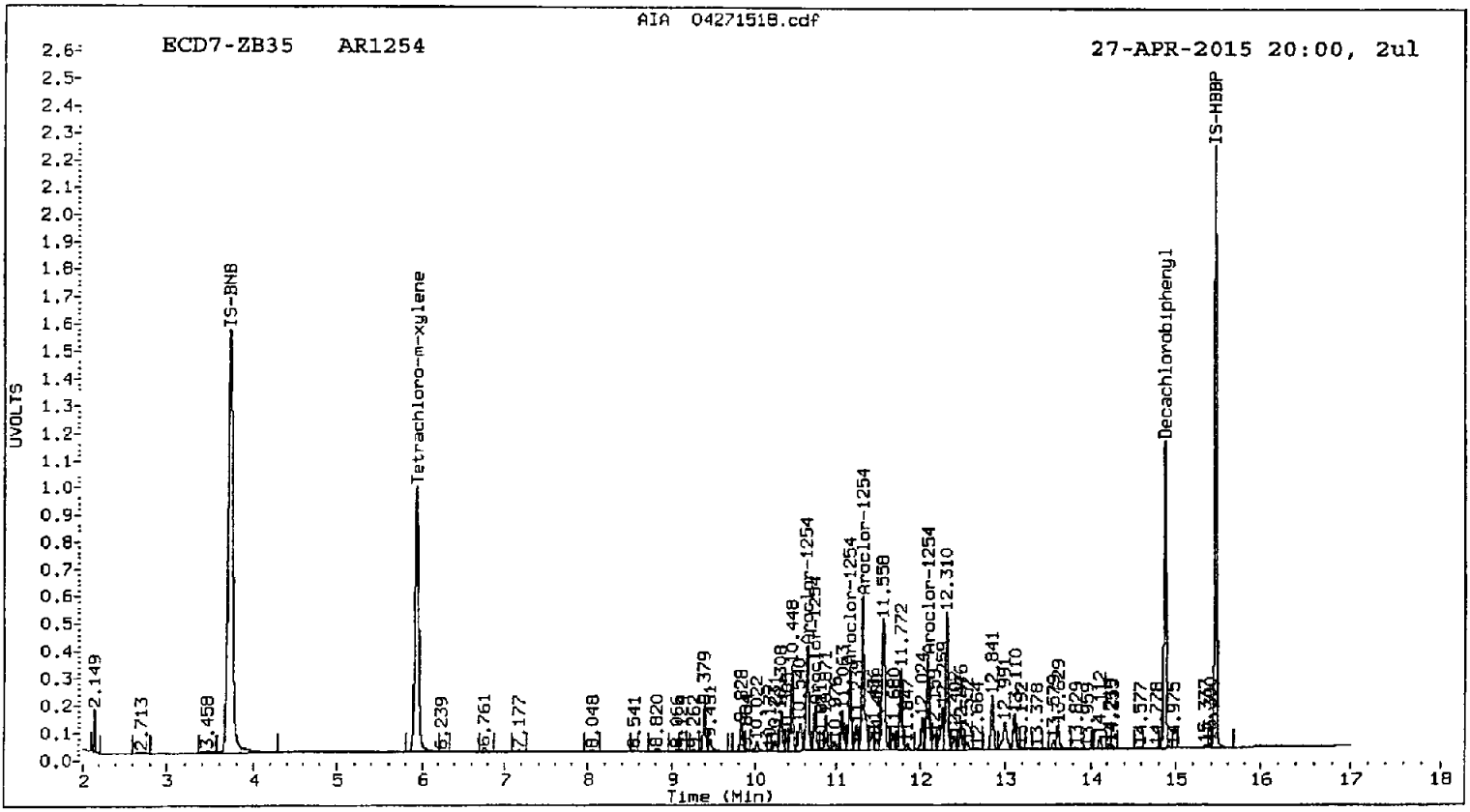
		ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.386	0.000	239483	250.0	1	10.627	0.000	1603627	250.0
Aroclor-1254	2	10.705	0.000	344479	250.0	2	10.721	0.000	769477	250.0
Aroclor-1254	3	11.085	0.000	282128	250.0	3	11.156	0.000	1259809	250.0
Aroclor-1254	4	11.222	0.000	527795	250.0	4	11.306	0.000	2685615	250.0
Aroclor-1254	5	11.936	0.000	385641	250.0	5	12.086	0.000	1631630	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):				250.0 RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 5383948 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 26873825 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1254
AIA 04271518.cdf
27-APR-2015 20:00, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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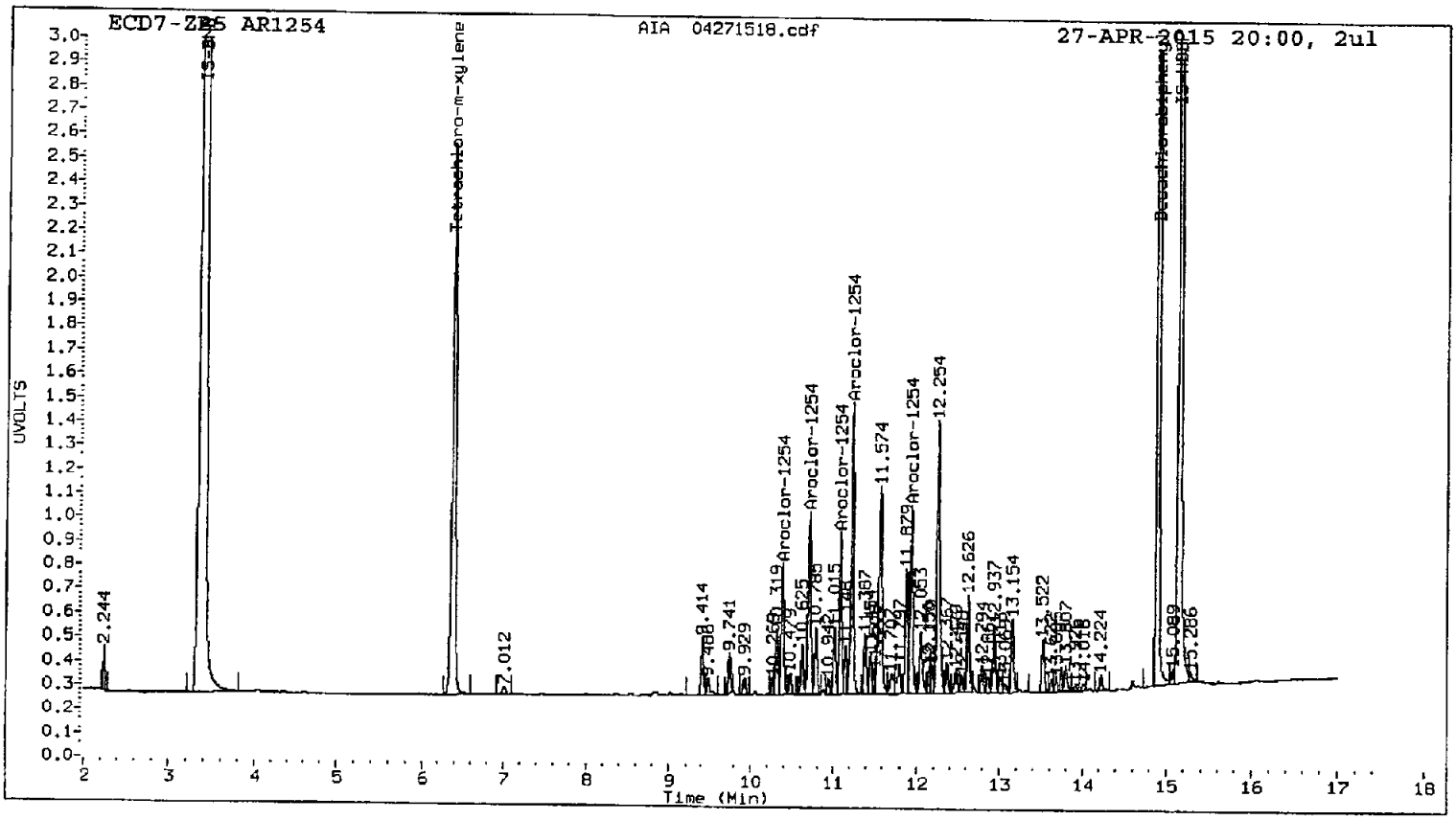
ECD7-ZB35 AR1254
27-APR-2015 20:00, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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AIA 04271518.cdf
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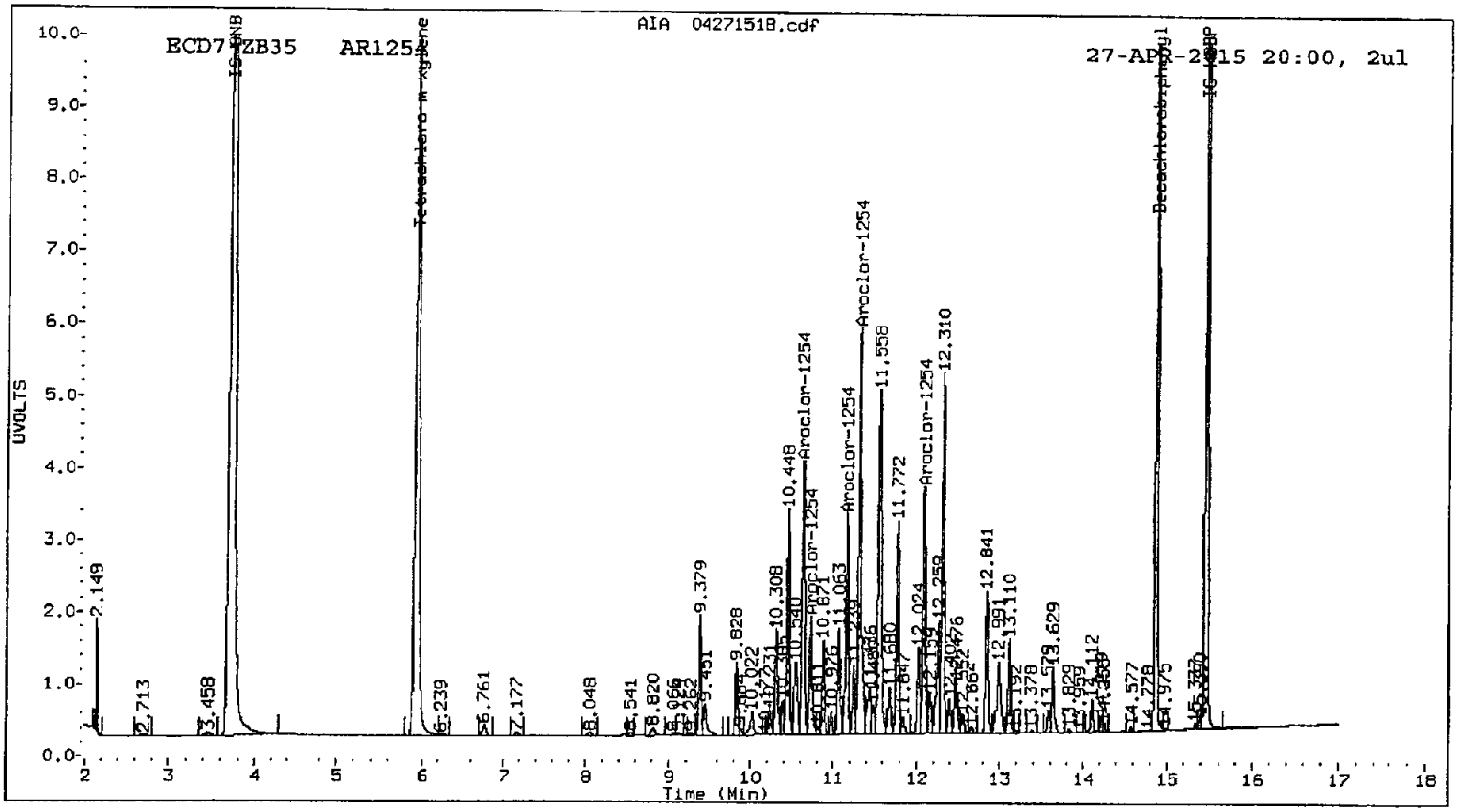
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
UVOLTS
Time (Min)


ECD7-ZB35 AR1254
AIA 04271518.cdf
27-APR-2015 20:00, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271519.d
Data file 2: 20150427.b/ical-2.b/04271519.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR2162
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162
Client ID:
Injection Date: 27-APR-2015 20:21
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.371	-0.001	1363691	5.930	0.000	6117184	37.9	36.9	2.7	Tetrachloro-m-xylene
14.897	0.000	2372009	14.867	0.001	3930701	37.5	36.1	3.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

4/29/15

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.7	92.2
Decachlorobiphenyl	93.8	90.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5172082	-0.5
Hexabromobiphenyl	3879663	4170256	7.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12240043	-0.5
Hexabromobiphenyl	7233601	7766117	7.4

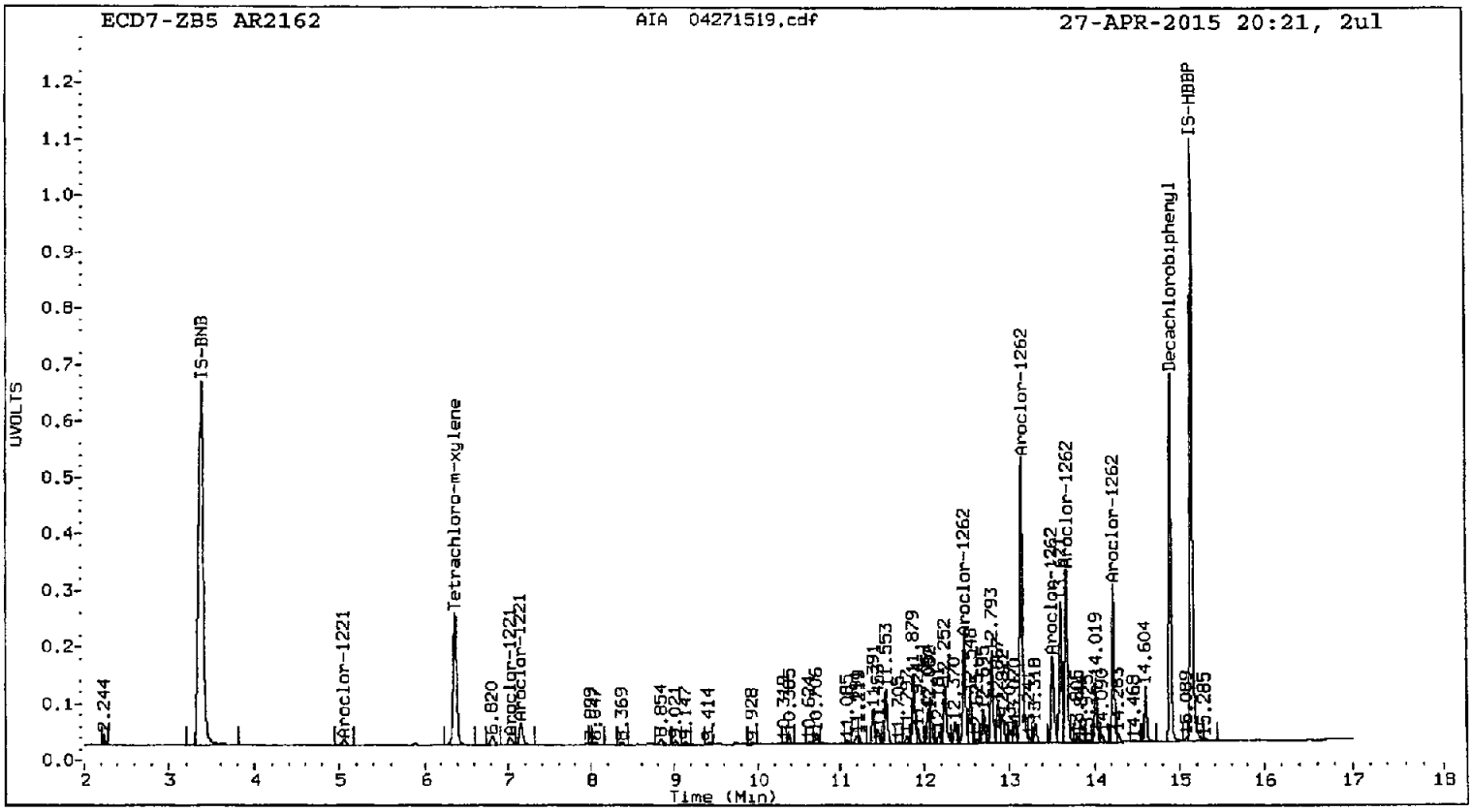
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

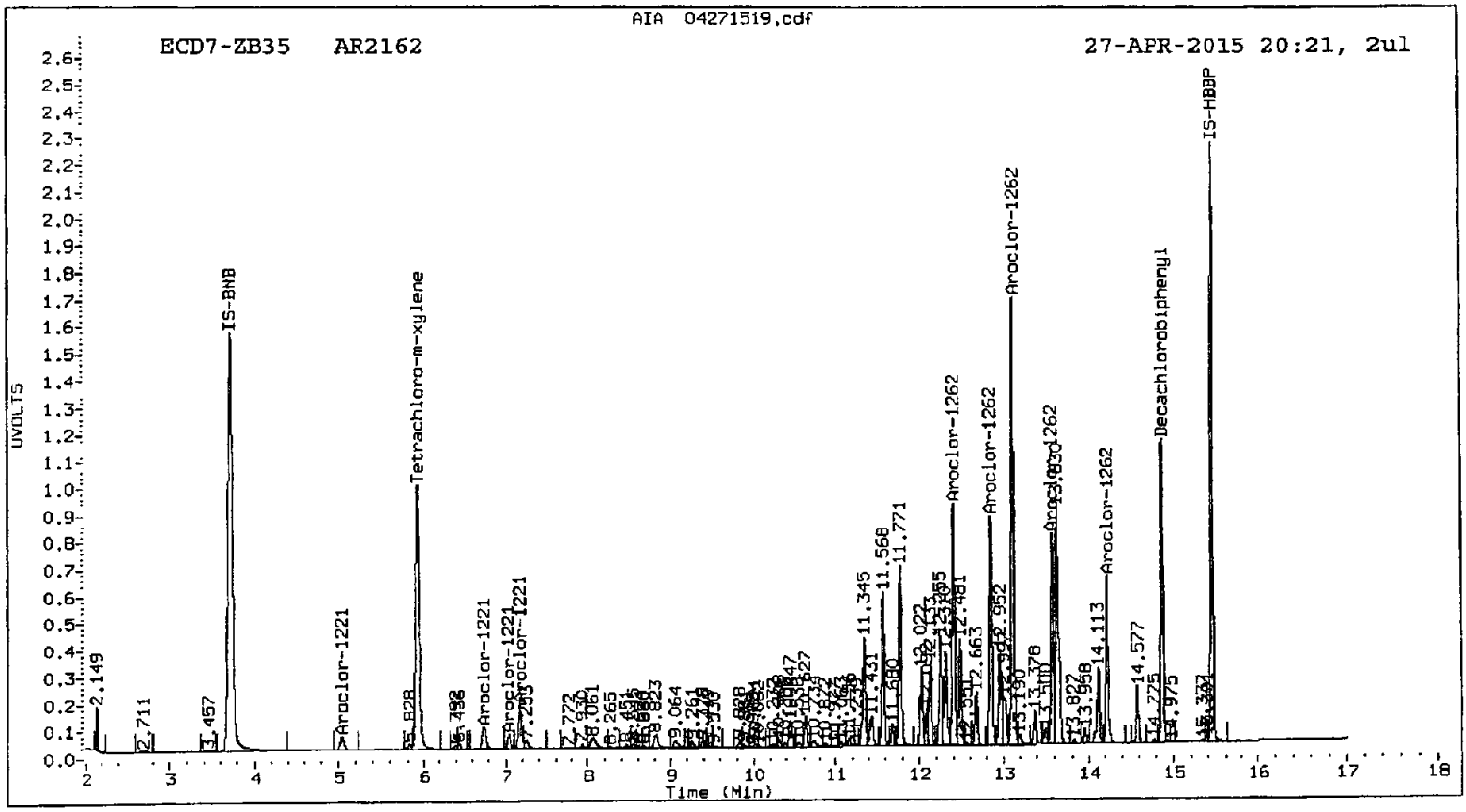
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1221	1	5.055	0.000	55573	250.0	1	5.042	0.000	334577	250.0
Aroclor-1221	2	7.027	0.000	82910	250.0	2	6.741	0.000	544007	250.0
Aroclor-1221	3	7.153	0.000	238932	250.0	3	7.037	0.000	311222	250.0
Aroclor-1221	NS	---			----	4	7.172	0.000	926809	250.0
Total Col1Ave (3 peaks):					250.0	Total Col2Ave (4 peaks):			250.0	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			250.0	
Aroclor-1262	1	12.479	0.000	820020	250.0	1	12.402	0.000	3592932	250.0
Aroclor-1262	2	13.153	0.000	2228129	250.0	2	12.844	0.000	3399265	250.0
Aroclor-1262	3	13.523	0.000	722419	250.0	3	13.108	0.000	6879866	250.0
Aroclor-1262	4	13.684	0.000	1229849	250.0	4	13.578	0.000	2993978	250.0
Aroclor-1262	5	14.225	0.000	1049539	250.0	5	14.218	0.000	2337926	250.0
Total Col1Ave (5 peaks):					250.0	Total Col2Ave (5 peaks):			250.0	RPD = 0
Corrected Ave (4 peaks):					250.0	Corrected Ave (4 peaks):			250.0	RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 14103265 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 52054342 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR2162
AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1221
Aroclor-1262
Aroclor-1262
Aroclor-1262
Aroclor-1262
Decachlorobiphenyl
IS-HBBP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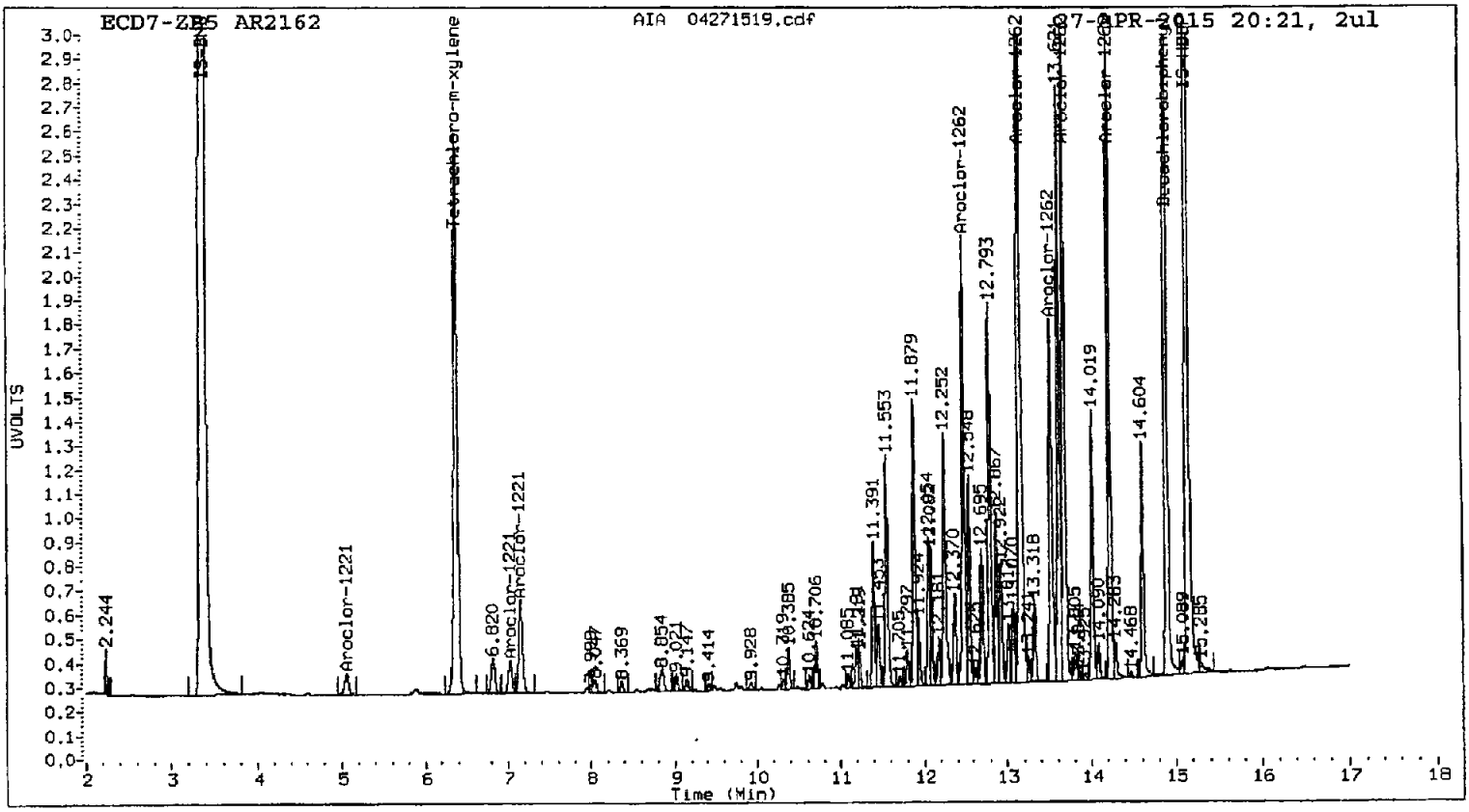
ECD7-ZB35 AR2162
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
IS-BNB
Aroclor-1221
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1221
Aroclor-1262
Aroclor-1262
Aroclor-1262
Aroclor-1262
Decachlorobiphenyl
IS-HBBP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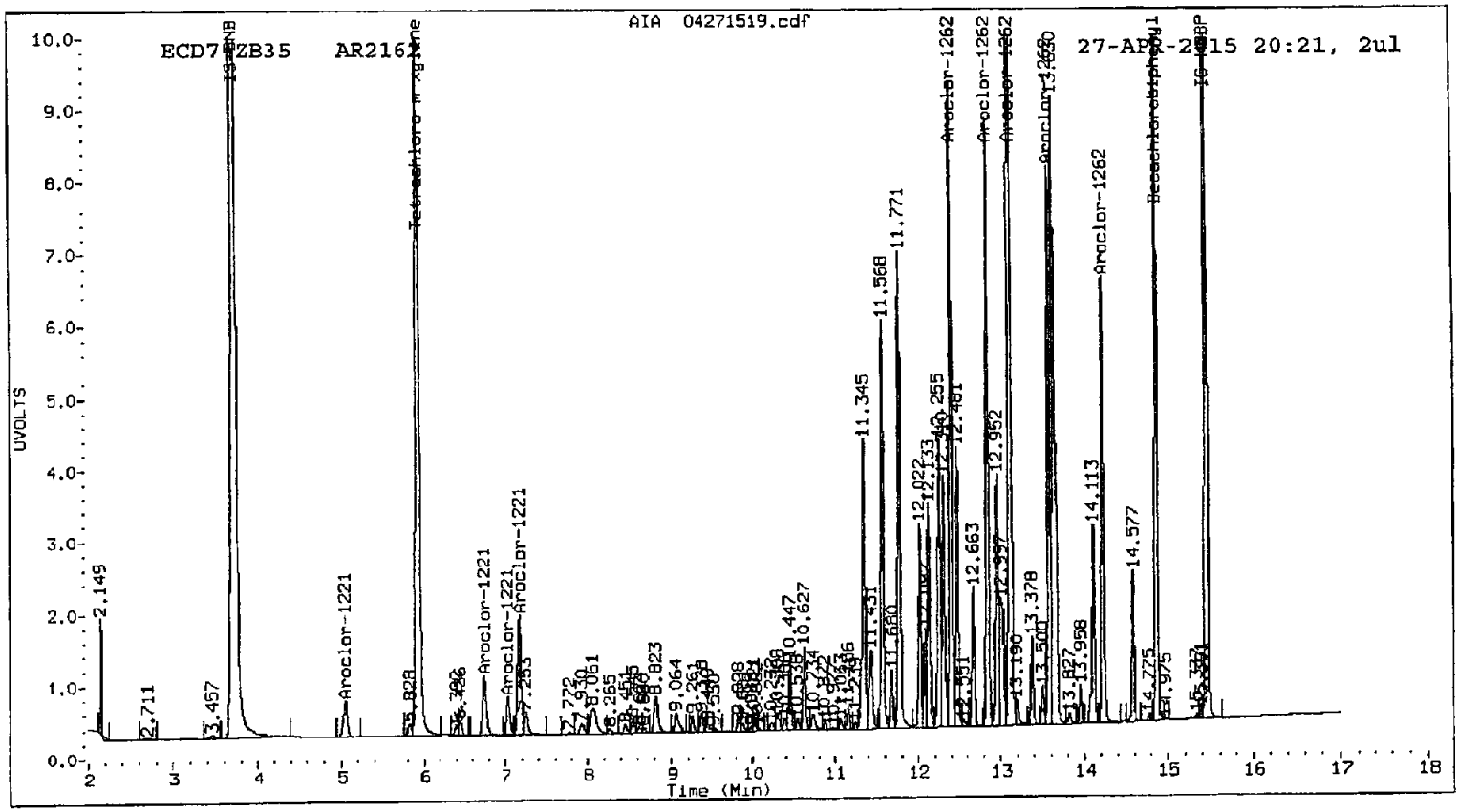
AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl
2.244
6.820
11.879
12.252
12.793
14.019
14.604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AIA 04271519.cdf
27-APR-2015 20:21, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1262
Decachlorobiphenyl
2.149
11.345
11.568
11.771
12.663
14.113
14.577

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271520.d
Data file 2: 20150427.b/ical-2.b/04271520.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: AR3268
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268
Client ID:
Injection Date: 27-APR-2015 20:42
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1361921	5.930	0.000	6158473	37.7	36.8	2.3	Tetrachloro-m-xylene
14.897	0.000	3629100	14.866	0.000	5917904	56.4	53.2	5.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.1	92.0
Decachlorobiphenyl	141.1	133.1

JL 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5195753	0.0
Hexabromobiphenyl	3879663	4240267	9.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12347807	0.4
Hexabromobiphenyl	7233601	7935328	9.7

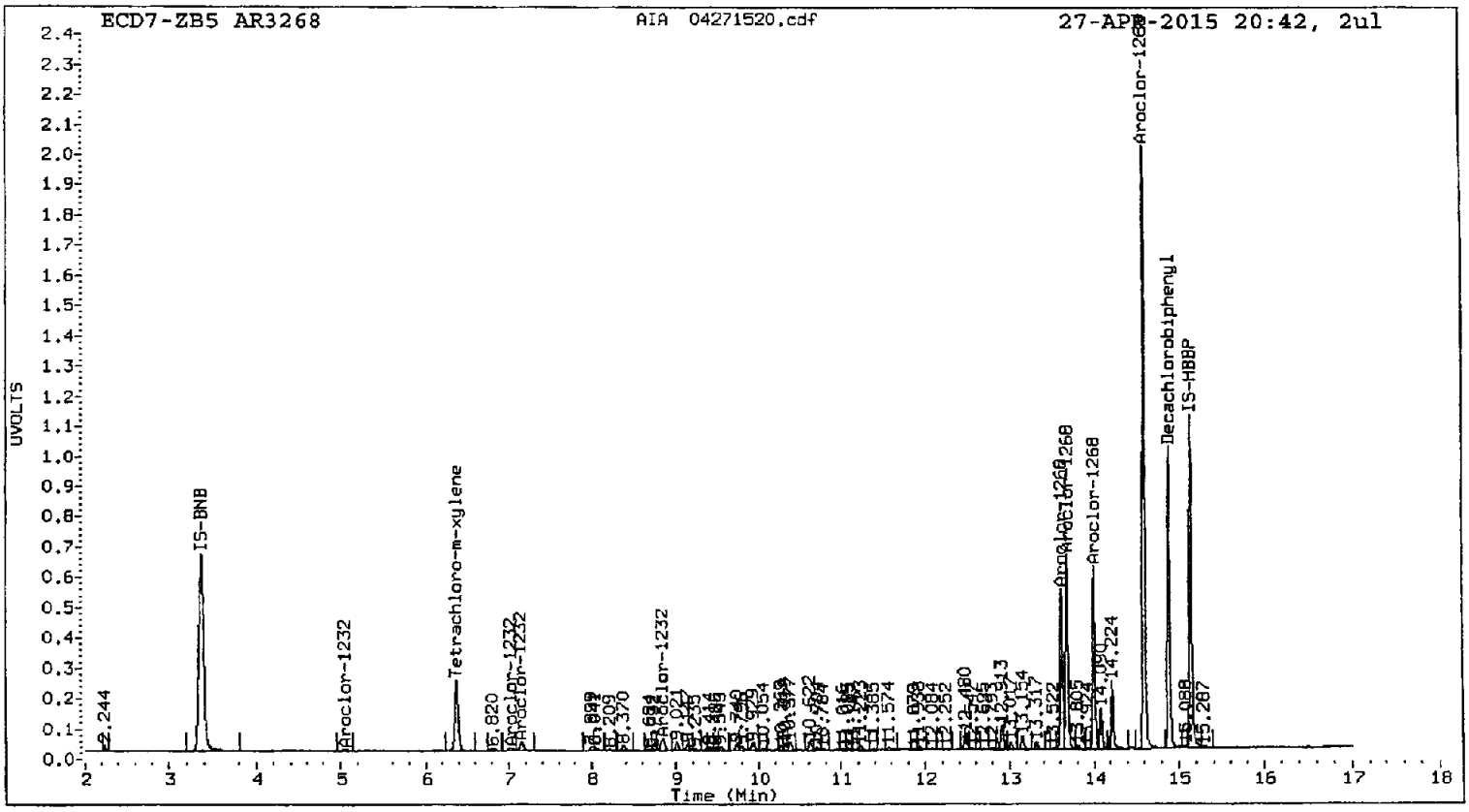
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

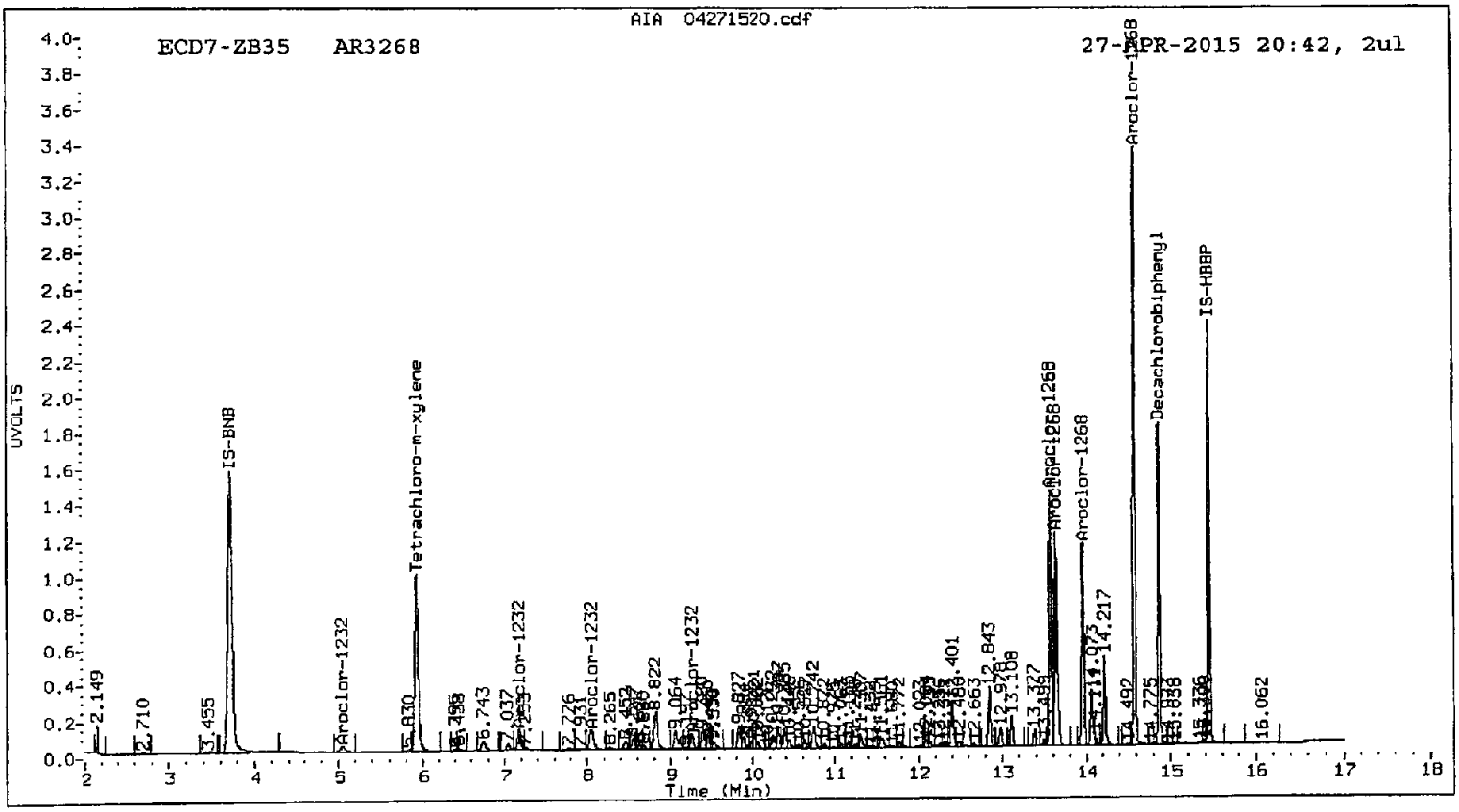
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	5.055	0.000	31926	250.0	1	5.042	0.000	206327	250.0
Aroclor-1232	2	7.026	0.000	56876	250.0	2	7.173	0.000	667509	250.0
Aroclor-1232	3	7.154	0.000	160958	250.0	3	8.049	0.000	779604	250.0
Aroclor-1232	4	8.852	0.000	267091	250.0	4	9.261	0.000	403766	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0
Aroclor-1268	1	13.621	0.000	2069726	250.0	1	13.576	0.000	5259678	250.0
Aroclor-1268	2	13.683	0.000	2475772	250.0	2	13.633	0.000	4961915	250.0
Aroclor-1268	3	14.004	0.000	2201173	250.0	3	13.958	0.000	4061116	250.0
Aroclor-1268	4	14.605	0.000	7184649	250.0	4	14.577	0.000	11127247	250.0
Total Col1Ave (4 peaks):					250.0	Total Col2Ave (4 peaks):				250.0 RPD = 0
Corrected Ave (3 peaks):					250.0	Corrected Ave (3 peaks):				250.0 RPD = 0

Total PCB Area Col1 (6.472 - 14.797) = 18677342 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 45660661 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR3268
AIA 04271520.cdf
27-APR-2015 20:42, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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ECD7-ZB35 AR3268
27-APR-2015 20:42, 2ul
UVOLTS
Time (Min)
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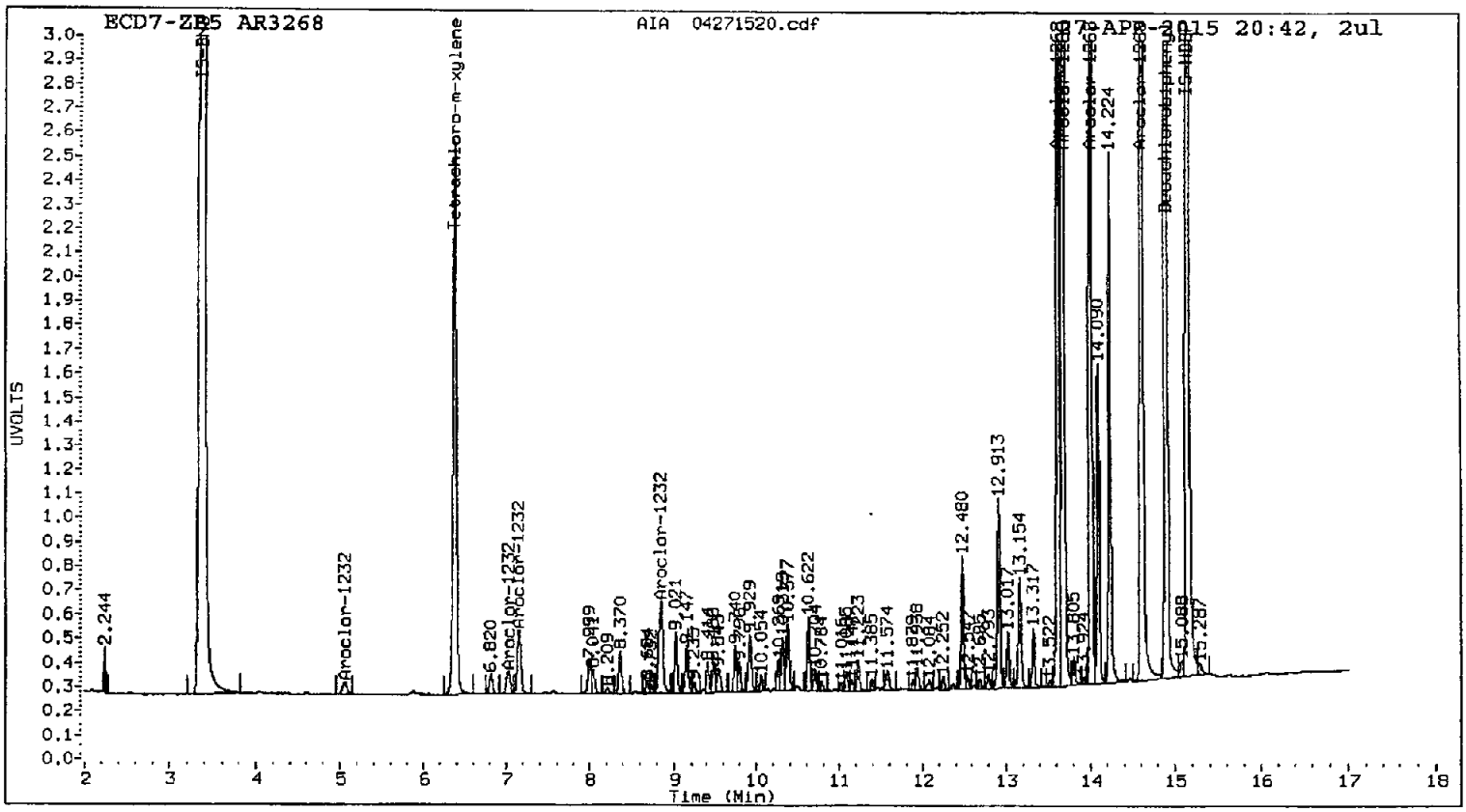
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1268
Decachlorobiphenyl
IS-HBBP


ECD7-ZB5 AR3268
AIA 04271520.cdf
27-APR-2015 20:42, 2ul
UVOLTS
Time (Min)
Aroclor-1232
Tetrachloro-m-xylene
Aroclor-1232
Aroclor-1232
Aroclor-1232

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271521.d
Data file 2: 20150427.b/ical-2.b/04271521.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV
Client ID:
Injection Date: 27-APR-2015 21:04
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.004	1374878	5.927	-0.003	6261833	38.3	37.1	3.2	Tetrachloro-m-xylene
14.895	-0.001	2455155	14.867	0.001	4141325	37.6	37.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.8	92.8
Decachlorobiphenyl	93.9	92.8

A 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5155821	-0.8
Hexabromobiphenyl	3879663	4308520	11.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12444267	1.1
Hexabromobiphenyl	7233601	7963073	10.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

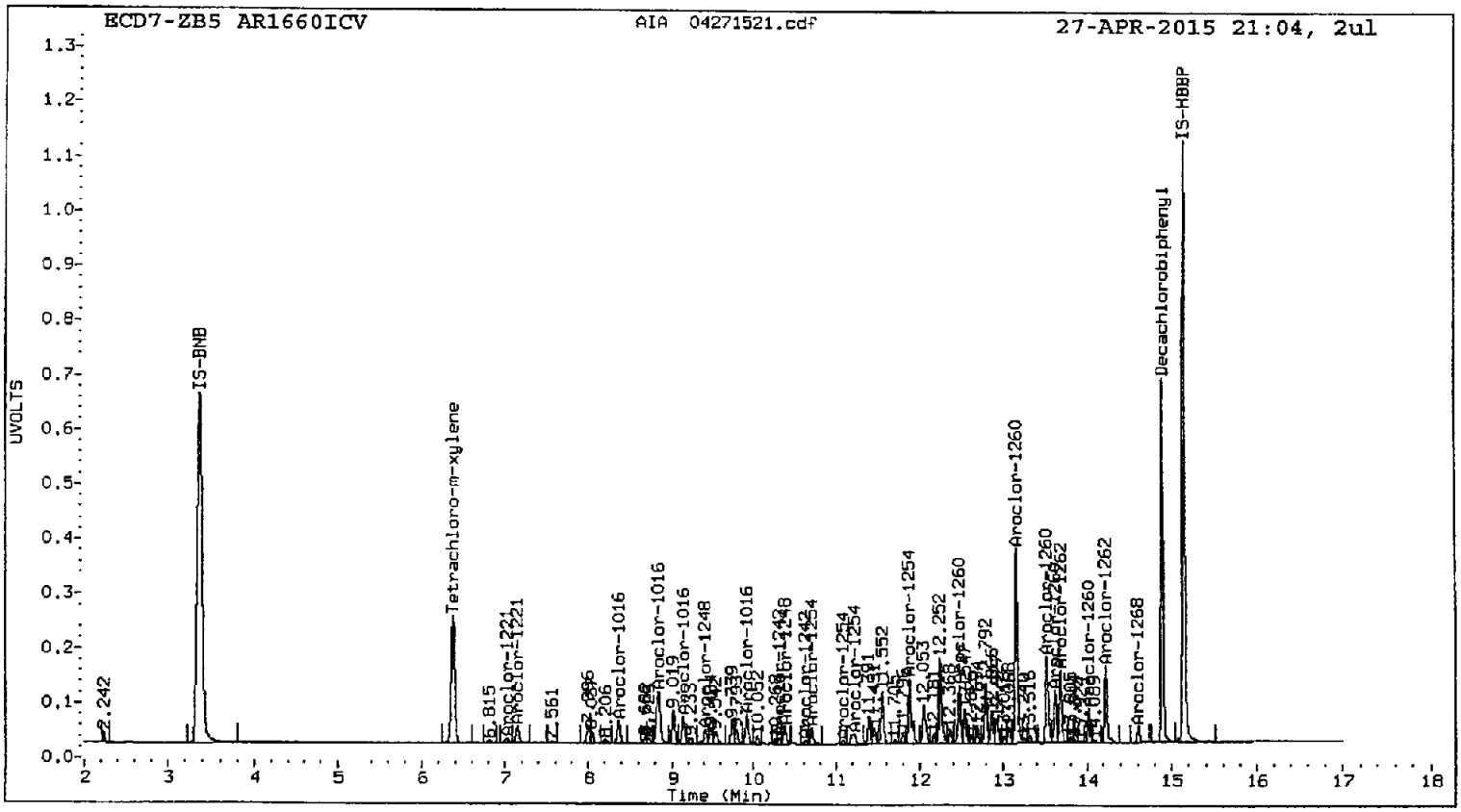
Aroclor	Peak#	RT	Shift	ZB5 Col Area	Amount	Peak#	RT	Shift	ZB35 Col Area	Amount
Aroclor-1016	1	8.367	-0.003	220411	256.4	1	8.045	-0.002	1752572	247.6
Aroclor-1016	2	8.850	-0.003	661927	253.5	2	8.821	-0.002	3625715	245.2
Aroclor-1016	3	9.146	-0.002	236650	264.0	3	9.258	-0.002	974410	248.1
Aroclor-1016	4	9.927	-0.003	281516	289.2	4	10.019	-0.002	786045	283.9
Total Col1Ave (4 peaks):					265.8	Total Col2Ave (4 peaks):				256.2 RPD = 4
Corrected Ave (3 peaks):					258.0	Corrected Ave (3 peaks):				247.0 RPD = 4
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.024	-0.004	54237	164.1	2	6.745	0.004	261371	118.1
Aroclor-1221	3	7.150	-0.003	184699	193.9	3	7.034	-0.002	191895	151.6
Aroclor-1221	NS	---			----	4	7.170	-0.002	806713	214.0
Col1Ave: <3 Quant Peaks						Col2Ave: 161.3				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.024	-0.003	54237	240.2	2	7.170	-0.003	806713	299.8
Aroclor-1232	3	7.150	-0.004	184699	289.1	3	8.045	-0.003	1752572	557.7
Aroclor-1232	4	8.850	-0.002	661927	624.4	4	9.258	-0.003	974410	598.6
Total Col1Ave (3 peaks):					384.6	Total Col2Ave (3 peaks):				485.4 RPD = 23
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.850	-0.001	661927	340.0	1	8.045	-0.002	1752572	340.3
Aroclor-1242	2	9.146	-0.002	236650	336.5	2	8.821	-0.002	3625715	337.5
Aroclor-1242	3	10.318	-0.001	38764	58.9	3	10.384	0.000	177451	46.9
Aroclor-1242	4	10.623	0.001	24972	25.1	4	10.739	-0.003	73811	16.1
Total Col1Ave (4 peaks):					190.1	Total Col2Ave (4 peaks):				185.2 RPD = 3
Corrected Ave (3 peaks):					140.1	Corrected Ave (3 peaks):				133.5 RPD = 5
Aroclor-1248	1	9.412	-0.003	132697	195.8	1	8.821	0.002	3625715	513.8
Aroclor-1248	2	9.927	-0.002	281516	211.8	2	9.825	-0.003	1207744	214.4
Aroclor-1248	3	10.383	0.006	135633	88.8	3	10.384	-0.001	177451	30.0
Aroclor-1248	4	10.623	0.001	24972	16.0	4	10.739	-0.002	73811	9.7
Total Col1Ave (4 peaks):					128.1	Total Col2Ave (4 peaks):				191.9 RPD = 40
Corrected Ave (3 peaks):					100.2	Corrected Ave (3 peaks):				84.7 RPD = 17
Aroclor-1254	1	10.383	-0.002	135633	140.4	1	10.625	-0.002	731469	112.2
Aroclor-1254	2	10.705	0.000	128364	92.3	2	10.739	0.018	73811	23.6
Aroclor-1254	3	11.084	-0.001	25009	22.0	3	11.155	-0.001	131534	25.7
Aroclor-1254	4	11.219	-0.003	142925	67.1	4	11.344	0.038	1829430	167.6
Aroclor-1254	5	11.878	-0.058	666865	428.5	5	12.091	0.005	826947	124.7
Total Col1Ave (5 peaks):					150.1	Total Col2Ave (5 peaks):				90.8 RPD = 49*
Corrected Ave (4 peaks):					80.4	Corrected Ave (4 peaks):				71.6 RPD = 12
Aroclor-1260	1	12.479	-0.001	472565	245.4	1	12.401	-0.002	2083232	248.7
Aroclor-1260	2	13.153	-0.001	1575523	250.4	2	13.106	-0.001	5086299	263.4
Aroclor-1260	3	13.522	-0.001	759131	263.7	3	13.577	0.000	1477723	237.1
Aroclor-1260	4	13.620	-0.001	407778	237.0	4	13.628	0.000	3373698	257.7
Aroclor-1260	5	14.019	0.000	243659	262.3	NS	---			----
Total Col1Ave (5 peaks):					251.8	Total Col2Ave (4 peaks):				251.7 RPD = 0
Corrected Ave (4 peaks):					248.8	Corrected Ave (3 peaks):				247.9 RPD = 0
Aroclor-1262	1	12.479	0.000	472565	139.4	1	12.401	-0.001	2083232	141.4
Aroclor-1262	2	13.153	0.000	1575523	171.1	2	12.843	-0.001	2408319	172.7
Aroclor-1262	3	13.522	-0.001	759131	254.3	3	13.106	-0.002	5086299	180.3
Aroclor-1262	4	13.684	0.000	544620	107.2	4	13.577	0.000	1477723	120.3
Aroclor-1262	5	14.224	-0.001	566669	130.6	5	14.218	0.000	1318754	137.5
Total Col1Ave (5 peaks):					160.5	Total Col2Ave (5 peaks):				150.4 RPD = 6

Corrected Ave (4 peaks):			137.1		Corrected Ave (4 peaks):			143.0	RPD = 4
Aroclor-1268 1	13.620	-0.001	407778	48.5	1	13.577	0.002	1477723	70.0
Aroclor-1268 2	13.684	0.001	544620	54.1	2	13.628	-0.005	3373698	169.4
Aroclor-1268 3	14.019	0.014	243659	27.2	3	13.957	-0.001	53431	3.3
Aroclor-1268 4	14.603	-0.002	118993	4.1	4	14.576	-0.001	247660	5.5
Total Col1Ave (4 peaks):			33.5		Total Col2Ave (4 peaks):			62.1	RPD = 60*
Corrected Ave (3 peaks):			26.6		Corrected Ave (3 peaks):			26.3	RPD = 1

Total PCB Area Col1 (6.472 - 14.797) = 13100190 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 57200502 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical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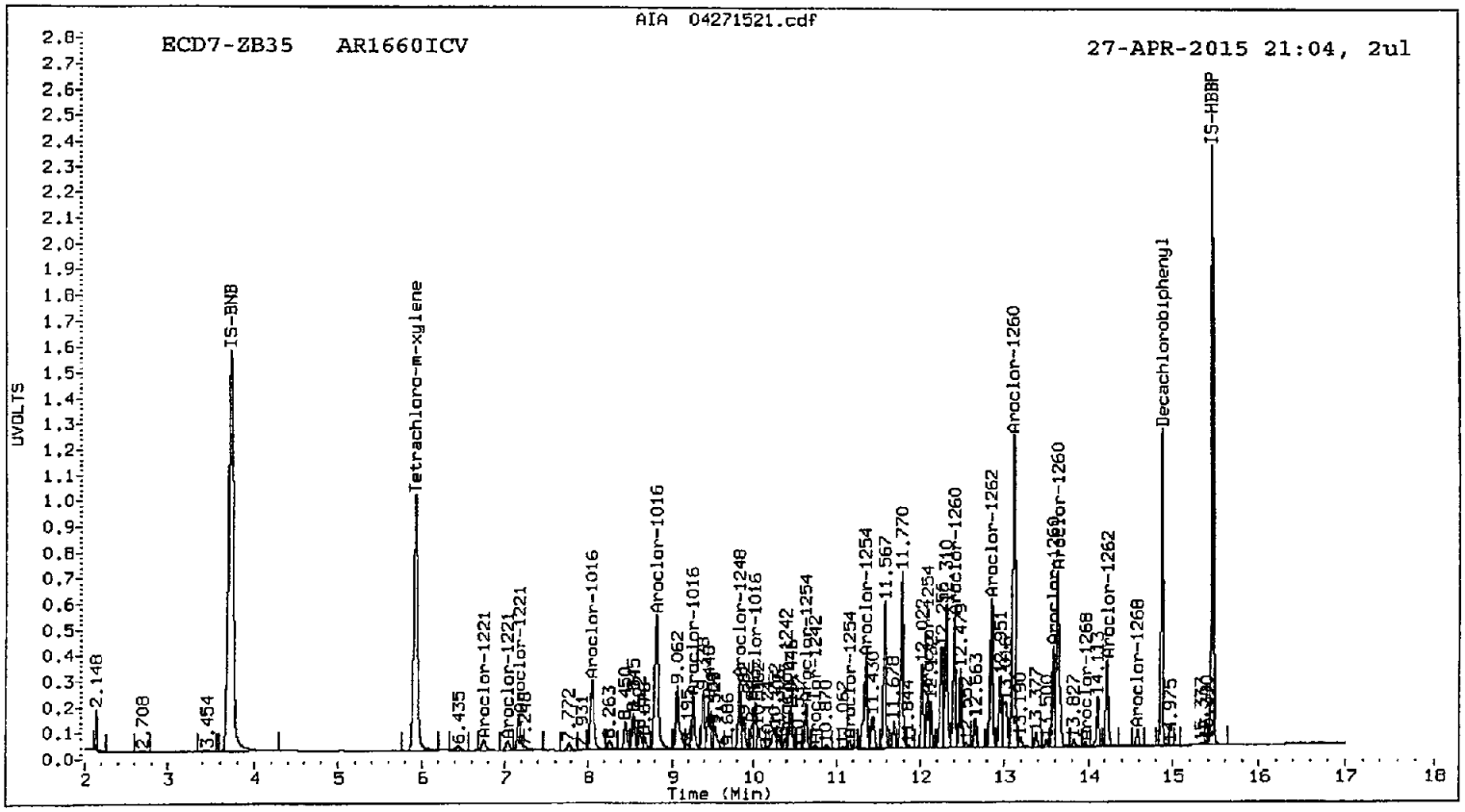
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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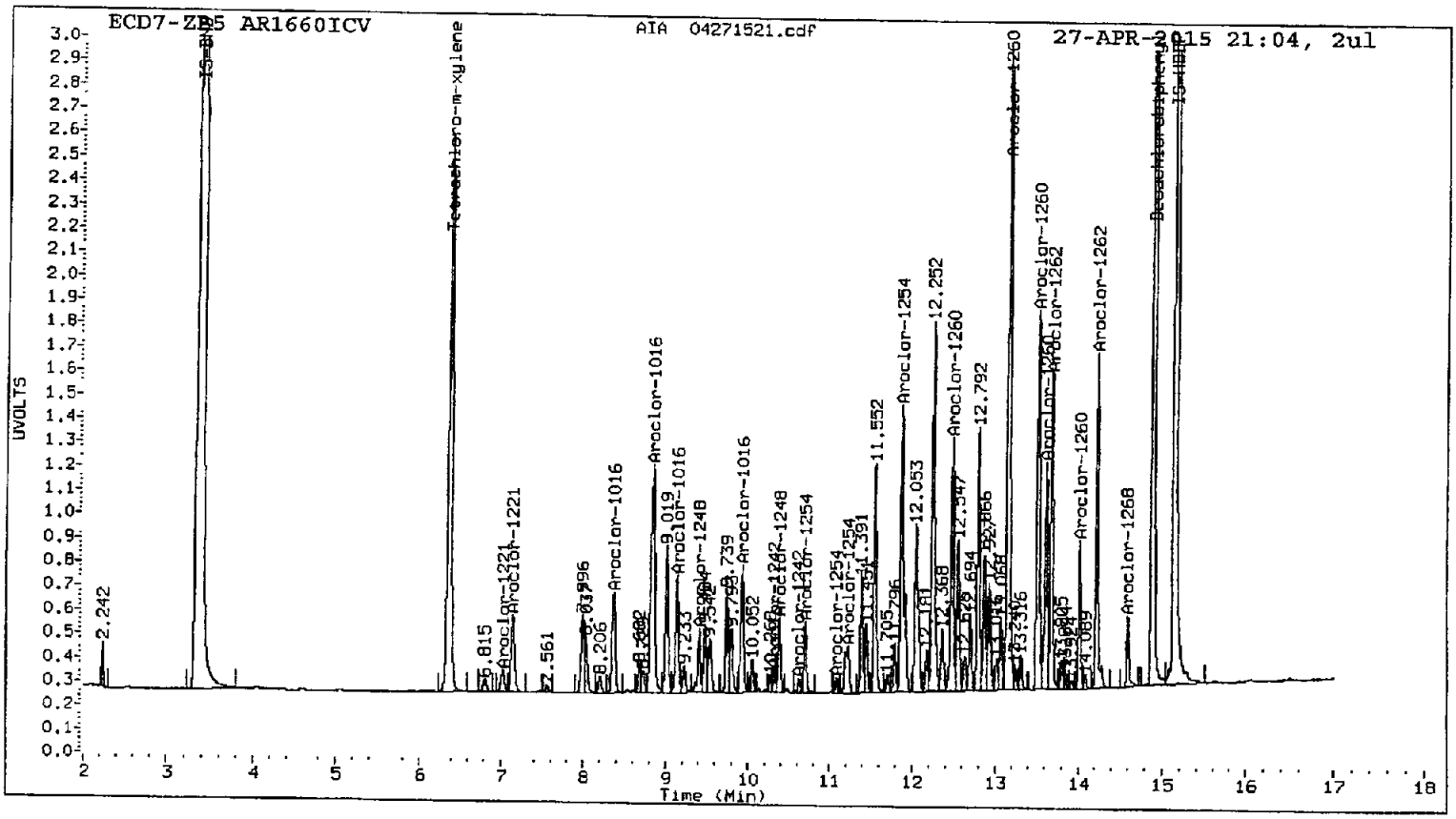
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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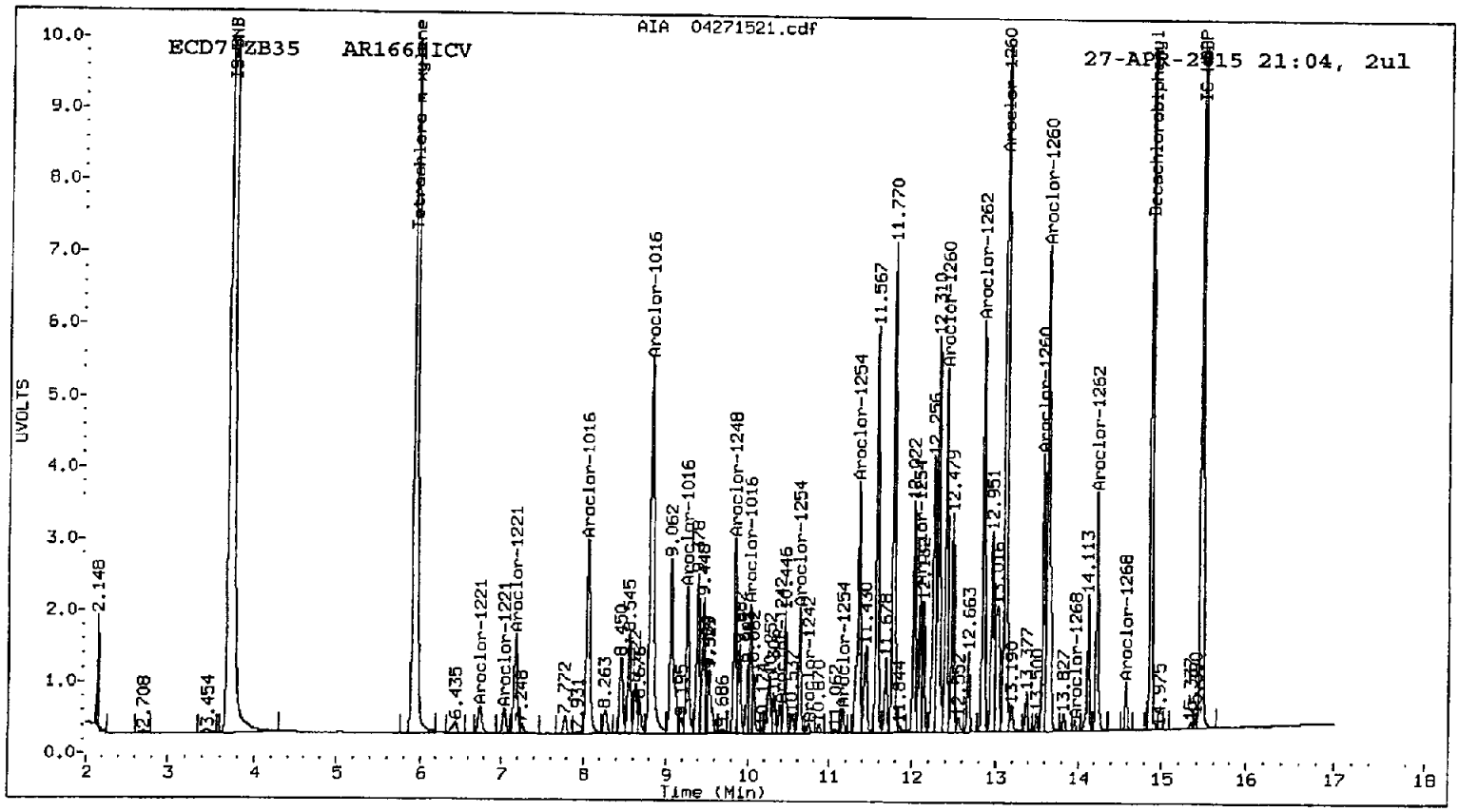
27-APR-2015 21:04, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271522.d
Data file 2: 20150427.b/ical-2.b/04271522.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242ICV
Client ID:
Injection Date: 27-APR-2015 21:25
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
6.369	-0.003	1367058	5.927	-0.003	6230161	38.0	36.8	3.1	Tetrachloro-m-xylene
14.895	-0.001	2468970	14.866	0.000	4106512	37.3	36.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.0	92.1
Decachlorobiphenyl	93.3	90.9

JR 04/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5167901	-0.5
Hexabromobiphenyl	3879663	4361176	12.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12477584	1.4
Hexabromobiphenyl	7233601	8063672	11.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.367	-0.002	164261	190.6	1	8.045	-0.002	1312084	184.9
Aroclor-1016	2	8.851	-0.002	487328	186.2	2	8.822	-0.001	2685616	181.1
Aroclor-1016	3	9.145	-0.003	173328	192.9	3	9.259	-0.001	721402	183.2
Aroclor-1016	4	9.927	-0.003	222266	227.8	4	10.020	-0.001	631732	227.6
Total Col1Ave (4 peaks):					199.4	Total Col2Ave (4 peaks):				194.2 RPD = 3
Corrected Ave (3 peaks):					189.9	Corrected Ave (3 peaks):				183.1 RPD = 4
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.022	-0.005	44269	133.6	2	6.746	0.006	216973	97.8
Aroclor-1221	3	7.150	-0.003	135003	141.4	3	7.035	-0.002	141758	111.7
Aroclor-1221	NS	---			----	4	7.170	-0.002	605002	160.1
Col1Ave: <3 Quant Peaks						Col2Ave: 123.2				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.022	-0.004	44269	195.6	2	7.170	-0.003	605002	224.2
Aroclor-1232	3	7.150	-0.003	135003	210.8	3	8.045	-0.004	1312084	416.4
Aroclor-1232	4	8.851	-0.002	487328	458.6	4	9.259	-0.002	721402	442.0
Total Col1Ave (3 peaks):					288.4	Total Col2Ave (3 peaks):				360.9 RPD = 22
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.851	-0.001	487328	249.8	1	8.045	-0.002	1312084	254.1
Aroclor-1242	2	9.145	-0.002	173328	245.9	2	8.822	-0.001	2685616	249.3
Aroclor-1242	3	10.318	-0.001	160897	243.8	3	10.383	-0.001	888143	234.3
Aroclor-1242	4	10.621	-0.001	234958	235.4	4	10.739	-0.002	1123383	243.9
Total Col1Ave (4 peaks):					243.7	Total Col2Ave (4 peaks):				245.4 RPD = 1
Corrected Ave (3 peaks):					241.7	Corrected Ave (3 peaks):				242.5 RPD = 0
Aroclor-1248	1	9.412	-0.003	102832	151.4	1	8.822	0.003	2685616	379.6
Aroclor-1248	2	9.927	-0.002	222266	166.9	2	9.825	-0.003	941449	166.7
Aroclor-1248	3	10.375	-0.002	223180	145.8	3	10.383	-0.002	888143	149.6
Aroclor-1248	4	10.621	-0.001	234958	149.9	4	10.739	-0.002	1123383	146.6
Total Col1Ave (4 peaks):					153.5	Total Col2Ave (4 peaks):				210.6 RPD = 31
Corrected Ave (3 peaks):					149.0	Corrected Ave (3 peaks):				154.3 RPD = 3
Aroclor-1254	1	10.375	-0.010	223180	230.4	1	10.625	-0.002	338339	51.8
Aroclor-1254	2	10.703	-0.002	83335	59.8	2	10.739	0.018	1123383	358.3
Aroclor-1254	3	11.084	-0.001	68721	60.2	3	11.154	-0.002	326019	63.5
Aroclor-1254	4	11.222	-0.001	105594	49.5	4	11.305	-0.001	541280	49.5
Aroclor-1254	5	11.938	0.002	82174	52.7	5	12.082	-0.004	358156	53.9
Total Col1Ave (5 peaks):					90.5	Total Col2Ave (5 peaks):				115.4 RPD = 24
Corrected Ave (4 peaks):					55.5	Corrected Ave (4 peaks):				54.7 RPD = 2
Aroclor-1260	1	---			0.0	1	12.474	0.071	31683	3.7
Aroclor-1260	2	---			0.0	2	13.108	0.000	40301	2.1
Aroclor-1260	3	---			0.0	3	13.627	0.050	24816	3.9
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.2				
Aroclor-1262	1	---			0.0	1	12.474	0.071	31683	2.1
Aroclor-1262	2	---			0.0	2	12.840	-0.004	78631	5.6
Aroclor-1262	3	---			0.0	3	13.108	0.000	40301	1.4
Aroclor-1262	4	---			0.0	4	13.627	0.049	24816	2.0
Aroclor-1262	5	---			0.0	5	14.255	0.037	46846	4.8
Col1Ave: <3 Quant Peaks						Col2Ave: 3.2				

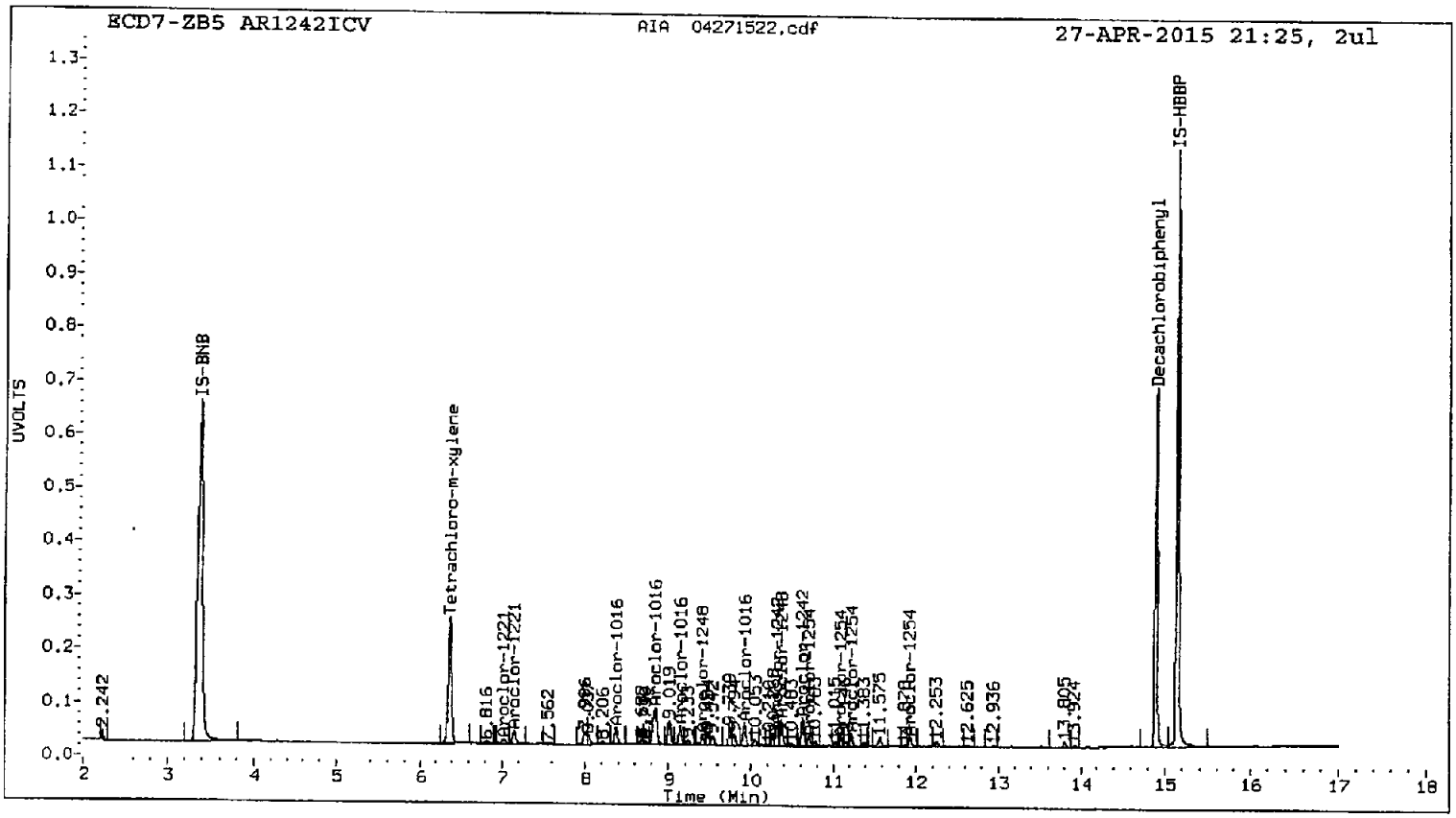
Aroclor-1268 1	---	0.0	1	---	0.0
Aroclor-1268 2	---	0.0	2	---	0.0
Aroclor-1268 3	---	0.0	3	---	0.0
Aroclor-1268 4	---	0.0	4	---	0.0
Col1Ave: <3 Quant Peaks			Col2Ave: <3 Quant Peaks		

Total PCB Area Col1 (6.472 - 14.797) = 3886633 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 21443237 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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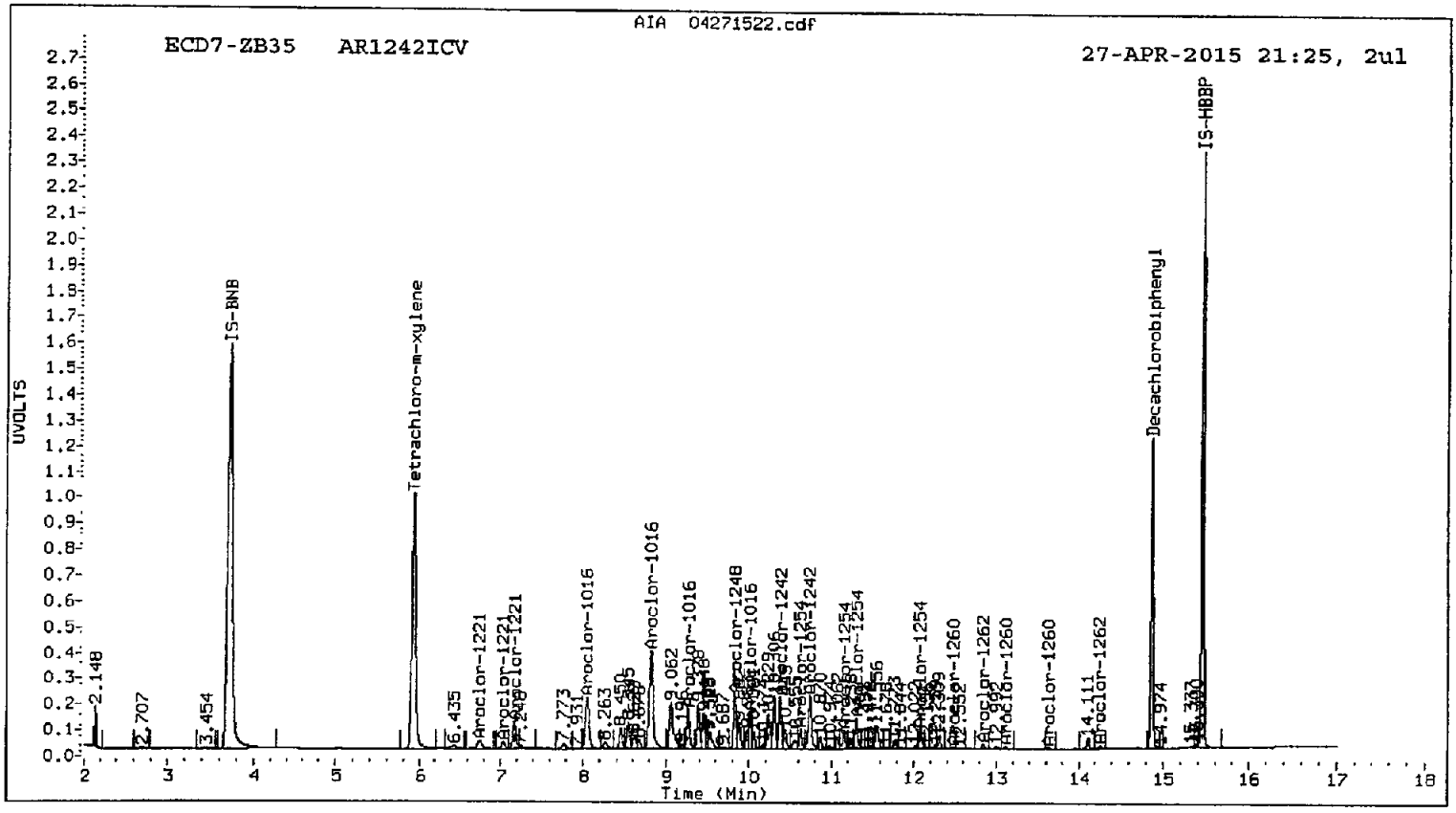
27-APR-2015 21:25, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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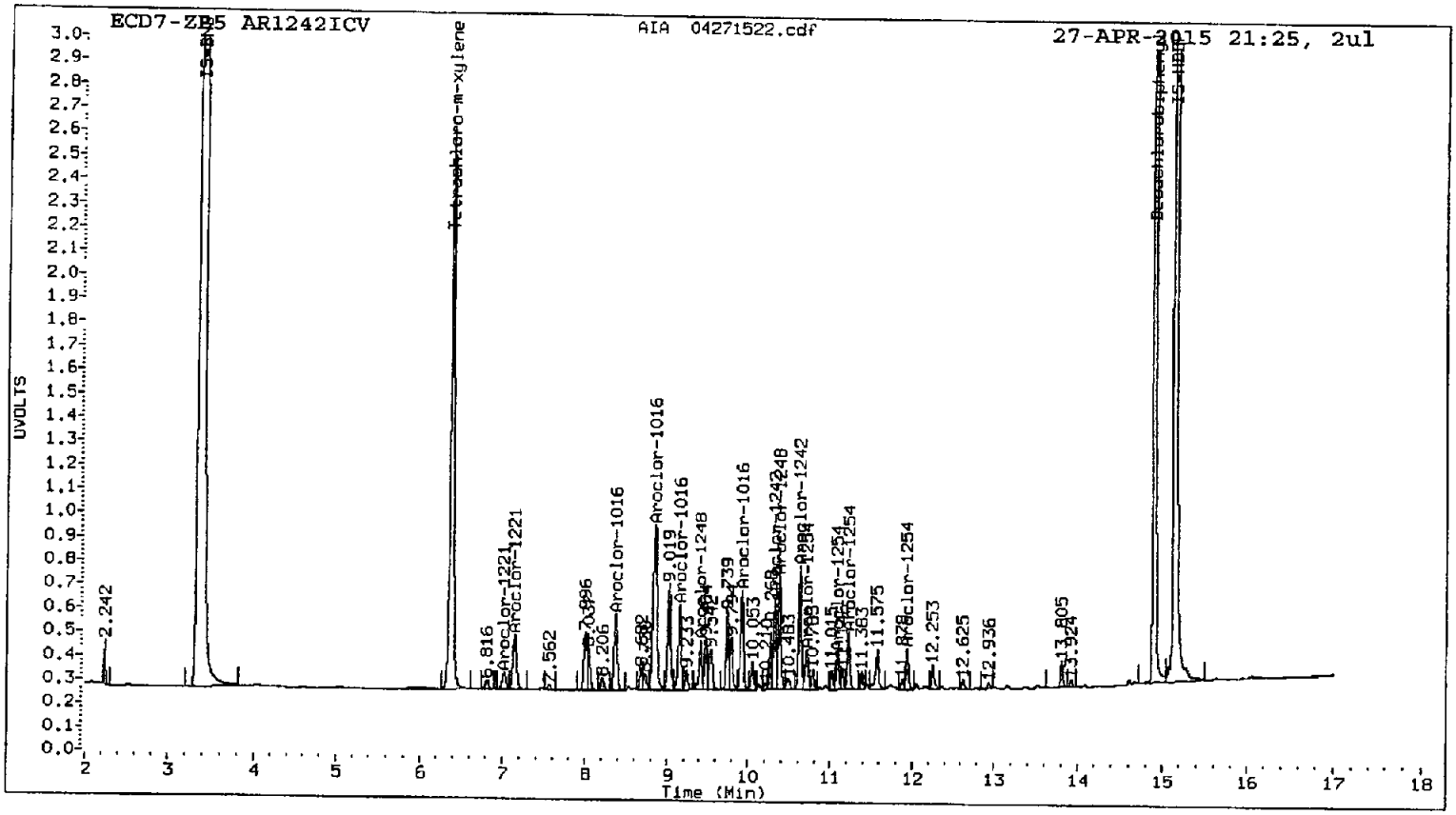
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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27-APR-2015 21:25, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
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Aroclor-1242
Aroclor-1254
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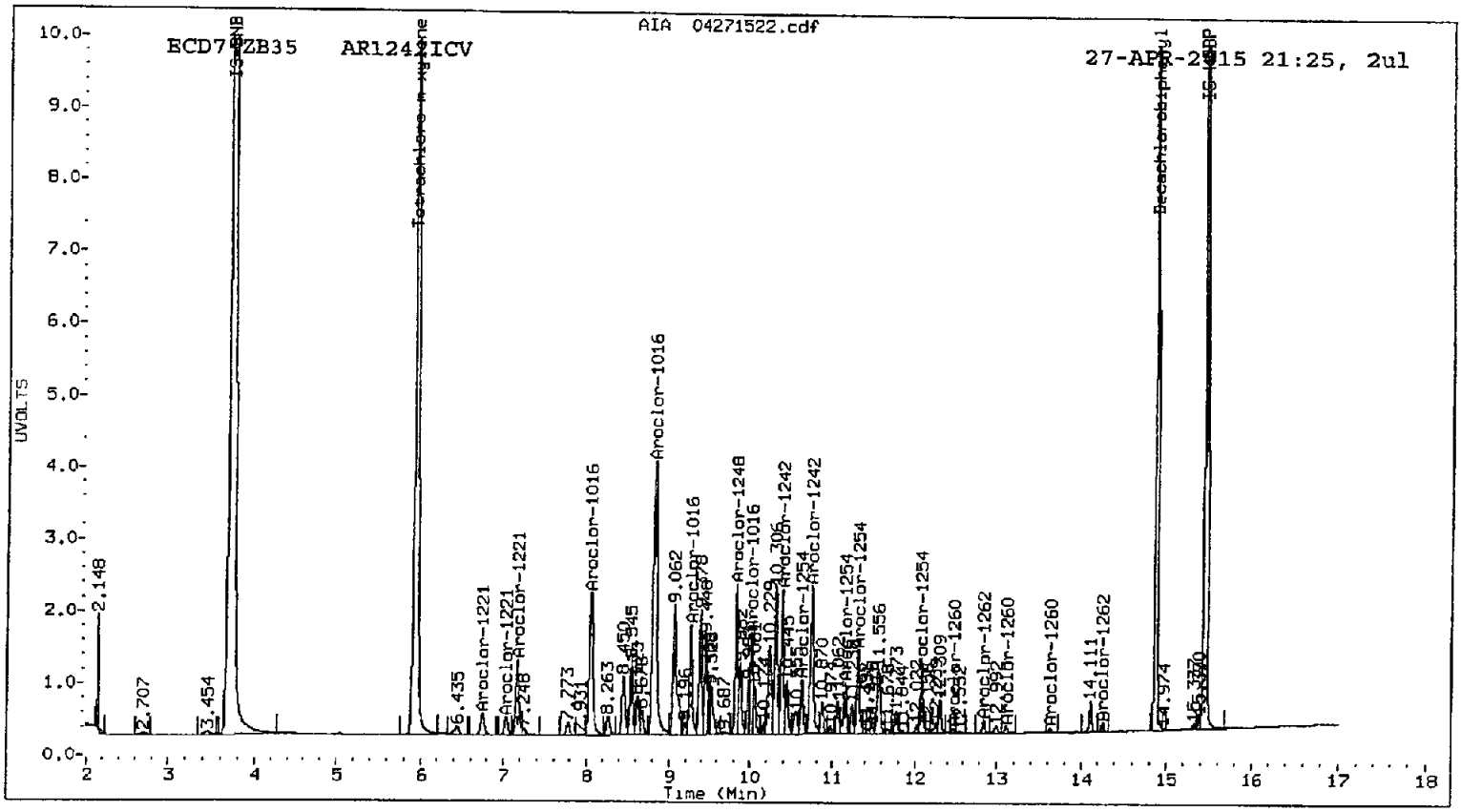
Aroclor-1262
UVOLTS
Time (Min)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Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271523.d
Data file 2: 20150427.b/ical-2.b/04271523.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248ICV
Client ID:
Injection Date: 27-APR-2015 21:47
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.004	1362698	5.927	-0.003	6246831	38.1	37.3	2.1	Tetrachloro-m-xylene
14.895	-0.001	2458167	14.866	0.000	4111005	38.5	37.4	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.2	93.2
Decachlorobiphenyl	96.2	93.4

JK 4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5142539	-1.0
Hexabromobiphenyl	3879663	4214075	8.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12364470	0.5
Hexabromobiphenyl	7233601	7852456	8.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.366	-0.003	84004	98.0	1	8.042	-0.005	723454	102.9
Aroclor-1016	2	8.847	-0.006	331508	127.3	2	8.817	-0.006	1865390	127.0
Aroclor-1016	3	9.145	-0.003	104069	116.4	3	9.259	-0.002	427336	109.5
Aroclor-1016	4	9.926	-0.004	326875	336.6	4	10.019	-0.001	1266908	460.5
Total Col1Ave (4 peaks):					169.6	Total Col2Ave (4 peaks):				200.0 RPD = 16
Corrected Ave (3 peaks):					113.9	Corrected Ave (3 peaks):				113.1 RPD = 1
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	7.010	-0.018	22831	69.2	2	6.755	0.014	113025	51.4
Aroclor-1221	3	7.149	-0.003	28015	29.5	3	7.035	-0.001	26756	21.3
Aroclor-1221	NS	---			----	4	7.169	-0.002	163612	43.7
Col1Ave: <3 Quant Peaks						Col2Ave:				38.8
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	7.010	-0.016	22831	101.4	2	7.169	-0.003	163612	61.2
Aroclor-1232	3	7.149	-0.004	28015	44.0	3	8.042	-0.007	723454	231.7
Aroclor-1232	4	8.847	-0.005	331508	313.5	4	9.259	-0.002	427336	264.2
Total Col1Ave (3 peaks):					153.0	Total Col2Ave (3 peaks):				185.7 RPD = 19
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	8.847	-0.004	331508	170.7	1	8.042	-0.005	723454	141.4
Aroclor-1242	2	9.145	-0.003	104069	148.3	2	8.817	-0.005	1865390	174.8
Aroclor-1242	3	10.317	-0.002	285514	434.7	3	10.382	-0.001	1434231	381.8
Aroclor-1242	4	10.620	-0.002	379668	382.3	4	10.740	-0.002	1854830	406.4
Total Col1Ave (4 peaks):					284.0	Total Col2Ave (4 peaks):				276.1 RPD = 3
Corrected Ave (3 peaks):					233.8	Corrected Ave (3 peaks):				232.7 RPD = 0
Aroclor-1248	1	9.412	-0.003	171293	253.5	1	8.817	-0.001	1865390	266.1
Aroclor-1248	2	9.926	-0.003	326875	246.6	2	9.825	-0.003	1410897	252.0
Aroclor-1248	3	10.375	-0.002	374300	245.7	3	10.382	-0.002	1434231	243.8
Aroclor-1248	4	10.620	-0.002	379668	243.4	4	10.740	-0.002	1854830	244.2
Total Col1Ave (4 peaks):					247.3	Total Col2Ave (4 peaks):				251.5 RPD = 2
Corrected Ave (3 peaks):					245.2	Corrected Ave (3 peaks):				246.7 RPD = 1
Aroclor-1254	1	10.375	-0.010	374300	388.3	1	10.624	-0.002	609050	94.1
Aroclor-1254	2	10.702	-0.003	162654	117.3	2	10.740	0.018	1854830	597.0
Aroclor-1254	3	11.083	-0.002	138933	122.4	3	11.154	-0.002	634015	124.6
Aroclor-1254	4	11.221	-0.002	212618	100.1	4	11.305	-0.001	1031442	95.1
Aroclor-1254	5	11.938	0.002	172292	111.0	5	12.081	-0.005	752189	114.2
Total Col1Ave (5 peaks):					167.8	Total Col2Ave (5 peaks):				205.0 RPD = 20
Corrected Ave (4 peaks):					112.7	Corrected Ave (4 peaks):				107.0 RPD = 5
Aroclor-1260	1	---			0.0	1	12.402	-0.001	36402	4.4
Aroclor-1260	2	13.153	-0.002	16411	2.7	2	13.109	0.001	82282	4.3
Aroclor-1260	3	---			0.0	3	13.576	-0.001	30201	4.9
Aroclor-1260	4	---			0.0	4	13.630	0.001	52655	4.1
Aroclor-1260	5	13.924	-0.095	12336	13.6	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave:				4.4
Aroclor-1262	1	---			0.0	1	12.402	-0.001	36402	2.5
Aroclor-1262	2	---			0.0	2	12.841	-0.003	99979	7.3
Aroclor-1262	3	---			0.0	3	13.109	0.001	82282	3.0
Aroclor-1262	4	---			0.0	4	13.576	-0.001	30201	2.5
Aroclor-1262	5	---			0.0	5	14.218	0.001	19623	2.1
Col1Ave: <3 Quant Peaks						Col2Ave:				3.5

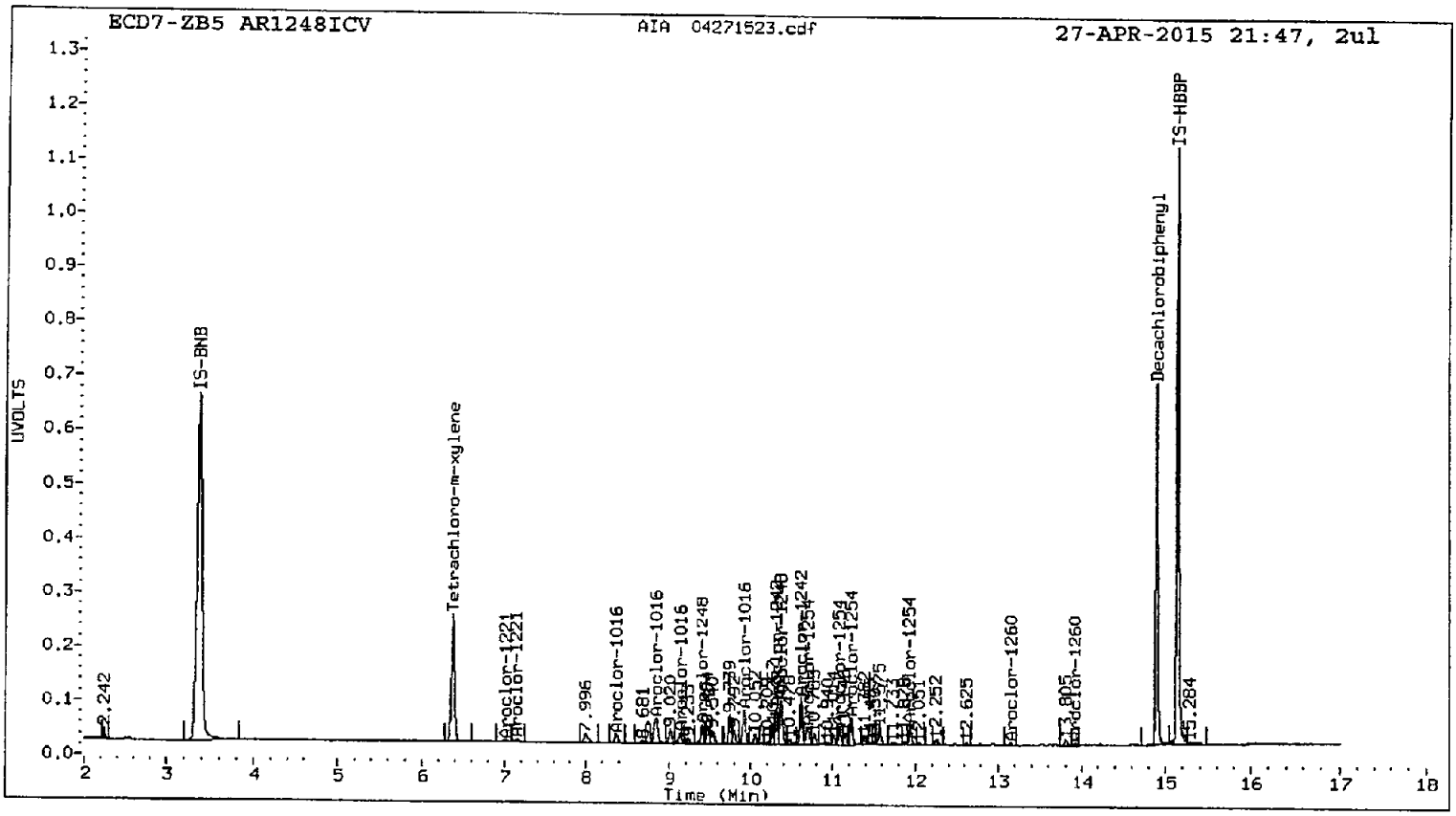
Aroclor-1268 1	---	0.0	1	13.576	0.000	30201	1.5
Aroclor-1268 2	---	0.0	2	13.630	-0.004	52655	2.7
Aroclor-1268 3	---	0.0	3	13.958	0.000	6613	0.4
Aroclor-1268 4	---	0.0	4	14.575	-0.002	13497	0.3
Col1Ave: <3 Quant Peaks			Col2Ave:		1.2		

Total PCB Area Col1 (6.472 - 14.797) = 4717192 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 25377758 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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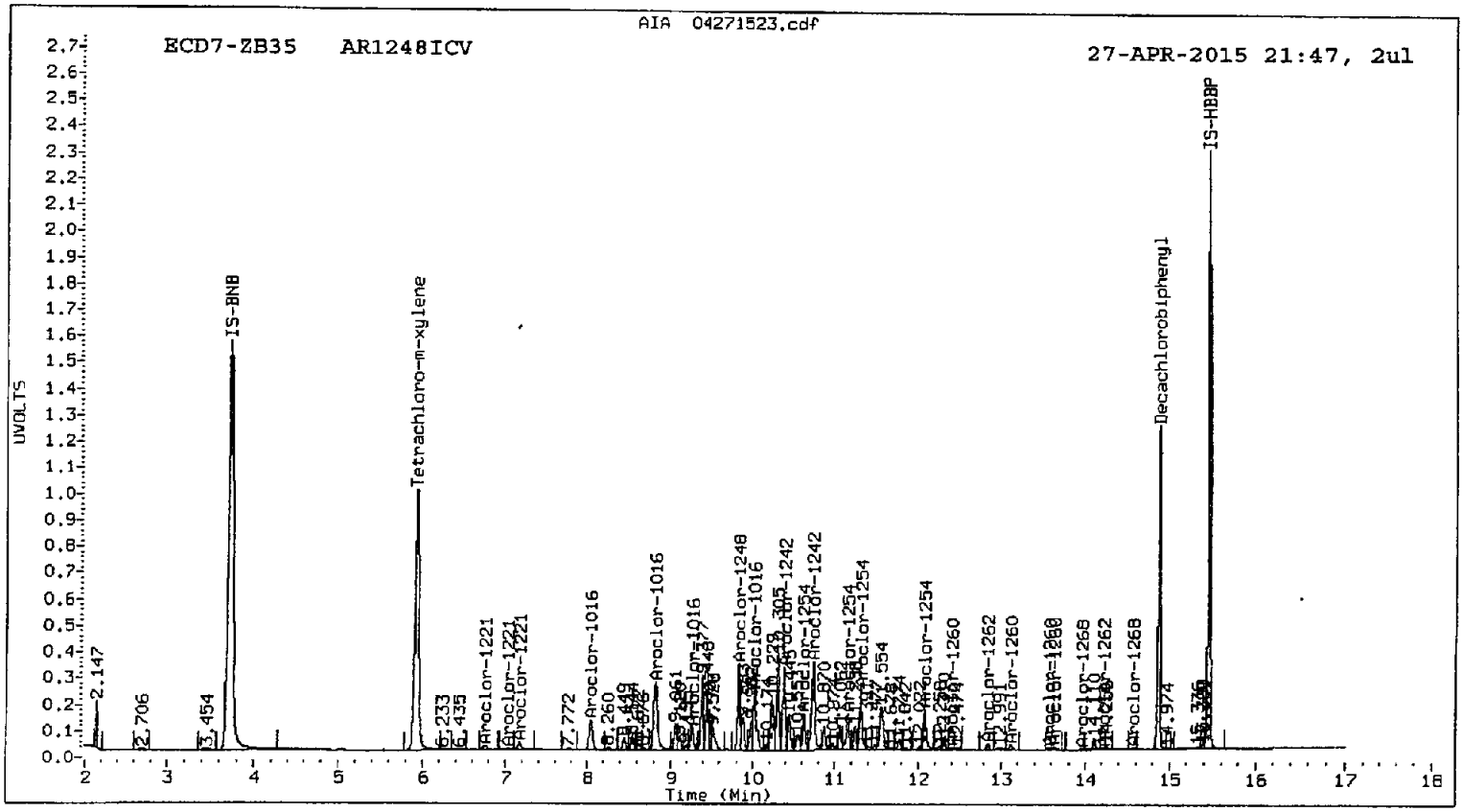
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
UVOLTS
Time (Min)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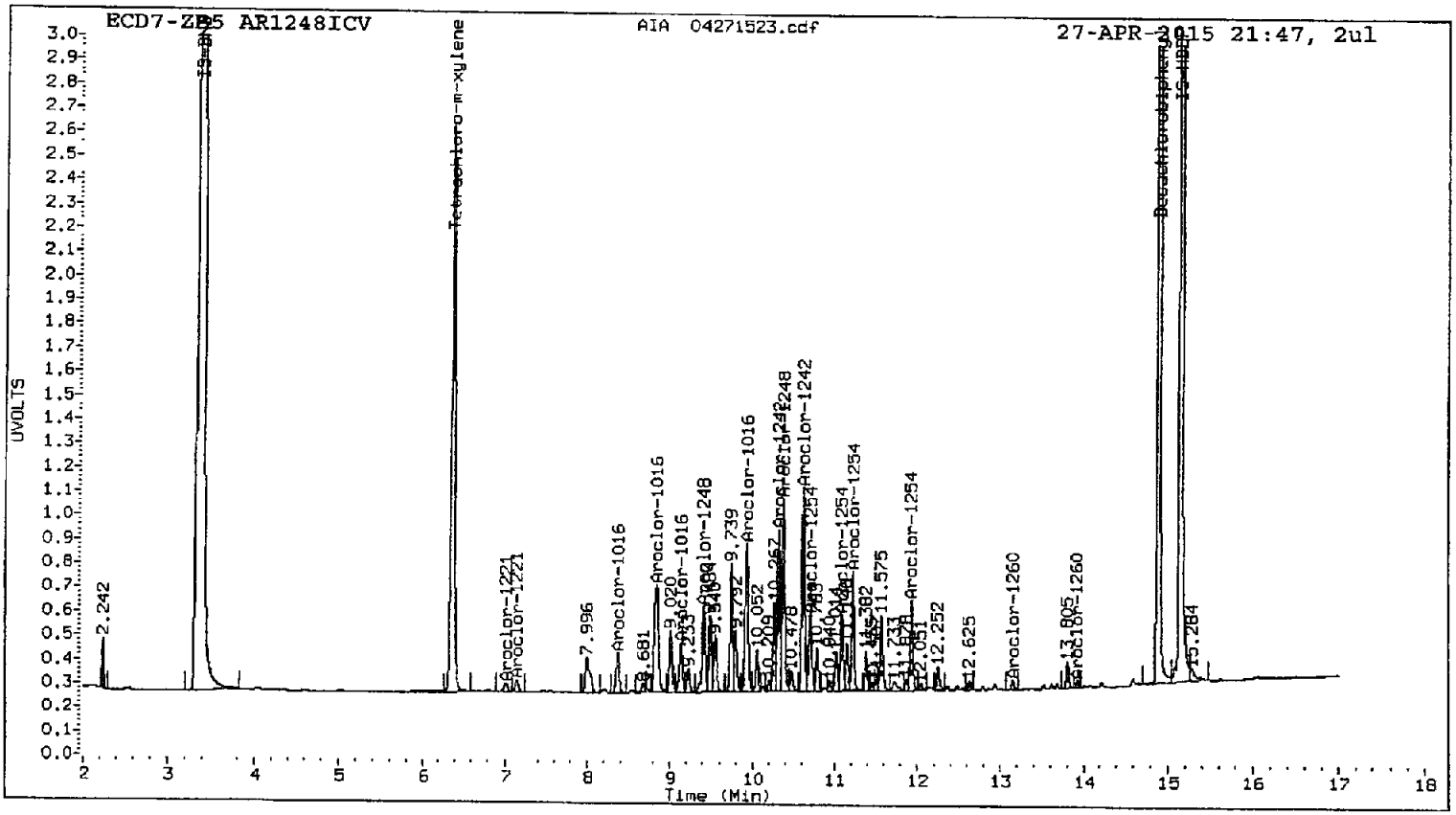
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)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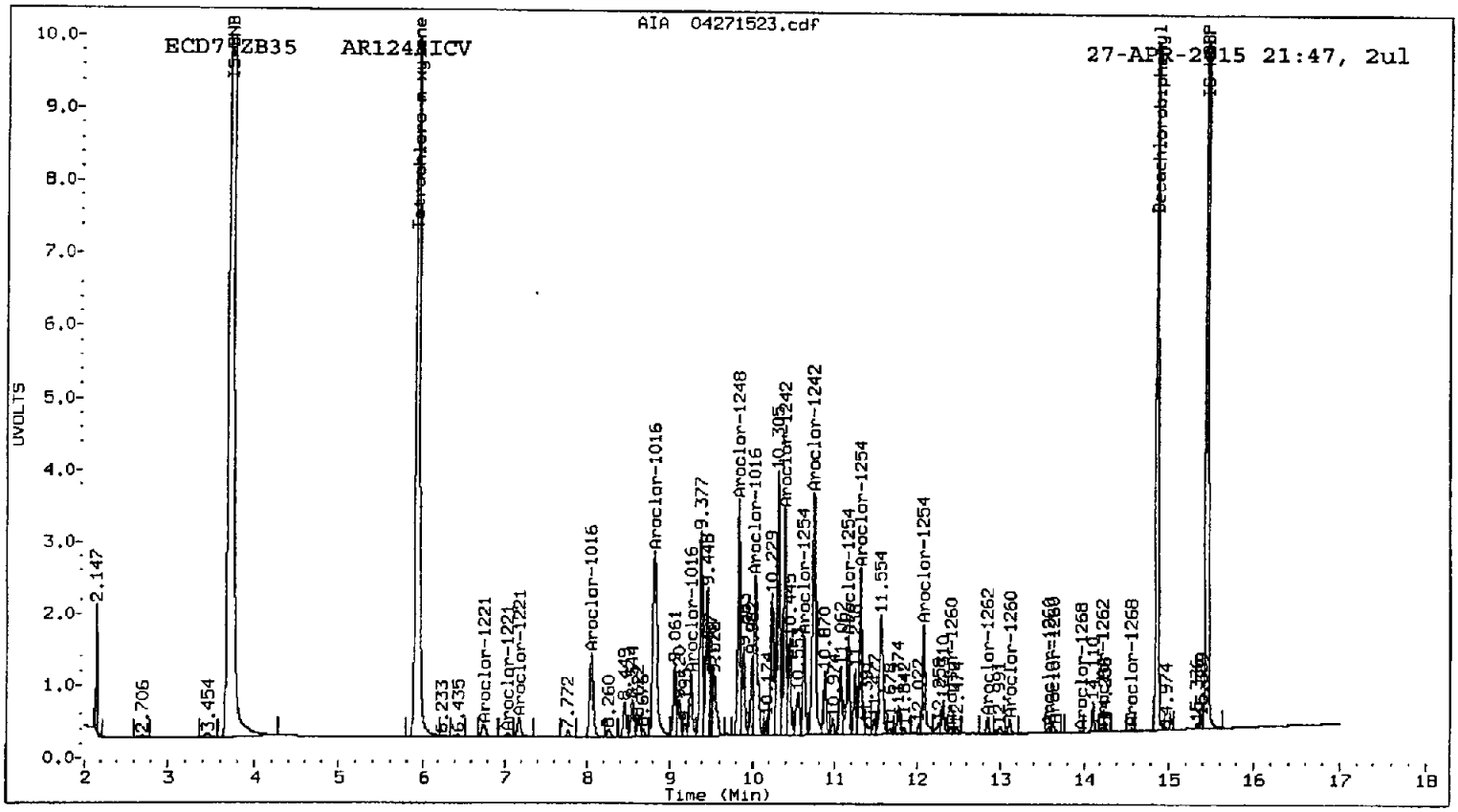
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
UVOLTS
Time (Min)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Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271524.d
Data file 2: 20150427.b/ical-2.b/04271524.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV
Client ID:
Injection Date: 27-APR-2015 22:08
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.369	-0.003	1319977	5.928	-0.003	6024840	36.8	36.0	2.2	Tetrachloro-m-xylene
14.895	-0.001	2369574	14.866	-0.001	3971983	37.6	36.3	3.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

JK 04/28/15

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	92.1	90.1
Decachlorobiphenyl	94.1	90.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5146912	-0.9
Hexabromobiphenyl	3879663	4152288	7.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12332435	0.2
Hexabromobiphenyl	7233601	7808443	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	8.044	-0.003	23715	3.4
Aroclor-1016	2	---			0.0	2	8.810	-0.013	70453	4.8
Aroclor-1016	3	---			0.0	3	9.259	-0.001	10559	2.7
Aroclor-1016	4	---			0.0	4	10.020	-0.001	261102	95.2
	Col1Ave: <3 Quant Peaks					Col2Ave: 26.5				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.758	0.017	88982	40.6
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.172	0.001	24148	6.5
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.172	0.000	24148	9.1
Aroclor-1232	3	---			0.0	3	8.044	-0.004	23715	7.6
Aroclor-1232	4	---			0.0	4	9.259	-0.001	10559	6.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 7.7				
Aroclor-1242	1	---			0.0	1	8.044	-0.003	23715	4.6
Aroclor-1242	2	---			0.0	2	8.810	-0.012	70453	6.6
Aroclor-1242	3	10.317	-0.002	139624	212.4	3	10.382	-0.001	280900	75.0
Aroclor-1242	4	10.623	0.000	106322	107.0	4	10.719	-0.023	973471	213.9
	Col1Ave: <3 Quant Peaks					Col2Ave: 75.0				
Aroclor-1248	1	9.411	-0.003	109278	161.6	1	8.810	-0.008	70453	10.1
Aroclor-1248	2	9.926	-0.003	46925	35.4	2	9.826	-0.002	499816	89.5
Aroclor-1248	3	10.383	0.005	277305	181.9	3	10.382	-0.003	280900	47.9
Aroclor-1248	4	10.623	0.000	106322	68.1	4	10.719	-0.022	973471	128.5
	Total Col1Ave (4 peaks):			111.7		Total Col2Ave (4 peaks):			69.0	RPD = 47*
	Corrected Ave (3 peaks):			88.3		Corrected Ave (3 peaks):			49.2	RPD = 57*
Aroclor-1254	1	10.383	-0.003	277305	287.5	1	10.625	-0.002	1831710	283.6
Aroclor-1254	2	10.703	-0.002	394873	284.6	2	10.719	-0.002	973471	314.1
Aroclor-1254	3	11.083	-0.002	336621	296.2	3	11.154	-0.002	1451882	286.2
Aroclor-1254	4	11.220	-0.002	597272	280.9	4	11.305	-0.002	2998232	277.2
Aroclor-1254	5	11.935	-0.001	462140	297.5	5	12.084	-0.002	1912585	291.1
	Total Col1Ave (5 peaks):			289.3		Total Col2Ave (5 peaks):			290.4	RPD = 0
	Corrected Ave (4 peaks):			287.3		Corrected Ave (4 peaks):			284.5	RPD = 1
Aroclor-1260	1	12.475	-0.005	36711	19.8	1	12.401	-0.002	148134	18.0
Aroclor-1260	2	13.152	-0.003	100078	16.5	2	13.108	0.001	492854	26.0
Aroclor-1260	3	13.520	-0.003	95190	34.3	3	13.579	0.002	71547	11.7
Aroclor-1260	4	---			0.0	4	13.626	-0.002	349612	27.2
Aroclor-1260	5	13.923	-0.096	12173	13.6	NS	---			----
	Total Col1Ave (4 peaks):			21.0		Total Col2Ave (4 peaks):			20.8	RPD = 1
	Corrected Ave (3 peaks):			16.6		Corrected Ave (3 peaks):			18.6	RPD = 11
Aroclor-1262	1	12.475	-0.005	36711	11.2	1	12.401	-0.001	148134	10.3
Aroclor-1262	2	13.152	-0.001	100078	11.3	2	12.840	-0.004	893004	65.3
Aroclor-1262	3	13.520	-0.003	95190	33.1	3	13.108	0.000	492854	17.8
Aroclor-1262	4	---			0.0	4	13.579	0.002	71547	5.9
Aroclor-1262	5	---			0.0	5	14.218	0.000	14178	1.5
	Total Col1Ave (3 peaks):			18.5		Total Col2Ave (5 peaks):			20.2	RPD = 8
	Corrected Ave: < 3 Peaks					Corrected Ave (4 peaks):			8.9	
Aroclor-1268	1	---			0.0	1	13.579	0.003	71547	3.5

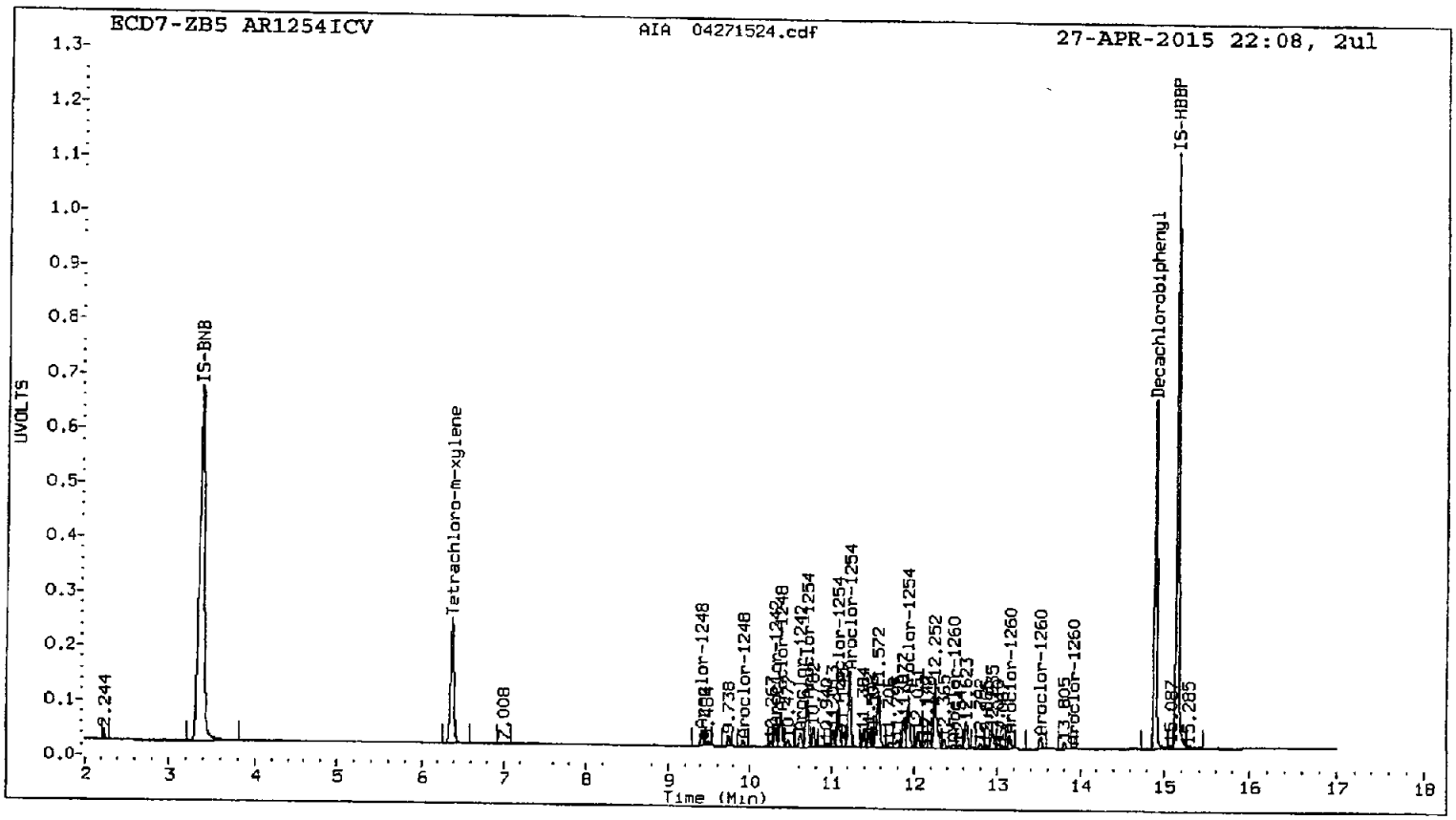
Aroclor-1268 2	---	0.0	2	13.626	-0.007	349612	17.9
Aroclor-1268 3	---	0.0	3	---			0.0
Aroclor-1268 4	---	0.0	4	---			0.0
Col1Ave: <3 Quant Peaks			Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.472 - 14.797) = 6020040 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 30456620 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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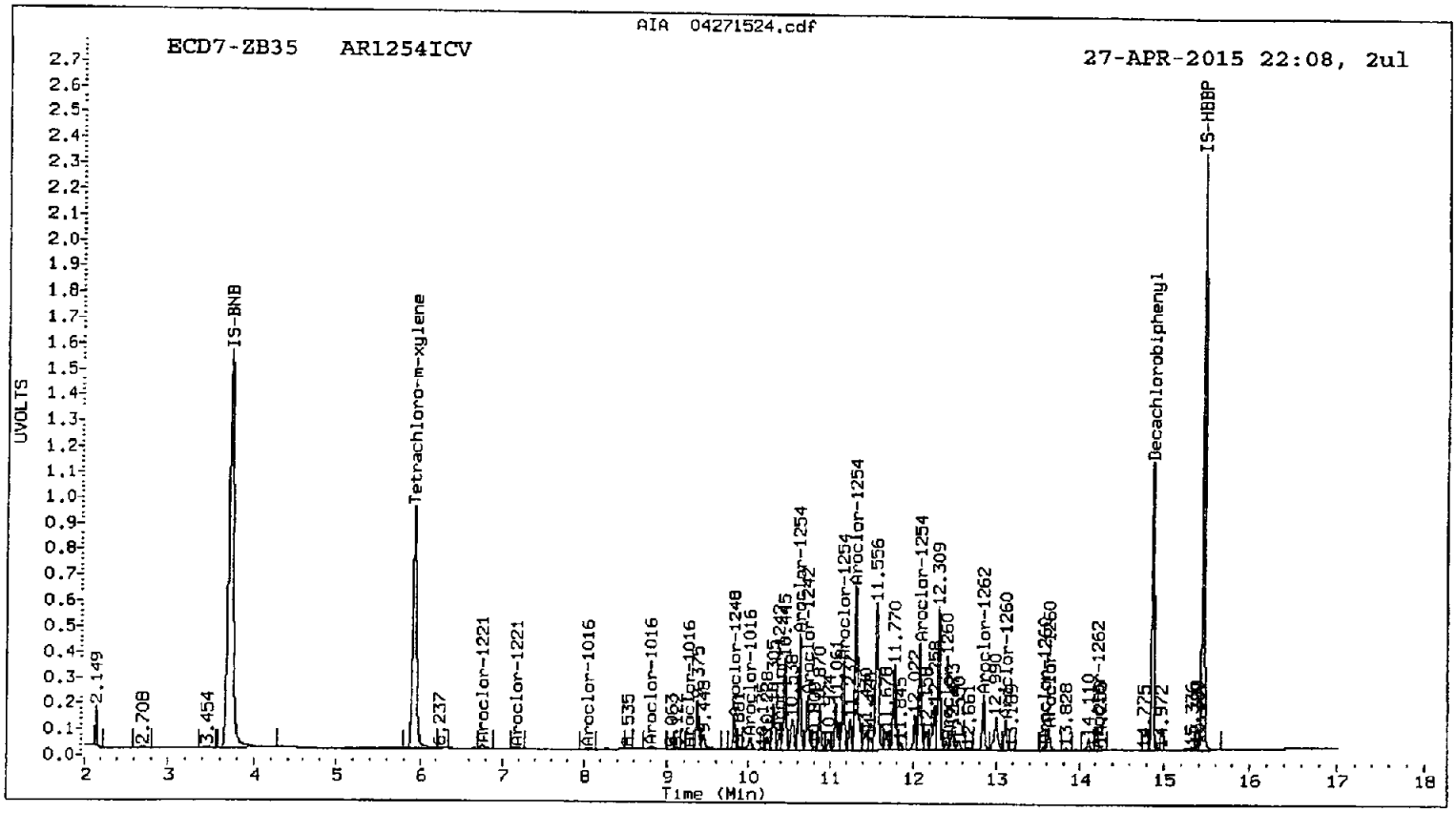
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1248
Aroclor-1254
Aroclor-1260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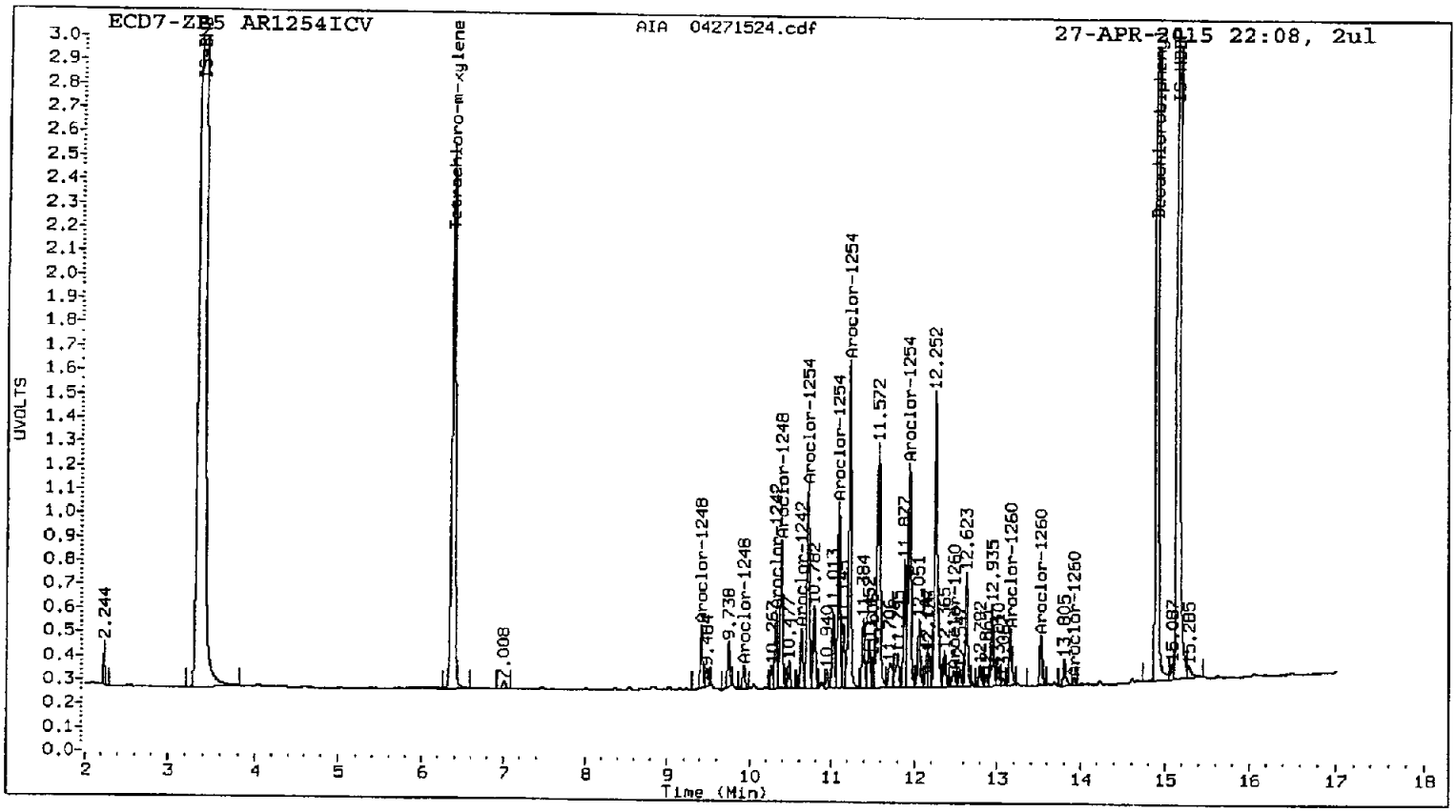
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262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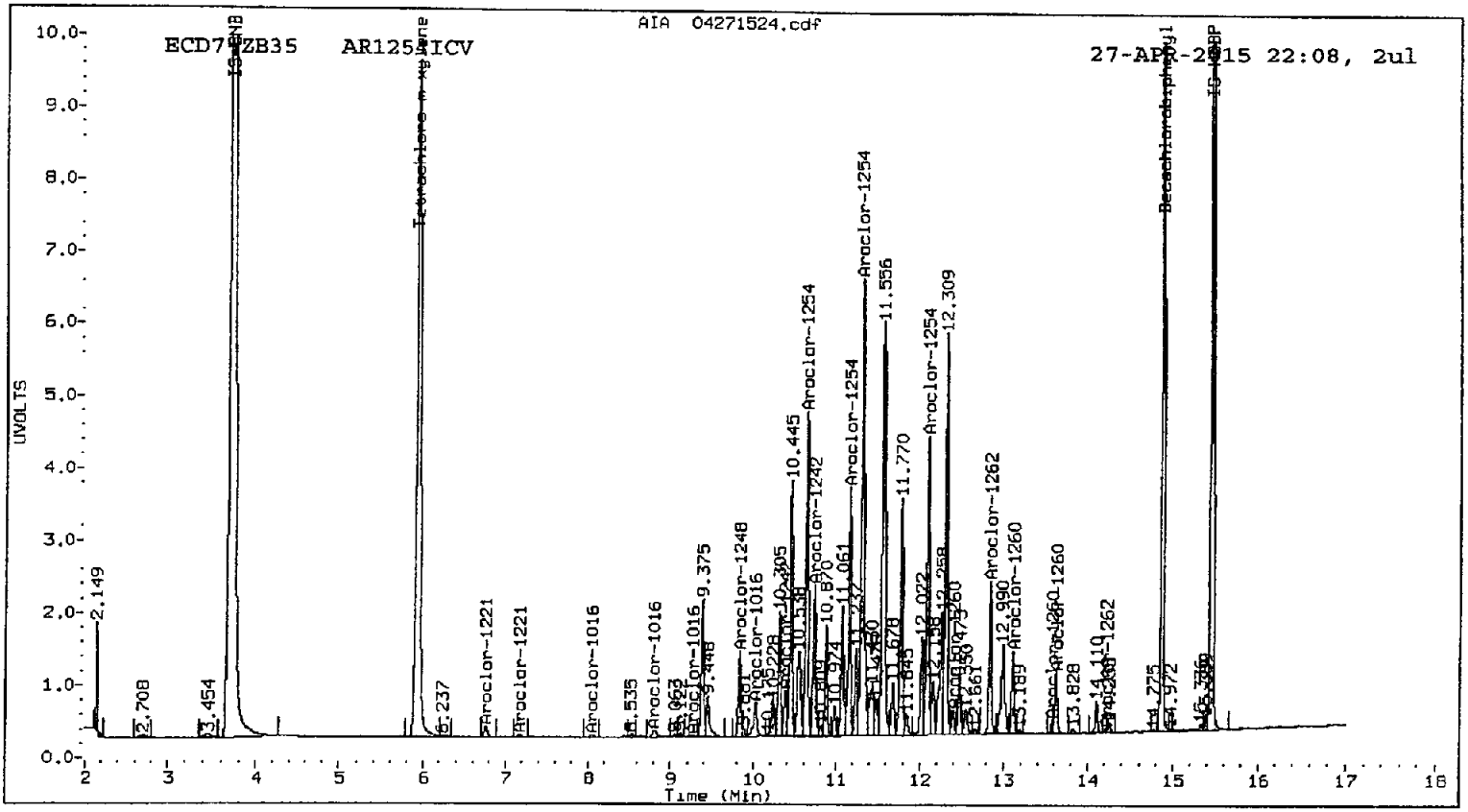
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
Aroclor-1248
Aroclor-1254
Aroclor-1260
2.244
7.008
11.572
12.252
15.087
15.285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27-APR-2015 22:08, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBB
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
2.149
2.708
3.454
6.237
9.375
10.445
11.556
11.770
12.309
12.990
15.275
15.972

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271525.d
Data file 2: 20150427.b/ical-2.b/04271525.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR2162ICV
Client ID:
Injection Date: 27-APR-2015 22:29
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.370	-0.002	1373191	5.928	-0.002	6134784	38.2	37.2	2.8	Tetrachloro-m-xylene
14.895	-0.002	2452719	14.865	-0.001	4126252	37.5	36.3	3.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.6	92.9
Decachlorobiphenyl	93.7	90.8

JK 04/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5161065	-0.7
Hexabromobiphenyl	3879663	4313451	11.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12177692	-1.0
Hexabromobiphenyl	7233601	8108836	12.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

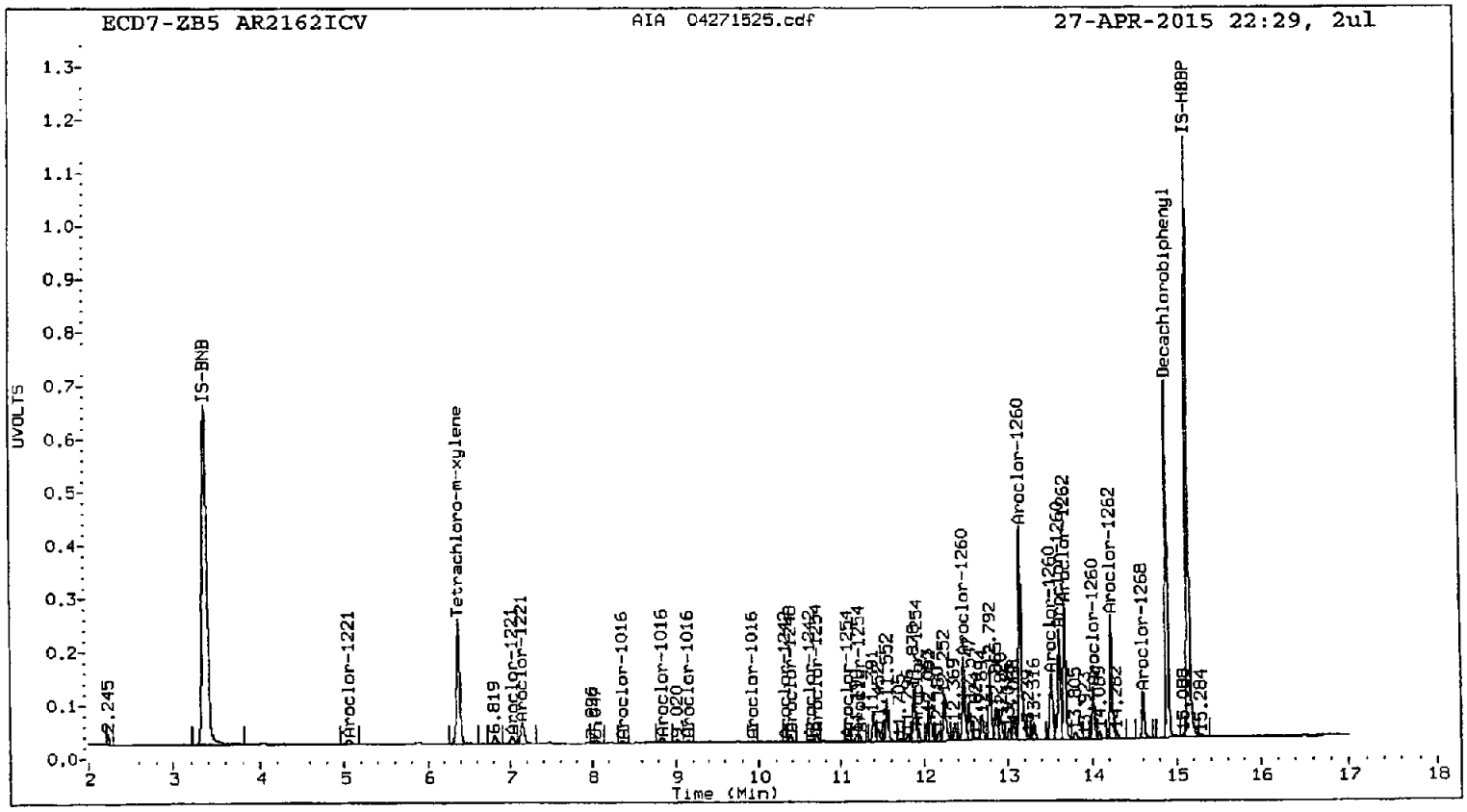
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount	
Aroclor-1016	1	8.368	-0.001	20938	24.3	1	8.059	0.012	337795	48.8	
Aroclor-1016	2	8.852	0.000	57363	22.0	2	8.823	0.000	347181	24.0	
Aroclor-1016	3	9.147	-0.001	18986	21.2	3	9.260	0.000	101473	26.4	
Aroclor-1016	4	9.928	-0.001	11914	12.2	4	10.020	0.000	77476	28.6	
Total Col1Ave (4 peaks):					19.9	Total Col2Ave (4 peaks):				31.9	RPD = 46*
Corrected Ave (3 peaks):					18.4	Corrected Ave (3 peaks):				26.3	RPD = 35
Aroclor-1221	1	5.052	-0.003	55291	249.3	1	5.040	-0.002	333769	250.7	
Aroclor-1221	2	7.028	0.000	82909	250.5	2	6.739	-0.001	543320	251.0	
Aroclor-1221	3	7.152	0.000	237836	249.4	3	7.035	-0.001	309244	249.7	
Aroclor-1221	NS	---			----	4	7.170	-0.001	920388	249.5	
Total Col1Ave (3 peaks):					249.7	Total Col2Ave (4 peaks):				250.2	RPD = 0
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				250.0	
Aroclor-1232	1	5.052	-0.003	55291	435.9	1	5.040	-0.002	333769	410.1	
Aroclor-1232	2	7.028	0.001	82909	366.9	2	7.170	-0.002	920388	349.5	
Aroclor-1232	3	7.152	-0.001	237836	371.9	3	8.059	0.010	337795	109.8	
Aroclor-1232	4	8.852	0.000	57363	54.1	4	9.260	0.000	101473	63.7	
Total Col1Ave (4 peaks):					307.2	Total Col2Ave (4 peaks):				233.3	RPD = 27
Corrected Ave (3 peaks):					264.3	Corrected Ave (3 peaks):				174.4	RPD = 41*
Aroclor-1242	1	8.852	0.001	57363	29.4	1	8.059	0.012	337795	67.0	
Aroclor-1242	2	9.147	-0.001	18986	27.0	2	8.823	0.000	347181	33.0	
Aroclor-1242	3	10.319	0.000	13970	21.2	3	10.384	0.001	65524	17.7	
Aroclor-1242	4	10.623	0.001	19030	19.1	4	10.734	-0.008	130050	28.9	
Total Col1Ave (4 peaks):					24.2	Total Col2Ave (4 peaks):				36.7	RPD = 41*
Corrected Ave (3 peaks):					22.4	Corrected Ave (3 peaks):				26.6	RPD = 17
Aroclor-1248	1	---			0.0	1	8.823	0.004	347181	50.3	
Aroclor-1248	2	9.928	-0.001	11914	9.0	2	9.827	-0.001	85454	15.5	
Aroclor-1248	3	10.384	0.006	62613	41.0	3	10.384	0.000	65524	11.3	
Aroclor-1248	4	10.623	0.001	19030	12.2	4	10.734	-0.008	130050	17.4	
Total Col1Ave (3 peaks):					20.7	Total Col2Ave (4 peaks):				23.6	RPD = 13
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				14.7	
Aroclor-1254	1	10.384	-0.001	62613	64.7	1	10.625	-0.002	404336	63.4	
Aroclor-1254	2	10.705	0.000	68084	48.9	2	10.734	0.012	130050	42.5	
Aroclor-1254	3	11.084	-0.001	21134	18.5	3	11.155	-0.001	108453	21.6	
Aroclor-1254	4	11.219	-0.003	45923	21.5	4	11.344	0.038	1642464	153.8	
Aroclor-1254	5	11.924	-0.012	94156	60.4	5	12.090	0.004	432535	66.7	
Total Col1Ave (5 peaks):					42.8	Total Col2Ave (5 peaks):				69.6	RPD = 48*
Corrected Ave (4 peaks):					37.4	Corrected Ave (4 peaks):				48.6	RPD = 26
Aroclor-1260	1	12.479	-0.002	680659	353.0	1	12.400	-0.002	2981312	349.6	
Aroclor-1260	2	13.152	-0.002	1786196	283.6	2	13.106	-0.001	5631829	286.4	
Aroclor-1260	3	13.523	0.000	589772	204.6	3	13.576	-0.001	2568158	404.7	
Aroclor-1260	4	13.620	-0.001	877830	509.6	4	13.629	0.001	3854516	289.1	
Aroclor-1260	5	14.017	-0.003	398638	428.7	NS	---			----	
Total Col1Ave (5 peaks):					355.9	Total Col2Ave (4 peaks):				332.4	RPD = 7
Corrected Ave (4 peaks):					317.5	Corrected Ave (3 peaks):				308.4	RPD = 3
Aroclor-1262	1	12.479	-0.001	680659	200.6	1	12.400	-0.002	2981312	198.7	
Aroclor-1262	2	13.152	-0.001	1786196	193.8	2	12.844	0.000	2909923	205.0	
Aroclor-1262	3	13.523	0.000	589772	197.3	3	13.106	-0.002	5631829	196.0	
Aroclor-1262	4	13.683	-0.001	1028776	202.2	4	13.576	-0.001	2568158	205.4	
Aroclor-1262	5	14.223	-0.002	859672	198.0	5	14.218	0.000	1997378	204.6	

Total Col1Ave (5 peaks):			198.4		Total Col2Ave (5 peaks):			201.9	RPD = 2	
Corrected Ave (4 peaks):			197.4		Corrected Ave (4 peaks):			201.0	RPD = 2	
Aroclor-1268 1	13.620	-0.001	877830	104.2	1	13.576	0.000	2568158	119.5	
Aroclor-1268 2	13.683	0.000	1028776	102.1	2	13.629	-0.004	3854516	190.0	
Aroclor-1268 3	14.017	0.012	398638	44.5	3	13.958	-0.001	178780	10.8	
Aroclor-1268 4	14.602	-0.002	328922	11.3	4	14.576	-0.001	653789	14.4	
Total Col1Ave (4 peaks):			65.5		Total Col2Ave (4 peaks):			83.7	RPD = 24	
Corrected Ave (3 peaks):			52.6		Corrected Ave (3 peaks):			48.2	RPD = 9	

Total PCB Area Col1 (6.472 - 14.797) = 11808300 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 44247268 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical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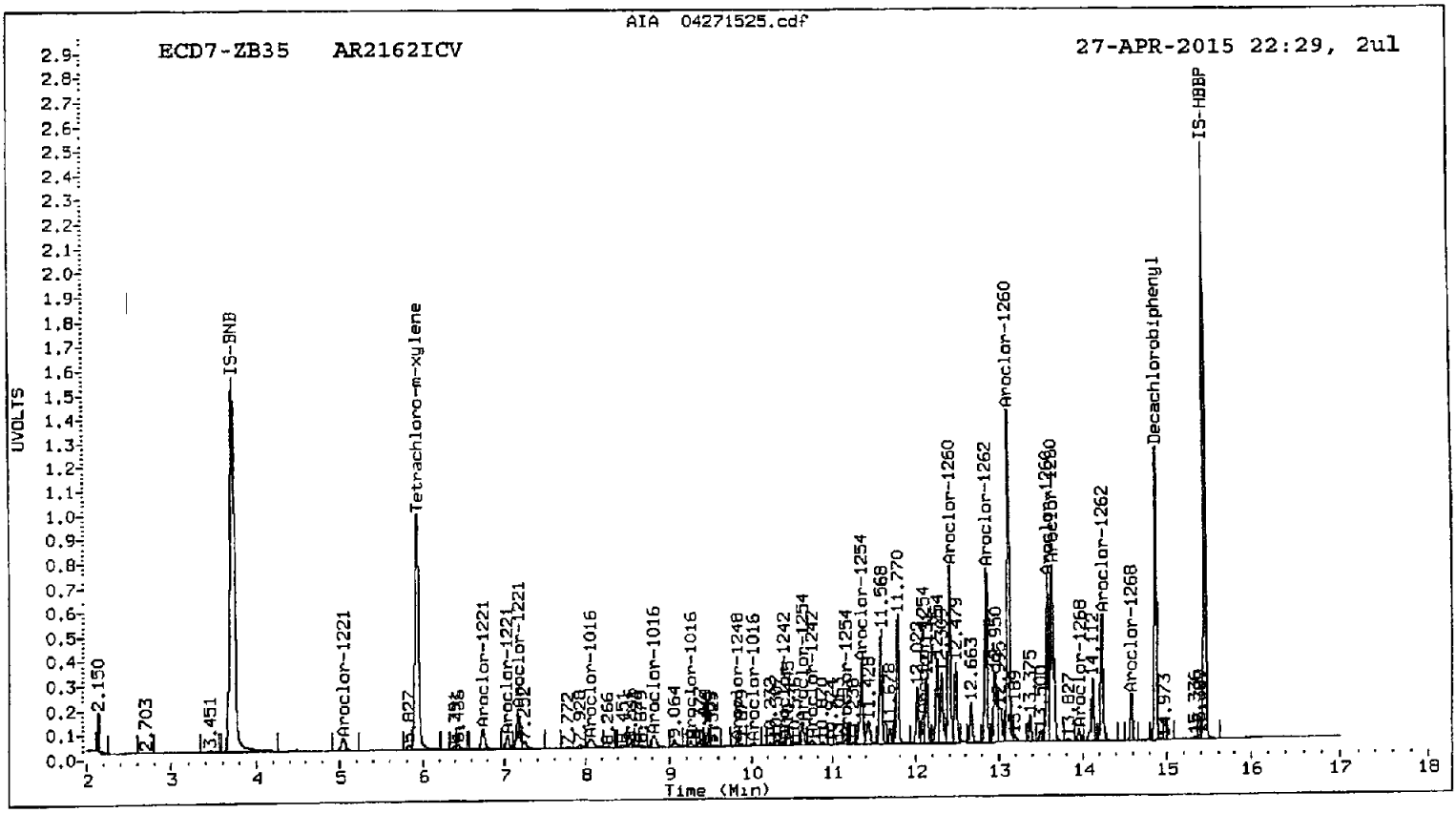
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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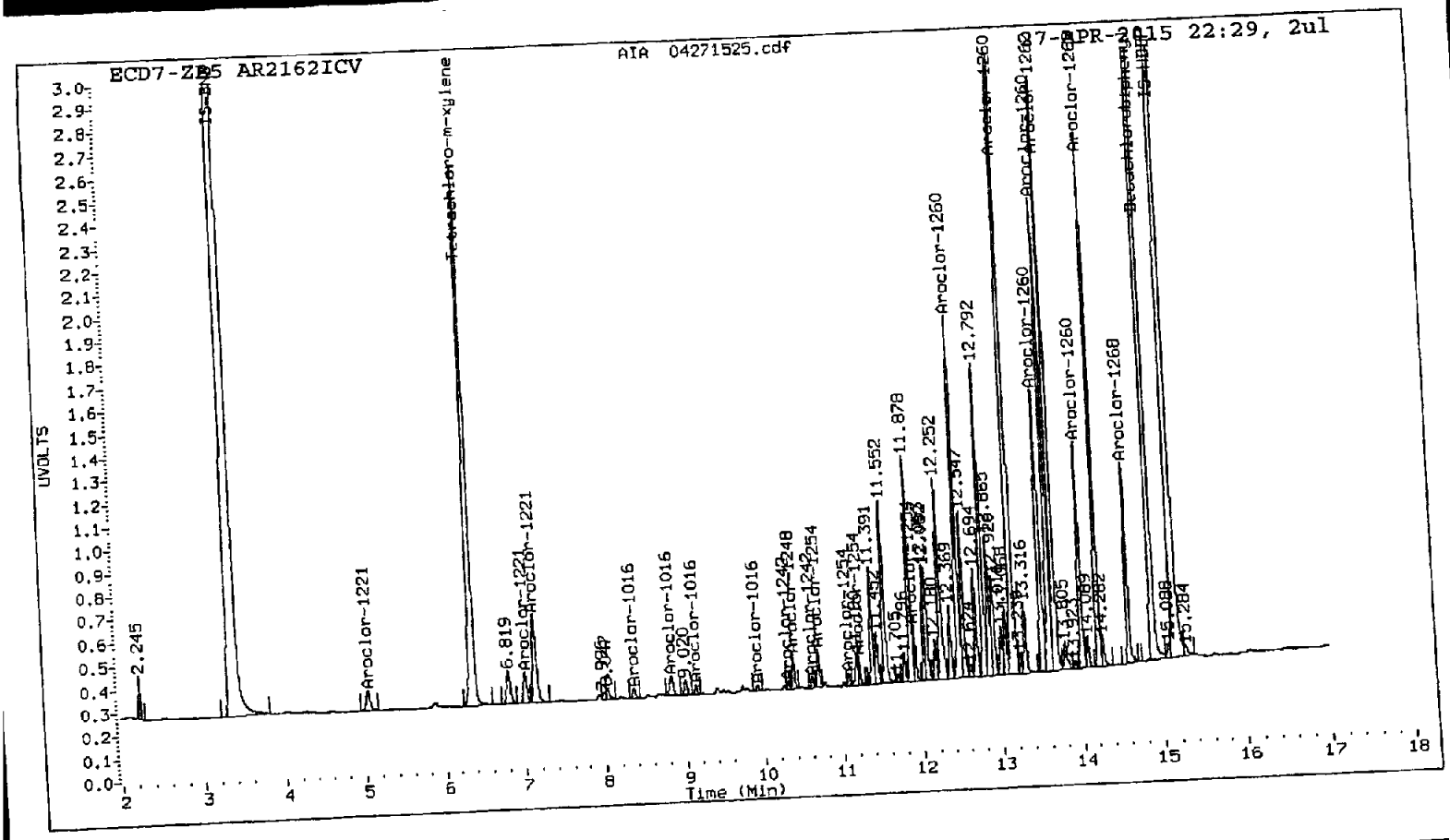
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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AIA 04271525.cdf
27-APR-2015 22:29, 2ul
UVOLTS
Time (Min)
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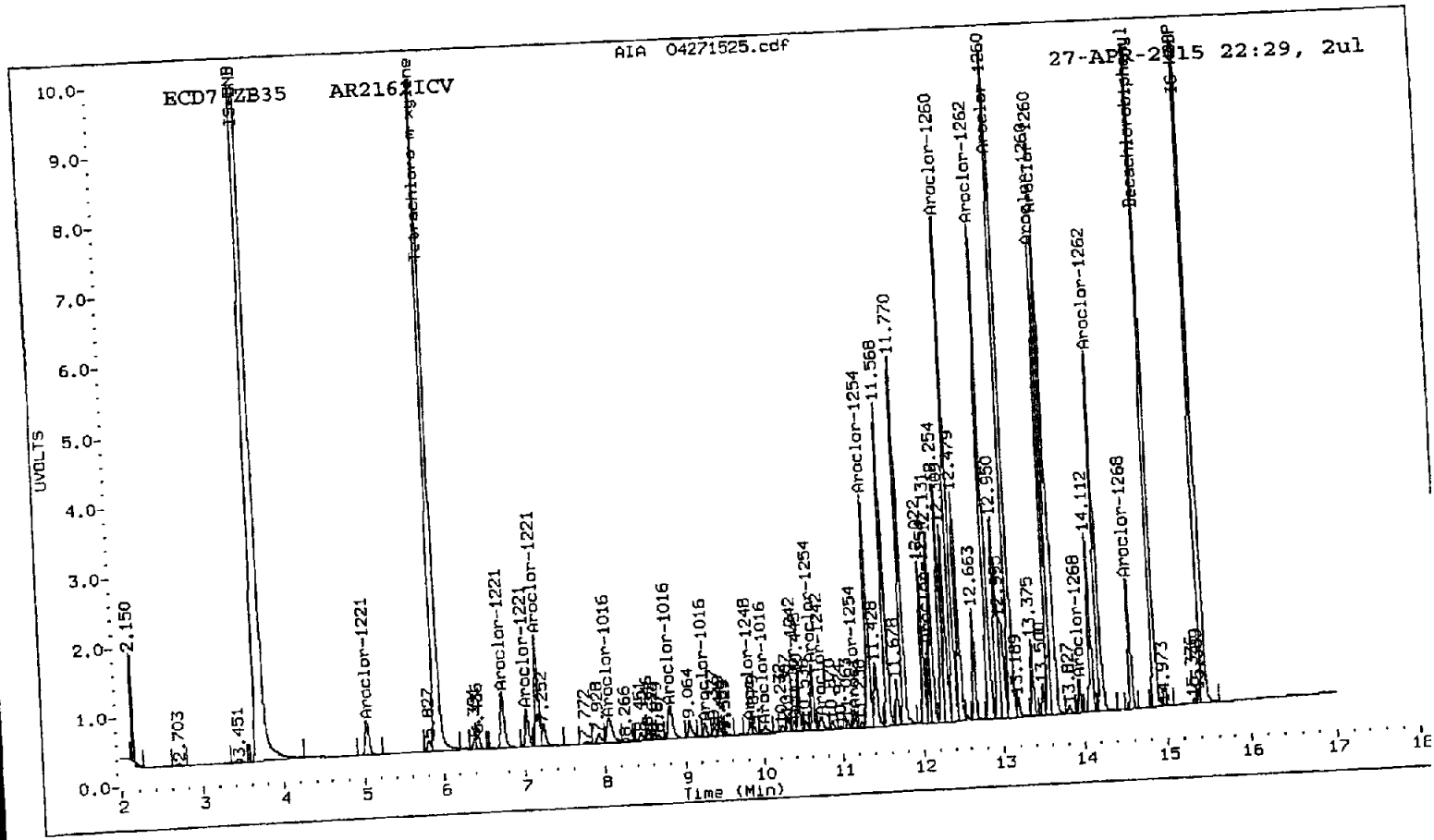
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150427.b/ical-1.b/04271526.d
Data file 2: 20150427.b/ical-2.b/04271526.d
Method: /chem2/ecd7.i/20150427.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR3268ICV
Client ID:
Injection Date: 27-APR-2015 22:51
Report Date: 04/28/2015 10:24
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.372	0.000	1367646	5.931	0.001	6175053	38.2	37.2	2.6	Tetrachloro-m-xylene
14.896	-0.001	3436634	14.867	0.000	5680040	54.3	51.0	6.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.5	93.1
Decachlorobiphenyl	135.7	127.5

4/28/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5195722	5142956	-1.0
Hexabromobiphenyl	3879663	4173472	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	12303253	12234714	-0.6
Hexabromobiphenyl	7233601	7947124	9.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-APR-2015
<- Indicates standard response outside Limits (-50 to +100%)

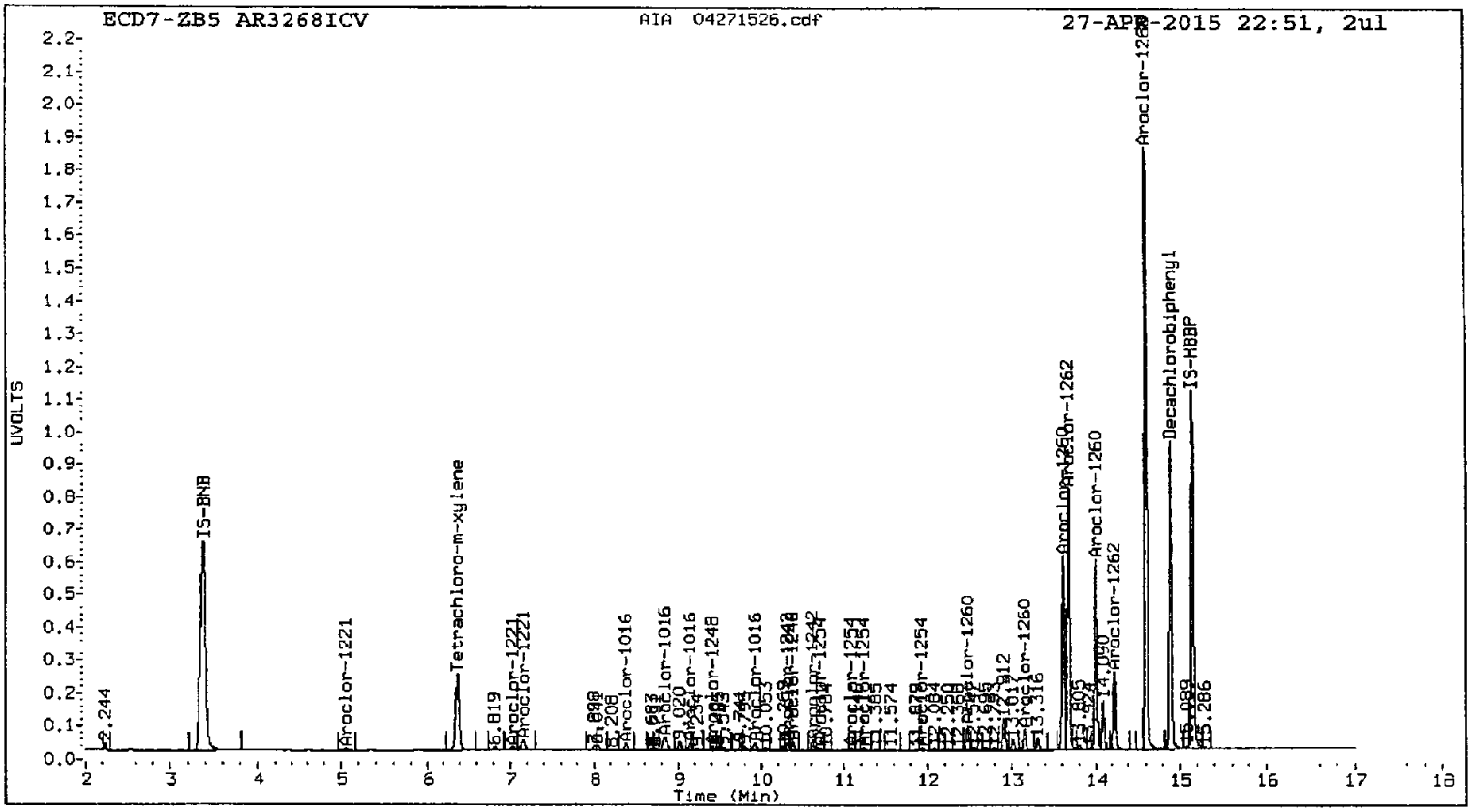
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.369	-0.001	99123	115.6	1	8.047	0.000	856733	123.1
Aroclor-1016	2	8.851	-0.002	289394	111.1	2	8.821	-0.002	1605379	110.4
Aroclor-1016	3	9.147	-0.001	103906	116.2	3	9.260	-0.001	441898	114.4
Aroclor-1016	4	9.927	-0.002	116019	119.5	4	10.020	-0.001	338224	124.2
Total Col1Ave (4 peaks):					115.6	Total Col2Ave (4 peaks):				118.1 RPD = 2
Corrected Ave (3 peaks):					114.3	Corrected Ave (3 peaks):				116.0 RPD = 1
Aroclor-1221	1	5.056	0.001	31540	142.7	1	5.044	0.001	207245	154.9
Aroclor-1221	2	7.027	0.000	62287	188.9	2	6.743	0.002	377814	173.7
Aroclor-1221	3	7.153	0.001	189879	199.8	3	7.037	0.001	221038	177.6
Aroclor-1221	NS	---			----	4	7.172	0.000	779248	210.3
Total Col1Ave (3 peaks):					177.1	Total Col2Ave (4 peaks):				179.1 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				168.8
Aroclor-1232	1	5.056	0.001	31540	249.5	1	5.044	0.001	207245	253.4
Aroclor-1232	2	7.027	0.001	62287	276.6	2	7.172	-0.001	779248	294.5
Aroclor-1232	3	7.153	0.000	189879	297.9	3	8.047	-0.001	856733	277.3
Aroclor-1232	4	8.851	-0.001	289394	273.7	4	9.260	-0.001	441898	276.1
Total Col1Ave (4 peaks):					274.4	Total Col2Ave (4 peaks):				275.3 RPD = 0
Corrected Ave (3 peaks):					266.6	Corrected Ave (3 peaks):				268.9 RPD = 1
Aroclor-1242	1	8.851	0.000	289394	149.0	1	8.047	0.000	856733	169.2
Aroclor-1242	2	9.147	-0.001	103906	148.1	2	8.821	-0.002	1605379	152.0
Aroclor-1242	3	10.318	-0.001	84517	128.7	3	10.384	0.001	506934	136.4
Aroclor-1242	4	10.621	-0.001	125931	126.8	4	10.742	0.000	602479	133.4
Total Col1Ave (4 peaks):					138.2	Total Col2Ave (4 peaks):				147.8 RPD = 7
Corrected Ave (3 peaks):					134.5	Corrected Ave (3 peaks):				140.6 RPD = 4
Aroclor-1248	1	9.413	-0.001	48198	71.3	1	8.821	0.003	1605379	231.4
Aroclor-1248	2	9.927	-0.002	116019	87.5	2	9.827	-0.002	517823	93.5
Aroclor-1248	3	10.375	-0.003	111254	73.0	3	10.384	-0.001	506934	87.1
Aroclor-1248	4	10.621	-0.001	125931	80.7	4	10.742	0.000	602479	80.2
Total Col1Ave (4 peaks):					78.1	Total Col2Ave (4 peaks):				123.0 RPD = 45*
Corrected Ave (3 peaks):					75.0	Corrected Ave (3 peaks):				86.9 RPD = 15
Aroclor-1254	1	10.375	-0.010	111254	115.4	1	10.626	-0.001	130109	20.3
Aroclor-1254	2	10.703	-0.002	31059	22.4	2	10.742	0.020	602479	196.0
Aroclor-1254	3	11.085	0.000	25122	22.1	3	11.155	-0.001	118038	23.5
Aroclor-1254	4	11.222	0.000	38242	18.0	4	11.307	0.000	236142	22.0
Aroclor-1254	5	11.938	0.002	26334	17.0	5	12.083	-0.003	109074	16.7
Total Col1Ave (5 peaks):					39.0	Total Col2Ave (5 peaks):				55.7 RPD = 35
Corrected Ave (4 peaks):					19.9	Corrected Ave (4 peaks):				20.6 RPD = 4
Aroclor-1260	1	12.479	-0.001	334819	179.5	1	12.401	-0.002	1462958	175.0
Aroclor-1260	2	13.153	-0.001	293059	48.1	2	13.106	-0.001	999516	51.9
Aroclor-1260	3	13.621	0.098	2308096	827.6	3	13.575	-0.002	5846835	940.1
Aroclor-1260	4	---			0.0	4	13.633	0.005	6081212	465.5
Aroclor-1260	5	14.004	-0.015	2170296	2412.0	NS	---			----
Total Col1Ave (4 peaks):					866.8	Total Col2Ave (4 peaks):				408.1 RPD = 72*
Corrected Ave (3 peaks):					351.7	Corrected Ave (3 peaks):				230.8 RPD = 42*
Aroclor-1262	1	12.479	0.000	334819	102.0	1	12.401	-0.001	1462958	99.5
Aroclor-1262	2	13.153	0.000	293059	32.9	2	12.841	-0.003	1646616	118.3
Aroclor-1262	3	13.621	0.098	2308096	798.1	3	13.106	-0.002	999516	35.5
Aroclor-1262	4	13.682	-0.002	3063015	622.2	4	13.575	-0.002	5846835	477.1
Aroclor-1262	5	14.224	-0.001	932678	222.0	5	14.218	0.000	2005835	209.6

Total Col1Ave (5 peaks):			355.4		Total Col2Ave (5 peaks):			188.0	RPD = 62*
Corrected Ave (4 peaks):			244.8		Corrected Ave (4 peaks):			115.7	RPD = 72*
Aroclor-1268 1	13.621	0.000	2308096	283.3	1	13.575	-0.001	5846835	277.5
Aroclor-1268 2	13.682	-0.001	3063015	314.2	2	13.633	0.000	6081212	305.9
Aroclor-1268 3	14.004	-0.001	2170296	250.4	3	13.958	0.000	4012458	246.6
Aroclor-1268 4	14.604	-0.001	6542022	231.3	4	14.576	-0.001	10299747	231.1
Total Col1Ave (4 peaks):			269.8		Total Col2Ave (4 peaks):			265.3	RPD = 2
Corrected Ave (3 peaks):			255.0		Corrected Ave (3 peaks):			251.7	RPD = 1

Total PCB Area Col1 (6.472 - 14.797) = 19346264 Col1 Total PCB = 0.8 ppm*

Total PCB Area Col2 (6.030 - 14.766) = 48048525 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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UVOLTS
Time (Min)
IS-BNB
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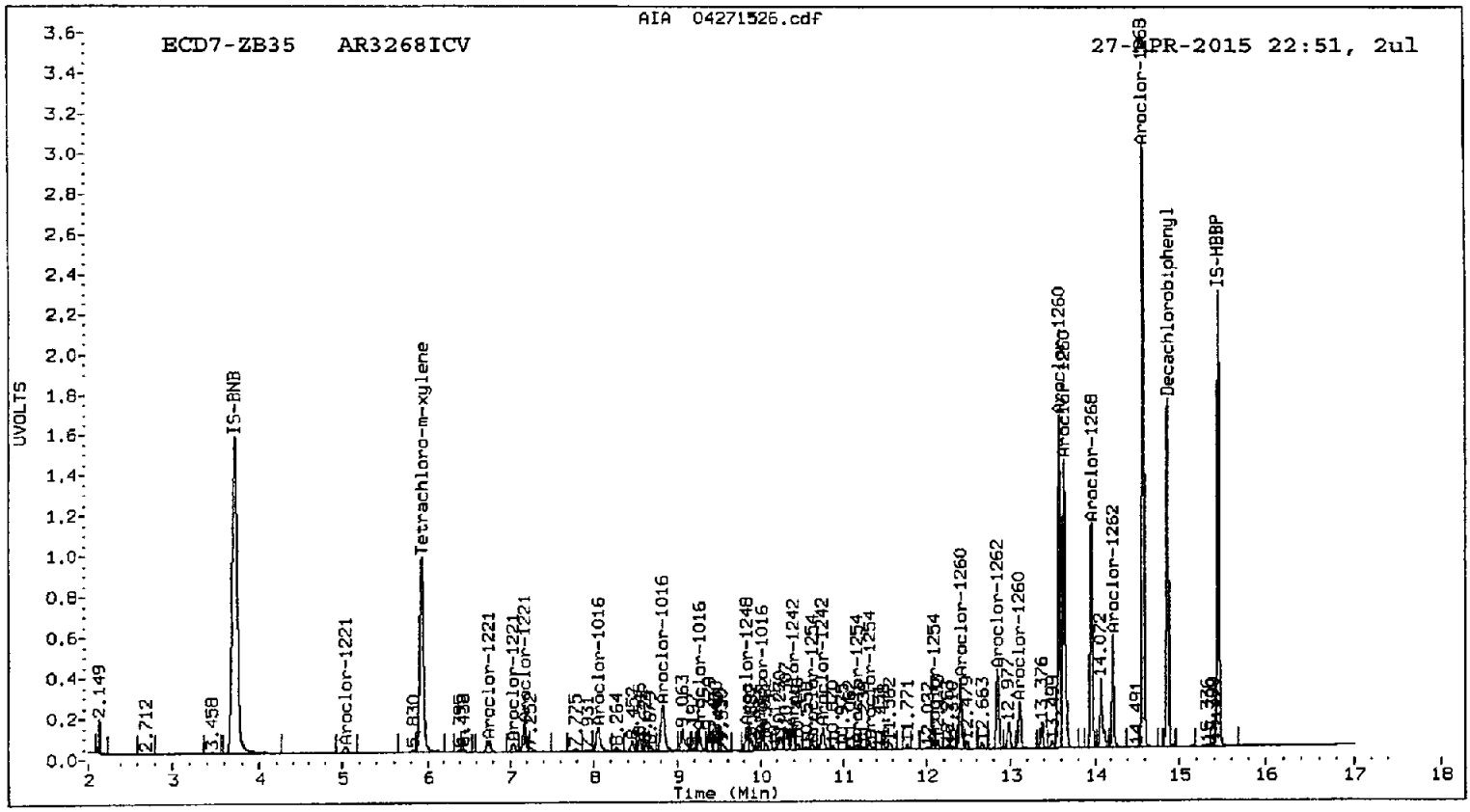
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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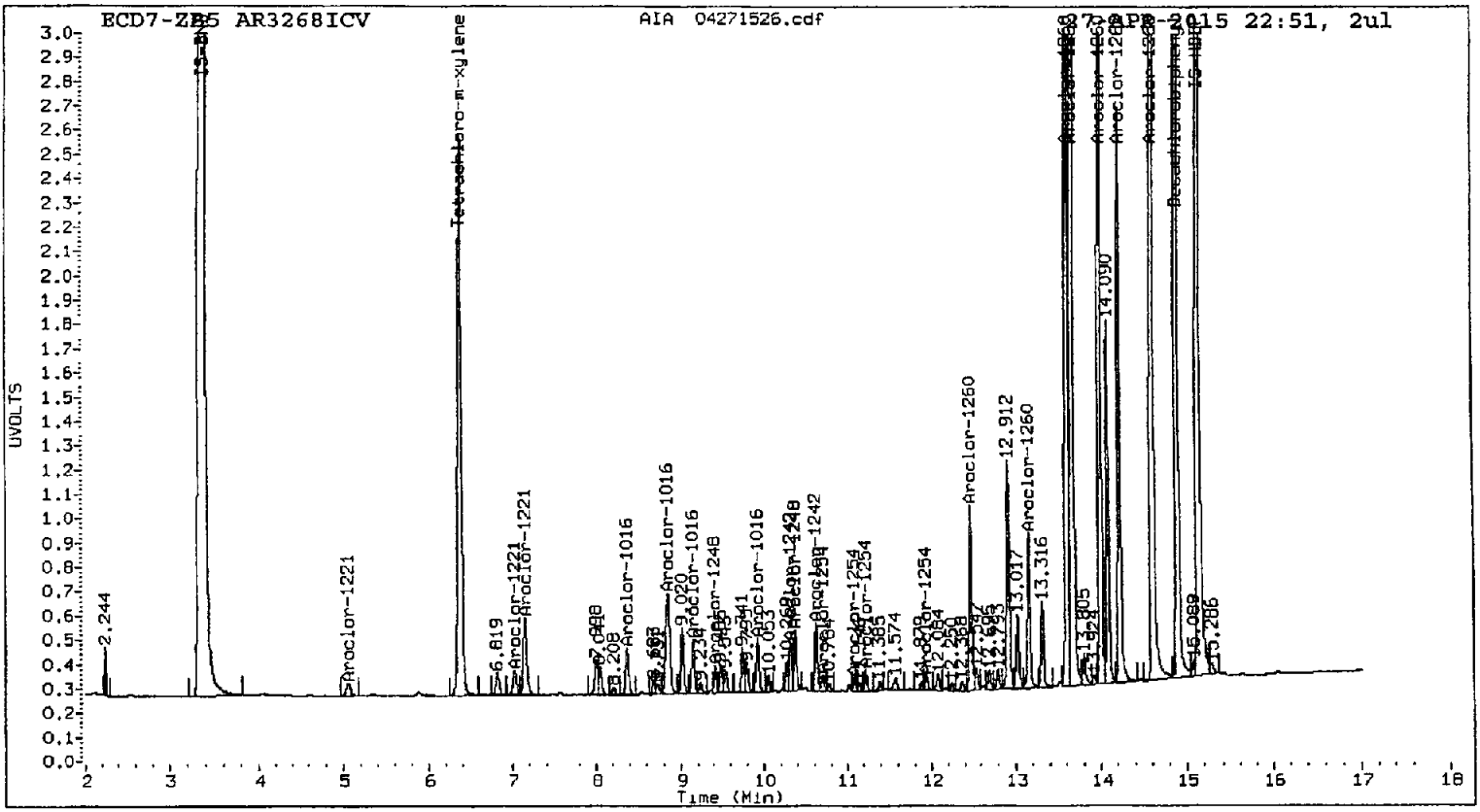
Aroclor-1268
Decachlorobiphenyl
IS-HBBP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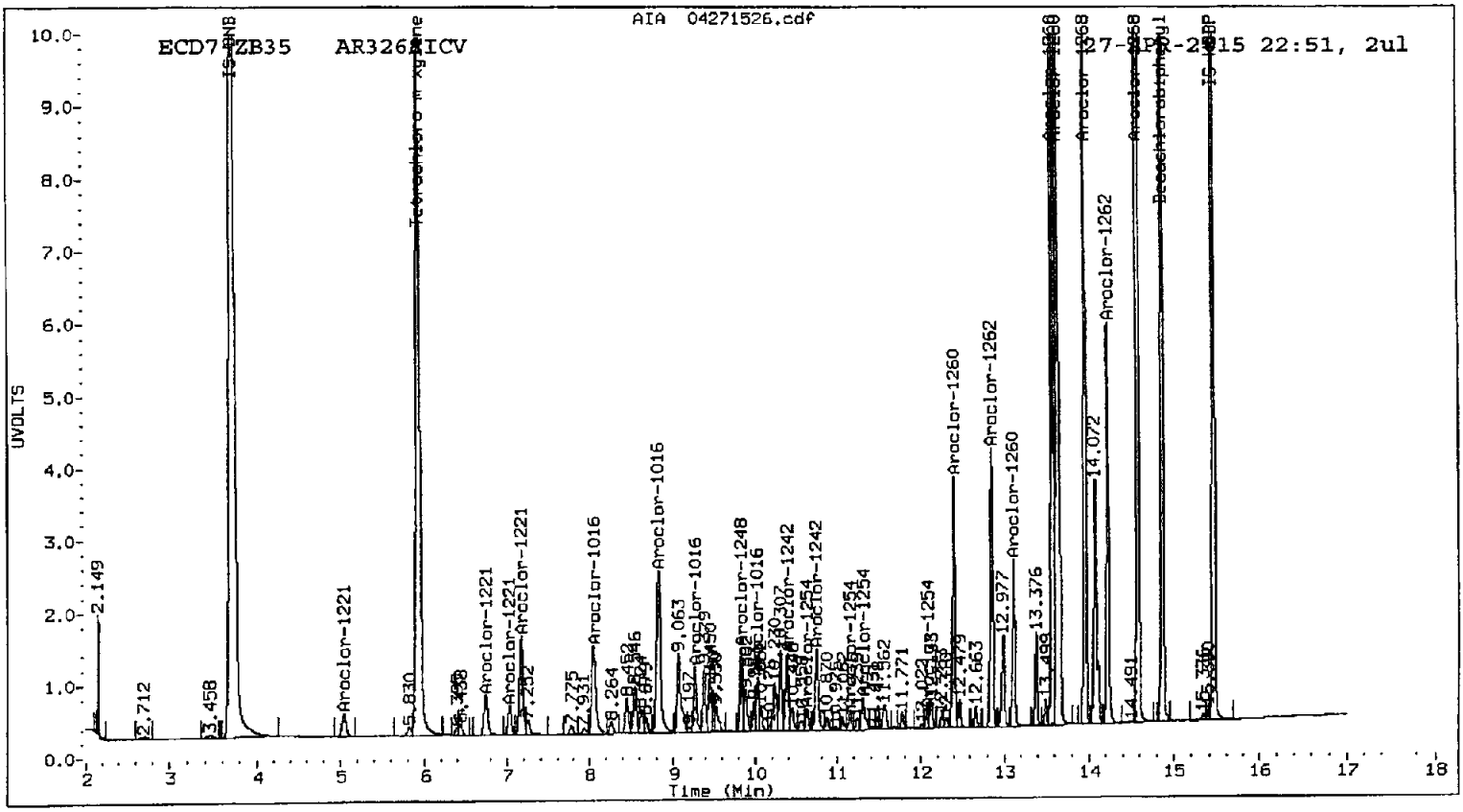
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Time (Min)
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Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150427.b/ddt-1.b/04271527.d ARI ID: 0.1 PPM DDT

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
10.668	0.000	5068065	10.711	0.000	11234390	0.100	0.100	0.0	2,4-DDE
11.226	0.000	5620253	11.100	0.000	18541682	0.100	0.100	0.0	2,4-DDD
11.733	0.000	2405765	11.861	0.000	25652101	0.100	0.200#	66.7*	2,4-DDT
11.103	0.000	9241925	11.400	0.000	13377279	0.100	0.100	0.0	4,4-DDE
11.677	0.000	9444978	11.861	0.000	25652101	0.100	0.200#	66.7*	4,4-DDD
12.188	0.000	1895243	12.288	0.000	4443878	0.100	0.100	0.0	4,4-DDT

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

04/23/15

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: 20150427.b/ddt-1.b/04271528.d ARI ID: DDT BD

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
0.000	-10.668	0	0.000	-10.711	0	0.000	0.000	----	2,4-DDE
0.000	-11.226	0	11.099	0.000	249549	0.000	0.001	----	2,4-DDD
0.000	-11.733	0	11.862	0.001	6644504	0.000	0.053#	----	2,4-DDT
11.102	-0.001	56933	11.401	0.001	28933	0.001	0.000	96.8*	4,4-DDE
11.677	0.000	2240763	11.862	0.001	6644504	0.024	0.053#	73.6*	4,4-DDD
12.187	0.000	1857806	12.289	0.001	4080984	0.101	0.094	7.4	4,4-DDT

\# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

PCB Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGC9

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AGC9 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00033 Analysis Start Date: 05/28/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ___	Method Blank in Control?	Y / N / ___
Retention times within Windows?	Y / N / ___	BS/BSD Recovery in Control?	Y / N / ___
ICV/CCV met %D Criteria?	Y / N / ___	BS/BSD RPD ≤30%?	NA / Bsurr
Surrogate Recovery in Control?	Y / N / ___	MS / MSD Recovery in Control?	Y / N / ___
Internal STD. within 50-200%?	NA / Y / N / ___	MS / MSD RPD ≤30%?	NA / <10%
Manual Integrations?	Y / N / ___	Samples Diluted?	Y / N / ___
Integration Summary?	Y / N / ___	Special Analysis Request?	Y / N / ___

Detail problems, corrective actions and/or other pertinent information below

Samples ran 2x's, 1st run on 05/28/15 ccal AR1260 fails low. 2nd run on 06/01/15 passes. used w/ best fit, y-flags are for ranges

(Review 1) Analyst: _____ **Date:** 06/02/15

(Review 2) Reviewer: _____ **Date:** _____

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 05/27/15 15 05/27/15 Analysis: PCB Analyst: JC

Column 1 Serial No.: 213134 Column Type: XTB5

Column 2 Serial No.: 175393 Column Type: XTB35

GC Method: PCB ICal Date: 05/27/15 Injection Volume: 2µL

IS	Ical/Ccal	ICV
	C4641	
	C4646	D962-D968
J971	D33-D92	

Document All Maintenance Tasks In Element

C:\Chem32\ECD7_1\2015052?.D\

Inject Date/Time	Filename	DF	LabID	Cl
27-MAY-2015 17:50	05271510.d	1	IB	
27-MAY-2015 18:11	05271511.d	1	0.25PPMAR1660	
27-MAY-2015 18:33	05271512.d	1	0.02PPMAR1660	
27-MAY-2015 18:54	05271513.d	1	0.05PPMAR1660	
27-MAY-2015 19:15	05271514.d	1	1PPMAR1660	
27-MAY-2015 19:37	05271515.d	1	0.1PPMAR1660	
27-MAY-2015 19:58	05271516.d	1	0.5PPMAR1660	
27-MAY-2015 20:20	05271517.d	1	AR1242	
27-MAY-2015 20:41	05271518.d	1	AR1248	
27-MAY-2015 21:02	05271519.d	1	AR1254	
27-MAY-2015 21:24	05271520.d	1	AR2162	
27-MAY-2015 21:45	05271521.d	1	AR3268	
27-MAY-2015 22:07	05271522.d	1	AR1660ICV	
27-MAY-2015 22:28	05271523.d	1	AR1242ICV	
27-MAY-2015 22:49	05271524.d	1	AR1248ICV	
27-MAY-2015 23:11	05271525.d	1	AR1254ICV	
27-MAY-2015 23:32	05271526.d	1	AR2162	
27-MAY-2015 23:54	05271527.d	1	AR3268	
28-MAY-2015 00:15	05271528.d	1	0.1 PPM DDT	
28-MAY-2015 00:36	05271529.d	1	DDT BD	
28-MAY-2015 00:58	05271530.d	1	AR1254	
28-MAY-2015 01:19	05271531.d	1	AR1660	
28-MAY-2015 01:41	05271532.d	1	AGG2MBS1	AGG2M
28-MAY-2015 02:02	05271533.d	1	AGG2LCSS1	AGG2L
28-MAY-2015 02:23	05271534.d	1	AGF9A	CS-2C
28-MAY-2015 02:45	05271535.d	1	AGF9B	HL-2C
28-MAY-2015 03:06	05271536.d	1	AGF8A	CS-2C
28-MAY-2015 03:28	05271537.d	1	AGF8B	HL-2C
28-MAY-2015 03:49	05271538.d	1	AGG2A	NTS2
28-MAY-2015 04:10	05271539.d	1	AGG2B	ST7-0
28-MAY-2015 04:32	05271540.d	1	AGG2C	7th-S
28-MAY-2015 04:53	05271541.d	1	AGG2D	HP-ST
28-MAY-2015 05:15	05271542.d	1	AR1248	
28-MAY-2015 05:36	05271543.d	1	AR1660	
28-MAY-2015 05:57	05271544.d	1	AGA8MBS1	AGA8M
28-MAY-2015 06:19	05271545.d	1	AGA8LCSS1	AGA8L
28-MAY-2015 06:40	05271546.d	1	AGA8A	SDP-1
28-MAY-2015 07:02	05271547.d	1	AGA8B	SDP-1
28-MAY-2015 07:23	05271548.d	1	AGA8C	SDP-1
28-MAY-2015 07:45	05271549.d	1	AGA8D	SDP-0
28-MAY-2015 08:06	05271550.d	1	AGA8E	SDP-0
28-MAY-2015 08:27	05271551.d	1	AGA8F	SDP-0
28-MAY-2015 08:49	05271552.d	1	AGA8FMS	SDP-0
28-MAY-2015 09:10	05271553.d	1	AGA8FMSD	SDP-0
28-MAY-2015 09:32	05271554.d	1	AR1242	
28-MAY-2015 09:53	05271555.d	1	AR1660	
28-MAY-2015 10:14	05271556.d	1	AGA8G	SDP-0
28-MAY-2015 10:36	05271557.d	1	AGA8H	SDP-0
28-MAY-2015 10:57	05271558.d	1	AGA8I	SDP-0
28-MAY-2015 11:19	05271559.d	1	AGA8MBW1	AGA8M

MOC/02/15

All entries legible.

nance Tasks In Element

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 05/28/15 Analysis: PCB Analyst: [illegible]

Column 1 Serial No.: 213734 Column Type: ZB5

Column 2 Serial No.: 175388 Column Type: ZB35

GC Method: PCB ICal Date: 05/04/15 Injection Volume: 2µl

IS	Ical/Ccal	ICV
C971	C4641 C4646 D88-D92	D962-D968

Document All Maintenance Tasks In Element

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/201505

	Inject Date/Time	Filename	DF	LabID
1	28-MAY-2015 17:14	05281501.d	1	0.1 PPM DDT
2	28-MAY-2015 17:36	05281502.d	1	DDT BD
3	28-MAY-2015 17:57	05281503.d	1	AR1254
4	28-MAY-2015 18:18	05281504.d	1	AR1660
5	28-MAY-2015 18:40	05281505.d	1	AGQ7MBW1
6	28-MAY-2015 19:01	05281506.d	1	AGQ7LCSW1
7	28-MAY-2015 19:23	05281507.d	1	AGQ7LCSDW1
8	28-MAY-2015 19:44	05281508.d	1	AGQ7A
9	28-MAY-2015 20:05	05281509.d	1	AGC9MBS1
10	28-MAY-2015 20:27	05281510.d	1	AGCLCSS1
11	28-MAY-2015 20:48	05281511.d	1	AGC9A
12	28-MAY-2015 21:10	05281512.d	1	AGC9B
13	28-MAY-2015 21:31	05281513.d	1	AGC9C
14	28-MAY-2015 21:53	05281514.d	1	AR1248
15	28-MAY-2015 22:14	05281515.d	1	AR1660
16	28-MAY-2015 22:35	05281516.d	1	AGC9D
17	28-MAY-2015 22:57	05281517.d	1	AGC9E
18	28-MAY-2015 23:18	05281518.d	1	AGC9F
19	28-MAY-2015 23:40	05281519.d	1	AGC9G
20	29-MAY-2015 00:01	05281520.d	1	AGC9H
21	29-MAY-2015 00:22	05281521.d	1	AGC9HMS
22	29-MAY-2015 00:44	05281522.d	1	AGC9HMSD
23	29-MAY-2015 01:05	05281523.d	1	AGC9I
24	29-MAY-2015 01:27	05281524.d	1	AGC9J
25	29-MAY-2015 01:48	05281525.d	1	AGC9K
26	29-MAY-2015 02:10	05281526.d	1	AR1242
27	29-MAY-2015 02:31	05281527.d	1	AR1660

06/02/15

e all entries legible.
itenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527element.b/0601-1.b

ARI Job No.: RINS Method: PCB1.m Instrument: ecd7.i Date: 01-JUN-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0939	06011501.d	RINSE		1	NO MANUAL INTEGRATION
1000	06011502.d	AR1242		1	NO MANUAL INTEGRATION
1021	06011503.d	AR1660		1	NO MANUAL INTEGRATION
1157	06011504.d	AGC9MBS1	AGC9MBS1	1	NO MANUAL INTEGRATION
1218	06011505.d	AGC9LCSS1	AGC9LCSS1	1	NO MANUAL INTEGRATION
1240	06011506.d	AGC9A	SDP-01(3.0	1	NO MANUAL INTEGRATION
1301	06011507.d	AGC9B	SDP-01(8.0	1	NO MANUAL INTEGRATION
1323	06011508.d	AGC9C	SDP-02(16.	1	NO MANUAL INTEGRATION
1344	06011509 d	AGC9D	SDP-02(18.	1	NO MANUAL INTEGRATION
1405	06011510 d	AGC9E	SDP-02(22.	1	NO MANUAL INTEGRATION
1427	06011511.d	AGC9F	SDP-03(6.5	1	NO MANUAL INTEGRATION
1448	06011512.d	AGC9G	SDP-03(23.	1	NO MANUAL INTEGRATION
1510	06011513.d	AR1248		1	NO MANUAL INTEGRATION
1531	06011514.d	AR1660		1	NO MANUAL INTEGRATION
1553	06011515.d	AGC9H	SDP-04(1.5	1	NO MANUAL INTEGRATION
1614	06011516.d	AGC9HMS	SDP-04(1.5	1	NO MANUAL INTEGRATION
1635	06011517.d	AGC9HMSD	SDP-04(1.5	1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527element.b/0601-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1657	06011518.d	AGC9I	SDP-04(10.	1	NO MANUAL INTEGRATION
1718	06011519.d	AGC9J	SDP-05(6.5	1	NO MANUAL INTEGRATION
1740	06011520.d	AGC9K	SDP-05(17.	1	NO MANUAL INTEGRATION
1801	06011521.d	AR1254		1	NO MANUAL INTEGRATION
1823	06011522.d	AR1660		1	NO MANUAL INTEGRATION
1844	06011523.d	AGG1MBS1	AGG1MBS1	1	NO MANUAL INTEGRATION
1905	06011524.d	AGG1LCSS1	AGG1LCSS1	1	NO MANUAL INTEGRATION
1927	06011525.d	AGG1LCSDS1	AGG1LCSDS1	1	NO MANUAL INTEGRATION
1948	06011526.d	AGG1A	SL4-T6-051	1	NO MANUAL INTEGRATION
2009	06011527.d	AGG1B	NST2-05181	1	NO MANUAL INTEGRATION
2031	06011528.d	AGG1C	NST5-05181	1	NO MANUAL INTEGRATION
2052	06011529.d	AGG1D	ST7-051815	1	NO MANUAL INTEGRATION
2114	06011530.d	AGG1E	7th-STI-05	1	NO MANUAL INTEGRATION
2135	06011531.d	AGG1F	KN-STI-051	1	NO MANUAL INTEGRATION
2156	06011532.d	AGG1G	HP-ST6-051	1	NO MANUAL INTEGRATION
2218	06011533.d	AGG1H	HP-ST4-051	1	NO MANUAL INTEGRATION
2239	06011534.d	AGG3A	EWWST6-051	1	NO MANUAL INTEGRATION
2301	06011535.d	AR1242		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527element.b/0601-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2322	06011536 d	AR1660		1	NO MANUAL INTEGRATION

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011502.d
Data file 2: 20150527.b/0601-2.b/06011502.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 01-JUN-2015 10:00
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.352	-0.031	1344091	5.914	-0.034	6000297	37.7	37.3	0.9	Tetrachloro-m-xylene
14.897	-0.003	2570436	14.868	-0.004	3563028	41.6	35.5	15.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.2	93.3
Decachlorobiphenyl	103.9	88.8

JK 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5261745	-3.4
Hexabromobiphenyl	5633814	4917776	-12.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	11916765	-8.8
Hexabromobiphenyl	8980422	8317065	-7.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGS 00857

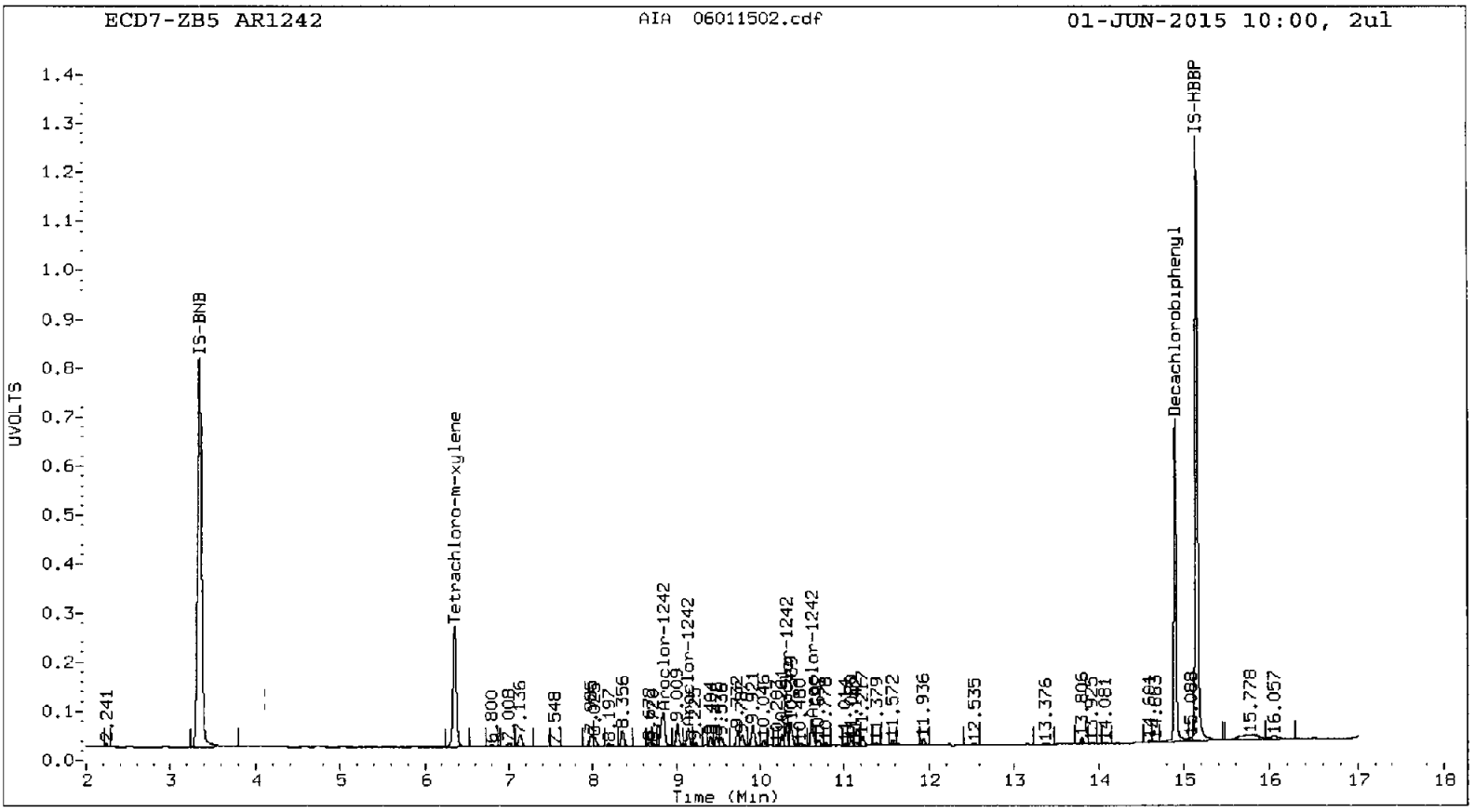
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1242	1	8.841	-0.026	483339	254.6	1	8.038	-0.032	1231296	256.9
Aroclor-1242	2	9.136	-0.025	173242	254.9	2	8.815	-0.026	2478727	245.0
Aroclor-1242	3	10.312	-0.019	168061	265.4	3	10.380	-0.019	883038	250.5
Aroclor-1242	4	10.615	-0.017	265068	279.4	4	10.738	-0.018	1059811	247.2
Total Col1Ave (4 peaks):					263.6	Total Col2Ave (4 peaks):				249.9 RPD = 5
Corrected Ave (3 peaks):					258.3	Corrected Ave (3 peaks):				247.6 RPD = 4
CalAmt %D:					5.4	CalAmt %D:				0.0

Total PCB Area Col1 (6.483 - 14.799) = 3809499 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 18665942 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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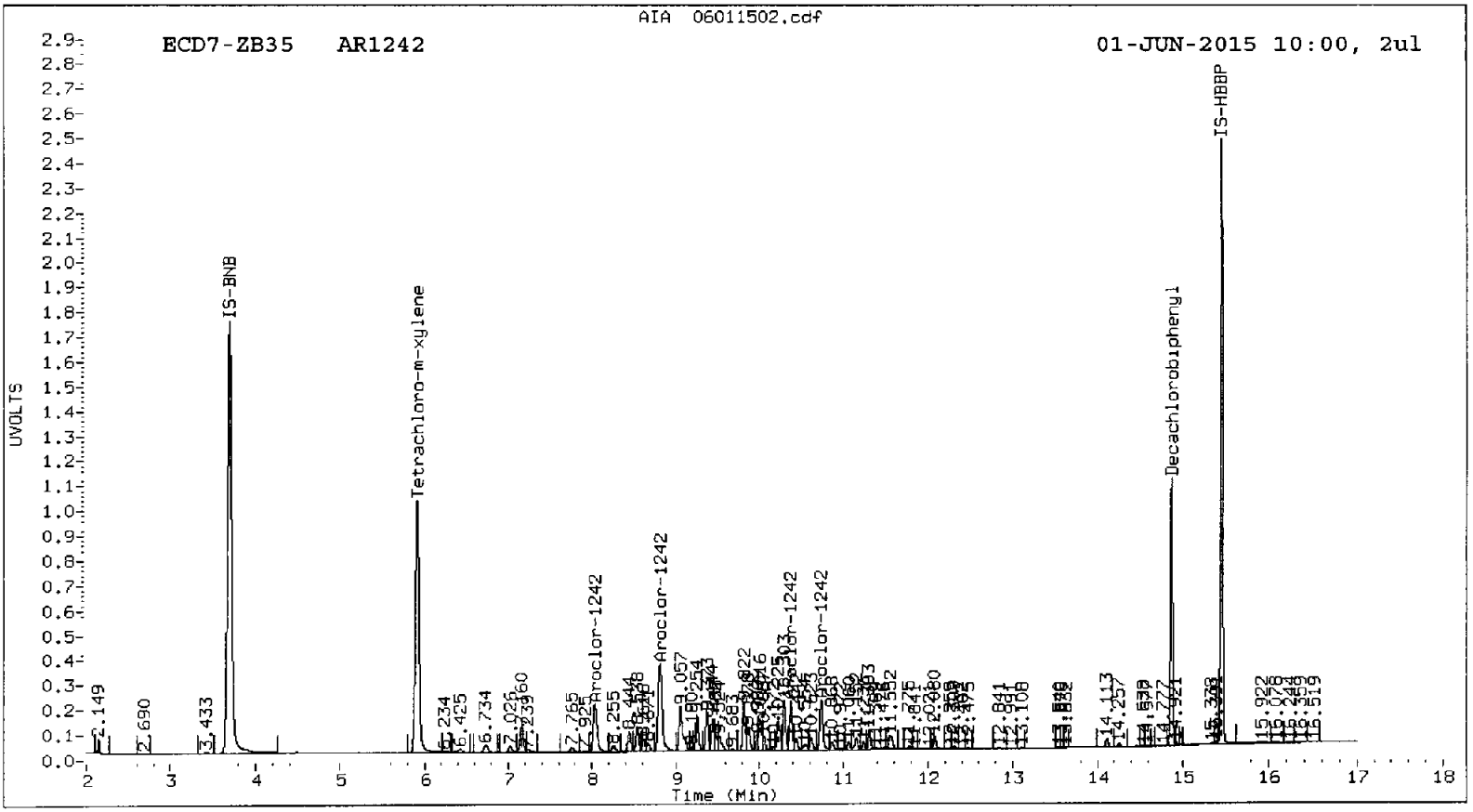
01-JUN-2015 10:00, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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ECD7-ZB35 AR1242
01-JUN-2015 10:00, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1242
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011503.d
Data file 2: 20150527.b/0601-2.b/06011503.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 01-JUN-2015 10:21
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.368	-0.016	1388425	5.930	-0.018	6303699	40.7	39.4	3.3	Tetrachloro-m-xylene
14.898	-0.002	2589435	14.868	-0.003	3799360	43.0	37.9	12.7	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	101.7	98.4
Decachlorobiphenyl	107.5	94.7

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5034372	-7.6
Hexabromobiphenyl	5633814	4788034	-15.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	11878558	-9.0
Hexabromobiphenyl	8980422	8320333	-7.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

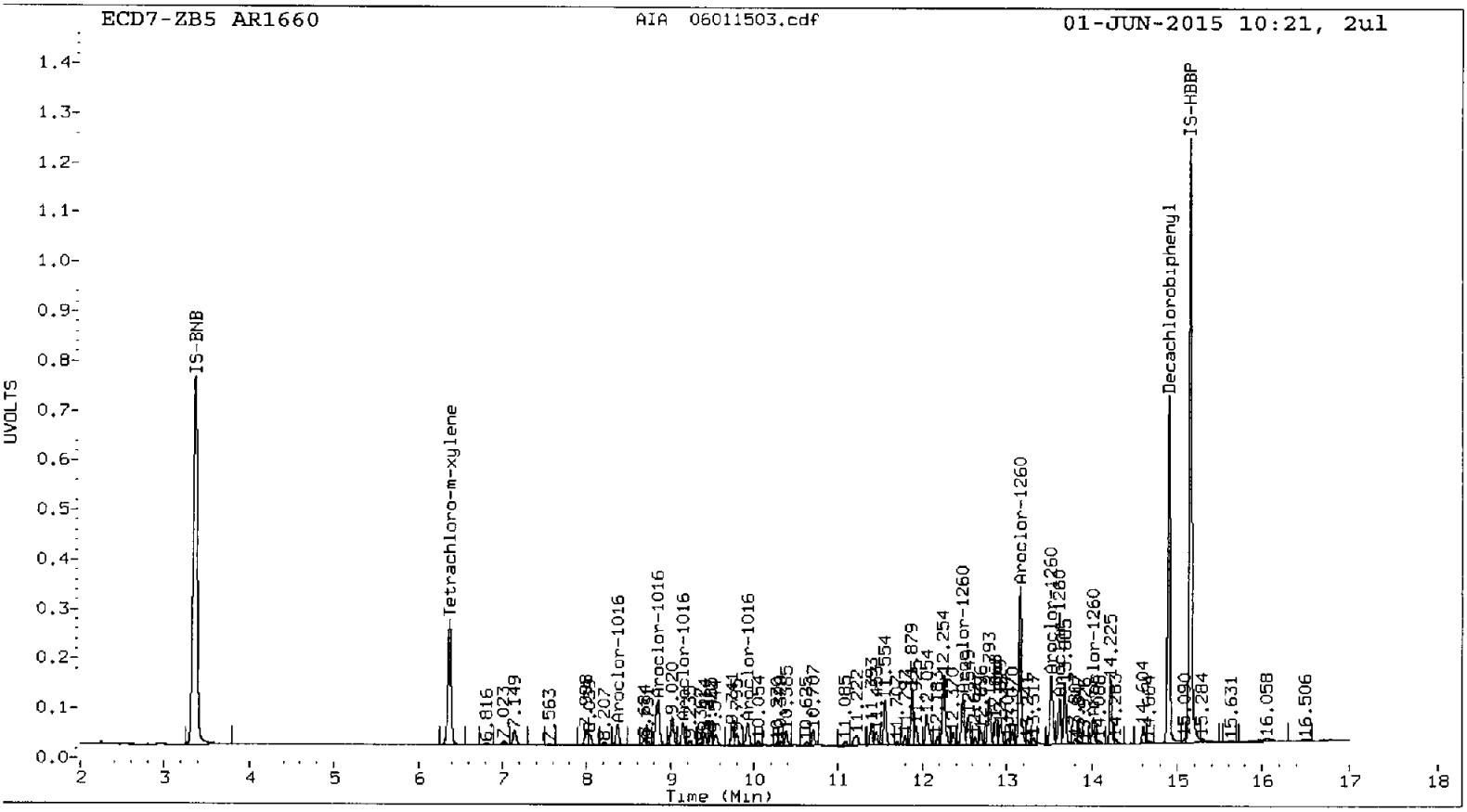
AEC: 98878

		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.369	-0.015	207755	256.6	1	8.052	-0.015	1616490	248.3
Aroclor-1016	2	8.851	-0.014	628534	253.3	2	8.826	-0.014	3317204	239.9
Aroclor-1016	3	9.147	-0.012	223418	263.2	3	9.265	-0.012	888479	249.1
Aroclor-1016	4	9.929	-0.010	235608	261.5	4	10.025	-0.011	596375	236.7
Total Col1Ave (4 peaks):					258.6	Total Col2Ave (4 peaks):				243.5 RPD = 6
Corrected Ave (3 peaks):					257.1	Corrected Ave (3 peaks):				241.6 RPD = 6
CalAmt %D:					3.5	CalAmt %D:				-2.6
Aroclor-1260	1	12.481	-0.006	441316	282.5	1	12.405	-0.006	1693013	226.9
Aroclor-1260	2	13.155	-0.005	1429335	282.7	2	13.111	-0.006	3984487	229.3
Aroclor-1260	3	13.523	-0.005	653692	278.3	3	13.580	-0.004	1160093	219.9
Aroclor-1260	4	13.622	-0.004	398651	281.3	4	13.631	-0.005	2537354	221.6
Aroclor-1260	5	14.020	-0.004	218290	280.3	NS	---			----
Total Col1Ave (5 peaks):					281.0	Total Col2Ave (4 peaks):				224.4 RPD = 22
Corrected Ave (4 peaks):					280.6	Corrected Ave (3 peaks):				222.8 RPD = 23
CalAmt %D:					12.4	CalAmt %D:				-10.2

Total PCB Area Col1 (6.483 - 14.799) = 12167838 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 47999353 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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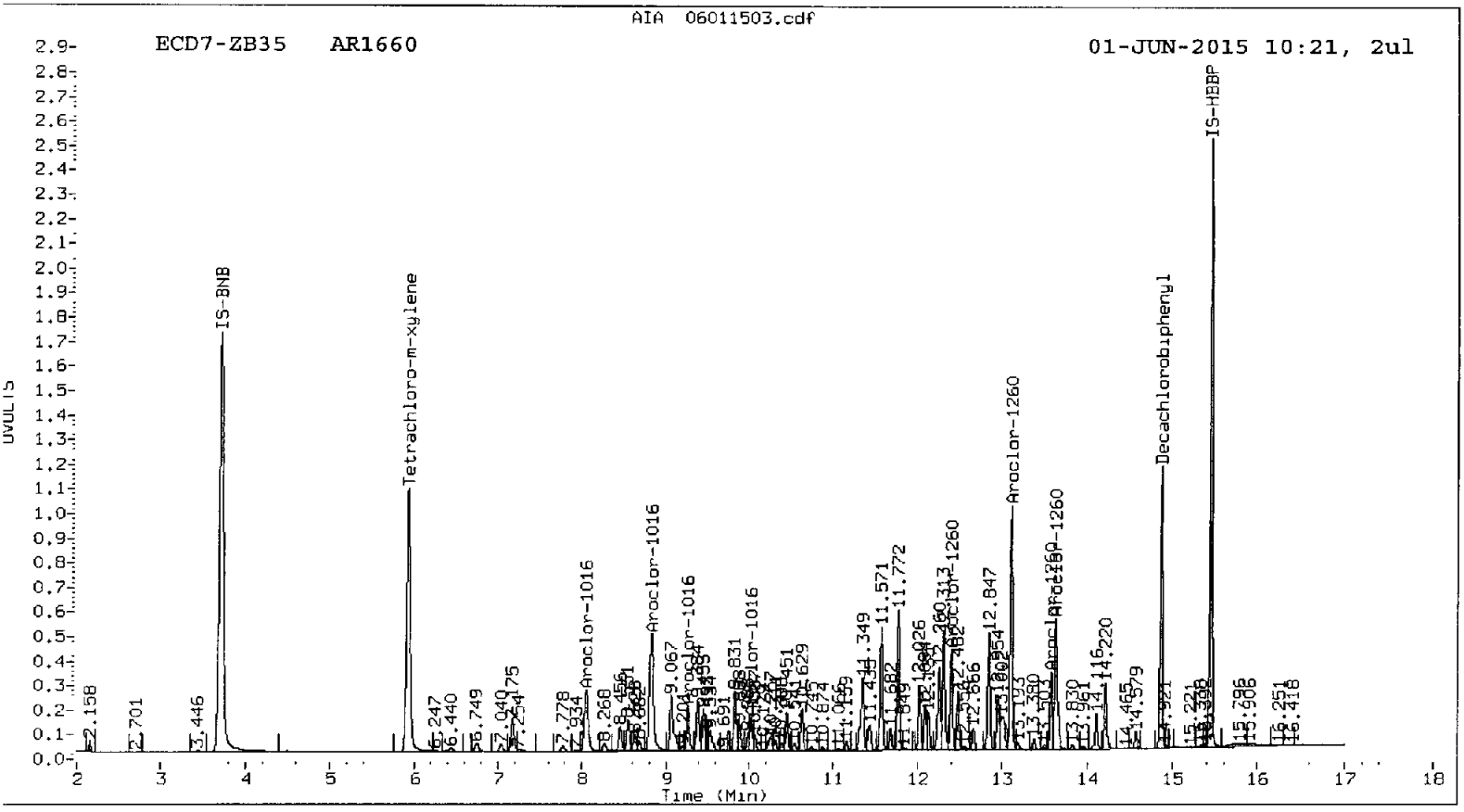
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)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ECD7-ZB35 AR1660
01-JUN-2015 10:21, 2ul
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011504.d
Data file 2: 20150527.b/0601-2.b/06011504.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9MBS1
Client ID:
Injection Date: 01-JUN-2015 11:57
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.326	-0.058	1216512	5.874	-0.074	5598687	32.6	31.8	2.4	Tetrachloro-m-xylene
14.895	-0.004	2600982	14.863	-0.008	3739361	36.3	33.5	8.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	81.5	79.6
Decachlorobiphenyl	90.8	83.7

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5502698	1.0
Hexabromobiphenyl	5633814	5697175	1.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13041422	-0.1
Hexabromobiphenyl	8980422	9269178	3.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9: 2867S

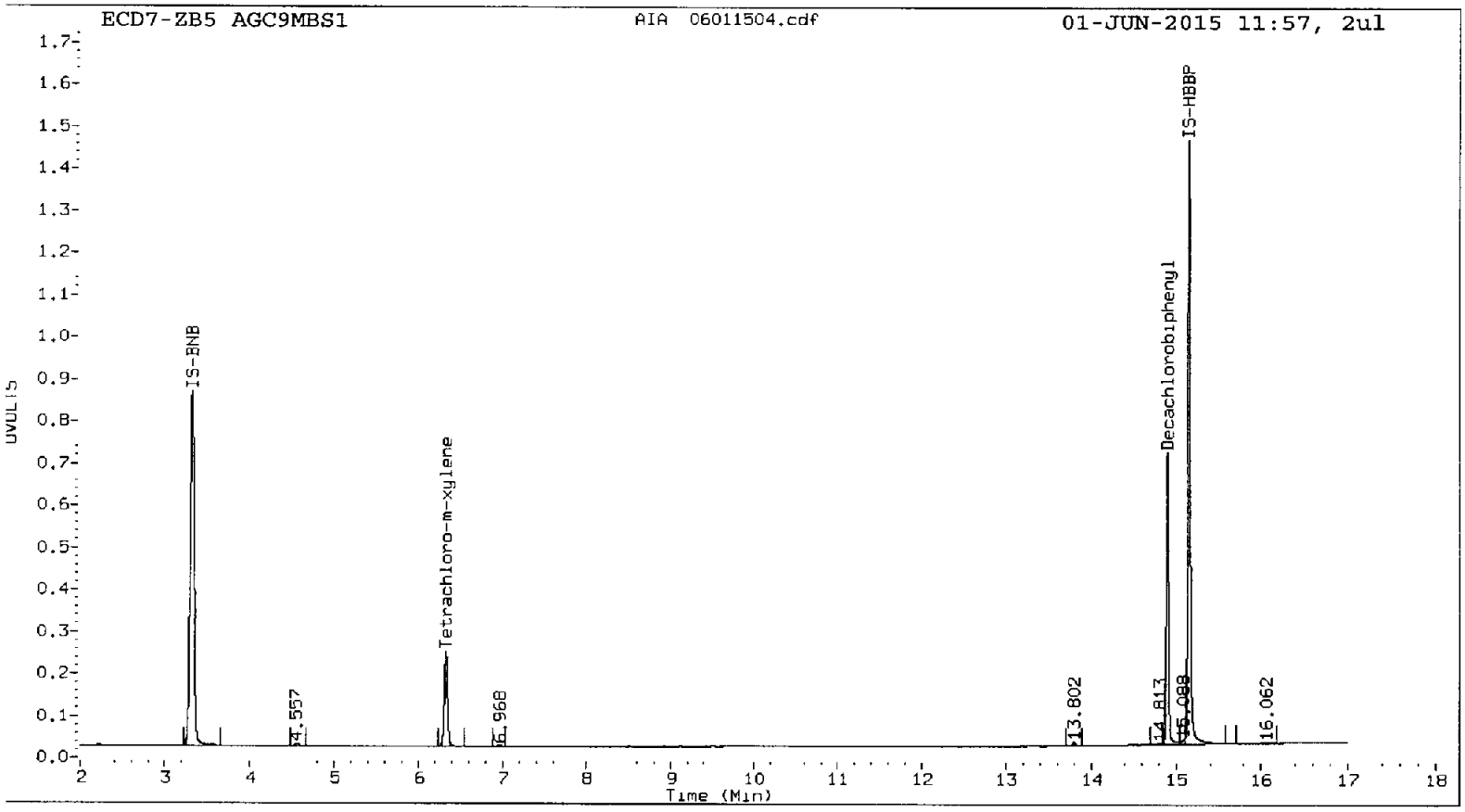
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.711	-0.009	79696	35.2
Aroclor-1221	3	---			0.0	3	7.017	0.002	11754	9.2
Aroclor-1221	NS	---			----	4	7.133	-0.018	23315	6.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 16.8				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	12.427	0.015	19180	2.3
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	13.532	-0.053	30000	5.1
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	12.427	0.032	19180	1.3
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	13.532	-0.039	30000	2.5
Aroclor-1262	5	---			0.0	5	14.251	0.039	18728	1.9
	Col1Ave: <3 Quant Peaks					Col2Ave: 1.9				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.483 - 14.799) = 52947 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 402975 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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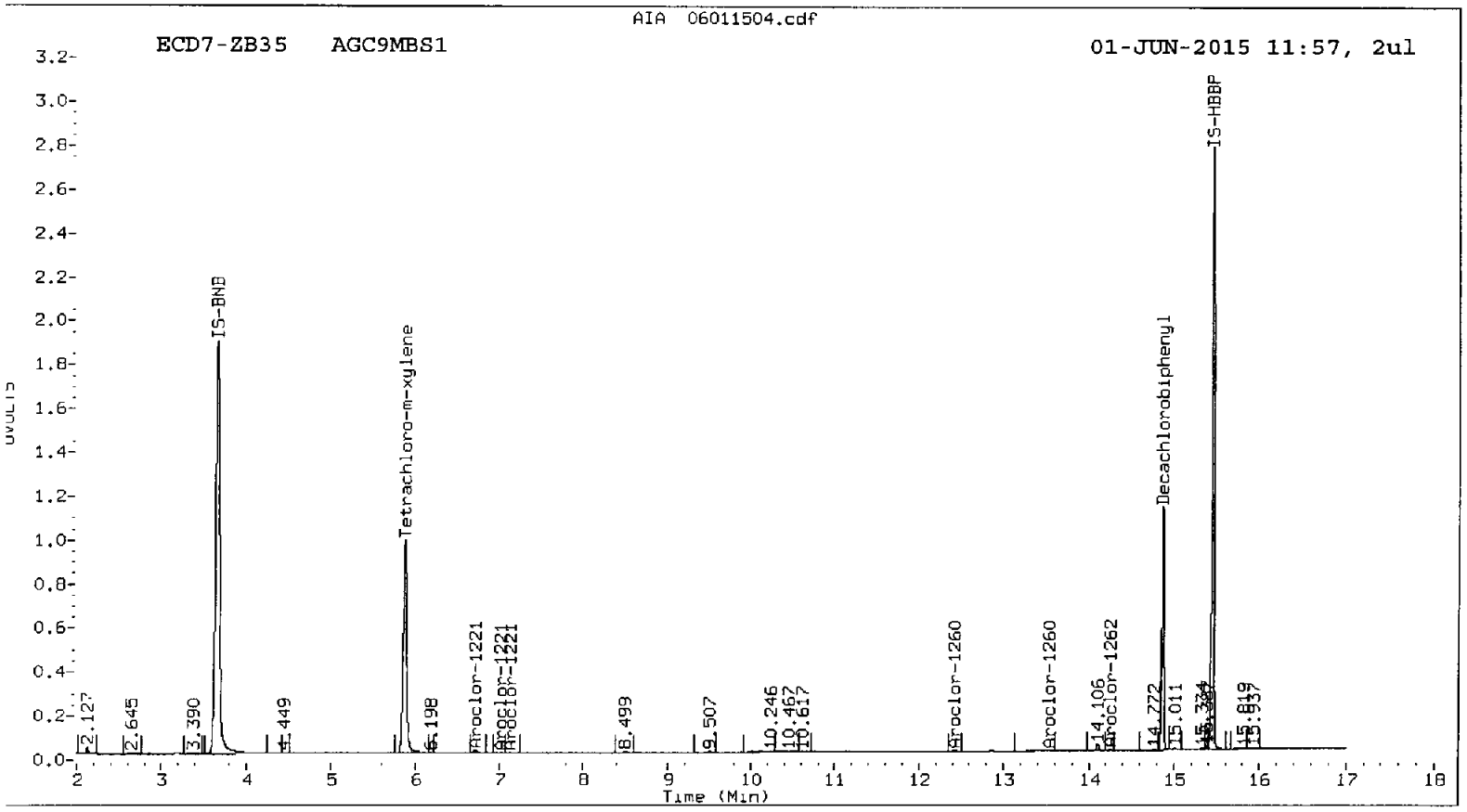
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
4.557
5.968
13.802
14.813
15.088
16.062
UVOLTS
Time (Min)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Decachlorobiphenyl
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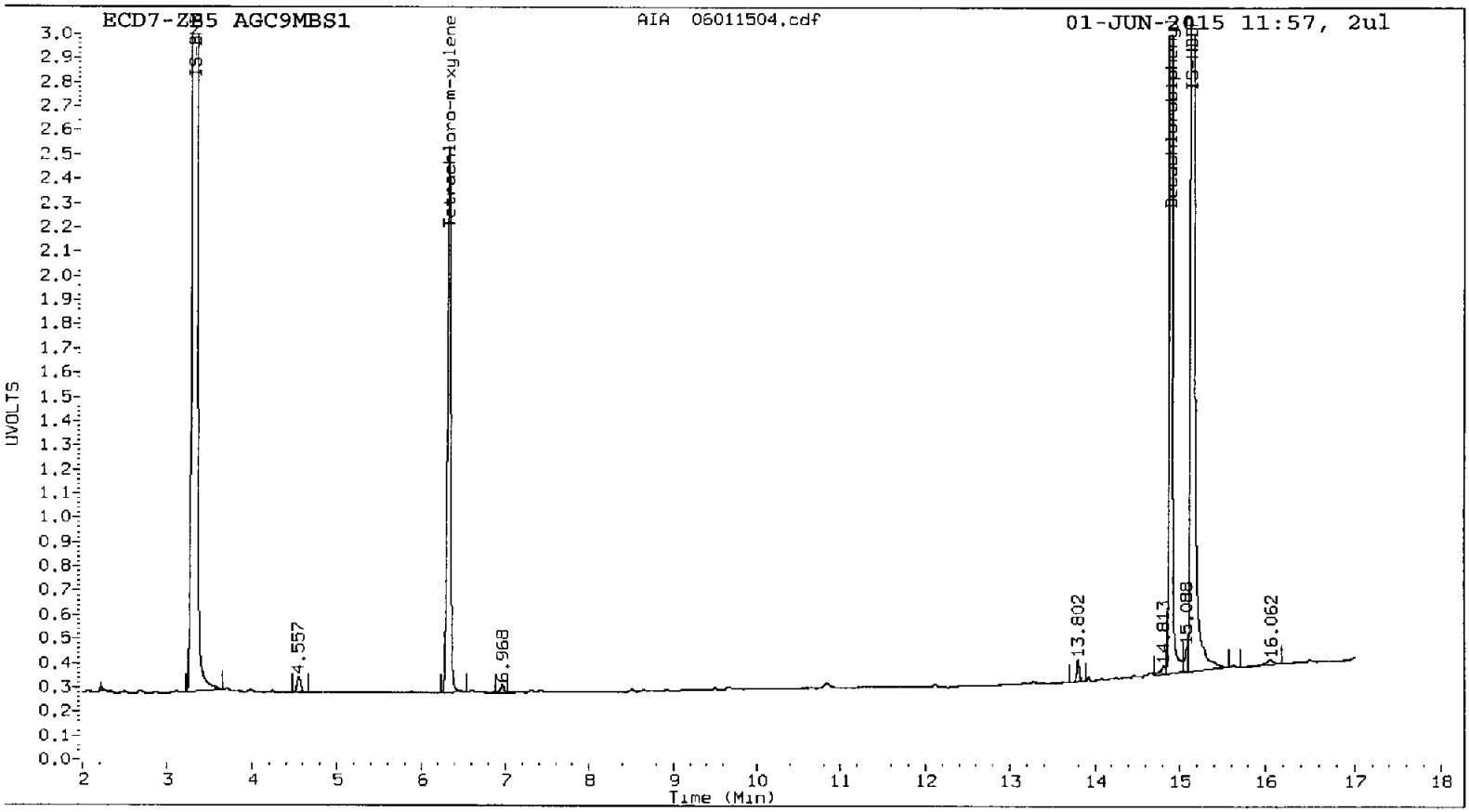
3.390
4.449
5.198
Aroclor-1221
Aroclor-1221
8.499
9.507
10.246
10.467
10.617
Aroclor-1260
Aroclor-1260
Aroclor-1262
14.106
14.772
15.011
15.819
15.937
UVOLTS
Time (Min)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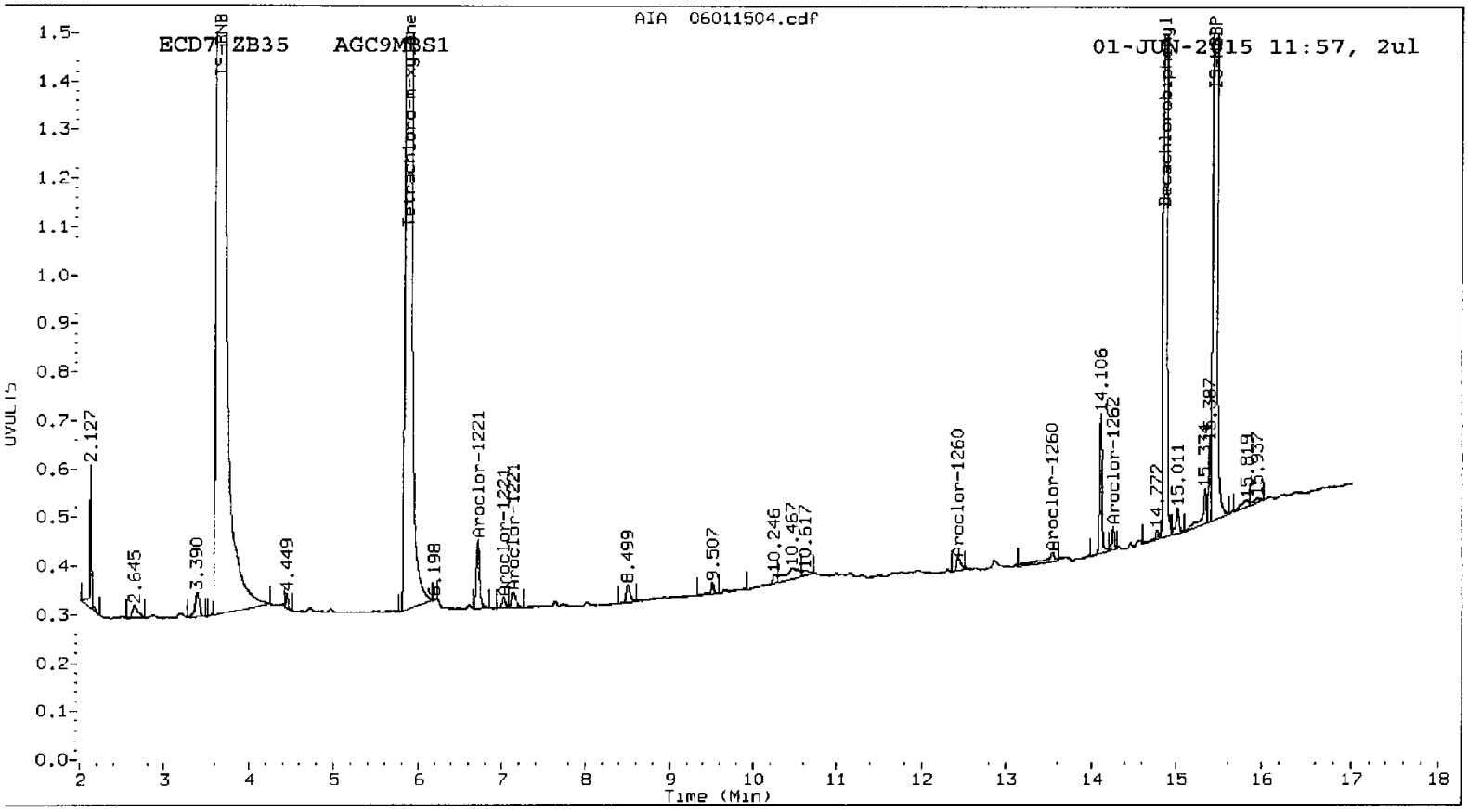
Tetrachloro-m-xylene
4.557
6.968
13.802
14.813
15.088
16.062
UVOLTS
Time (Min)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ECD7-ZB35 AGC9MBS1
01-JUN-2015 11:57, 2ul
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1260
Aroclor-1262
2.127
2.645
3.390
4.449
6.198
8.499
9.507
10.246
10.467
10.617
14.106
14.772
15.011
15.334
15.387
15.819
15.957
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011505.d
Data file 2: 20150527.b/0601-2.b/06011505.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9LCSS1
Client ID:
Injection Date: 01-JUN-2015 12:18
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.354	-0.029	1196132	5.918	-0.030	5381032	31.2	30.6	2.0	Tetrachloro-m-xylene
14.896	-0.003	2551638	14.867	-0.004	3759674	35.1	32.6	7.3	Decachlorobiphenyl

Indicates RPD > 40%
I Indicates Column 1 peak was manually integrated
I Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.0	76.5
Decachlorobiphenyl	87.8	81.6

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5650356	3.7
Hexabromobiphenyl	5633814	5778029	2.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13045224	-0.1
Hexabromobiphenyl	8980422	9553346	6.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

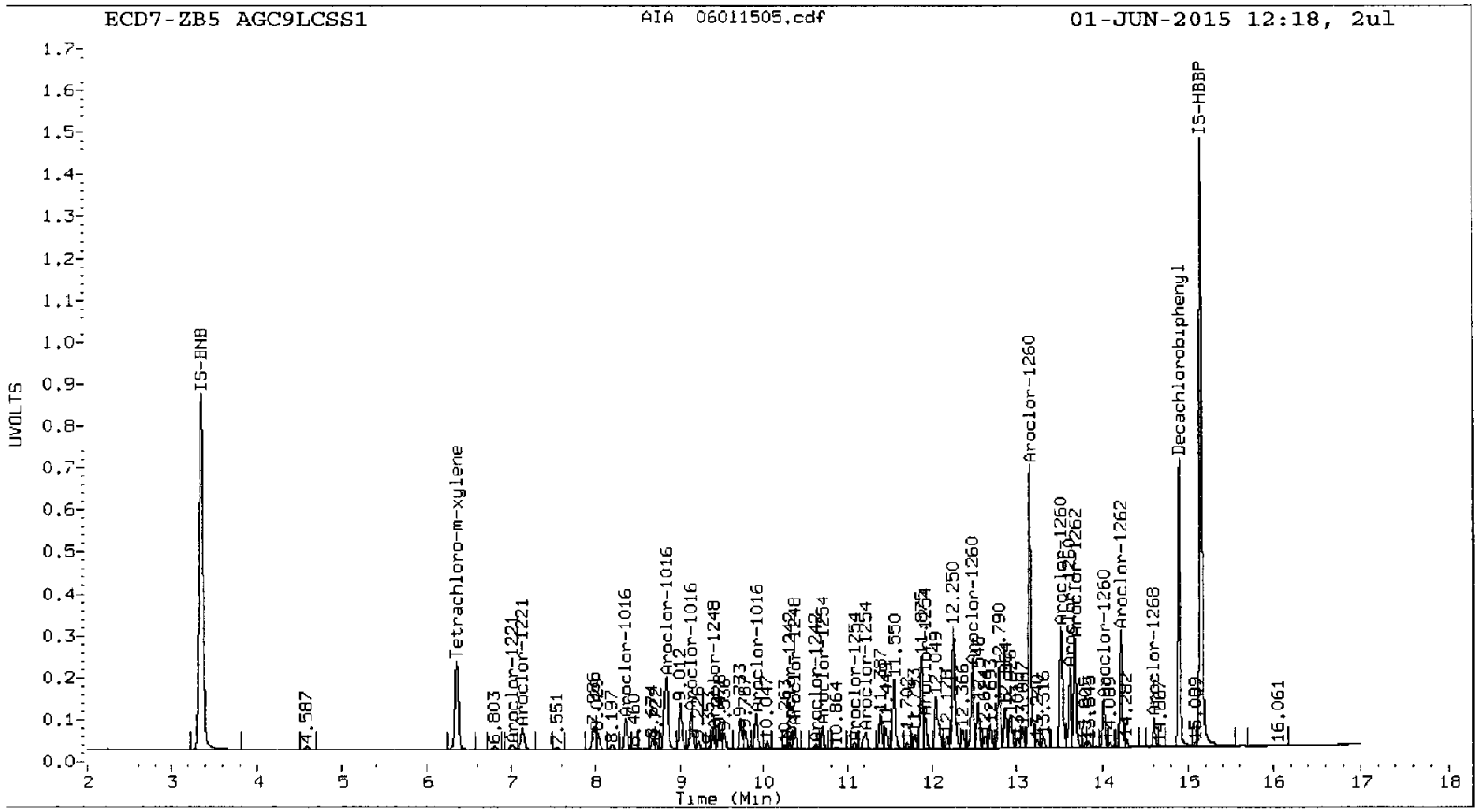
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.358	-0.025	373918	411.4	1	8.040	-0.026	2813086	393.4
Aroclor-1016	2	8.842	-0.023	1174368	421.6	2	8.817	-0.022	6195074	408.0
Aroclor-1016	3	9.138	-0.022	419977	440.8	3	9.254	-0.023	1638873	418.4
Aroclor-1016	4	9.922	-0.018	442975	438.1	4	10.016	-0.019	1167143	421.8
Total Col1Ave (4 peaks):					428.0	Total Col2Ave (4 peaks):				410.4 RPD = 4
Corrected Ave (3 peaks):					423.7	Corrected Ave (3 peaks):				406.6 RPD = 4
Aroclor-1221	1	---			0.0	1	5.028	0.010	16987	12.5
Aroclor-1221	2	7.014	0.015	72561	201.6	2	6.734	0.015	315016	139.0
Aroclor-1221	3	7.138	0.015	288179	283.7	3	7.027	0.012	273824	214.0
Aroclor-1221	NS	---			----	4	7.163	0.013	1195474	305.4
Col1Ave: <3 Quant Peaks						Col2Ave: 167.7				
Aroclor-1232	1	---			0.0	1	5.028	0.007	16987	20.6
Aroclor-1232	2	7.014	0.014	72561	292.0	2	7.163	0.010	1195474	432.5
Aroclor-1232	3	7.138	0.011	288179	424.9	3	8.040	0.011	2813086	868.1
Aroclor-1232	4	8.842	0.012	1174368	1036.0	4	9.254	0.007	1638873	985.7
Total Col1Ave (3 peaks):					584.3	Total Col2Ave (4 peaks):				576.7 RPD = 1
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				440.4
Aroclor-1242	1	8.842	-0.025	1174368	576.1	1	8.040	-0.030	2813086	536.2
Aroclor-1242	2	9.138	-0.023	419977	575.4	2	8.817	-0.024	6195074	559.3
Aroclor-1242	3	10.314	-0.017	58149	85.5	3	10.381	-0.018	264230	68.5
Aroclor-1242	4	10.619	-0.014	53004	52.0	4	10.738	-0.018	156372	33.3
Total Col1Ave (4 peaks):					322.3	Total Col2Ave (4 peaks):				299.3 RPD = 7
Corrected Ave (3 peaks):					237.6	Corrected Ave (3 peaks):				212.7 RPD = 11
Aroclor-1248	1	9.405	-0.023	202731	312.3	1	8.817	-0.021	6195074	861.7
Aroclor-1248	2	9.922	-0.020	442975	320.9	2	9.823	-0.021	1991374	346.6
Aroclor-1248	3	10.379	-0.010	230894	144.0	3	10.381	-0.018	264230	43.4
Aroclor-1248	4	10.619	-0.014	53004	32.7	4	10.738	-0.017	156372	19.9
Total Col1Ave (4 peaks):					202.5	Total Col2Ave (4 peaks):				317.9 RPD = 44*
Corrected Ave (3 peaks):					163.0	Corrected Ave (3 peaks):				136.6 RPD = 18
Aroclor-1254	1	10.379	-0.017	230894	223.7	1	10.623	-0.016	1327946	193.2
Aroclor-1254	2	10.701	-0.013	234170	158.8	2	10.738	0.004	156372	48.0
Aroclor-1254	3	11.080	-0.014	56479	47.2	3	11.154	-0.014	276614	51.5
Aroclor-1254	4	11.217	-0.014	270826	120.0	4	11.343	0.024	3104233	271.0
Aroclor-1254	5	11.921	-0.022	292603	180.8	5	12.089	-0.009	1383748	202.2
Total Col1Ave (5 peaks):					146.1	Total Col2Ave (5 peaks):				153.2 RPD = 5
Corrected Ave (4 peaks):					126.7	Corrected Ave (4 peaks):				123.7 RPD = 2
Aroclor-1260	1	12.477	-0.010	843057	447.2	1	12.401	-0.011	3331513	388.9
Aroclor-1260	2	13.152	-0.007	2944287	482.6	2	13.107	-0.010	8118380	406.9
Aroclor-1260	3	13.521	-0.007	1334832	470.9	3	13.577	-0.008	2372973	391.7
Aroclor-1260	4	13.620	-0.006	797559	466.3	4	13.628	-0.007	5281834	401.8
Aroclor-1260	5	14.018	-0.006	442894	471.2	NS	---			----
Total Col1Ave (5 peaks):					467.7	Total Col2Ave (4 peaks):				397.3 RPD = 16
Corrected Ave (4 peaks):					463.9	Corrected Ave (3 peaks):				394.1 RPD = 16
Aroclor-1262	1	12.477	0.010	843057	247.5	1	12.401	0.006	3331513	220.0
Aroclor-1262	2	13.152	0.009	2944287	310.7	2	12.843	0.007	3819342	268.4
Aroclor-1262	3	13.521	0.008	1334832	446.9	3	13.107	0.007	8118380	278.0
Aroclor-1262	4	13.684	0.009	1042556	201.1	4	13.577	0.007	2372973	188.4
Aroclor-1262	5	14.224	0.008	1048209	226.0	5	14.218	0.006	2061429	208.2
Total Col1Ave (5 peaks):					286.4	Total Col2Ave (5 peaks):				232.6 RPD = 21

	Corrected Ave (4 peaks):			246.3		Corrected Ave (4 peaks):			221.3	RPD = 11
Aroclor-1268	1	13.620	0.009	797559	89.0	1	13.577	0.008	2372973	106.0
Aroclor-1268	2	13.684	0.010	1042556	99.3	2	13.628	0.000	5281834	249.7
Aroclor-1268	3	14.018	0.022	442894	47.2	3	13.958	0.005	93304	5.5
Aroclor-1268	4	14.604	0.007	254143	7.7	4	14.577	0.005	474159	9.9
	Total Col1Ave (4 peaks):			60.8		Total Col2Ave (4 peaks):			92.8	RPD = 42*
	Corrected Ave (3 peaks):			48.0		Corrected Ave (3 peaks):			40.4	RPD = 17

Total PCB Area Col1 (6.483 - 14.799) = 23422040 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 92240036 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical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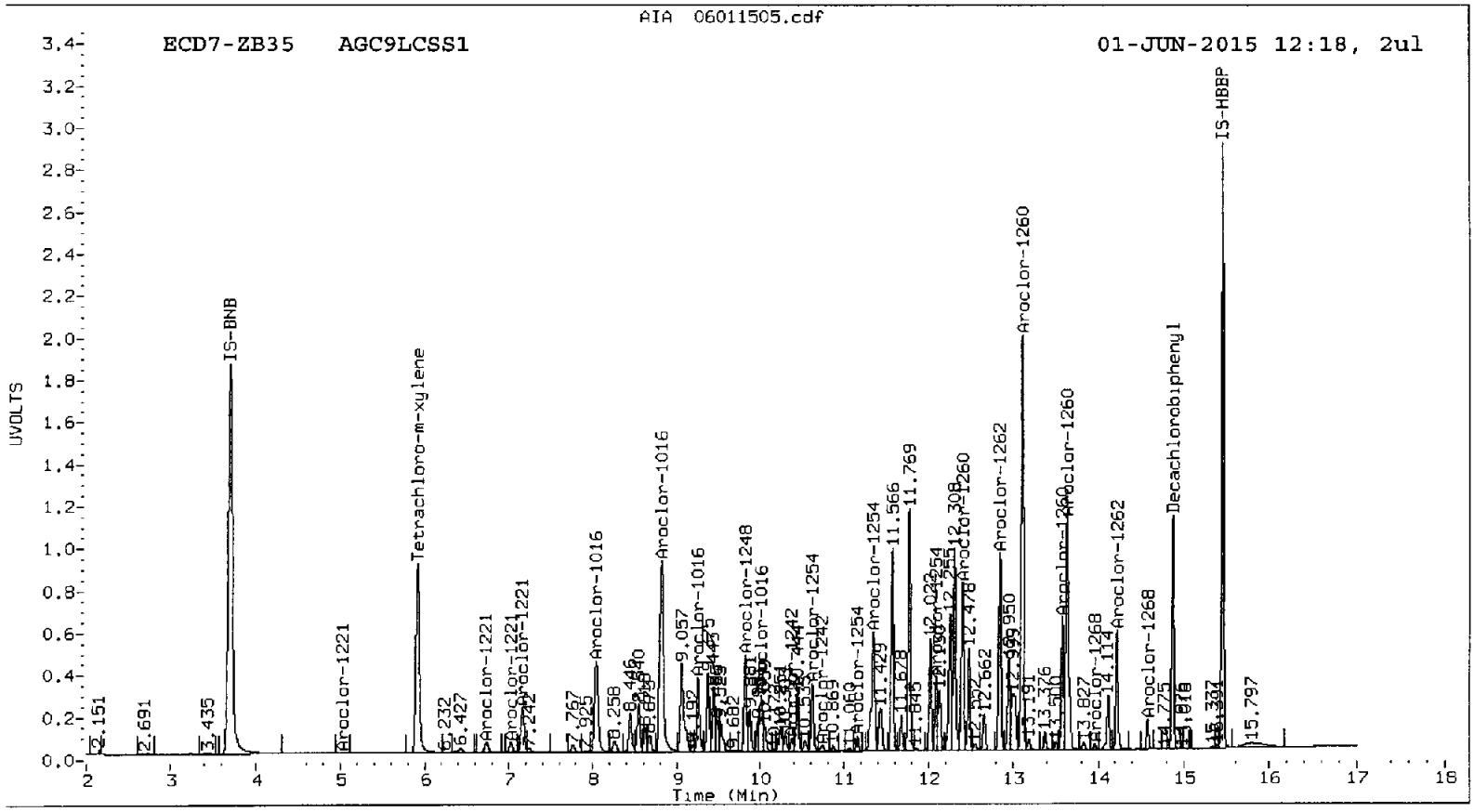
01-JUN-2015 12:18, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
IS-HBBP
4.587
5.803
7.551
16.061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Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
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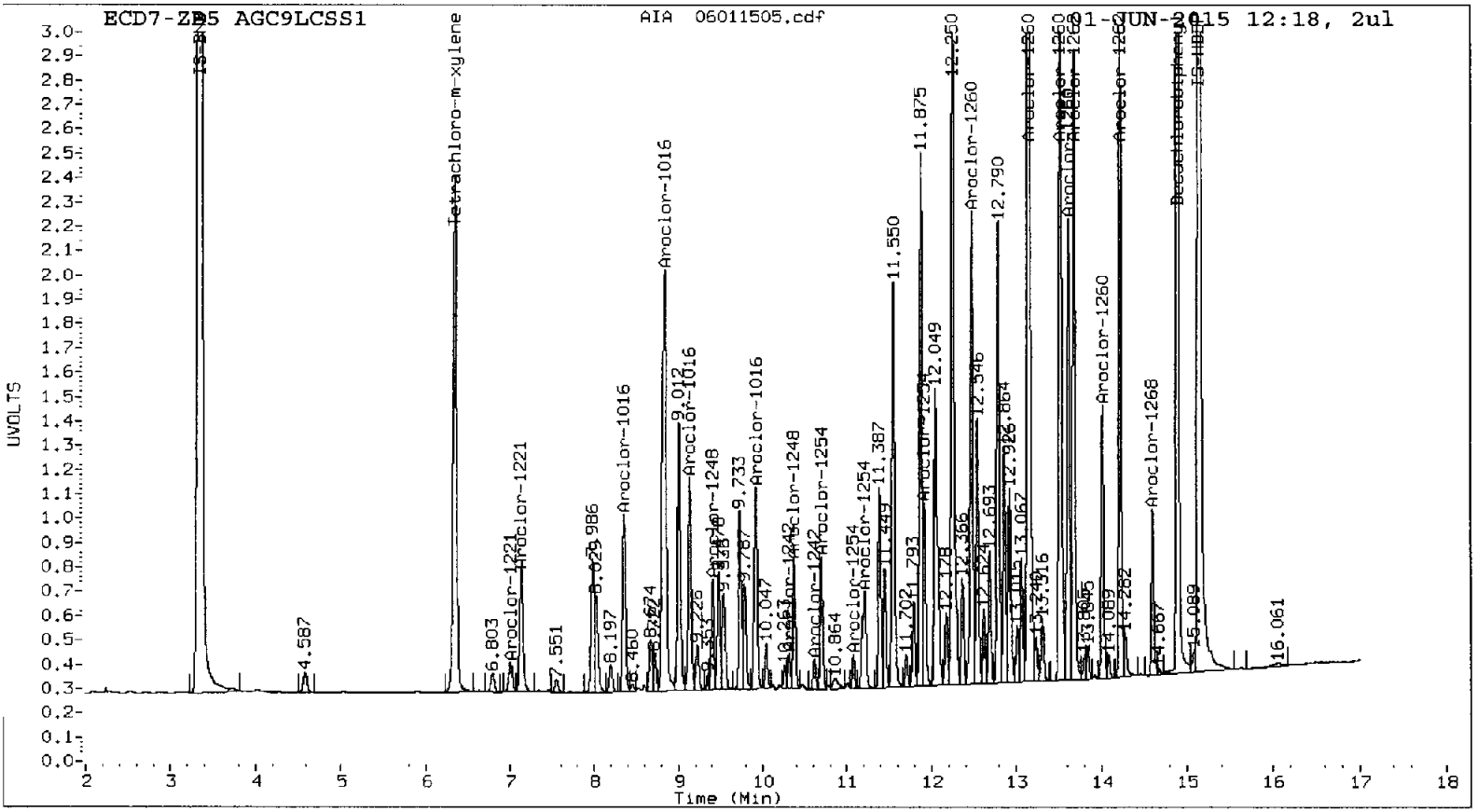
15.797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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1268
Decachlorobiphenyl
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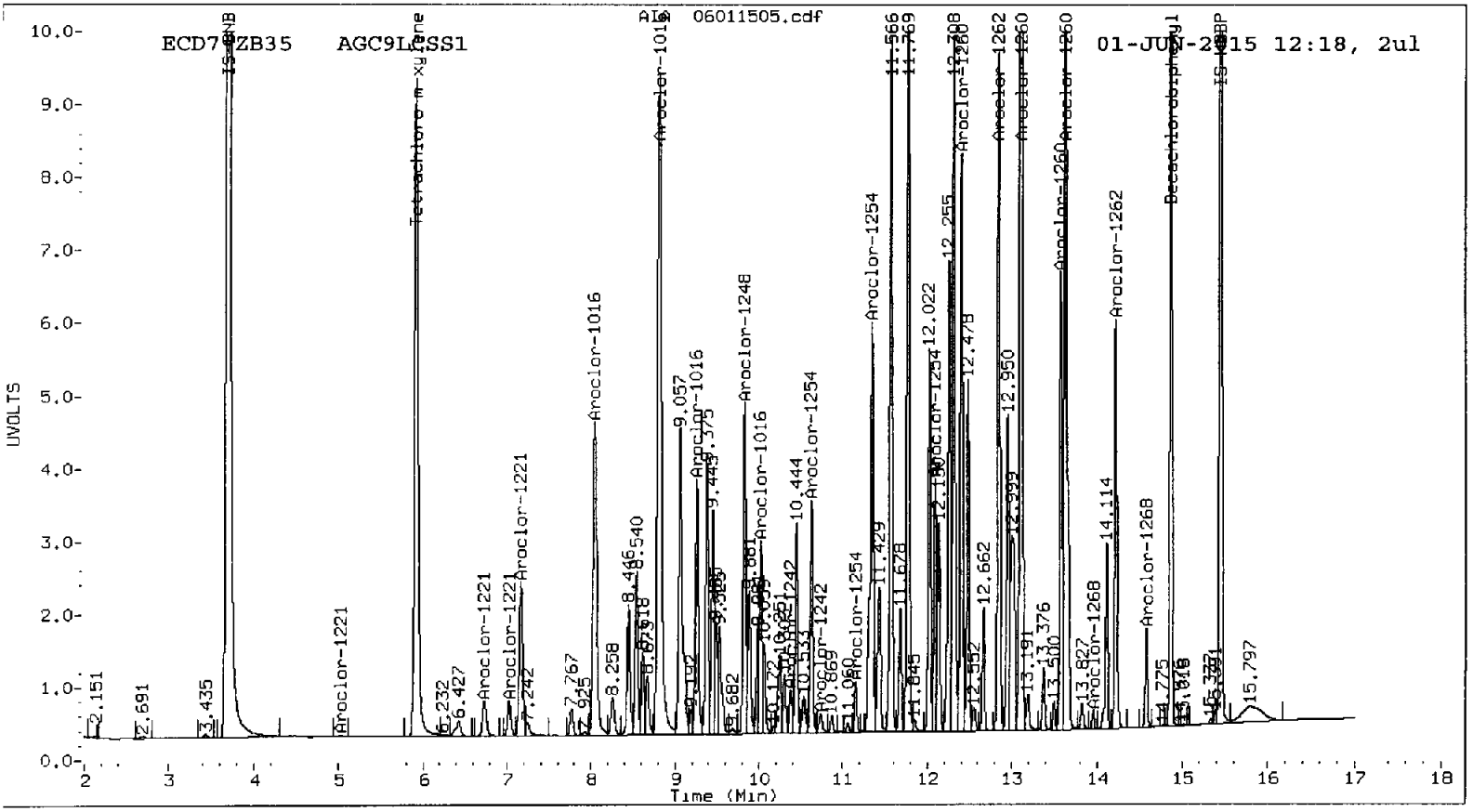
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UVOLTS
Time (Min)
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Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
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12.478
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Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011506.d
Data file 2: 20150527.b/0601-2.b/06011506.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9A
Client ID:
Injection Date: 01-JUN-2015 12:40
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.368	-0.015	1238981	5.931	-0.016	5584280	30.9	30.6	1.0	Tetrachloro-m-xylene
14.897	-0.002	2426665	14.869	-0.002	3741756	33.2	30.5	8.3	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	77.2	76.5
Decachlorobiphenyl	82.9	76.3

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5914091	8.5
Hexabromobiphenyl	5633814	5819276	3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13532961	3.6
Hexabromobiphenyl	8980422	10173797	13.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9A

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	9.144	-0.015	18839	18.9	3	9.194	-0.082	7726	1.9
Aroclor-1016	4	9.925	-0.014	20780	19.6	4	10.028	-0.008	70325	24.5
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	5.018	0.000	45055	32.1
Aroclor-1221	2	---			0.0	2	6.763	0.043	74464	31.7
Aroclor-1221	3	---			0.0	3	7.070	0.055	81696	61.6
Aroclor-1221	NS	---			----	4	7.203	0.053	112505	27.7
	Col1Ave: <3 Quant Peaks					Col2Ave: 38.2				
Aroclor-1232	1	---			0.0	1	5.018	-0.003	45055	52.7
Aroclor-1232	2	---			0.0	2	7.203	0.050	112505	39.2
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	9.194	-0.053	7726	4.5
	Col1Ave: <3 Quant Peaks					Col2Ave: 32.1				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	9.144	-0.017	18839	24.7	2	---			0.0
Aroclor-1242	3	10.322	-0.009	18720	26.3	3	10.386	-0.013	86049	21.5
Aroclor-1242	4	10.627	-0.005	61249	57.4	4	10.725	-0.031	640360	131.5
	Total Col1Ave (3 peaks):			36.1		Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	9.415	-0.013	28481	41.9	1	---			0.0
Aroclor-1248	2	9.925	-0.016	20780	14.4	2	9.832	-0.011	73105	12.3
Aroclor-1248	3	10.388	0.000	211083	125.8	3	10.386	-0.013	86049	13.6
Aroclor-1248	4	10.627	-0.006	61249	36.1	4	10.725	-0.030	640360	78.5
	Total Col1Ave (4 peaks):			54.5		Total Col2Ave (3 peaks):			34.8	RPD = 44*
	Corrected Ave (3 peaks):			30.8		Corrected Ave: <3 Peaks				
Aroclor-1254	1	10.388	-0.007	211083	195.4	1	10.631	-0.009	1178257	165.3
Aroclor-1254	2	10.707	-0.008	268270	173.8	2	10.725	-0.009	640360	189.6
Aroclor-1254	3	11.090	-0.004	241545	192.9	3	11.160	-0.008	755231	135.6
Aroclor-1254	4	11.224	-0.007	586704	248.3	4	11.310	-0.008	2319589	195.2
Aroclor-1254	5	11.932	-0.011	390200	230.4	5	12.092	-0.006	1565283	220.5
	Total Col1Ave (5 peaks):			208.2		Total Col2Ave (5 peaks):			181.2	RPD = 14
	Corrected Ave (4 peaks):			198.1		Corrected Ave (4 peaks):			171.4	RPD = 14
Aroclor-1260	1	12.482	-0.005	222308	117.1	1	12.406	-0.006	796757	87.3
Aroclor-1260	2	13.156	-0.004	778348	126.7	2	13.111	-0.005	2260363	106.4
Aroclor-1260	3	13.524	-0.004	420274	147.2	3	13.581	-0.004	589099	91.3
Aroclor-1260	4	13.624	-0.002	206169	119.7	4	13.631	-0.004	1602956	114.5
Aroclor-1260	5	14.020	-0.004	109012	115.2	NS	---			----
	Total Col1Ave (5 peaks):			125.2		Total Col2Ave (4 peaks):			99.9	RPD = 22
	Corrected Ave (4 peaks):			119.7		Corrected Ave (3 peaks):			95.0	RPD = 23
Aroclor-1262	1	12.482	0.015	222308	64.8	1	12.406	0.011	796757	49.4
Aroclor-1262	2	13.156	0.013	778348	81.5	2	12.845	0.009	1672691	110.4
Aroclor-1262	3	13.524	0.011	420274	139.7	3	13.111	0.011	2260363	72.7
Aroclor-1262	4	13.686	0.011	274805	52.6	4	13.581	0.010	589099	43.9
Aroclor-1262	5	14.225	0.010	245100	52.5	5	14.220	0.007	535622	50.8
	Total Col1Ave (5 peaks):			78.2		Total Col2Ave (5 peaks):			65.4	RPD = 18
	Corrected Ave (4 peaks):			62.9		Corrected Ave (4 peaks):			54.2	RPD = 15
Aroclor-1268	1	13.624	0.013	206169	22.9	1	13.581	0.012	589099	24.7

Aroclor-1268	2	13.686	0.012	274805	26.0	2	13.631	0.003	1602956	71.2
Aroclor-1268	3	14.020	0.023	109012	11.5	3	13.961	0.009	50721	2.8
Aroclor-1268	4	14.605	0.009	110158	3.3	4	14.579	0.007	218130	4.3

Total Col1Ave (4 peaks): 15.9 Total Col2Ave (4 peaks): 25.7 RPD = 47*

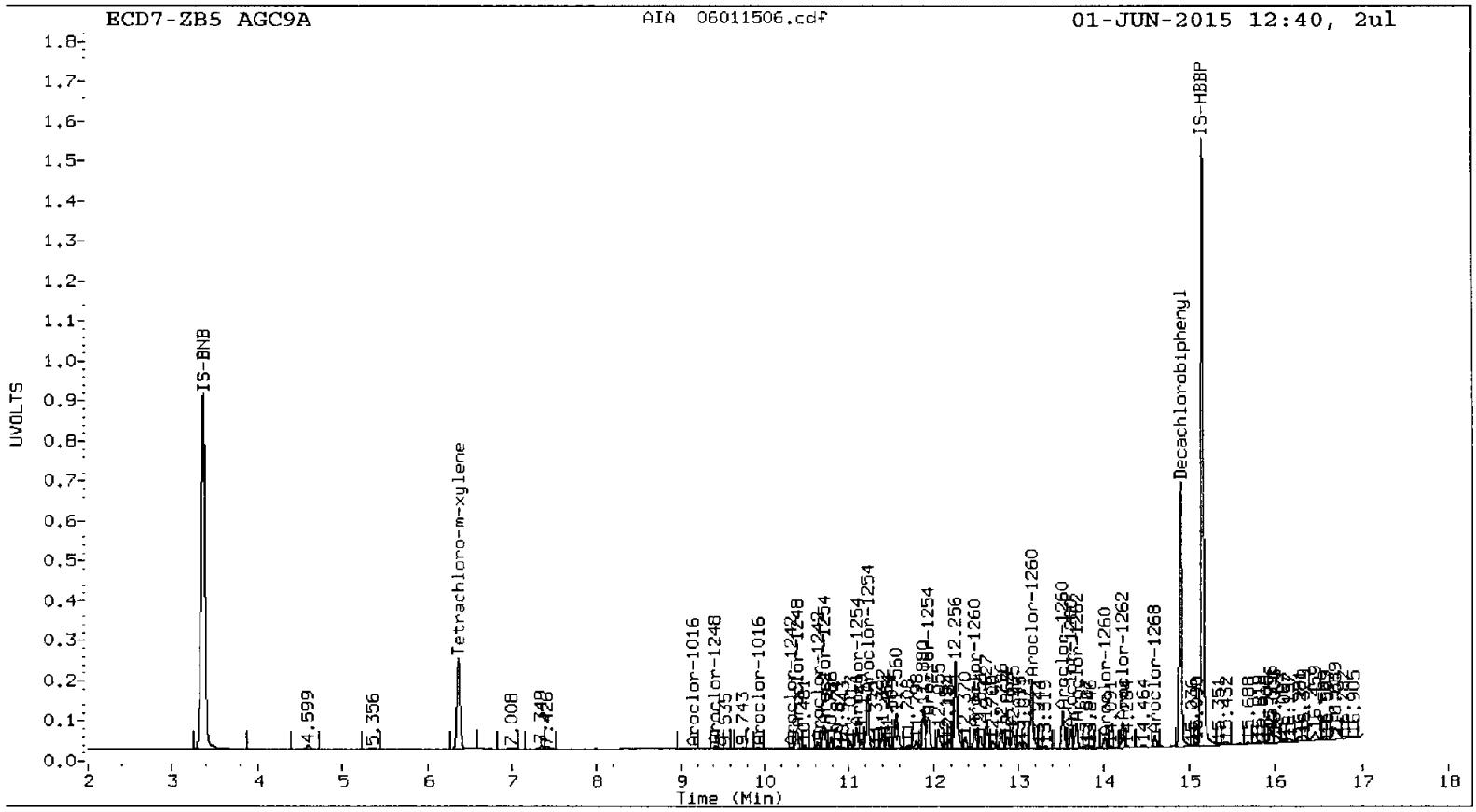
Corrected Ave (3 peaks): 12.6 Corrected Ave (3 peaks): 10.6 RPD = 17

Total PCB Area Col1 (6.483 - 14.799) = 9069987 Col1 Total PCB = 0.3 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 34051655 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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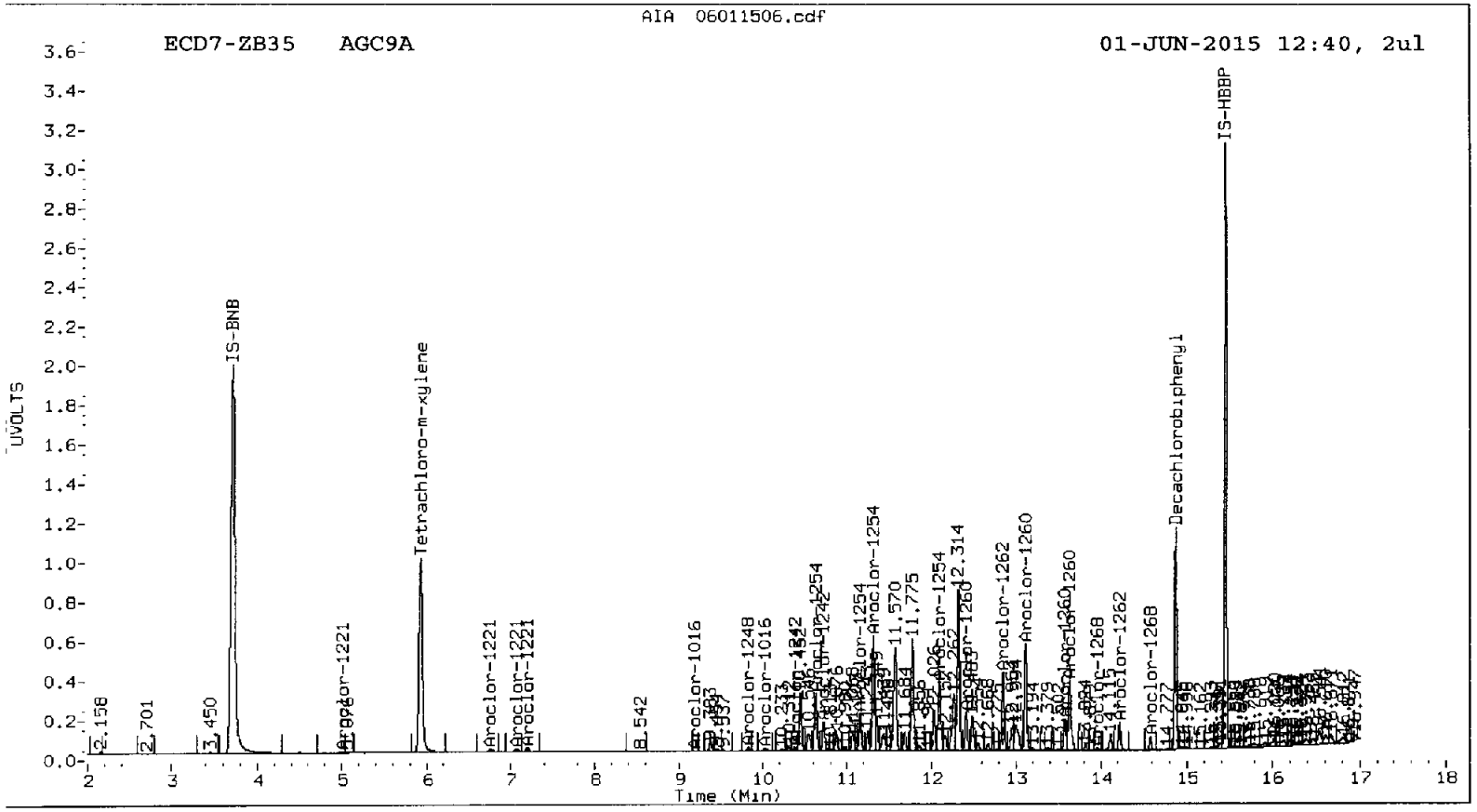
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Tetrachloro-m-xylene
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Decachlorobiphenyl
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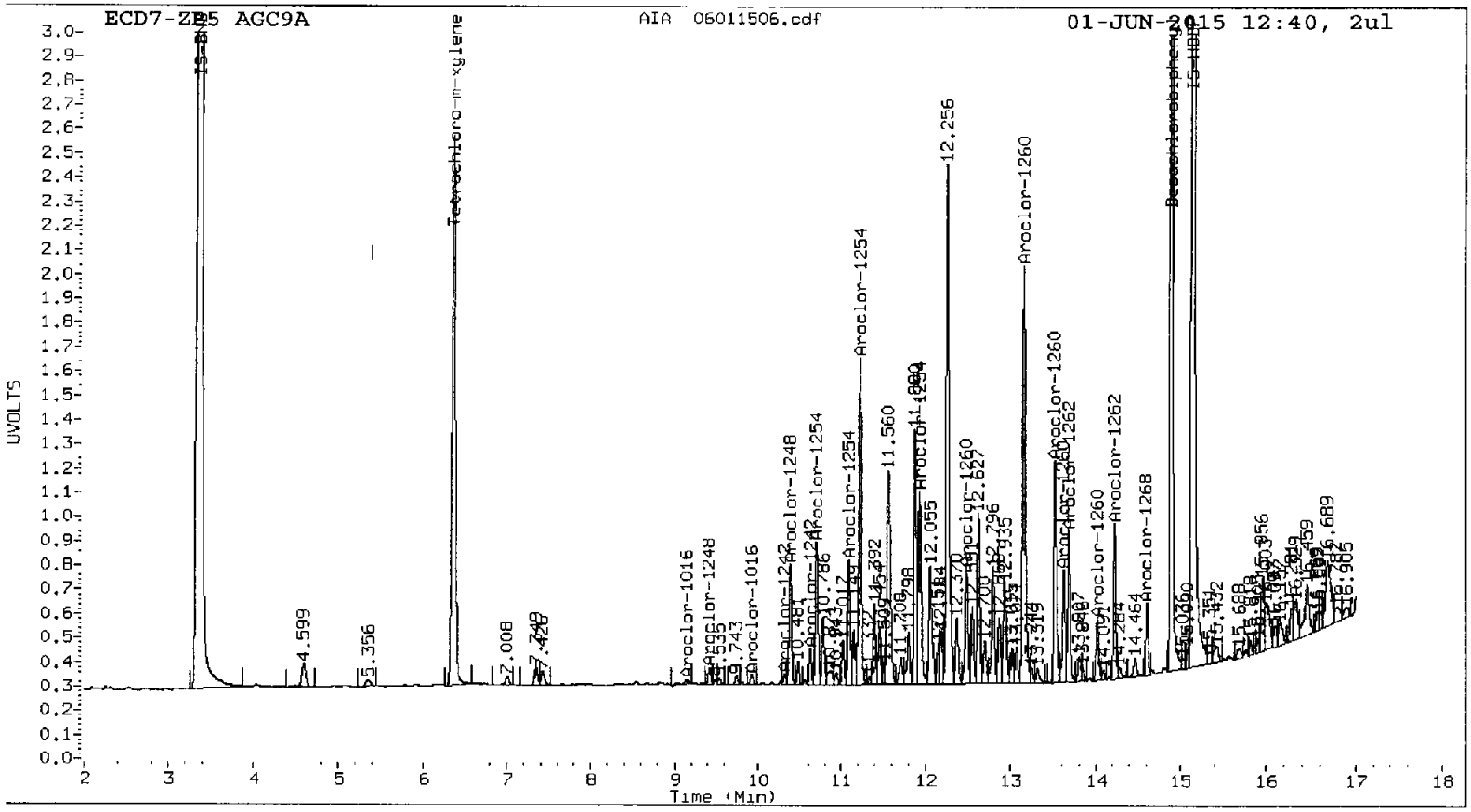
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
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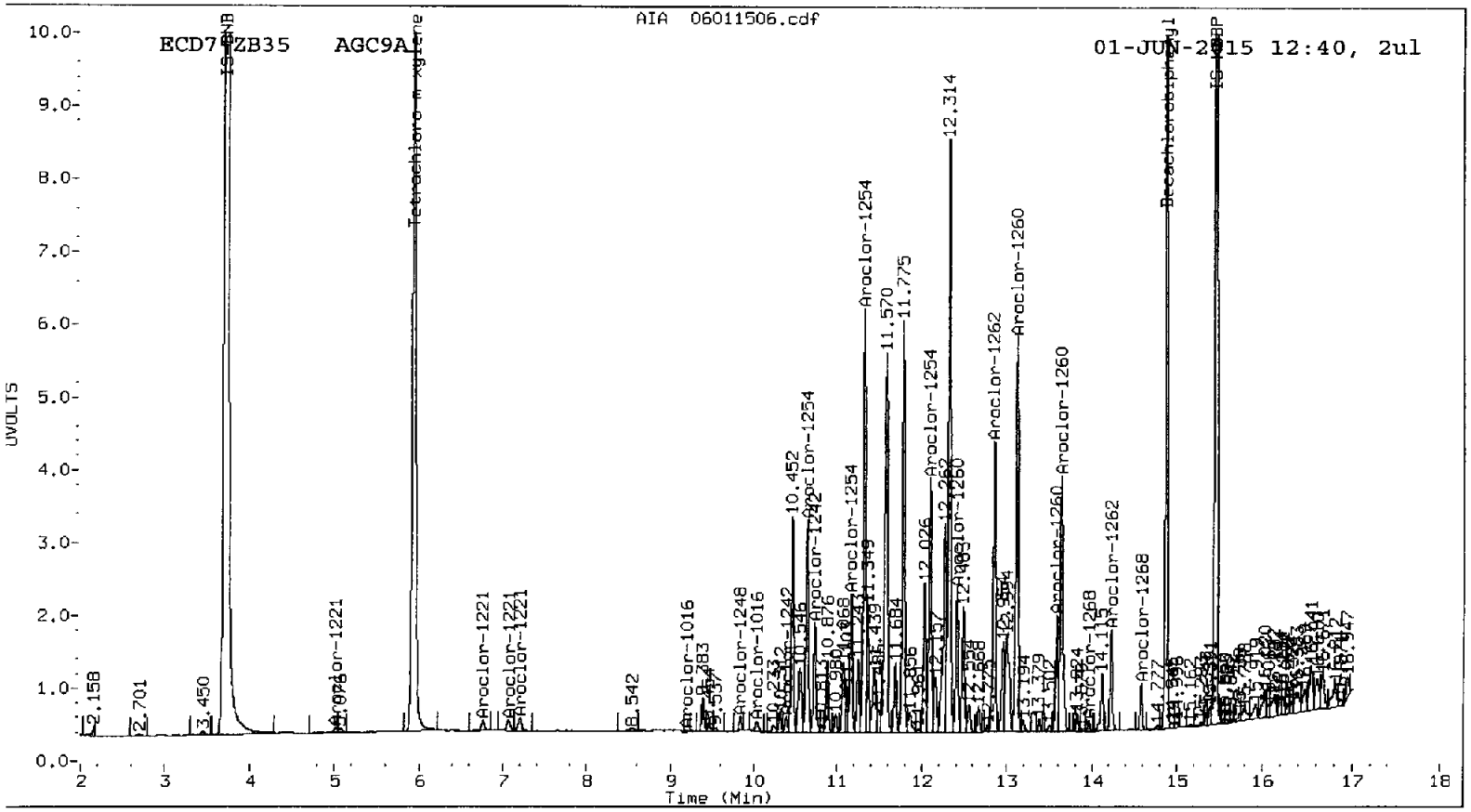
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)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Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011507.d
Data file 2: 20150527.b/0601-2.b/06011507.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9B
Client ID:
Injection Date: 01-JUN-2015 13:01
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.377	-0.007	1181195	5.940	-0.008	5368111	29.7	30.1	1.2	Tetrachloro-m-xylene
14.898	-0.001	2361368	14.870	-0.001	4094087	32.1	33.1	2.9	Decachlorobiphenyl

Indicates RPD > 40%
I Indicates Column 1 peak was manually integrated
I Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	74.3	75.2
Decachlorobiphenyl	80.3	82.6

JK 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5863407	7.6
Hexabromobiphenyl	5633814	5845079	3.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13233222	1.3
Hexabromobiphenyl	8980422	10272345	14.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 80688

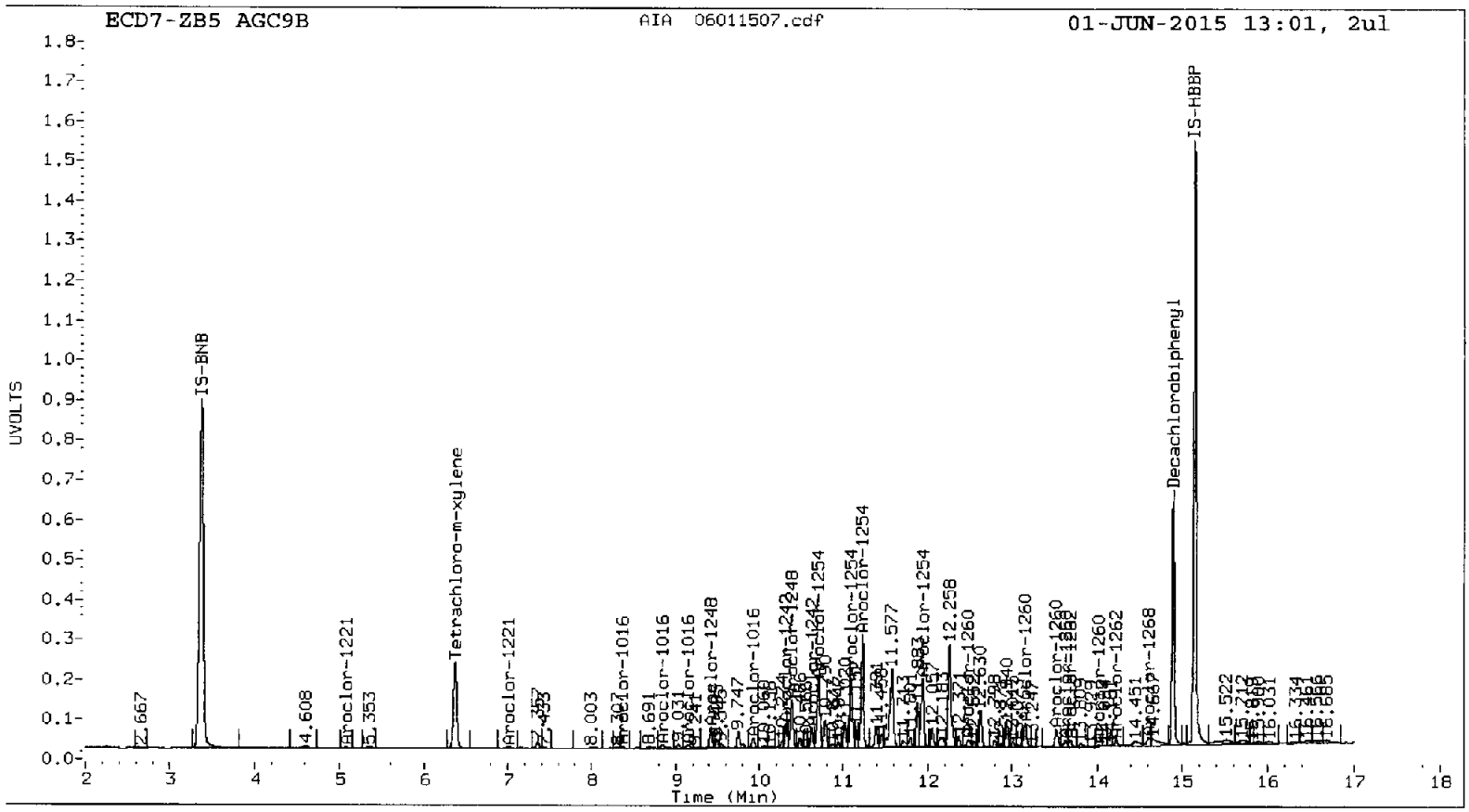
Aroclor	Peak#	RT	Shift	ZB5 Col Area	Amount	Peak#	RT	Shift	ZB35 Col Area	Amount
Aroclor-1016	1	8.377	-0.007	21557	22.9	1	8.059	-0.007	228679	31.5
Aroclor-1016	2	8.850	-0.015	59052	20.4	2	8.828	-0.012	326749	21.2
Aroclor-1016	3	9.151	-0.009	46214	46.7	3	9.268	-0.009	77076	19.4
Aroclor-1016	4	9.931	-0.008	126903	120.9	4	10.031	-0.005	500795	178.4
Total Col1Ave (4 peaks):					52.7	Total Col2Ave (4 peaks):				62.6 RPD = 17
Corrected Ave (3 peaks):					30.0	Corrected Ave (3 peaks):				24.0 RPD = 22
Aroclor-1221	1	5.077	0.054	15356	64.4	1	5.027	0.009	89629	65.2
Aroclor-1221	2	7.019	0.021	23694	63.4	2	6.769	0.049	97445	42.4
Aroclor-1221	3	---			0.0	3	7.076	0.060	177579	136.8
Aroclor-1221	NS	---			---	4	7.200	0.050	119030	30.0
Col1Ave: <3 Quant Peaks						Col2Ave: 68.6				
Aroclor-1232	1	5.077	0.052	15356	113.1	1	5.027	0.006	89629	107.2
Aroclor-1232	2	7.019	0.020	23694	91.9	2	7.200	0.047	119030	42.5
Aroclor-1232	3	---			0.0	3	8.059	0.030	228679	69.6
Aroclor-1232	4	8.850	0.020	59052	50.2	4	9.268	0.021	77076	45.7
Total Col1Ave (3 peaks):					85.1	Total Col2Ave (4 peaks):				66.2 RPD = 25
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				52.6
Aroclor-1242	1	8.850	-0.017	59052	27.9	1	8.059	-0.010	228679	43.0
Aroclor-1242	2	9.151	-0.010	46214	61.0	2	8.828	-0.014	326749	29.1
Aroclor-1242	3	10.325	-0.006	258089	365.8	3	10.390	-0.009	560089	143.1
Aroclor-1242	4	10.629	-0.004	223175	211.1	4	10.728	-0.028	1902022	399.5
Total Col1Ave (4 peaks):					166.4	Total Col2Ave (4 peaks):				153.7 RPD = 8
Corrected Ave (3 peaks):					100.0	Corrected Ave (3 peaks):				71.7 RPD = 33
Aroclor-1248	1	9.420	-0.008	243161	361.0	1	8.828	-0.011	326749	44.8
Aroclor-1248	2	9.931	-0.010	126903	88.6	2	9.836	-0.007	1013892	174.0
Aroclor-1248	3	10.391	0.002	544679	327.3	3	10.390	-0.009	560089	90.7
Aroclor-1248	4	10.629	-0.004	223175	132.6	4	10.728	-0.027	1902022	238.6
Total Col1Ave (4 peaks):					227.4	Total Col2Ave (4 peaks):				137.0 RPD = 50*
Corrected Ave (3 peaks):					182.8	Corrected Ave (3 peaks):				103.2 RPD = 56*
Aroclor-1254	1	10.391	-0.005	544679	508.6	1	10.633	-0.006	3294308	472.6
Aroclor-1254	2	10.710	-0.004	773156	505.2	2	10.728	-0.006	1902022	575.8
Aroclor-1254	3	11.093	-0.001	805038	648.5	3	11.163	-0.005	2485908	456.3
Aroclor-1254	4	11.228	-0.004	1149324	490.6	4	11.313	-0.005	5405954	465.2
Aroclor-1254	5	11.940	-0.003	819917	488.3	5	12.090	-0.008	3118149	449.2
Total Col1Ave (5 peaks):					528.2	Total Col2Ave (5 peaks):				483.8 RPD = 9
Corrected Ave (4 peaks):					498.2	Corrected Ave (4 peaks):				460.8 RPD = 8
Aroclor-1260	1	12.486	-0.001	114810	60.2	1	12.408	-0.003	350014	38.0
Aroclor-1260	2	13.158	-0.002	256241	41.5	2	13.113	-0.004	939907	43.8
Aroclor-1260	3	13.525	-0.003	232950	81.2	3	13.582	-0.003	203256	31.2
Aroclor-1260	4	13.626	0.000	78981	45.7	4	13.633	-0.003	697936	49.4
Aroclor-1260	5	14.019	-0.005	27127	28.5	NS	---			----
Total Col1Ave (5 peaks):					51.4	Total Col2Ave (4 peaks):				40.6 RPD = 24
Corrected Ave (4 peaks):					44.0	Corrected Ave (3 peaks):				37.7 RPD = 15
Aroclor-1262	1	12.486	0.019	114810	33.3	1	12.408	0.014	350014	21.5
Aroclor-1262	2	13.158	0.015	256241	26.7	2	12.845	0.009	1496863	97.8
Aroclor-1262	3	13.525	0.011	232950	77.1	3	13.113	0.013	939907	29.9
Aroclor-1262	4	13.686	0.012	84261	16.1	4	13.582	0.012	203256	15.0
Aroclor-1262	5	14.227	0.011	94279	20.1	5	14.221	0.009	243574	22.9
Total Col1Ave (5 peaks):					34.7	Total Col2Ave (5 peaks):				37.4 RPD = 8

Corrected Ave (4 peaks):			24.1		Corrected Ave (4 peaks):			22.3	RPD =	7
Aroclor-1268 1	13.626	0.014	78981	8.7	1	13.582	0.013	203256		8.4
Aroclor-1268 2	13.686	0.013	84261	7.9	2	13.633	0.004	697936		30.7
Aroclor-1268 3	14.019	0.022	27127	2.9	3	13.964	0.012	25524		1.4
Aroclor-1268 4	14.609	0.013	131909	4.0	4	14.581	0.009	192563		3.7
Total Col1Ave (4 peaks):			5.9		Total Col2Ave (4 peaks):			11.1	RPD =	61*
Corrected Ave (3 peaks):			4.9		Corrected Ave (3 peaks):			4.5	RPD =	8

Total PCB Area Col1 (6.483 - 14.799) = 13285953 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 58202219 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical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Time (Min)
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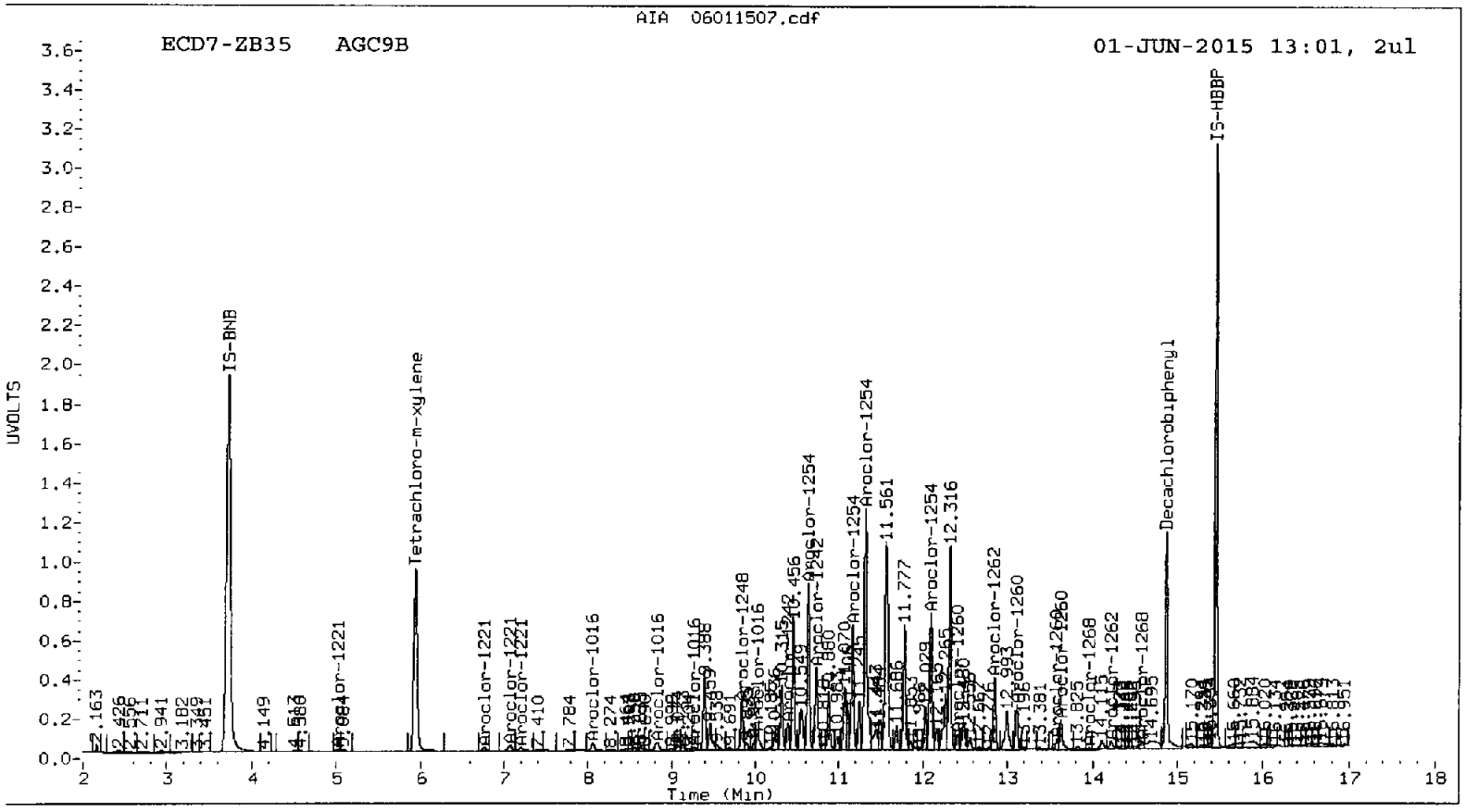
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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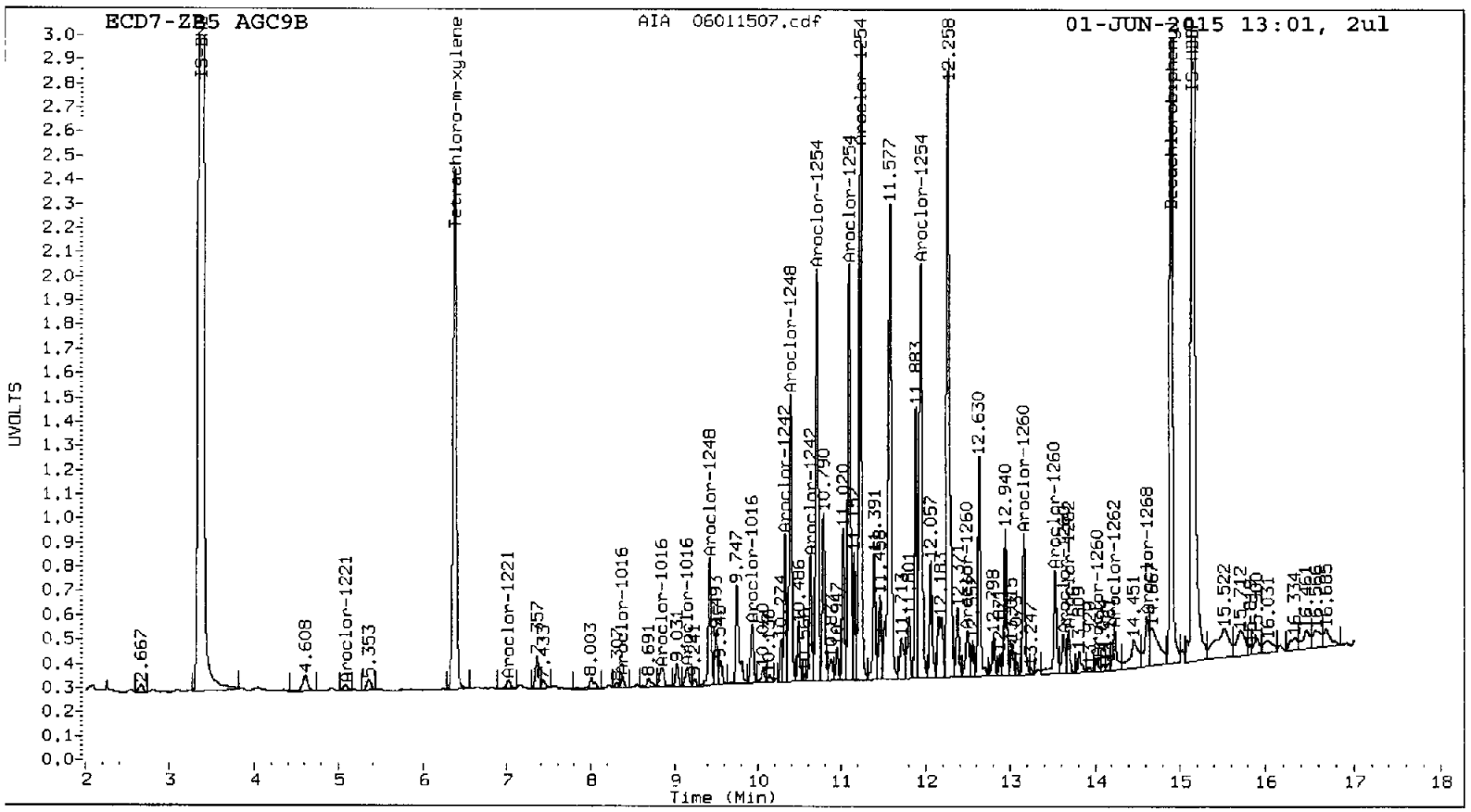
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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
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Aroclor-1262
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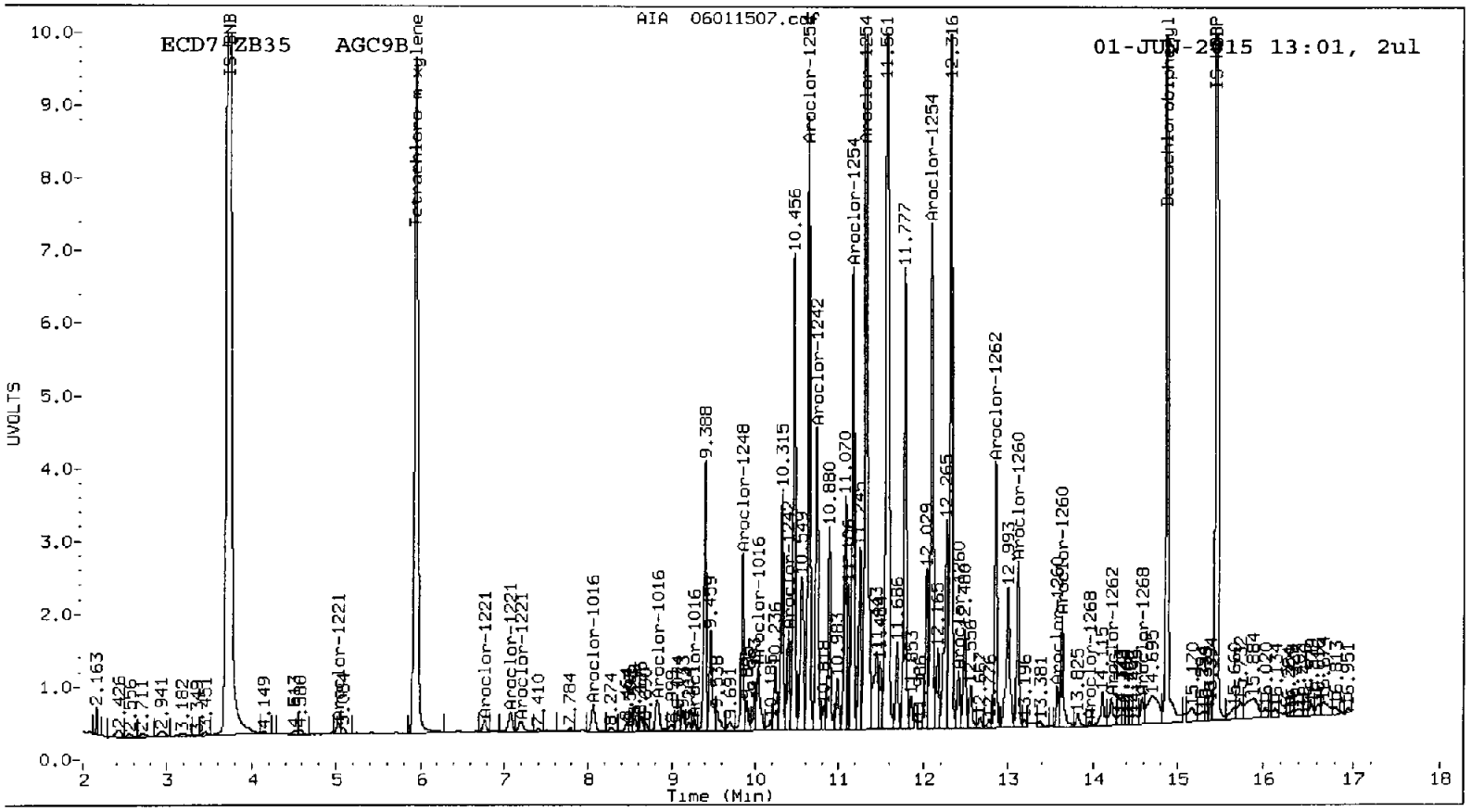
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Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011508.d
Data file 2: 20150527.b/0601-2.b/06011508.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9C
Client ID:
Injection Date: 01-JUN-2015 13:23
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.382	-0.002	1383984	5.944	-0.004	5354022	35.9	32.0	11.3	Tetrachloro-m-xylene
14.898	-0.001	2631484	14.873	0.001	5172675	41.0	46.4	12.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	89.6	80.0
Decachlorobiphenyl	102.5	115.9

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5693115	4.5
Hexabromobiphenyl	5633814	5101685	-9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12406397	-5.0
Hexabromobiphenyl	8980422	9254042	3.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9:9999

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	8.020	-0.047	776142	114.1
Aroclor-1016	2	8.836	-0.029	9431268	3360.7	2	8.835	-0.004	789037	54.6
Aroclor-1016	3	9.168	0.009	4304472	4484.2	3	9.193	-0.084	13242164	3554.7
Aroclor-1016	4	9.922	-0.018	323918	318.0	4	10.055	0.019	966009	367.1
Total Col1Ave (3 peaks): 2720.9						Total Col2Ave (4 peaks): 1022.7				RPD = 91*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 178.6				
Aroclor-1221	1	---			0.0	1	5.030	0.012	35985	27.9
Aroclor-1221	2	---			0.0	2	6.711	-0.009	80845	37.5
Aroclor-1221	3	---			0.0	3	7.080	0.065	79752	65.5
Aroclor-1221	NS	---			----	4	7.208	0.057	4181893	1123.3
Col1Ave: <3 Quant Peaks						Col2Ave: 313.6				
Aroclor-1232	1	---			0.0	1	5.030	0.009	35985	45.9
Aroclor-1232	2	7.022	0.023	26487	105.8	2	7.208	0.055	4181893	1591.0
Aroclor-1232	3	---			0.0	3	8.020	-0.010	776142	251.8
Aroclor-1232	4	8.836	0.006	9431268	8257.9	4	9.193	-0.054	13242164	8374.2
Col1Ave: <3 Quant Peaks						Col2Ave: 2565.7				
Aroclor-1242	1	8.836	-0.031	9431268	4592.0	1	8.020	-0.050	776142	155.5
Aroclor-1242	2	9.168	0.007	4304472	5852.9	2	8.835	-0.006	789037	74.9
Aroclor-1242	3	10.375	0.044	1102748	1609.5	3	10.387	-0.012	4549776	1239.8
Aroclor-1242	4	10.569	-0.064	2728077	2657.8	4	10.731	-0.025	1341436	300.6
Total Col1Ave (4 peaks): 3678.0						Total Col2Ave (4 peaks): 442.7				RPD = 157*
Corrected Ave (3 peaks): 2953.1						Corrected Ave (3 peaks): 177.0				RPD = 177*
Aroclor-1248	1	9.490	0.062	596686	912.2	1	8.835	-0.003	789037	115.4
Aroclor-1248	2	9.922	-0.020	323918	232.9	2	9.837	-0.007	699362	128.0
Aroclor-1248	3	10.375	-0.014	1102748	682.5	3	10.387	-0.012	4549776	785.7
Aroclor-1248	4	10.670	0.037	276209	169.0	4	10.731	-0.024	1341436	179.5
Total Col1Ave (4 peaks): 499.2						Total Col2Ave (4 peaks): 302.1				RPD = 49*
Corrected Ave (3 peaks): 361.5						Corrected Ave (3 peaks): 141.0				RPD = 88*
Aroclor-1254	1	10.375	-0.021	1102748	1060.5	1	10.626	-0.014	1349509	206.5
Aroclor-1254	2	10.725	0.010	199435	134.2	2	10.731	-0.003	1341436	433.1
Aroclor-1254	3	11.105	0.011	895166	742.7	3	11.168	0.000	3089233	604.8
Aroclor-1254	4	11.211	-0.021	1603895	705.2	4	11.277	-0.042	2535735	232.8
Aroclor-1254	5	11.907	-0.036	850159	521.4	5	12.103	0.005	451873	69.4
Total Col1Ave (5 peaks): 632.8						Total Col2Ave (5 peaks): 309.3				RPD = 69*
Corrected Ave (4 peaks): 525.9						Corrected Ave (4 peaks): 236.6				RPD = 76*
Aroclor-1260	1	12.514	0.028	120182	72.2	1	12.325	-0.086	15777630	1901.6
Aroclor-1260	2	13.155	-0.005	1339165	248.6	2	13.136	0.019	639894	33.1
Aroclor-1260	3	13.443	-0.085	1005157	401.6	3	13.583	-0.002	534805	91.1
Aroclor-1260	4	13.643	0.017	5998704	3972.4	4	---			0.0
Aroclor-1260	5	14.034	0.010	3896632	4695.3	NS	---			----
Total Col1Ave (5 peaks): 1878.0						Total Col2Ave (3 peaks): 675.3				RPD = 94*
Corrected Ave (4 peaks): 1173.7						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	12.514	0.047	120182	40.0	1	12.325	-0.069	15777630	1075.6
Aroclor-1262	2	13.155	0.012	1339165	160.0	2	12.853	0.016	843300	61.2
Aroclor-1262	3	13.443	-0.071	1005157	381.1	3	13.136	0.036	639894	22.6
Aroclor-1262	4	13.643	-0.032	5998704	1310.6	4	13.583	0.012	534805	43.8
Aroclor-1262	5	14.219	0.004	829993	202.7	5	14.184	-0.028	1014383	105.8
Total Col1Ave (5 peaks): 418.9						Total Col2Ave (5 peaks): 261.8				RPD = 46*
Corrected Ave (4 peaks): 195.9						Corrected Ave (4 peaks): 58.4				RPD = 108*

Aroclor-1268	1	13.643	0.032	5998704	758.6	1	13.583	0.014	534805	24.7
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	14.034	0.038	3896632	470.2	3	13.966	0.014	7202136	436.2
Aroclor-1268	4	14.622	0.026	426058	14.7	4	14.564	-0.008	340482	7.3

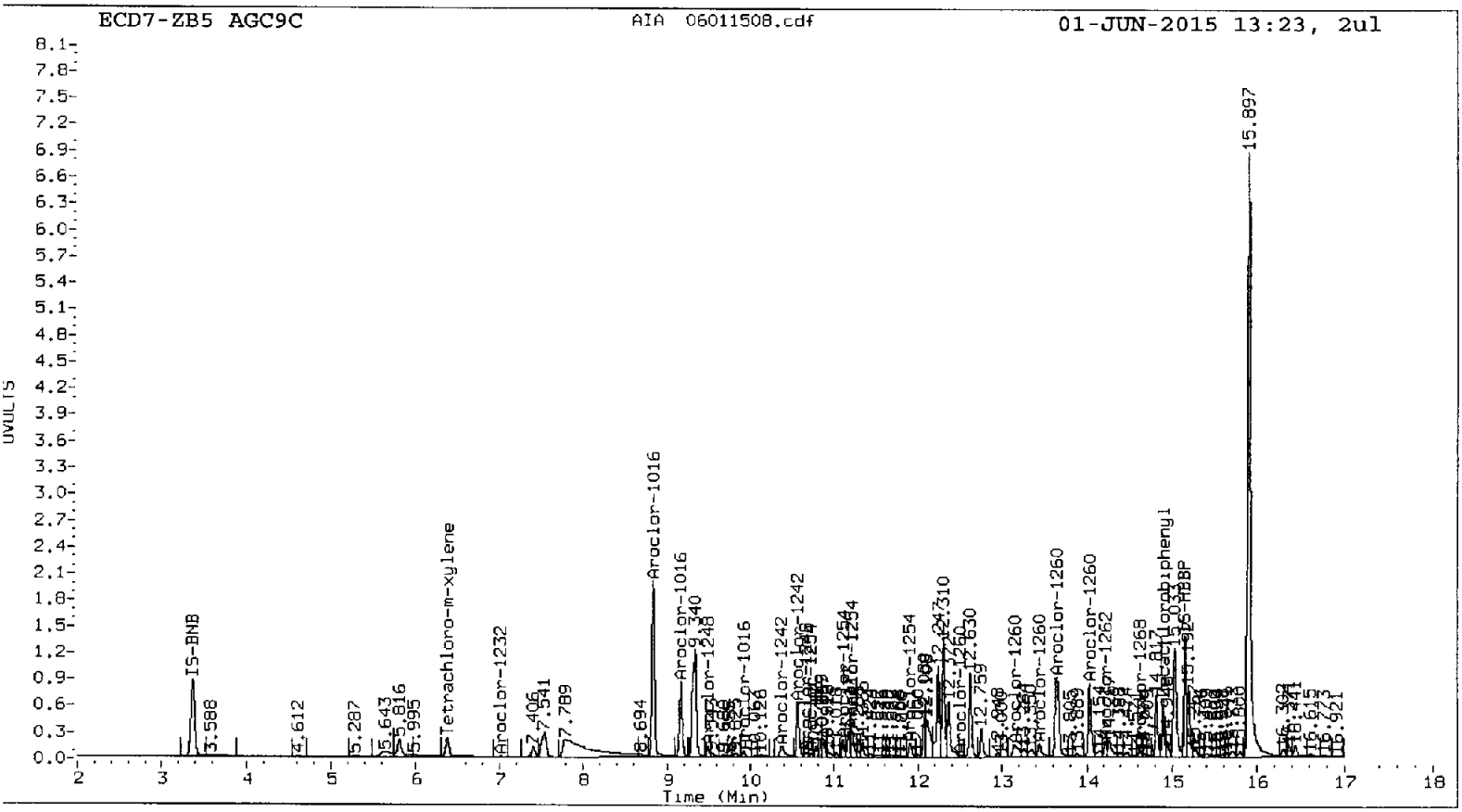
Total Col1Ave (3 peaks): 414.5 Total Col2Ave (3 peaks): 156.0 RPD = 91*

Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Total PCB Area Col1 (6.483 - 14.799) = 93489991 Col1 Total PCB = 3.7 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 168737079 Col2 Total PCB = 1.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical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Aroclor-1016
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IS-HBBP
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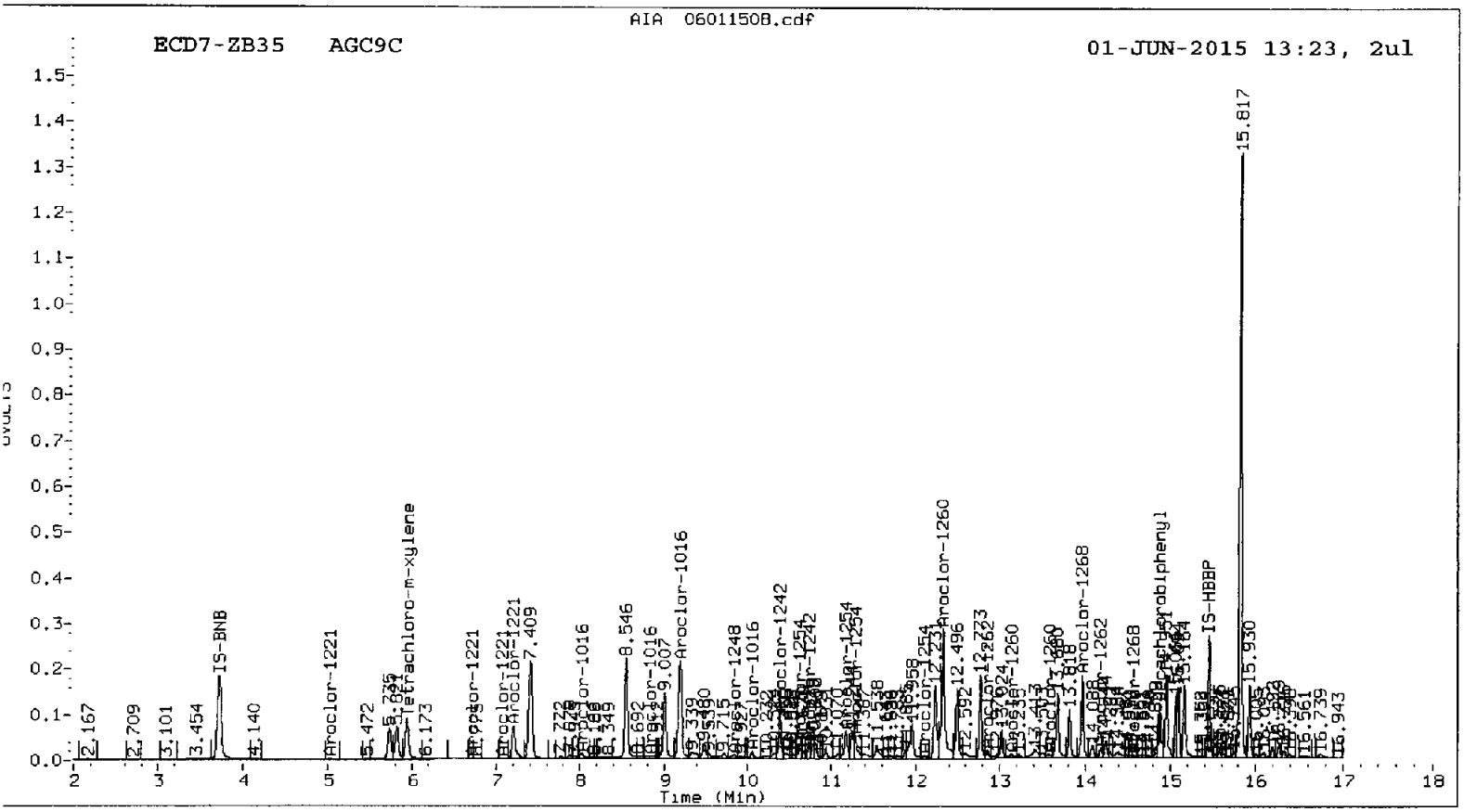
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IS-BNB
Tetrachloro-m-xylene
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Aroclor-1016
Aroclor-1242
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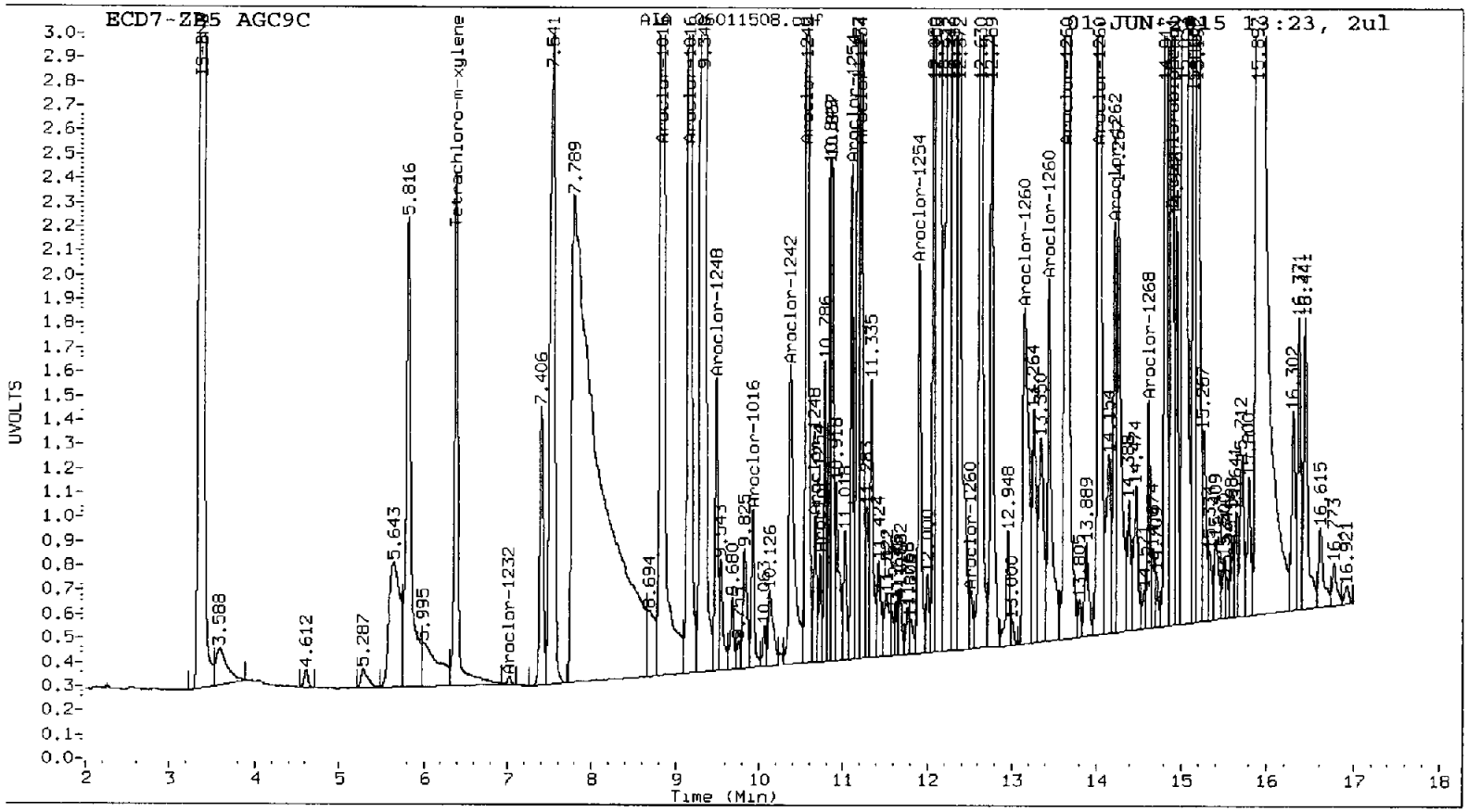
15.930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Time (Min)
Tetrachloro-m-xylene
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Aroclor-1016
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Aroclor-1242
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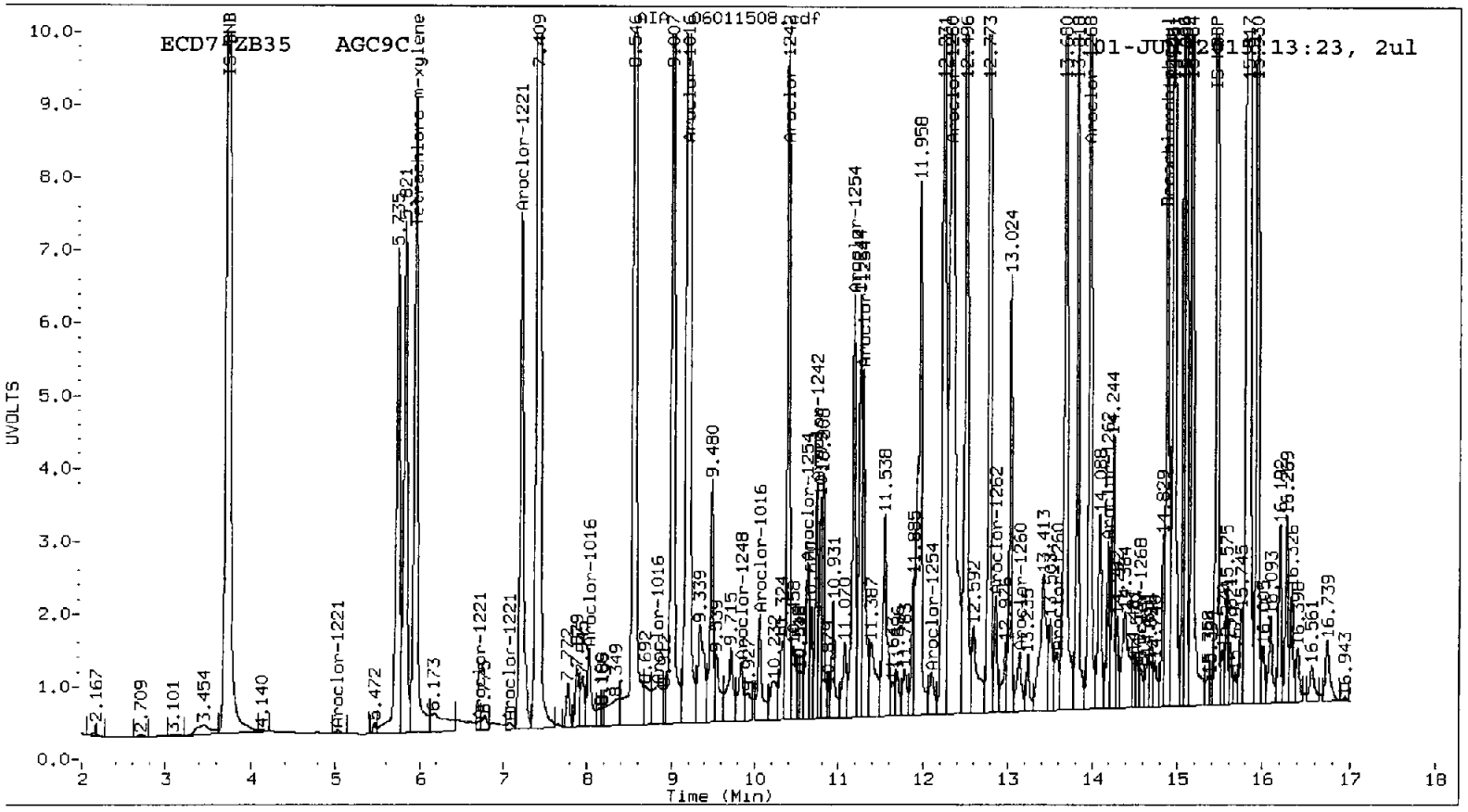
Aroclor-1260
Aroclor-1262
Aroclor-1268


ECD7-ZB35 AGC9C
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Aroclor-1221
Aroclor-1016
Aroclor-1248
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011509.d
Data file 2: 20150527.b/0601-2.b/06011509.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9D
Client ID:
Injection Date: 01-JUN-2015 13:44
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1352168	5.947	-0.001	5419494	33.2	30.5	8.3	Tetrachloro-m-xylene
14.899	0.000	2078095	14.870	-0.002	3033636	32.2	28.3	13.1	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	82.9	76.3
Decachlorobiphenyl	80.6	70.7

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	6012648	10.3
Hexabromobiphenyl	5633814	5125958	-9.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13166116	0.8
Hexabromobiphenyl	8980422	8900742	-0.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 · 68898

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.355	-0.029	277863	287.3	1	8.125	0.059	263445	36.5
Aroclor-1016	2	8.836	-0.029	65232	22.0	2	8.854	0.014	369082	24.1
Aroclor-1016	3	9.171	0.012	32386	31.9	3	9.197	-0.080	308130	77.9
Aroclor-1016	4	---			0.0	4	10.038	0.003	247338	88.6
Total Col1Ave (3 peaks):					113.8	Total Col2Ave (4 peaks):				56.8 RPD = 67*
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				46.2
Aroclor-1221	1	---			0.0	1	4.991	-0.027	279282	204.3
Aroclor-1221	2	---			0.0	2	6.741	0.021	519443	227.1
Aroclor-1221	3	---			0.0	3	7.015	0.000	264928	205.2
Aroclor-1221	NS	---			----	4	7.206	0.056	186227	47.1
Col1Ave: <3 Quant Peaks						Col2Ave: 170.9				
Aroclor-1232	1	---			0.0	1	4.991	-0.030	279282	335.8
Aroclor-1232	2	7.023	0.024	22373	84.6	2	7.206	0.053	186227	66.8
Aroclor-1232	3	---			0.0	3	7.936	-0.093	298791	91.4
Aroclor-1232	4	8.836	0.006	65232	54.1	4	9.197	-0.050	308130	183.6
Col1Ave: <3 Quant Peaks						Col2Ave: 169.4				
Aroclor-1242	1	8.836	-0.031	65232	30.1	1	8.125	0.056	263445	49.8
Aroclor-1242	2	9.171	0.010	32386	41.7	2	8.854	0.012	369082	33.0
Aroclor-1242	3	10.391	0.060	32442	44.8	3	10.394	-0.005	125815	32.3
Aroclor-1242	4	10.622	-0.010	34638	32.0	4	10.731	-0.025	147216	31.1
Total Col1Ave (4 peaks):					37.1	Total Col2Ave (4 peaks):				36.5 RPD = 2
Corrected Ave (3 peaks):					34.6	Corrected Ave (3 peaks):				32.1 RPD = 7
Aroclor-1248	1	---			0.0	1	8.770	-0.069	171975	23.7
Aroclor-1248	2	---			0.0	2	9.842	-0.002	203987	35.2
Aroclor-1248	3	10.391	0.002	32442	19.0	3	10.394	-0.005	125815	20.5
Aroclor-1248	4	10.622	-0.011	34638	20.1	4	10.731	-0.024	147216	18.6
Col1Ave: <3 Quant Peaks						Col2Ave: 24.5				
Aroclor-1254	1	10.391	-0.005	32442	29.5	1	10.634	-0.005	299516	43.2
Aroclor-1254	2	10.716	0.001	32550	20.7	2	10.731	-0.003	147216	44.8
Aroclor-1254	3	11.110	0.016	72096	56.6	3	11.167	-0.001	98248	18.1
Aroclor-1254	4	11.232	0.001	125107	52.1	4	11.315	-0.003	199337	17.2
Aroclor-1254	5	11.940	-0.003	31781	18.5	5	12.094	-0.004	109553	15.9
Total Col1Ave (5 peaks):					35.5	Total Col2Ave (5 peaks):				27.8 RPD = 24
Corrected Ave (4 peaks):					30.2	Corrected Ave (4 peaks):				23.6 RPD = 25
Aroclor-1260	1	12.486	0.000	48661	29.1	1	12.411	-0.001	185459	23.2
Aroclor-1260	2	13.161	0.001	336879	62.2	2	13.115	-0.002	208359	11.2
Aroclor-1260	3	13.527	-0.001	60708	24.1	3	13.582	-0.002	138884	24.6
Aroclor-1260	4	13.629	0.002	47952	31.6	4	13.634	-0.001	168270	13.7
Aroclor-1260	5	14.033	0.009	143304	171.9	NS	---			----
Total Col1Ave (5 peaks):					63.8	Total Col2Ave (4 peaks):				18.2 RPD = 111*
Corrected Ave (4 peaks):					36.8	Corrected Ave (3 peaks):				20.1 RPD = 78*
Aroclor-1262	1	12.486	0.019	48661	16.1	1	12.411	0.016	185459	13.1
Aroclor-1262	2	13.161	0.018	336879	40.1	2	12.852	0.016	165835	12.5
Aroclor-1262	3	13.527	0.013	60708	22.9	3	13.115	0.015	208359	7.7
Aroclor-1262	4	13.688	0.013	44726	9.7	4	13.582	0.012	138884	11.8
Aroclor-1262	5	14.226	0.011	120538	29.3	5	14.222	0.010	177588	19.3
Total Col1Ave (5 peaks):					23.6	Total Col2Ave (5 peaks):				12.9 RPD = 59*
Corrected Ave (4 peaks):					19.5	Corrected Ave (4 peaks):				11.3 RPD = 53*

Aroclor-1268	1	13.629	0.017	47952	6.0	1	13.582	0.013	138884	6.7
Aroclor-1268	2	13.688	0.014	44726	4.8	2	13.634	0.006	168270	8.5
Aroclor-1268	3	14.033	0.037	143304	17.2	3	13.972	0.019	348545	21.9
Aroclor-1268	4	14.609	0.013	71495	2.5	4	14.581	0.009	88295	2.0

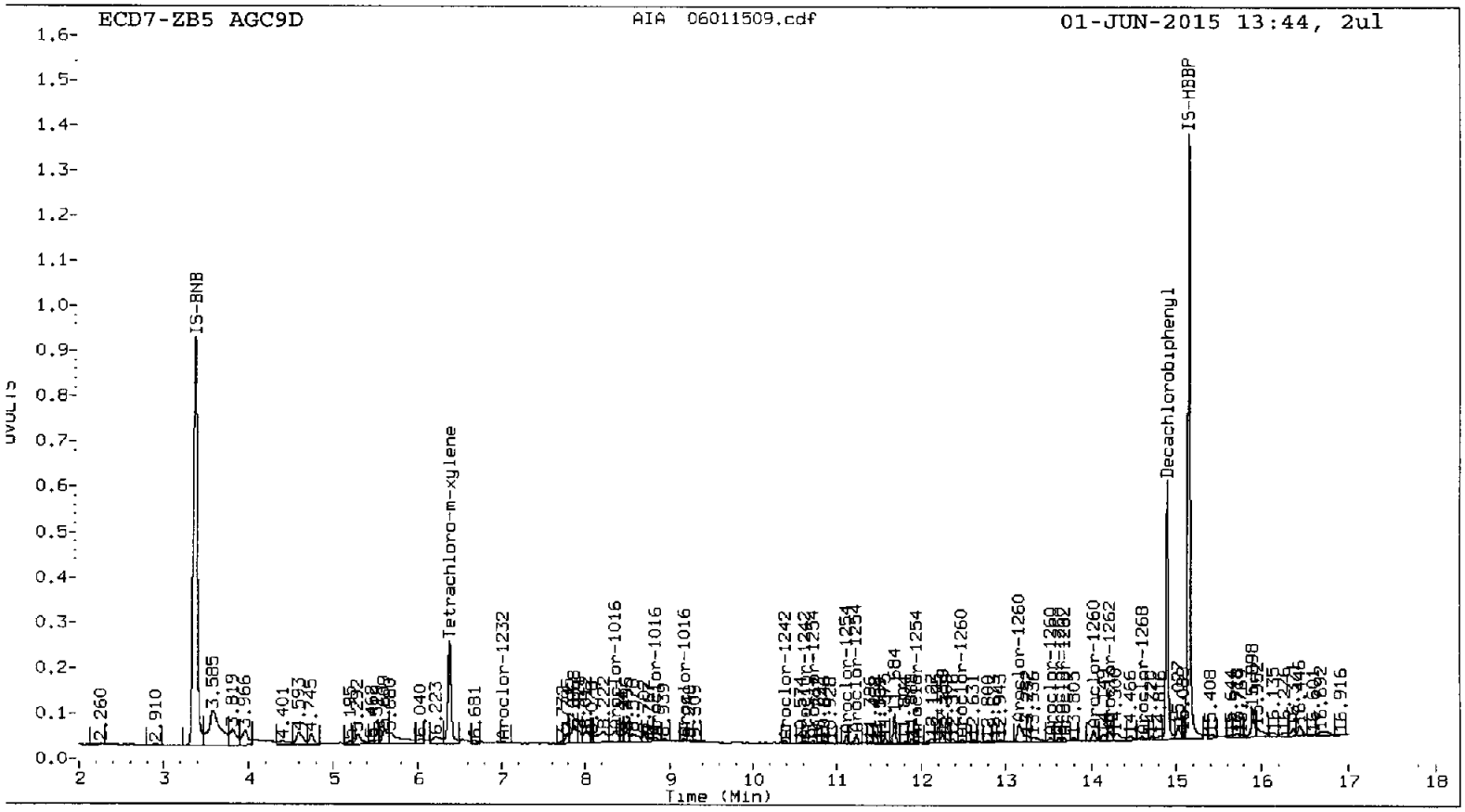
Total Col1Ave (4 peaks): 7.6 Total Col2Ave (4 peaks): 9.8 RPD = 25

Corrected Ave (3 peaks): 4.4 Corrected Ave (3 peaks): 5.7 RPD = 25

Total PCB Area Col1 (6.483 - 14.799) = 5376476 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 16445397 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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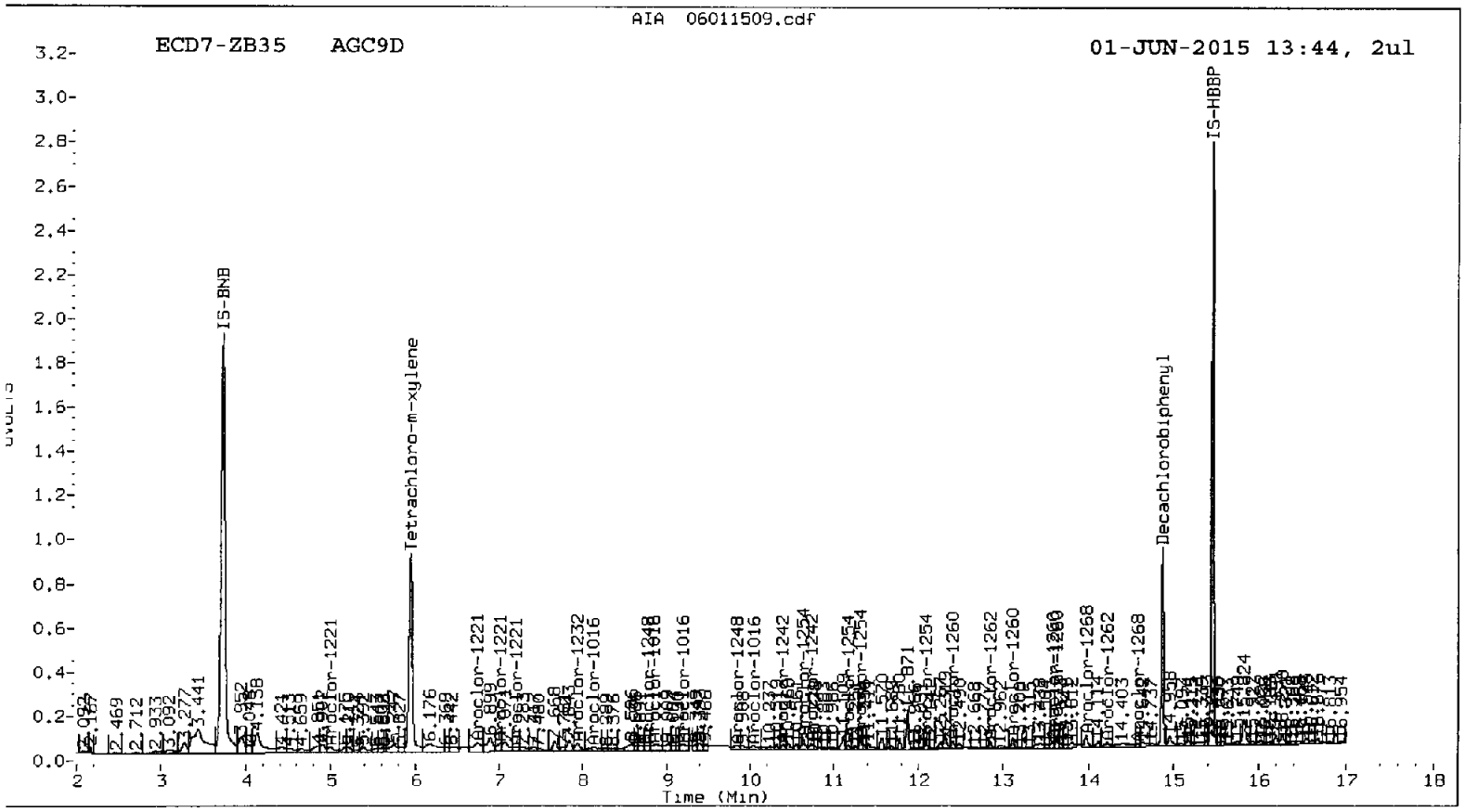
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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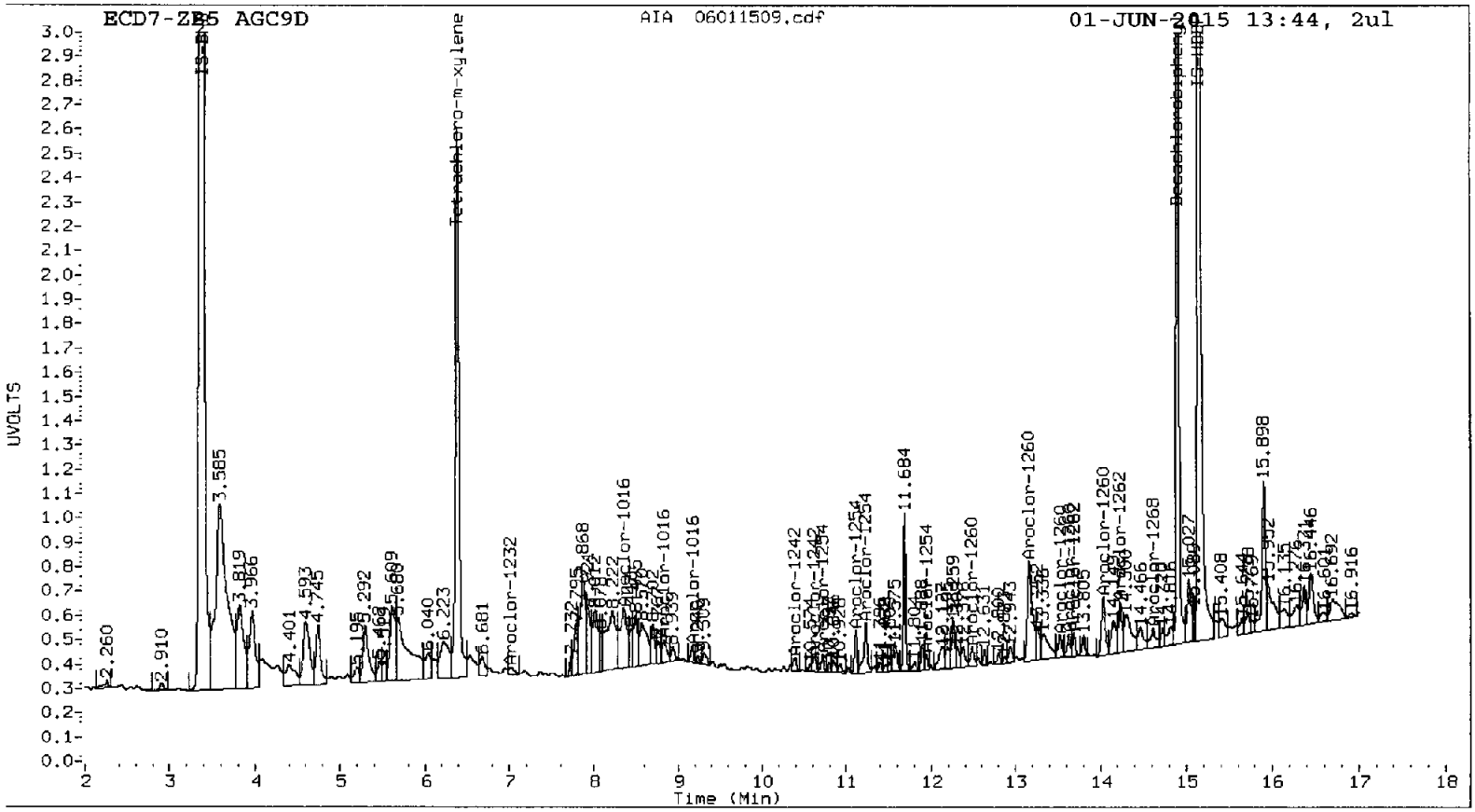
Decachlorobiphenyl
IS-HBBP
Time (Min)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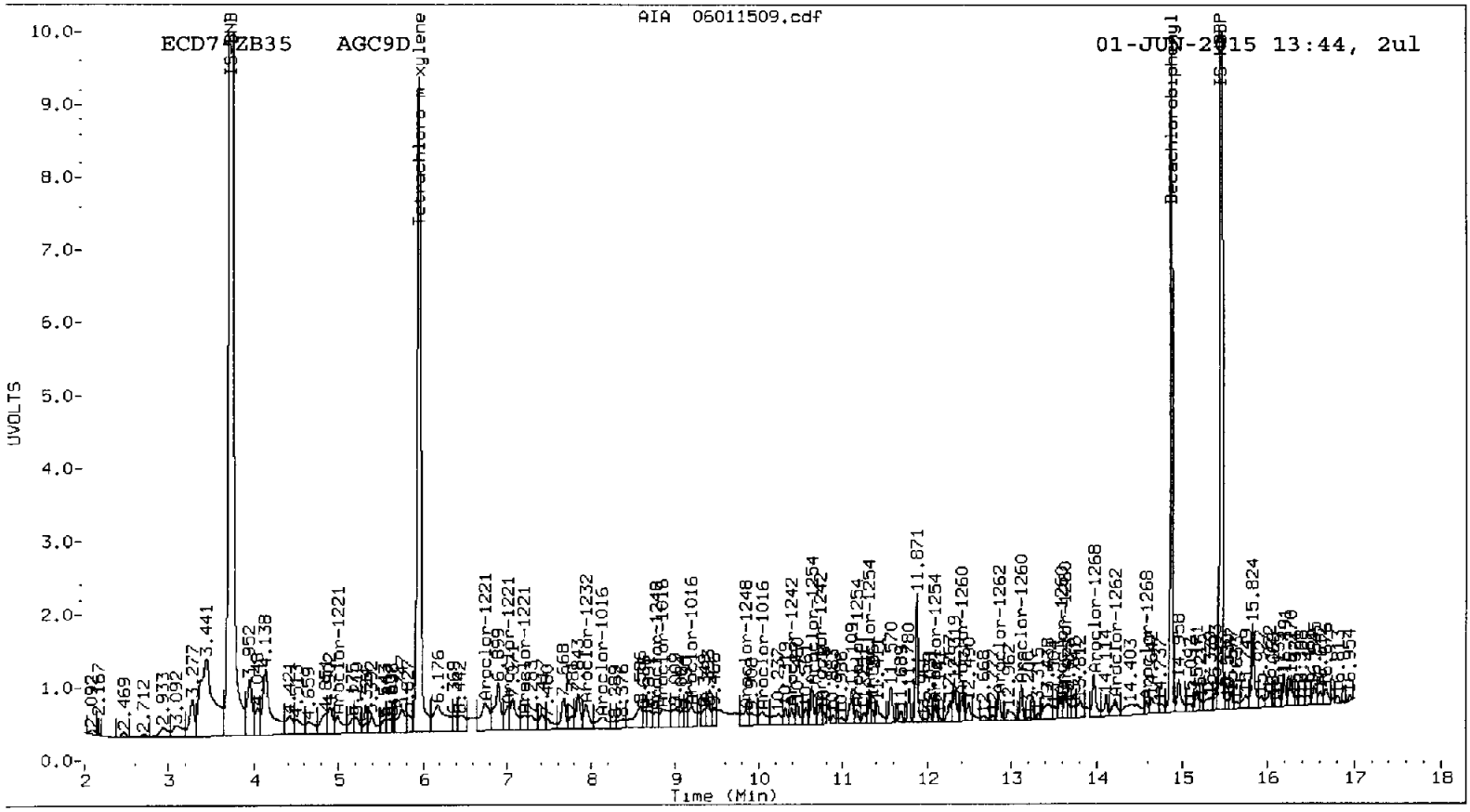
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1232
Aroclor-1016
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1232
Aroclor-1016
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011510.d
Data file 2: 20150527.b/0601-2.b/06011510.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9E
Client ID:
Injection Date: 01-JUN-2015 14:05
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.384	0.001	1155860	5.947	-0.001	5082306	28.1	28.7	2.1	Tetrachloro-m-xylene
14.899	0.000	2096909	14.870	-0.001	3132911	31.2	27.9	11.0	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	70.3	71.8
Decachlorobiphenyl	77.9	69.8

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	6063623	11.3
Hexabromobiphenyl	5633814	5349408	-5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13130266	0.5
Hexabromobiphenyl	8980422	9305743	3.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9:AGC9E

	ZB5 Col				ZB35 Col			
Aroclor	Peak# RT	Shift	Area	Amount	Peak# RT	Shift	Area	Amount
Aroclor-1016	1 ---			0.0	1 8.124	0.057	29541	4.1
Aroclor-1016	2 ---			0.0	2 8.772	-0.067	16670	1.1
Aroclor-1016	3 ---			0.0	3 9.261	-0.015	3564	0.9
Aroclor-1016	4 ---			0.0	4 ---			0.0
	Col1Ave: <3 Quant Peaks				Col2Ave: 2.0			
Aroclor-1221	1 ---			0.0	1 5.034	0.016	55327	40.6
Aroclor-1221	2 ---			0.0	2 6.776	0.057	106469	46.7
Aroclor-1221	3 ---			0.0	3 7.012	-0.003	19099	14.8
Aroclor-1221	NS ---			----	4 7.075	-0.076	58743	14.9
	Col1Ave: <3 Quant Peaks				Col2Ave: 29.2			
Aroclor-1232	1 ---			0.0	1 5.034	0.014	55327	66.7
Aroclor-1232	2 ---			0.0	2 7.075	-0.078	58743	21.1
Aroclor-1232	3 ---			0.0	3 8.124	0.094	29541	9.1
Aroclor-1232	4 ---			0.0	4 9.261	0.014	3564	2.1
	Col1Ave: <3 Quant Peaks				Col2Ave: 24.7			
Aroclor-1242	1 ---			0.0	1 8.124	0.054	29541	5.6
Aroclor-1242	2 ---			0.0	2 8.772	-0.069	16670	1.5
Aroclor-1242	3 ---			0.0	3 ---			0.0
Aroclor-1242	4 ---			0.0	4 ---			0.0
	Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks			
Aroclor-1248	1 ---			0.0	1 ---			0.0
Aroclor-1248	2 ---			0.0	2 ---			0.0
Aroclor-1248	3 ---			0.0	3 ---			0.0
Aroclor-1248	4 ---			0.0	4 ---			0.0
	Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks			
Aroclor-1254	1 ---			0.0	1 ---			0.0
Aroclor-1254	2 ---			0.0	2 ---			0.0
Aroclor-1254	3 ---			0.0	3 ---			0.0
Aroclor-1254	4 11.255	0.024	153245	63.3	4 ---			0.0
Aroclor-1254	5 11.925	-0.018	127846	73.6	5 ---			0.0
	Col1Ave: <3 Quant Peaks				Col2Ave: <3 Quant Peaks			
Aroclor-1260	1 ---			0.0	1 12.456	0.045	105670	12.7
Aroclor-1260	2 13.197	0.037	177635	31.5	2 13.133	0.016	36022	1.9
Aroclor-1260	3 ---			0.0	3 13.576	-0.009	373773	63.3
Aroclor-1260	4 13.624	-0.003	32695	20.6	4 13.669	0.033	87003	6.8
Aroclor-1260	5 14.035	0.012	27988	32.2	NS ---			----
	Total Col1Ave (3 peaks): 28.1				Total Col2Ave (4 peaks): 21.2			RPD = 28
	Corrected Ave: < 3 Peaks				Corrected Ave (3 peaks): 7.1			
Aroclor-1262	1 ---			0.0	1 12.456	0.062	105670	7.2
Aroclor-1262	2 13.197	0.054	177635	20.2	2 12.859	0.023	18233	1.3
Aroclor-1262	3 ---			0.0	3 13.133	0.033	36022	1.3
Aroclor-1262	4 13.687	0.012	10342	2.2	4 13.576	0.005	373773	30.5
Aroclor-1262	5 14.227	0.011	41106	9.6	5 14.201	-0.012	30327	3.1
	Total Col1Ave (3 peaks): 10.7				Total Col2Ave (5 peaks): 8.7			RPD = 21
	Corrected Ave: < 3 Peaks				Corrected Ave (4 peaks): 3.2			
Aroclor-1268	1 13.624	0.012	32695	3.9	1 13.576	0.007	373773	17.1
Aroclor-1268	2 13.687	0.013	10342	1.1	2 13.669	0.040	87003	4.2
Aroclor-1268	3 14.035	0.039	27988	3.2	3 13.974	0.021	80082	4.8

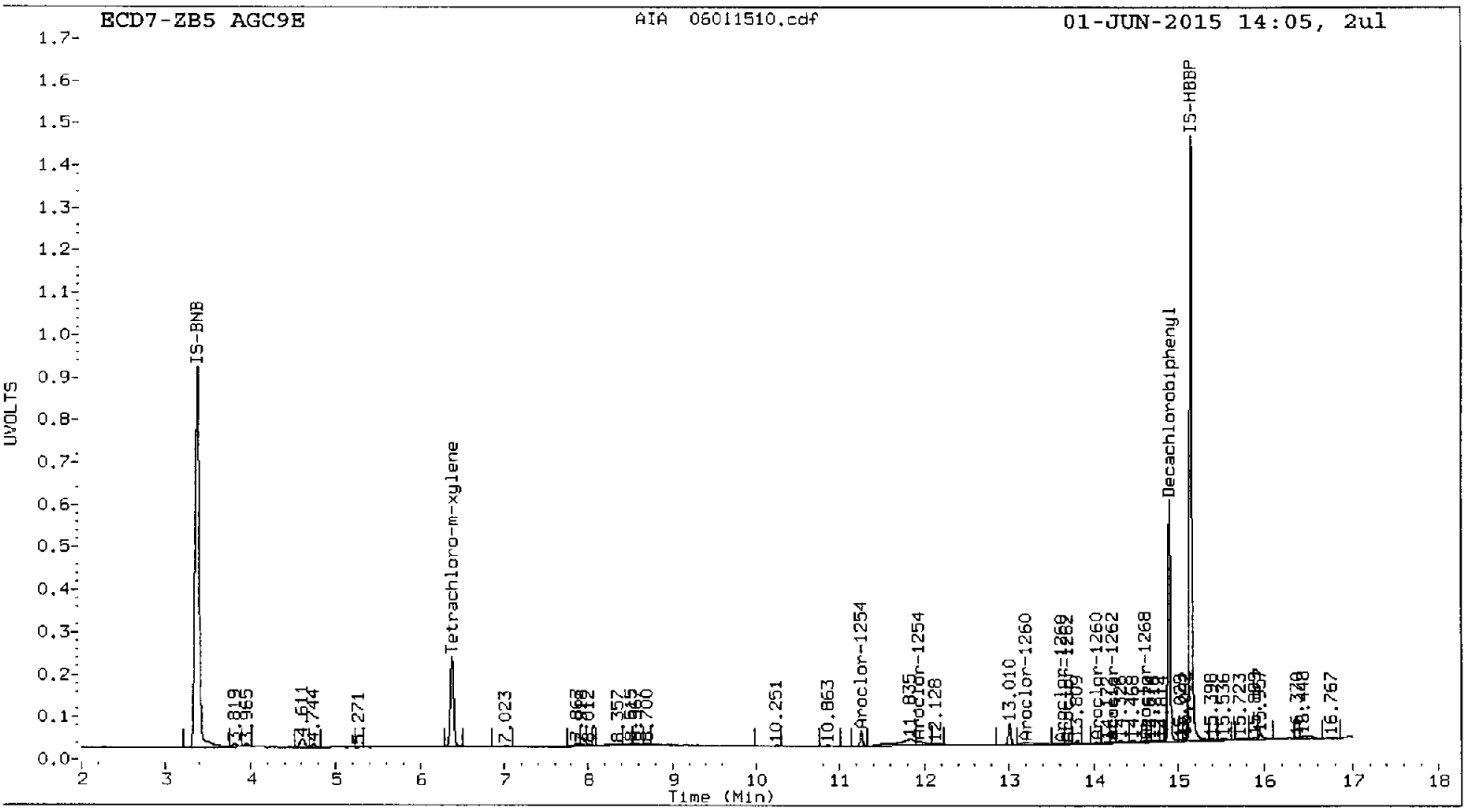
Aroclor-1268	4	14.610	0.013	24138	0.8	4	14.583	0.010	55919	1.2
	Total Col1Ave (4 peaks):			2.3	Total Col2Ave (4 peaks):				6.8	RPD = 101*
	Corrected Ave (3 peaks):			1.7	Corrected Ave (3 peaks):				3.4	RPD = 67*

Total PCB Area Col1 (6.483 - 14.799) = 1810236 Col1 Total PCB = 0.1 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 3105391 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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01-JUN-2015 14:05, 2ul
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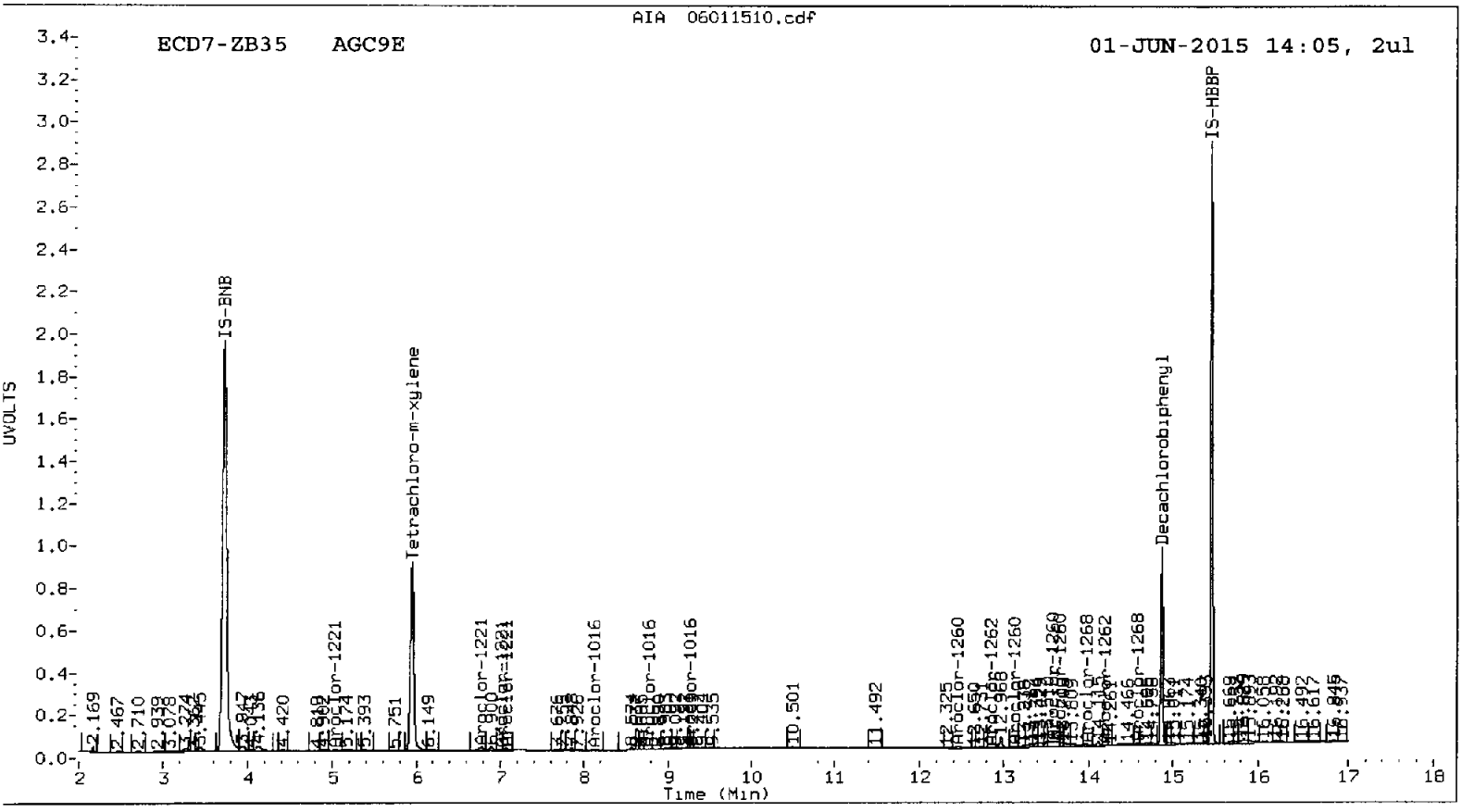
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1254
Aroclor-1260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UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
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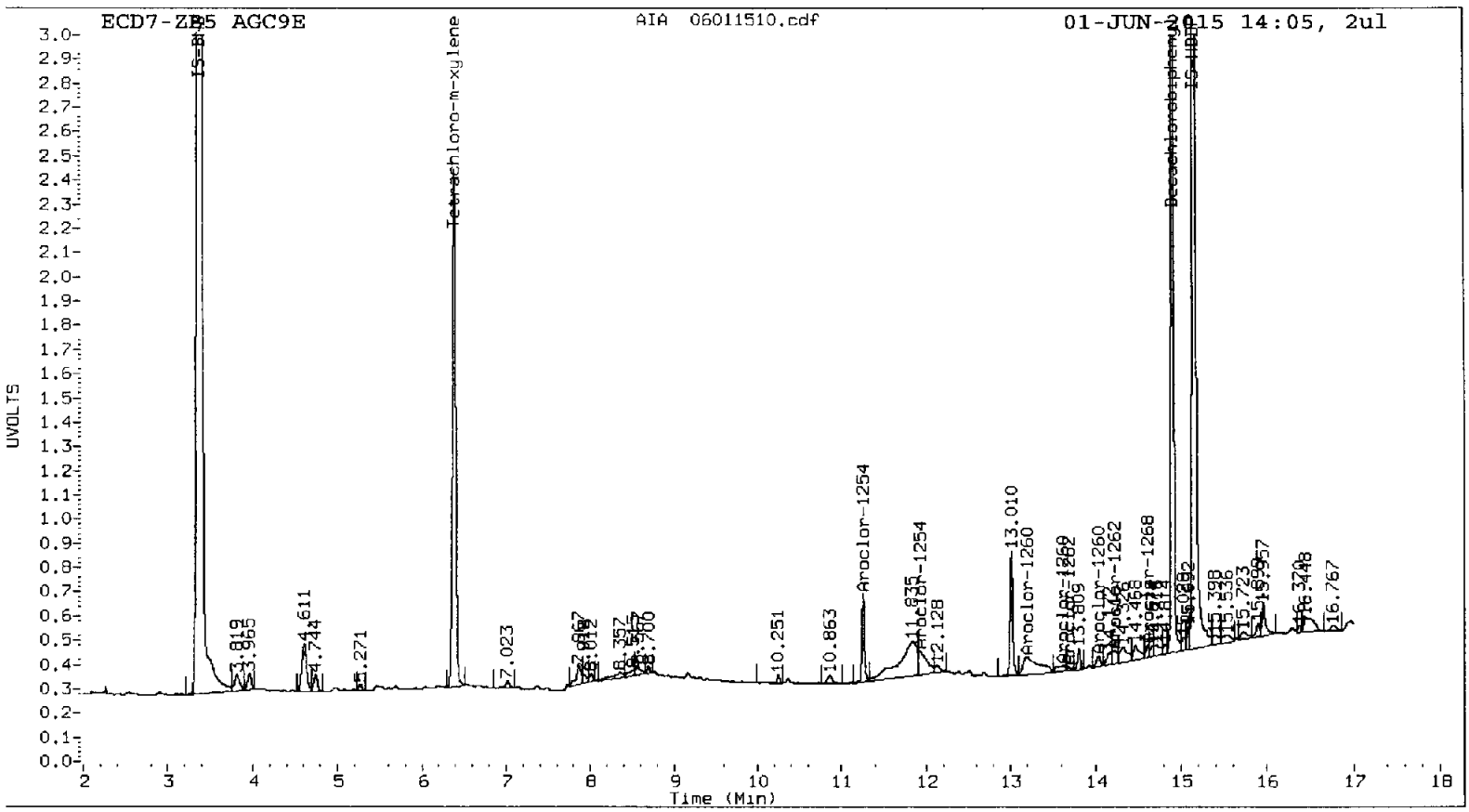
Aroclor-1221
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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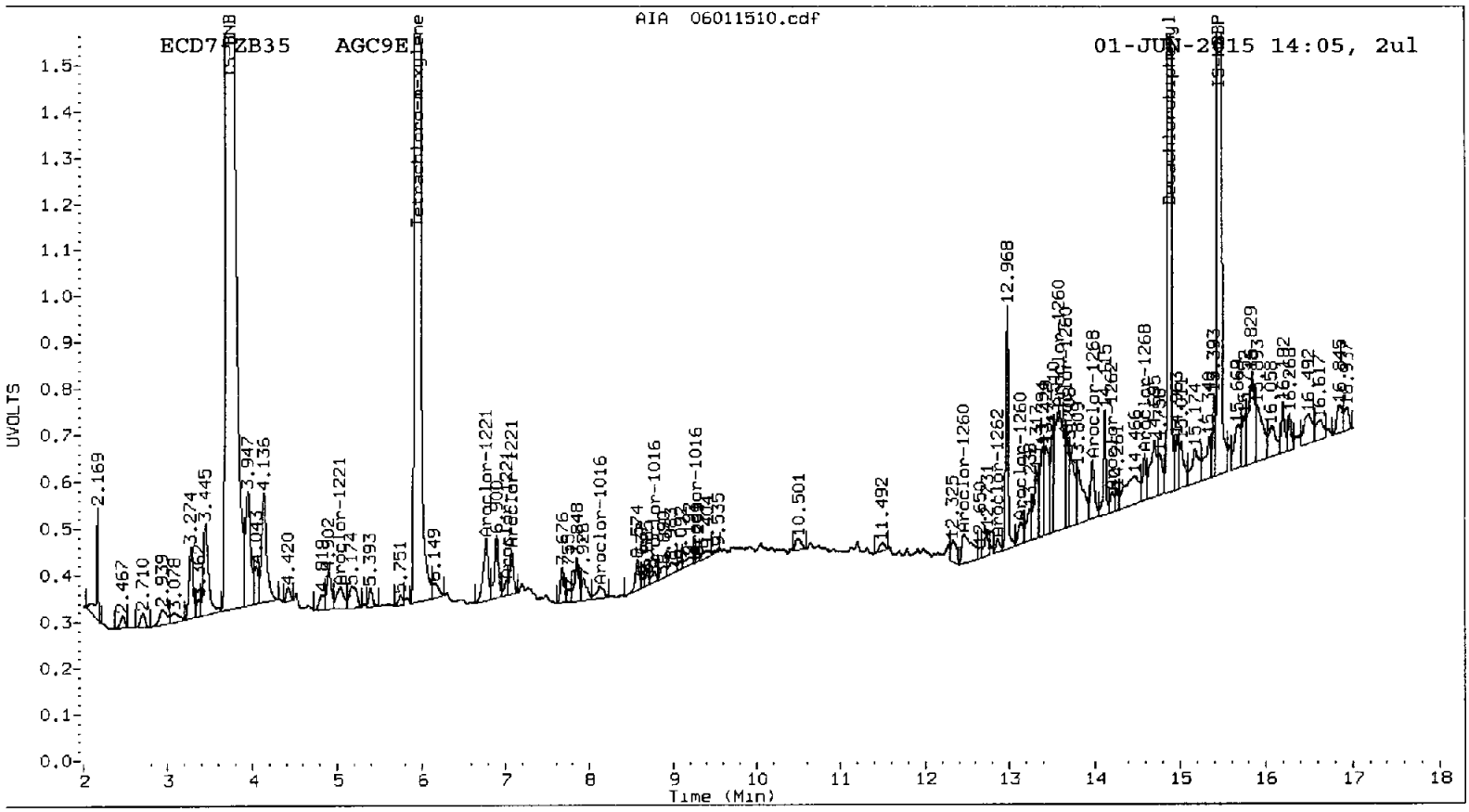
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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01-JUN-2015 14:05, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011511.d
Data file 2: 20150527.b/0601-2.b/06011511.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9F
Client ID:
Injection Date: 01-JUN-2015 14:27
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1176983	5.947	0.000	5230605	29.5	28.9	2.3	Tetrachloro-m-xylene
14.899	0.000	2129388	14.871	-0.001	3231073	31.4	28.7	8.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	73.8	72.1
Decachlorobiphenyl	78.5	71.9

MC 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5879291	7.9
Hexabromobiphenyl	5633814	5393474	-4.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13443972	2.9
Hexabromobiphenyl	8980422	9324908	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 . 8858

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	8.067	0.000	10446	1.4
Aroclor-1016	2	---			0.0	2	8.834	-0.005	49859	3.2
Aroclor-1016	3	9.157	-0.003	16327	16.5	3	---			0.0
Aroclor-1016	4	9.937	-0.003	27508	26.1	4	10.035	-0.001	134143	47.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 17.2				
Aroclor-1221	1	---			0.0	1	5.033	0.015	122217	87.6
Aroclor-1221	2	---			0.0	2	6.780	0.060	77059	33.0
Aroclor-1221	3	---			0.0	3	7.084	0.069	92031	69.8
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 63.4				
Aroclor-1232	1	---			0.0	1	5.033	0.012	122217	143.9
Aroclor-1232	2	---			0.0	2	7.218	0.065	86826	30.5
Aroclor-1232	3	---			0.0	3	8.067	0.037	10446	3.1
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: 59.2				
Aroclor-1242	1	---			0.0	1	8.067	-0.003	10446	1.9
Aroclor-1242	2	9.157	-0.004	16327	21.5	2	8.834	-0.007	49859	4.4
Aroclor-1242	3	10.329	-0.002	84395	119.3	3	10.395	-0.004	185269	46.6
Aroclor-1242	4	10.633	0.000	70454	66.5	4	10.732	-0.024	608049	125.7
	Total Col1Ave (3 peaks): 69.1					Total Col2Ave (4 peaks): 44.7 RPD = 43*				
	Corrected Ave: < 3 Peaks					Corrected Ave (3 peaks): 17.6				
Aroclor-1248	1	9.426	-0.002	48352	71.6	1	8.834	-0.005	49859	6.7
Aroclor-1248	2	9.937	-0.005	27508	19.2	2	9.842	-0.002	216175	36.5
Aroclor-1248	3	10.395	0.006	166769	100.0	3	10.395	-0.005	185269	29.5
Aroclor-1248	4	10.633	0.000	70454	41.7	4	10.732	-0.023	608049	75.1
	Total Col1Ave (4 peaks): 58.1					Total Col2Ave (4 peaks): 37.0 RPD = 44*				
	Corrected Ave (3 peaks): 44.2					Corrected Ave (3 peaks): 24.3 RPD = 58*				
Aroclor-1254	1	10.395	-0.001	166769	155.3	1	10.638	-0.002	1005915	142.0
Aroclor-1254	2	10.714	0.000	244099	159.1	2	10.732	-0.002	608049	181.2
Aroclor-1254	3	11.099	0.005	298503	239.8	3	11.166	-0.002	781420	141.2
Aroclor-1254	4	11.231	-0.001	412561	175.6	4	11.317	-0.002	1829218	155.0
Aroclor-1254	5	11.944	0.001	344031	204.3	5	12.091	-0.007	1233843	174.9
	Total Col1Ave (5 peaks): 186.8					Total Col2Ave (5 peaks): 158.9 RPD = 16				
	Corrected Ave (4 peaks): 173.6					Corrected Ave (4 peaks): 153.3 RPD = 12				
Aroclor-1260	1	12.486	0.000	66036	37.5	1	12.410	-0.001	193165	23.1
Aroclor-1260	2	13.159	0.000	156923	27.6	2	13.115	-0.002	496568	25.5
Aroclor-1260	3	13.526	-0.002	96009	36.3	3	13.583	-0.002	172723	29.2
Aroclor-1260	4	13.627	0.001	56743	35.5	4	13.634	-0.002	384009	29.9
Aroclor-1260	5	14.024	0.000	34373	39.2	NS	---			----
	Total Col1Ave (5 peaks): 35.2					Total Col2Ave (4 peaks): 26.9 RPD = 27				
	Corrected Ave (4 peaks): 34.2					Corrected Ave (3 peaks): 25.9 RPD = 28				
Aroclor-1262	1	12.486	0.019	66036	20.8	1	12.410	0.016	193165	13.1
Aroclor-1262	2	13.159	0.016	156923	17.7	2	12.847	0.011	627385	45.2
Aroclor-1262	3	13.526	0.013	96009	34.4	3	13.115	0.015	496568	17.4
Aroclor-1262	4	13.687	0.012	71757	14.8	4	13.583	0.012	172723	14.1
Aroclor-1262	5	14.228	0.012	72216	16.7	5	14.222	0.009	189868	19.6
	Total Col1Ave (5 peaks): 20.9					Total Col2Ave (5 peaks): 21.9 RPD = 5				
	Corrected Ave (4 peaks): 17.5					Corrected Ave (4 peaks): 16.0 RPD = 9				

Aroclor-1268 1	13.627	0.015	56743	6.8	1	13.583	0.014	172723	7.9
Aroclor-1268 2	13.687	0.013	71757	7.3	2	13.634	0.006	384009	18.6
Aroclor-1268 3	14.024	0.028	34373	3.9	3	13.968	0.015	69832	4.2
Aroclor-1268 4	14.608	0.011	40752	1.3	4	14.581	0.008	89526	1.9

Total Col1Ave (4 peaks): 4.8 Total Col2Ave (4 peaks): 8.2 RPD = 51*

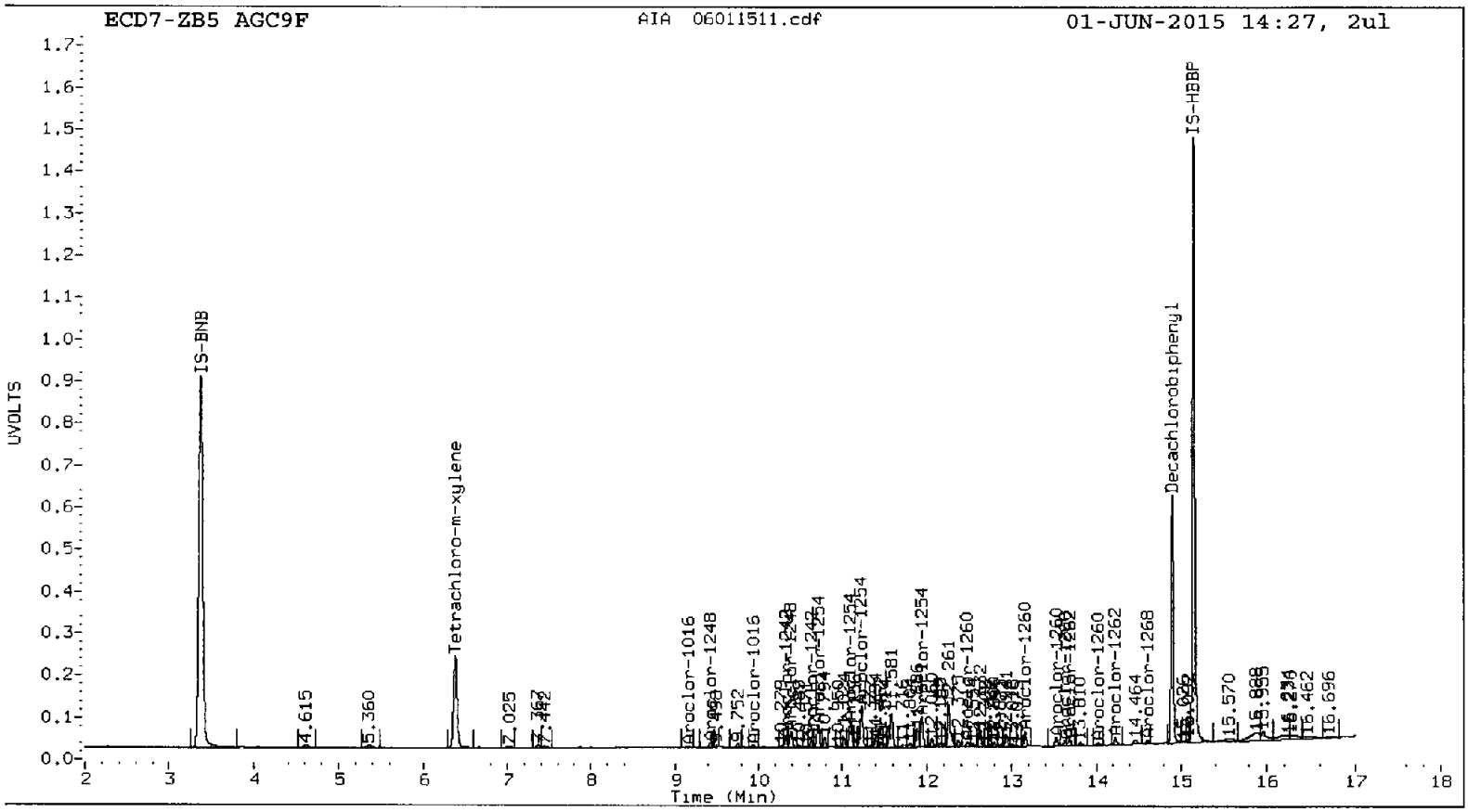
Corrected Ave (3 peaks): 4.0 Corrected Ave (3 peaks): 4.7 RPD = 15

Total PCB Area Col1 (6.483 - 14.799) = 5022332 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 19895938 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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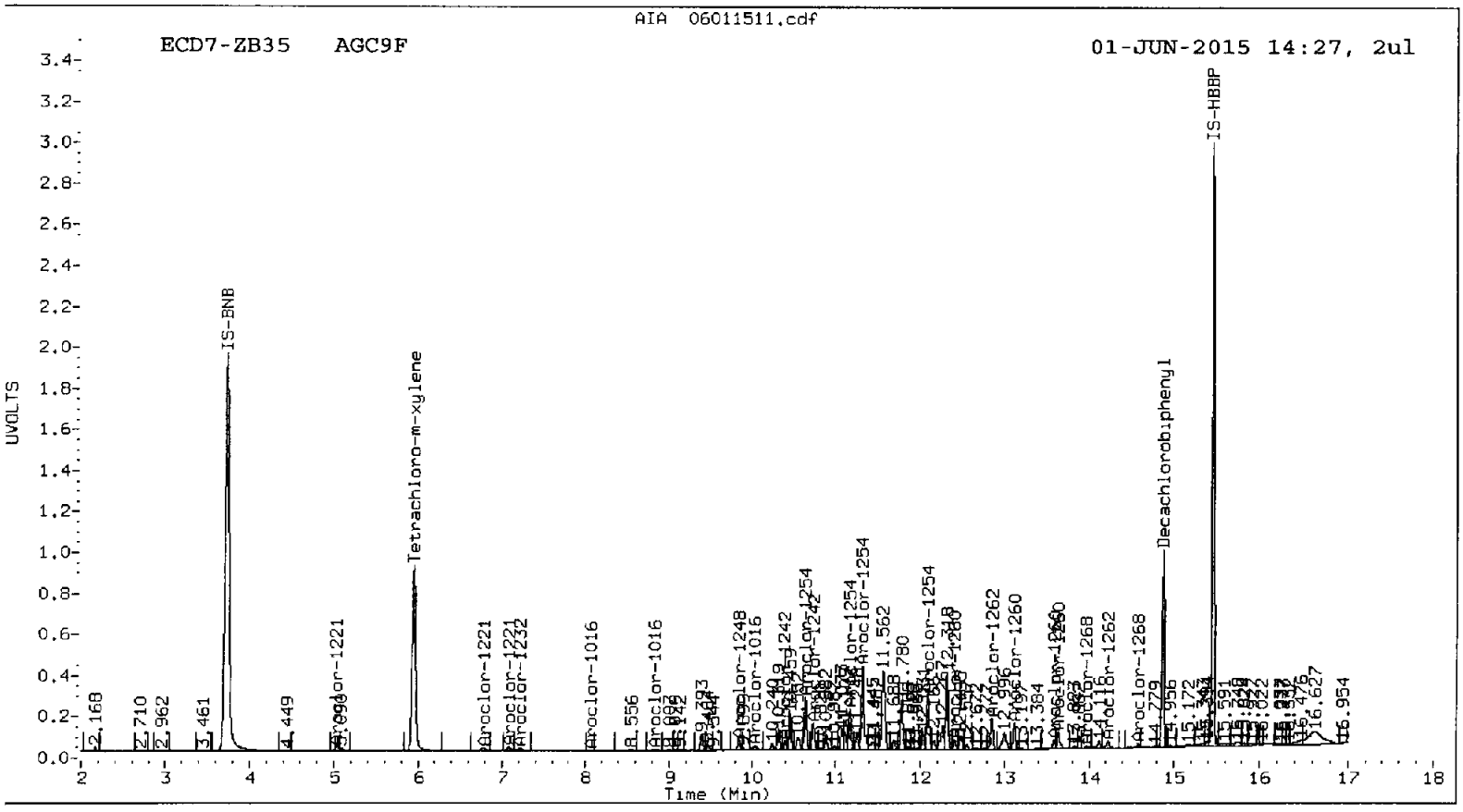
AIA 06011511.cdf
01-JUN-2015 14:27, 2ul
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBF
UVOLTS
Time (Min)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01-JUN-2015 14:27, 2ul
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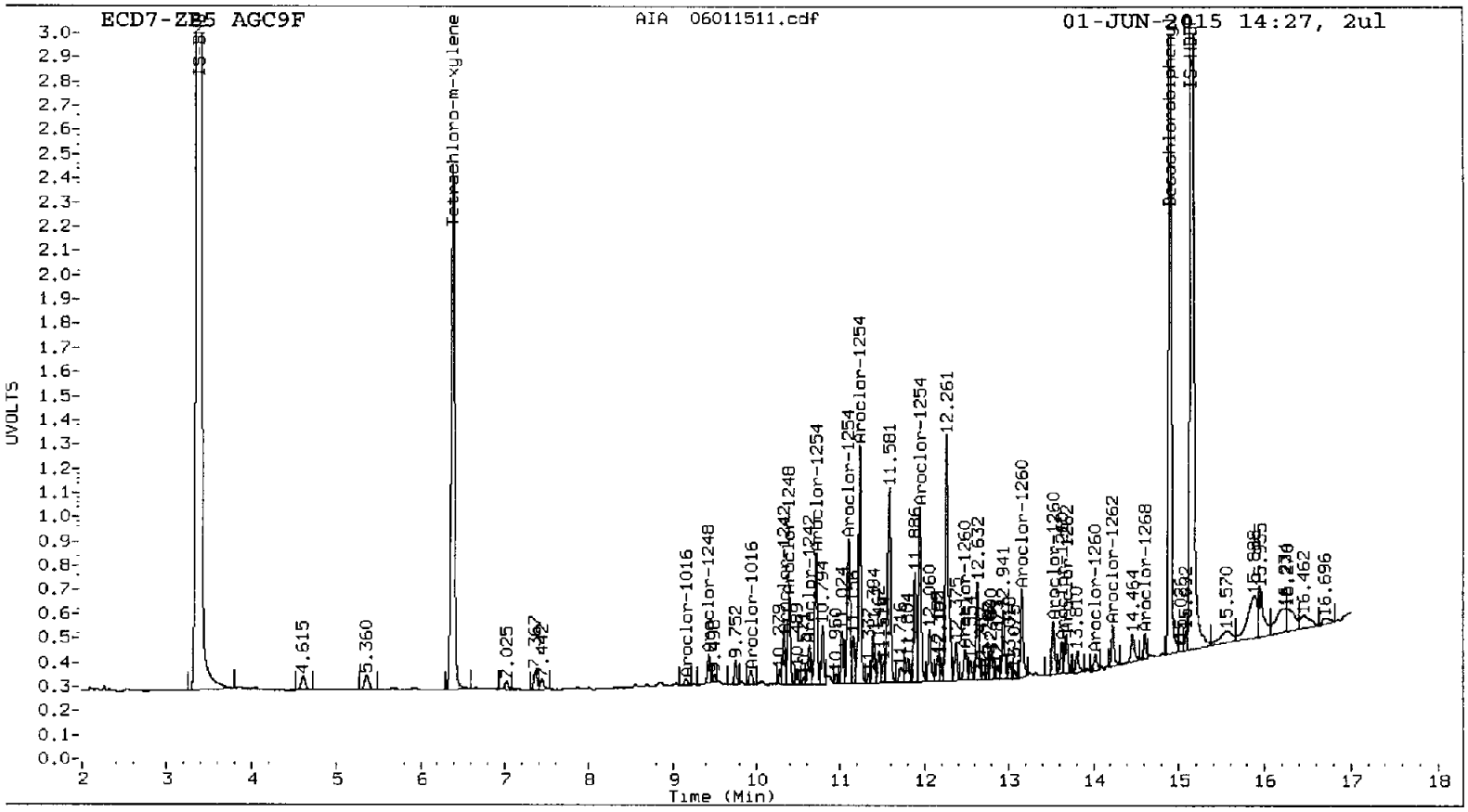
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBF
UVOLTS
Time (Min)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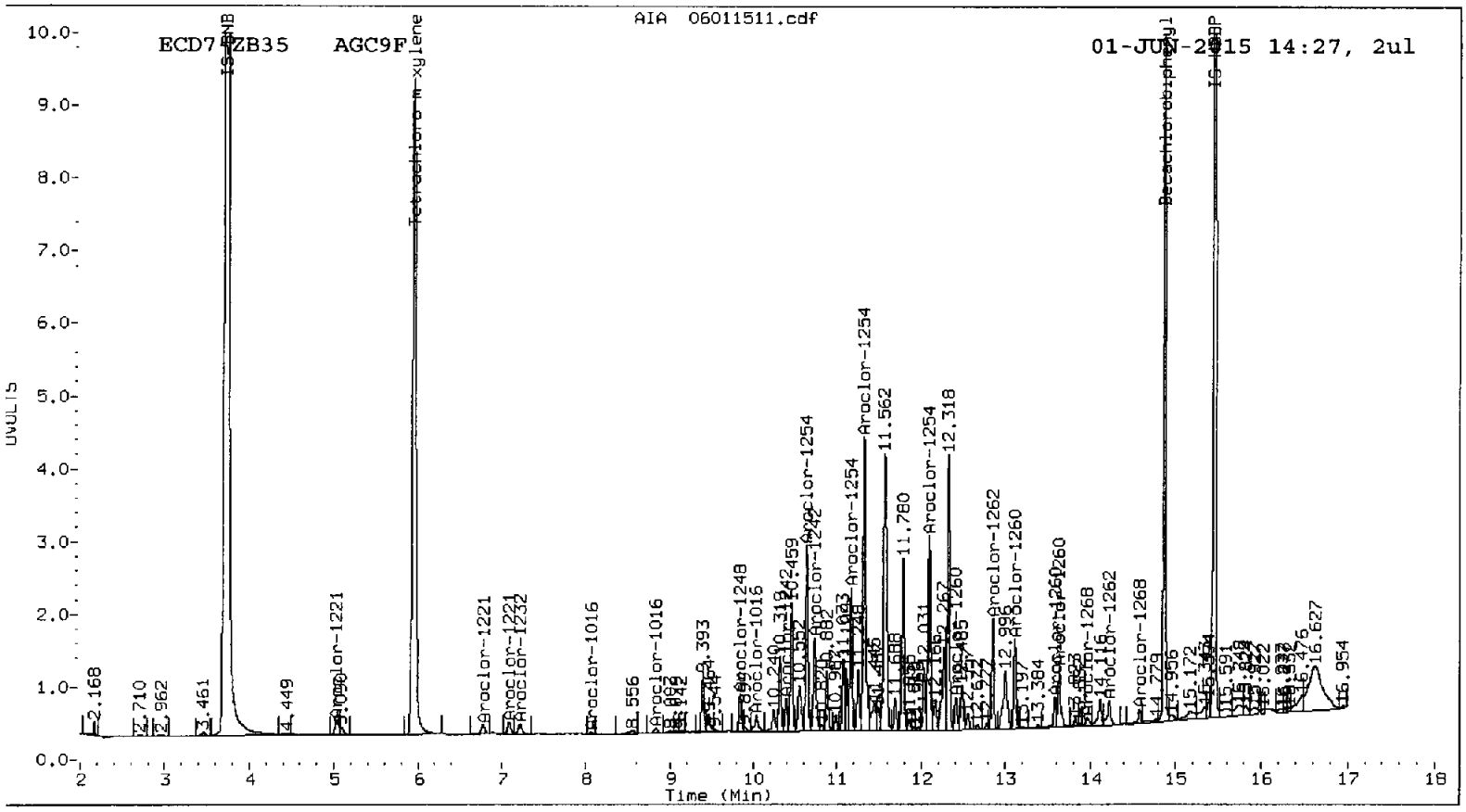
AIA 06011511.cdf
01-JUN-2015 14:27, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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01-JUN-2015 14:27, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1221
Aroclor-1232
Aroclor-1016
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011512.d
Data file 2: 20150527.b/0601-2.b/06011512.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9G
Client ID:
Injection Date: 01-JUN-2015 14:48
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1160273	5.948	0.000	5287690	29.9	30.0	0.4	Tetrachloro-m-xylene
14.899	0.000	2144979	14.870	-0.001	3303631	31.9	28.7	10.5	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	74.6	74.9
Decachlorobiphenyl	79.7	71.8

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5731652	5.2
Hexabromobiphenyl	5633814	5349736	-5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13084819	0.2
Hexabromobiphenyl	8980422	9546978	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9:0601.2

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	4.994	-0.024	18921	13.9
Aroclor-1221	2	---			0.0	2	6.777	0.058	103513	45.5
Aroclor-1221	3	---			0.0	3	7.028	0.012	30674	23.9
Aroclor-1221	NS	---			----	4	7.207	0.057	46660	11.9
	Col1Ave: <3 Quant Peaks					Col2Ave: 23.8				
Aroclor-1232	1	---			0.0	1	4.994	-0.027	18921	22.9
Aroclor-1232	2	---			0.0	2	7.207	0.054	46660	16.8
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	9.161	-0.001	10514	14.2	2	---			0.0
Aroclor-1242	3	10.394	0.063	13670	19.8	3	10.397	-0.002	27024	7.0
Aroclor-1242	4	10.715	0.082	16938	16.4	4	10.734	-0.022	73060	15.5
	Total Col1Ave (3 peaks): 16.8					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	9.843	-0.001	24389	4.2
Aroclor-1248	3	10.394	0.005	13670	8.4	3	10.397	-0.003	27024	4.4
Aroclor-1248	4	10.715	0.082	16938	10.3	4	10.734	-0.021	73060	9.3
	Col1Ave: <3 Quant Peaks					Col2Ave: 6.0				
Aroclor-1254	1	10.394	-0.002	13670	13.1	1	10.637	-0.002	109898	15.9
Aroclor-1254	2	10.715	0.001	16938	11.3	2	10.734	0.000	73060	22.4
Aroclor-1254	3	11.106	0.012	30292	25.0	3	11.168	0.000	69341	12.9
Aroclor-1254	4	11.230	-0.001	33250	14.5	4	11.317	-0.002	148469	12.9
Aroclor-1254	5	11.942	0.000	18301	11.1	5	12.095	-0.003	74224	10.8
	Total Col1Ave (5 peaks): 15.0					Total Col2Ave (5 peaks): 15.0 RPD = 0				
	Corrected Ave (4 peaks): 12.5					Corrected Ave (4 peaks): 13.1 RPD = 5				
Aroclor-1260	1	12.488	0.002	14215	8.1	1	12.412	0.000	42384	5.0
Aroclor-1260	2	13.159	0.000	23941	4.2	2	13.115	-0.002	80990	4.1
Aroclor-1260	3	13.527	-0.001	10749	4.1	3	13.583	-0.002	33392	5.5
Aroclor-1260	4	13.627	0.000	14205	9.0	4	13.636	0.001	57936	4.4
Aroclor-1260	5	---			0.0	NS	---			----
	Total Col1Ave (4 peaks): 6.4					Total Col2Ave (4 peaks): 4.7 RPD = 29				
	Corrected Ave (3 peaks): 5.5					Corrected Ave (3 peaks): 4.5 RPD = 20				
Aroclor-1262	1	12.488	0.021	14215	4.5	1	12.412	0.017	42384	2.8
Aroclor-1262	2	13.159	0.016	23941	2.7	2	12.851	0.015	71739	5.0
Aroclor-1262	3	13.527	0.014	10749	3.9	3	13.115	0.014	80990	2.8
Aroclor-1262	4	13.688	0.013	16324	3.4	4	13.583	0.013	33392	2.7
Aroclor-1262	5	14.229	0.013	24041	5.6	5	14.223	0.010	35983	3.6
	Total Col1Ave (5 peaks): 4.0					Total Col2Ave (5 peaks): 3.4 RPD = 17				
	Corrected Ave (4 peaks): 3.6					Corrected Ave (4 peaks): 3.0 RPD = 20				
Aroclor-1268	1	13.627	0.015	14205	1.7	1	13.583	0.014	33392	1.5
Aroclor-1268	2	13.688	0.014	16324	1.7	2	13.636	0.008	57936	2.7

AGC9 0601.b

Aroclor-1268 3	---	0.0	3	13.972	0.020	25905	1.5
Aroclor-1268 4	---	0.0	4	14.582	0.009	102733	2.1

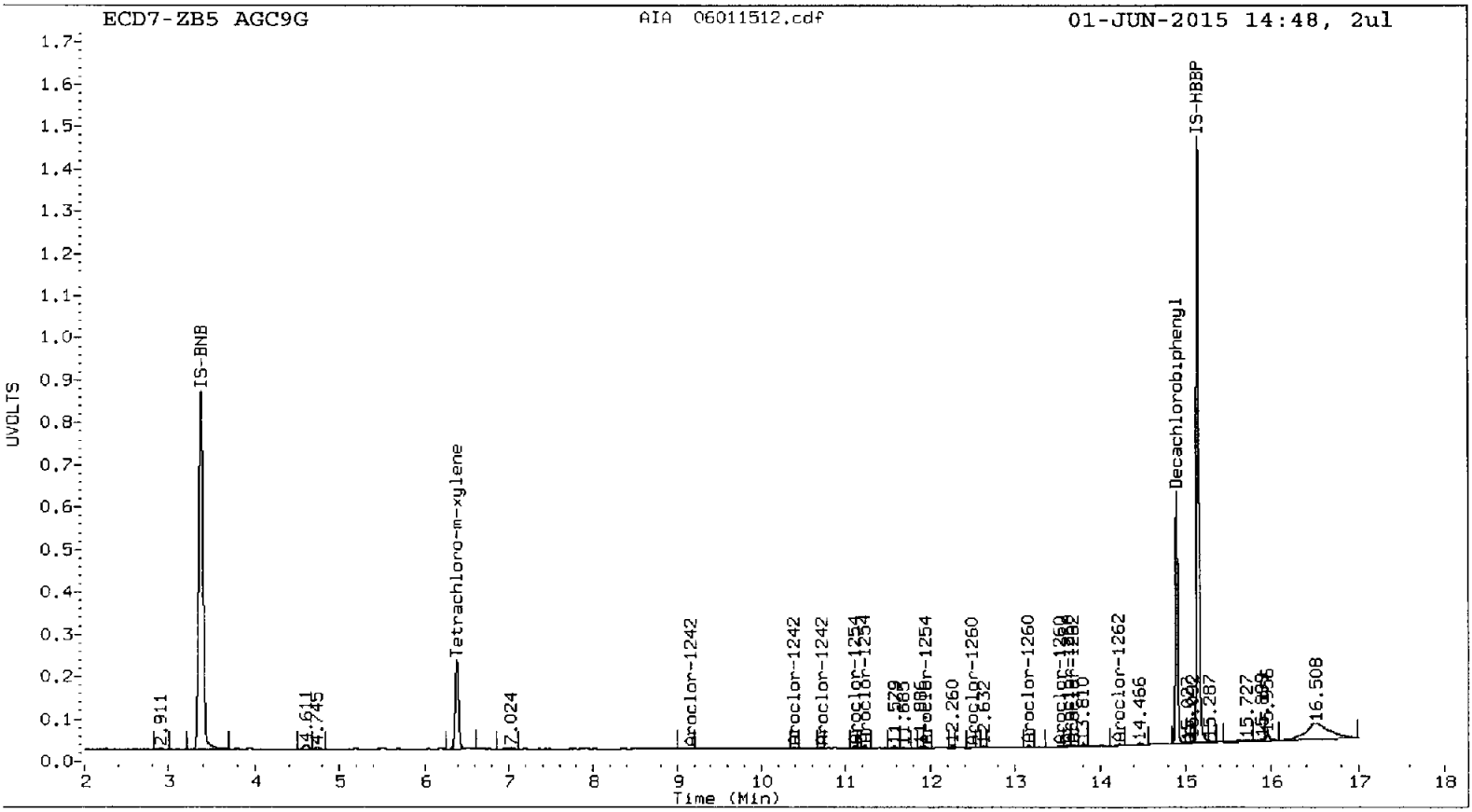
Col1Ave: <3 Quant Peaks Col2Ave: 2.0

Total PCB Area Col1 (6.483 - 14.799) = 416904 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 2828363 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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UVOLTS
Time (Min)
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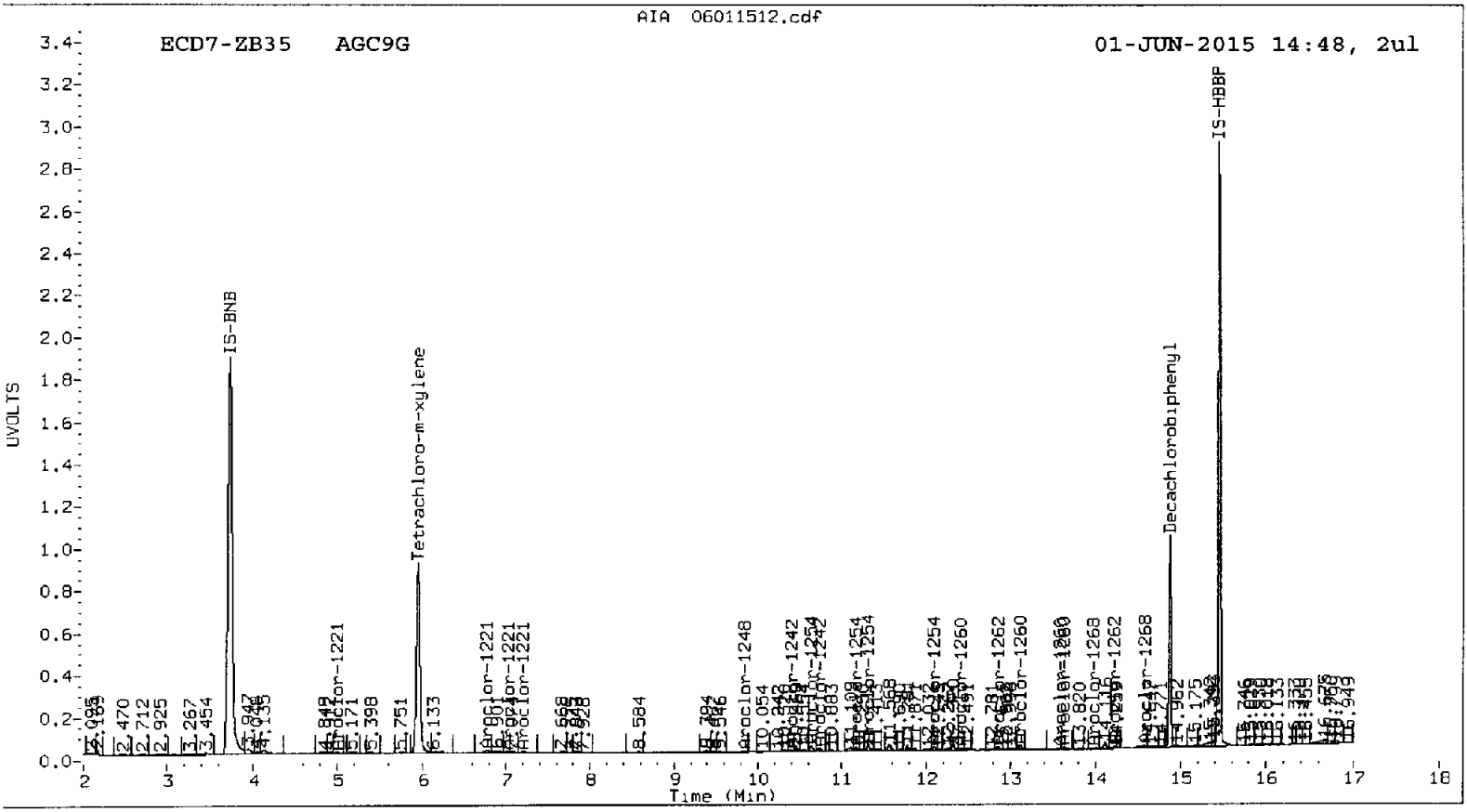
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1242
Aroclor-1254
Aroclor-1260
Aroclor-1262
16.508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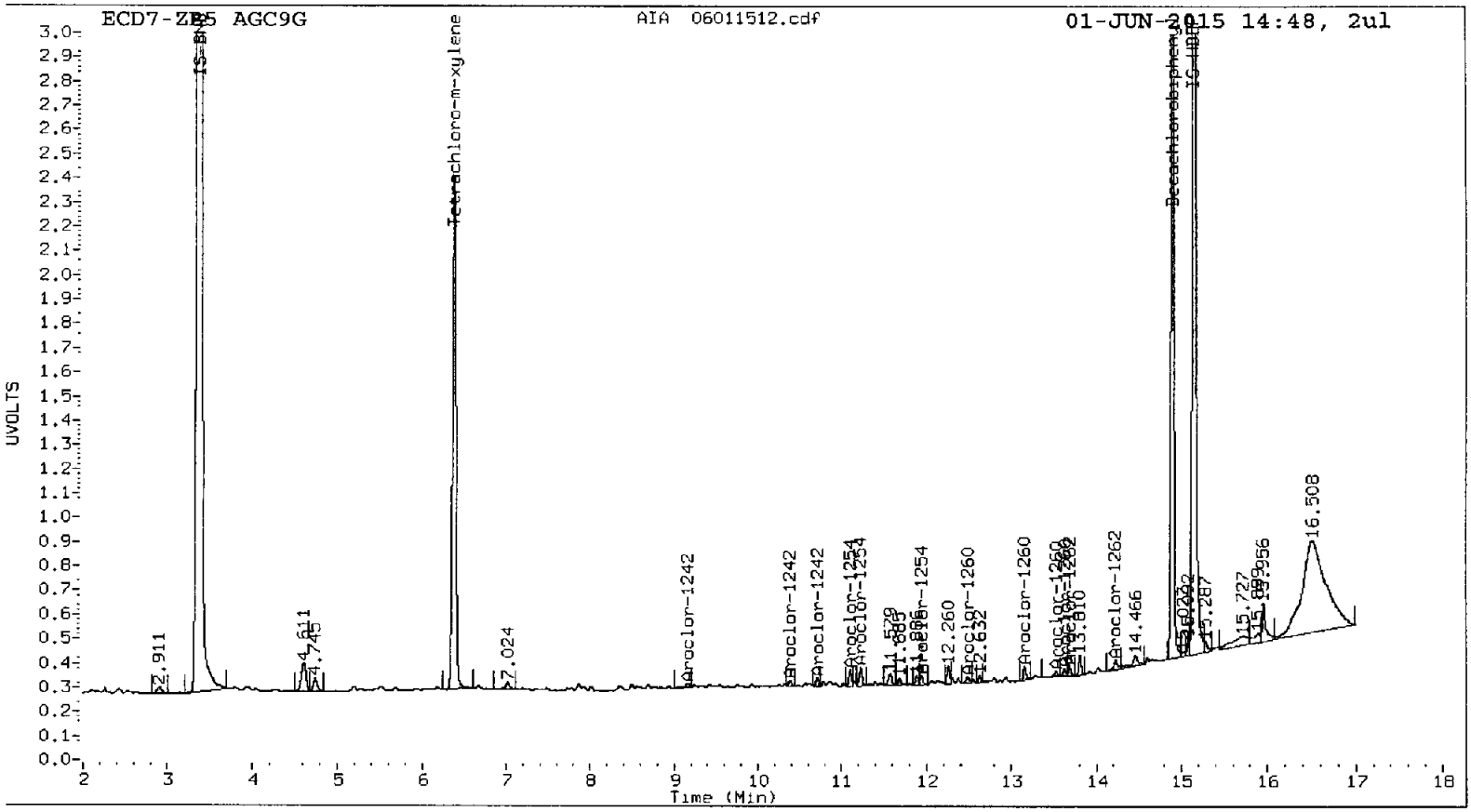
01-JUN-2015 14:48, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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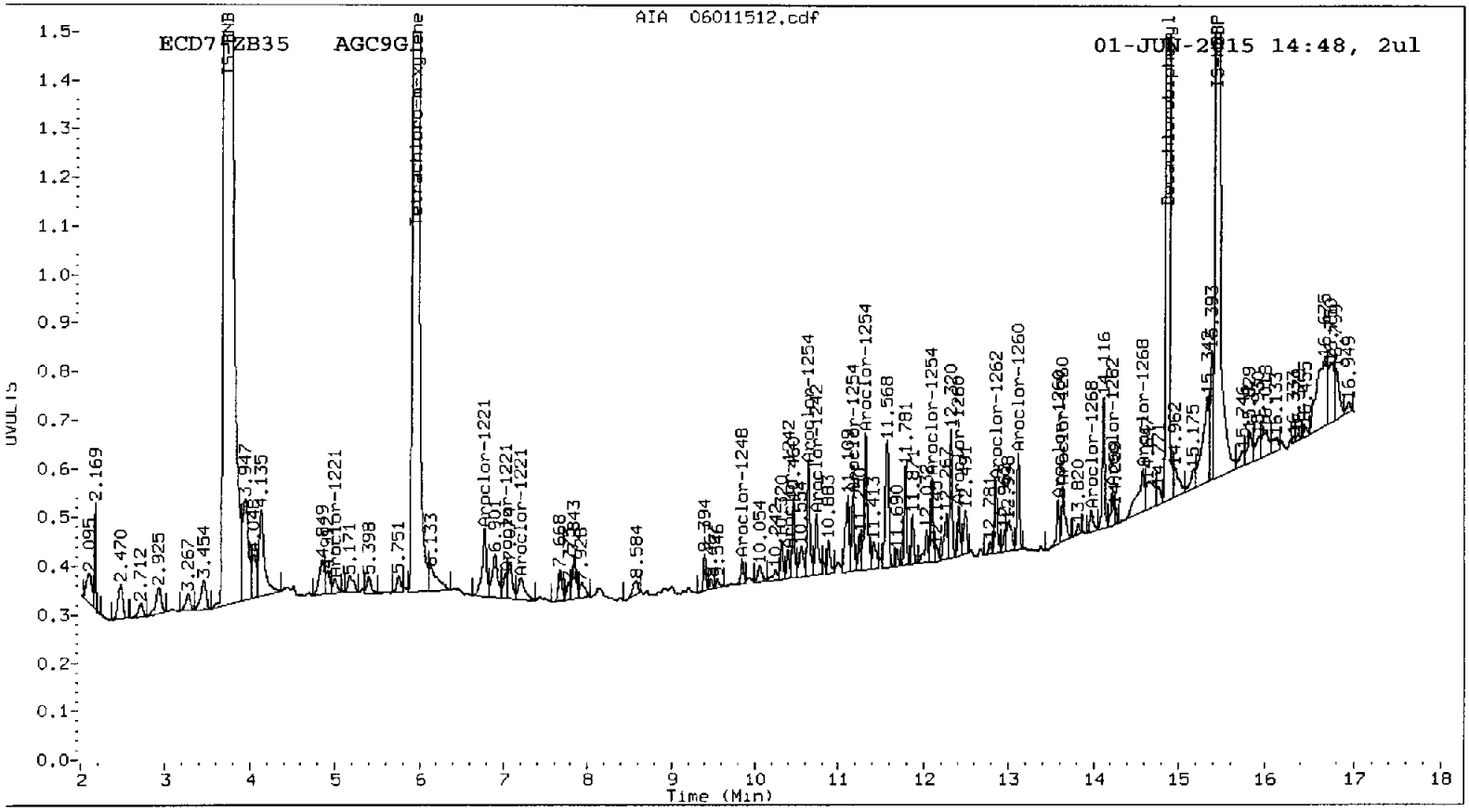
Tetrachloro-m-xylene
Decachlorobiphenyl
UVOLTS
Time (Min)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01-JUN-2015 14:48, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011513.d
Data file 2: 20150527.b/0601-2.b/06011513.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1248
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248
Client ID:
Injection Date: 01-JUN-2015 15:10
Report Date: 06/02/2015 07:08
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.387	0.003	1352087	5.951	0.003	6261612	37.4	36.7	2.0	Tetrachloro-m-xylene
14.900	0.001	2572147	14.872	0.000	4113181	38.9	38.1	2.1	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.6	91.8
Decachlorobiphenyl	97.2	95.2

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5325226	-2.3
Hexabromobiphenyl	5633814	5260221	-6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12644660	-3.2
Hexabromobiphenyl	8980422	8957832	-0.3

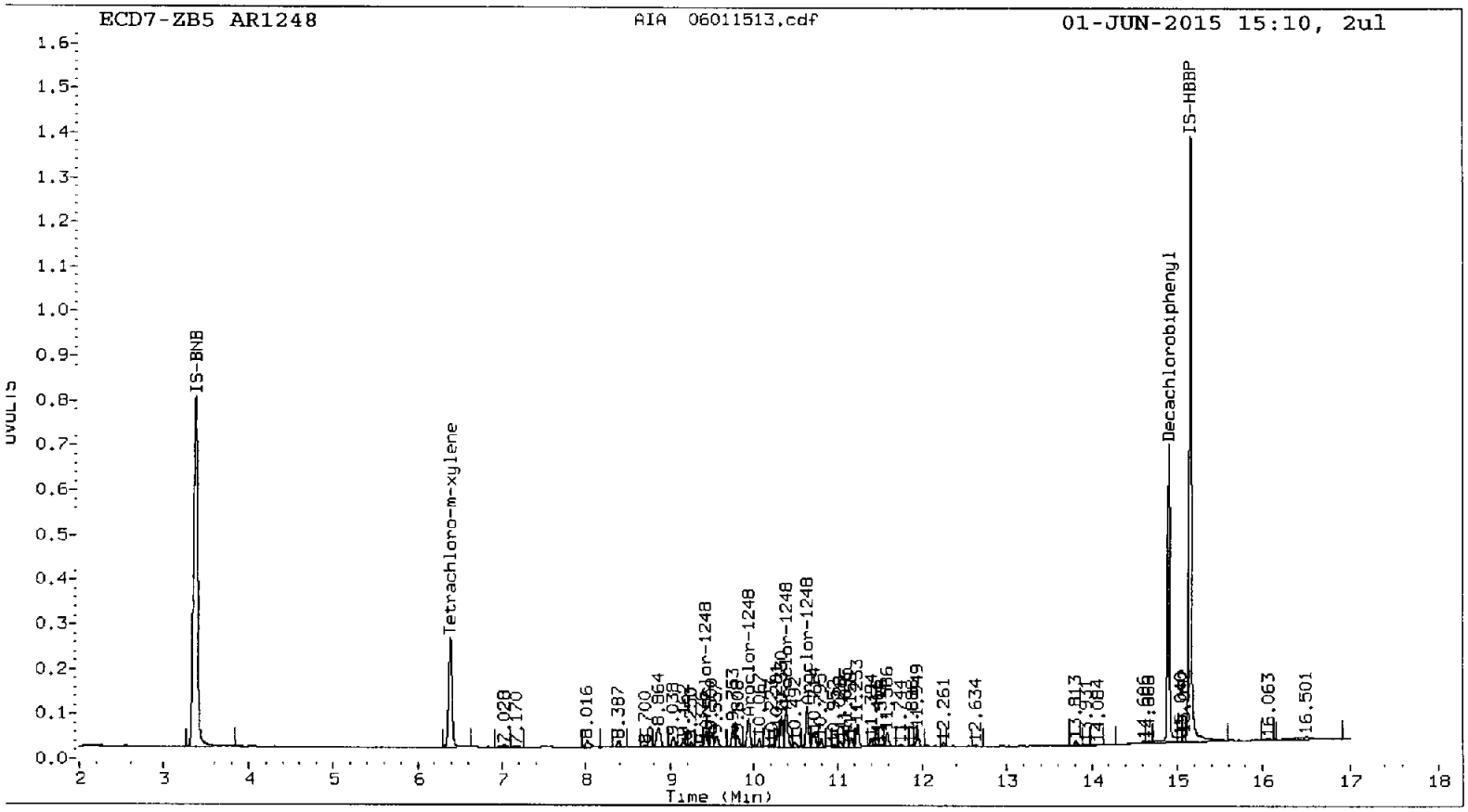
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1248	1	9.428	0.000	154553	252.6	1	8.839	0.000	1740106	249.7
Aroclor-1248	2	9.941	0.000	330947	254.4	2	9.844	0.000	1358121	243.9
Aroclor-1248	3	10.389	0.000	386232	255.6	3	10.399	0.000	1427232	241.8
Aroclor-1248	4	10.633	0.000	396749	259.5	4	10.755	0.000	1822304	239.2
Total Col1Ave (4 peaks):					255.5	Total Col2Ave (4 peaks):				243.7 RPD = 5
Corrected Ave (3 peaks):					254.2	Corrected Ave (3 peaks):				241.6 RPD = 5
CalAmt %D:					2.2	CalAmt %D:				-2.5

Total PCB Area Col1 (6.483 - 14.799) = 4756644 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 23613666 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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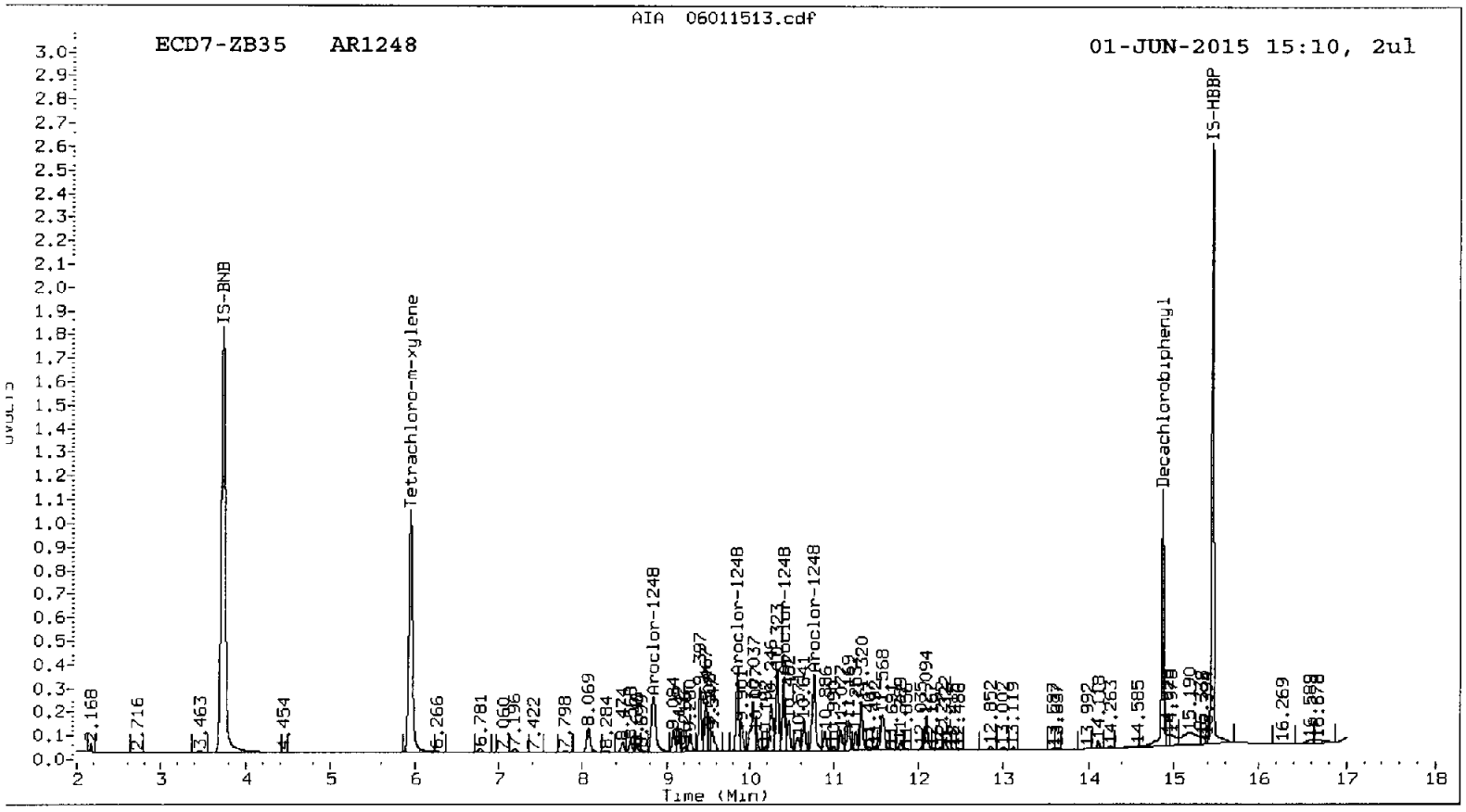
Tetrachloro-m-xylene
Aroclor-1248
Decachlorobiphenyl
IS-HBBP
Time (Min)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Tetrachloro-m-xylene
Aroclor-1248
Decachlorobiphenyl
IS-HBBP
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011514.d
Data file 2: 20150527.b/0601-2.b/06011514.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 01-JUN-2015 15:31
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.386	0.003	1404561	5.950	0.002	6455604	40.5	39.3	2.9	Tetrachloro-m-xylene
14.899	-0.001	2628173	14.871	-0.001	3857295	42.1	37.6	11.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	101.1	98.3
Decachlorobiphenyl	105.3	94.1

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5119769	-6.0
Hexabromobiphenyl	5633814	4961407	-11.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12175727	-6.8
Hexabromobiphenyl	8980422	8500039	-5.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

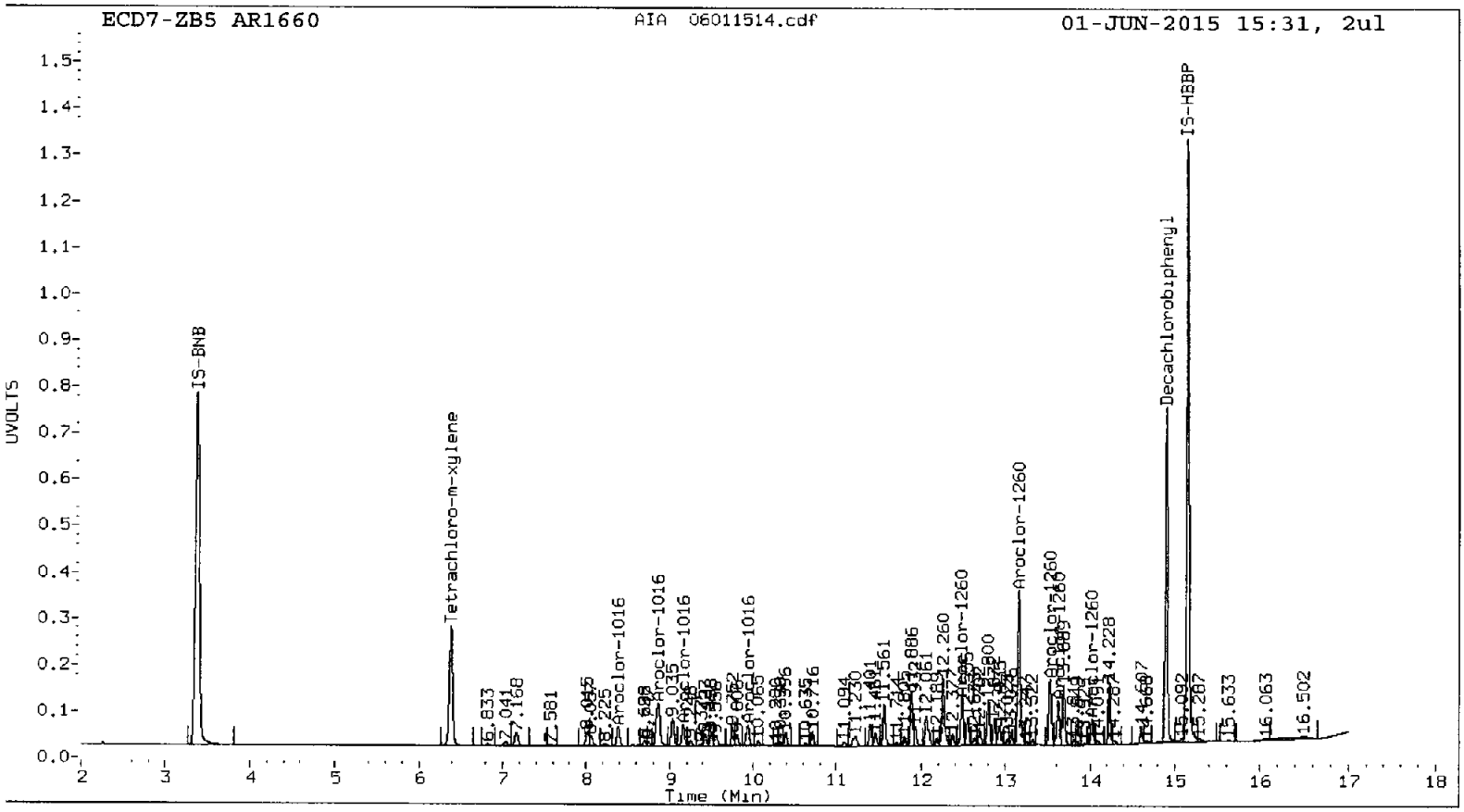
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	8.385	0.002	210694	255.9	1	8.069	0.003	1655628	248.1
Aroclor-1016	2	8.866	0.001	635725	251.9	2	8.841	0.002	3425479	241.7
Aroclor-1016	3	9.161	0.001	226590	262.5	3	9.278	0.001	912247	249.5
Aroclor-1016	4	9.940	0.001	237700	259.5	4	10.036	0.001	601554	232.9
Total Col1Ave (4 peaks):					257.4	Total Col2Ave (4 peaks):				243.1 RPD = 6
Corrected Ave (3 peaks):					255.7	Corrected Ave (3 peaks):				240.9 RPD = 6
CalAmt %D:					3.0	CalAmt %D:				-2.8
Aroclor-1260	1	12.486	0.000	445643	275.3	1	12.412	0.000	1742728	228.7
Aroclor-1260	2	13.160	0.000	1456204	278.0	2	13.117	0.000	4100854	231.0
Aroclor-1260	3	13.527	-0.001	665810	273.6	3	13.585	0.000	1204375	223.4
Aroclor-1260	4	13.626	-0.001	406228	276.6	4	13.636	0.000	2673449	228.6
Aroclor-1260	5	14.023	-0.001	224272	277.9	NS	---			----
Total Col1Ave (5 peaks):					276.3	Total Col2Ave (4 peaks):				227.9 RPD = 19
Corrected Ave (4 peaks):					275.8	Corrected Ave (3 peaks):				226.9 RPD = 19
CalAmt %D:					10.5	CalAmt %D:				-8.8

Total PCB Area Col1 (6.483 - 14.799) = 12301997 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 49538907 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

AGC9 : 00922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Time (Min)
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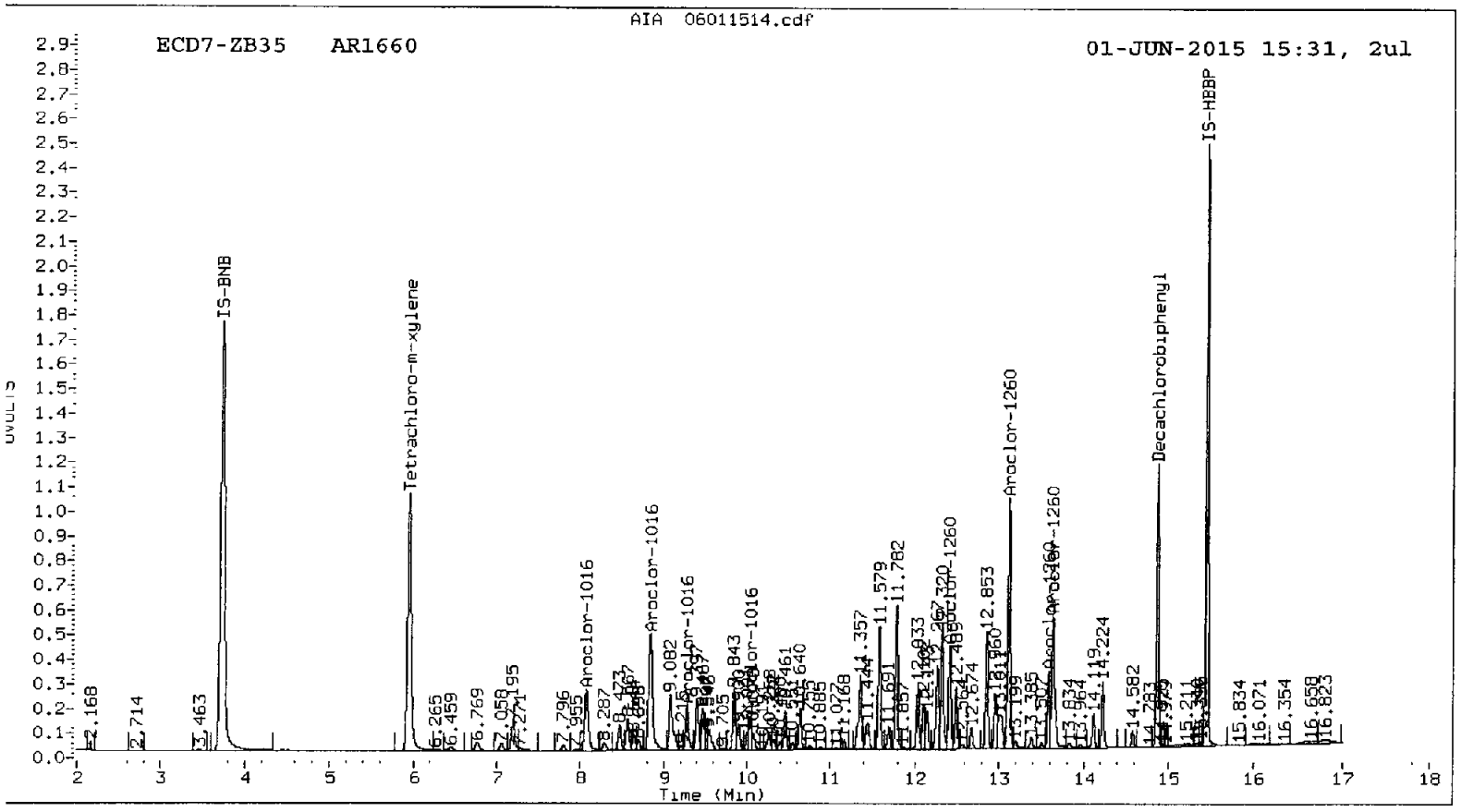
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011515.d
Data file 2: 20150527.b/0601-2.b/06011515.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9H
Client ID:
Injection Date: 01-JUN-2015 15:53
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.382	-0.001	1196152	5.946	-0.002	5405486	30.1	29.1	3.6	Tetrachloro-m-xylene
14.899	0.000	2188536	14.870	-0.002	3414724	30.9	28.9	7.0	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	75.4	72.7
Decachlorobiphenyl	77.4	72.1

JK 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5850926	7.4
Hexabromobiphenyl	5633814	5624341	-0.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13778749	5.5
Hexabromobiphenyl	8980422	9815637	9.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 - 8052L

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.313	-0.070	31485	33.5	1	---			0.0
Aroclor-1016	2	8.838	-0.027	12132	4.2	2	8.837	-0.002	15700	1.0
Aroclor-1016	3	9.152	-0.007	45687	46.3	3	9.202	-0.074	26972	6.5
Aroclor-1016	4	9.925	-0.014	53630	51.2	4	10.056	0.021	187121	64.0
	Total Col1Ave (4 peaks):				33.8		Total Col2Ave (3 peaks):			23.8 RPD = 35
	Corrected Ave (3 peaks):				28.0		Corrected Ave: < 3 Peaks			
Aroclor-1221	1	---			0.0	1	5.034	0.015	59175	41.4
Aroclor-1221	2	---			0.0	2	6.708	-0.012	31418	13.1
Aroclor-1221	3	---			0.0	3	7.083	0.068	84465	62.5
Aroclor-1221	NS	---			----	4	---			0.0
	Col1Ave: <3 Quant Peaks						Col2Ave: 39.0			
Aroclor-1232	1	---			0.0	1	5.034	0.013	59175	68.0
Aroclor-1232	2	7.022	0.022	16127	62.7	2	7.218	0.065	444075	182.1
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	8.838	0.008	12132	10.3	4	9.202	-0.045	26972	15.4
	Col1Ave: <3 Quant Peaks						Col2Ave: 78.5			
Aroclor-1242	1	8.838	-0.029	12132	5.7	1	---			0.0
Aroclor-1242	2	9.152	-0.009	45687	60.4	2	8.837	-0.004	15700	1.3
Aroclor-1242	3	10.329	-0.002	26918	38.2	3	10.394	-0.005	139972	34.3
Aroclor-1242	4	10.631	-0.002	40292	38.2	4	10.729	-0.027	533172	107.6
	Total Col1Ave (4 peaks):				35.7		Total Col2Ave (3 peaks):			47.7 RPD = 29
	Corrected Ave (3 peaks):				27.4		Corrected Ave: < 3 Peaks			
Aroclor-1248	1	9.425	-0.003	22203	33.0	1	8.837	-0.001	15700	2.1
Aroclor-1248	2	9.925	-0.016	53630	37.5	2	9.841	-0.002	113511	18.7
Aroclor-1248	3	10.394	0.006	101656	61.2	3	10.394	-0.005	139972	21.8
Aroclor-1248	4	10.631	-0.002	40292	24.0	4	10.729	-0.026	533172	64.2
	Total Col1Ave (4 peaks):				38.9		Total Col2Ave (4 peaks):			26.7 RPD = 37
	Corrected Ave (3 peaks):				31.5		Corrected Ave (3 peaks):			14.2 RPD = 76*
Aroclor-1254	1	10.394	-0.001	101656	95.1	1	10.637	-0.002	489543	67.4
Aroclor-1254	2	10.713	-0.001	147788	96.8	2	10.729	-0.005	533172	155.0
Aroclor-1254	3	11.110	0.016	585450	472.6	3	11.167	-0.001	345806	61.0
Aroclor-1254	4	11.230	-0.002	268902	115.0	4	11.315	-0.003	981066	81.1
Aroclor-1254	5	11.939	-0.004	143014	85.3	5	12.095	-0.003	578166	80.0
	Total Col1Ave (5 peaks):				174.0		Total Col2Ave (5 peaks):			88.9 RPD = 64*
	Corrected Ave (4 peaks):				98.1		Corrected Ave (4 peaks):			72.4 RPD = 30
Aroclor-1260	1	12.486	0.000	156019	85.0	1	12.410	-0.001	491045	55.8
Aroclor-1260	2	13.159	0.000	344534	58.0	2	13.114	-0.003	975646	47.6
Aroclor-1260	3	13.527	-0.001	126200	45.7	3	13.583	-0.002	511520	82.2
Aroclor-1260	4	13.627	0.001	238024	145.0	4	13.636	0.000	849878	62.9
Aroclor-1260	5	14.018	-0.006	99642	108.9	NS	---			----
	Total Col1Ave (5 peaks):				98.1		Total Col2Ave (4 peaks):			62.1 RPD = 35
	Corrected Ave (4 peaks):				74.4		Corrected Ave (3 peaks):			55.4 RPD = 29
Aroclor-1262	1	12.486	0.019	156019	47.0	1	12.410	0.016	491045	31.6
Aroclor-1262	2	13.159	0.016	344534	37.3	2	12.849	0.013	674132	46.1
Aroclor-1262	3	13.527	0.013	126200	43.4	3	13.114	0.014	975646	32.5
Aroclor-1262	4	13.688	0.013	313103	62.1	4	13.583	0.012	511520	39.5
Aroclor-1262	5	14.228	0.012	198127	43.9	5	14.222	0.010	414863	40.8
	Total Col1Ave (5 peaks):				46.7		Total Col2Ave (5 peaks):			38.1 RPD = 20
	Corrected Ave (4 peaks):				42.9		Corrected Ave (4 peaks):			36.1 RPD = 17

Aroclor-1268 1	13.627	0.015	238024	27.3	1	13.583	0.013	511520	22.2
Aroclor-1268 2	13.688	0.014	313103	30.6	2	13.636	0.008	849878	39.1
Aroclor-1268 3	14.018	0.021	99642	10.9	3	13.963	0.011	100280	5.7
Aroclor-1268 4	14.607	0.010	201865	6.3	4	14.581	0.008	364415	7.4

Total Col1Ave (4 peaks): 18.8 Total Col2Ave (4 peaks): 18.6 RPD = 1

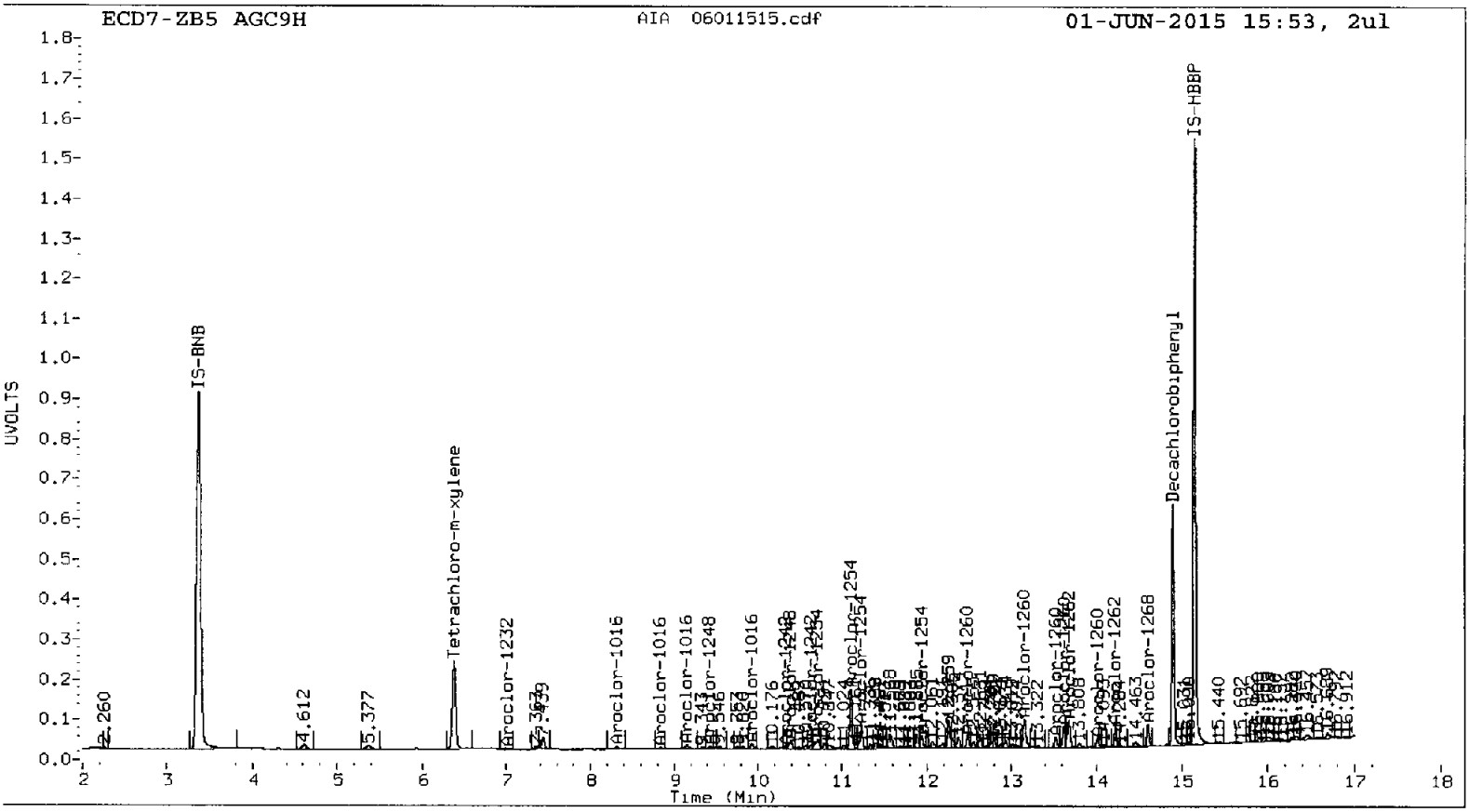
Corrected Ave (3 peaks): 14.8 Corrected Ave (3 peaks): 11.8 RPD = 23

Total PCB Area Col1 (6.483 - 14.799) = 5766883 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 18942896 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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Time (Min)
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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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Aroclor-1248
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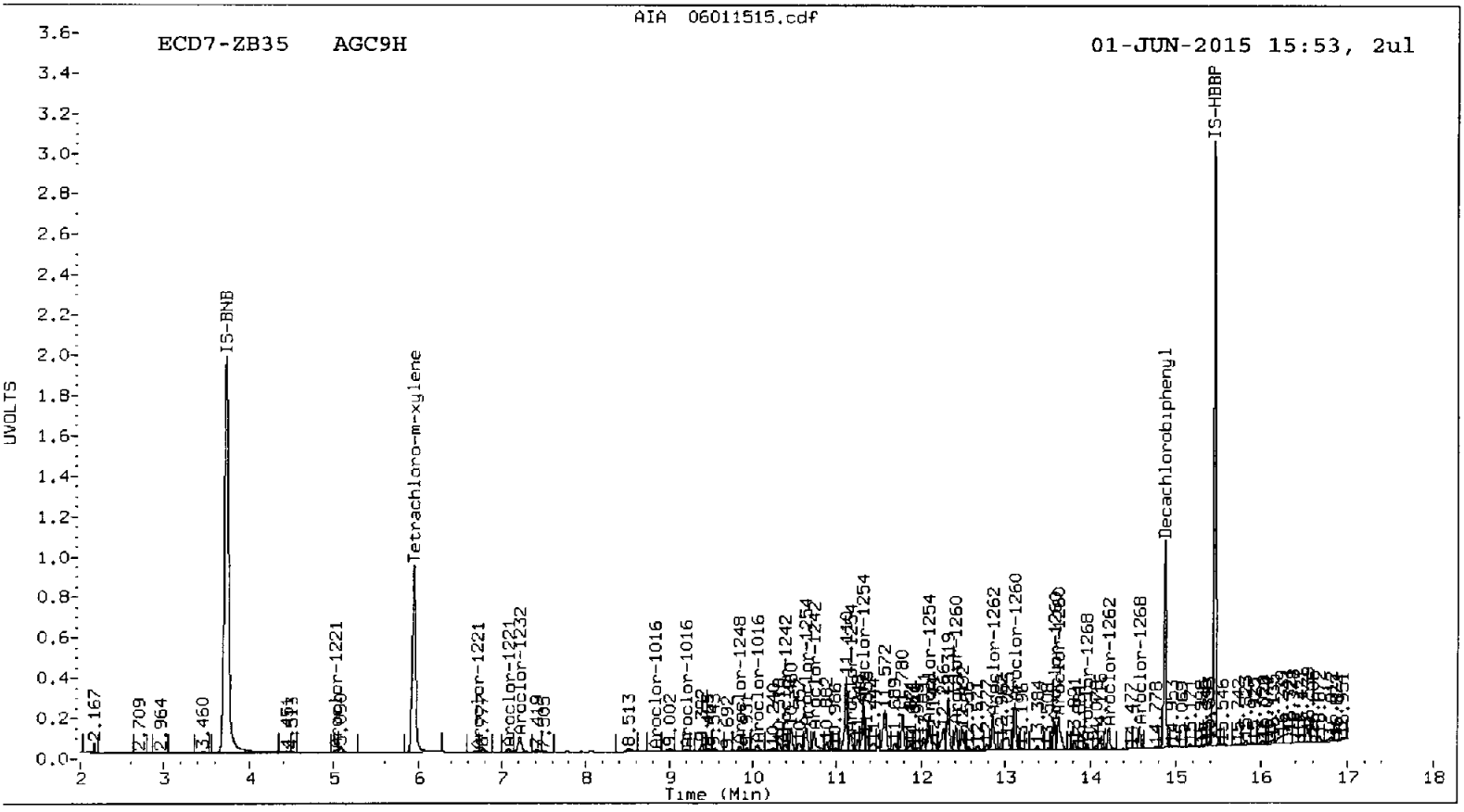
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Time (Min)
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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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Aroclor-1221
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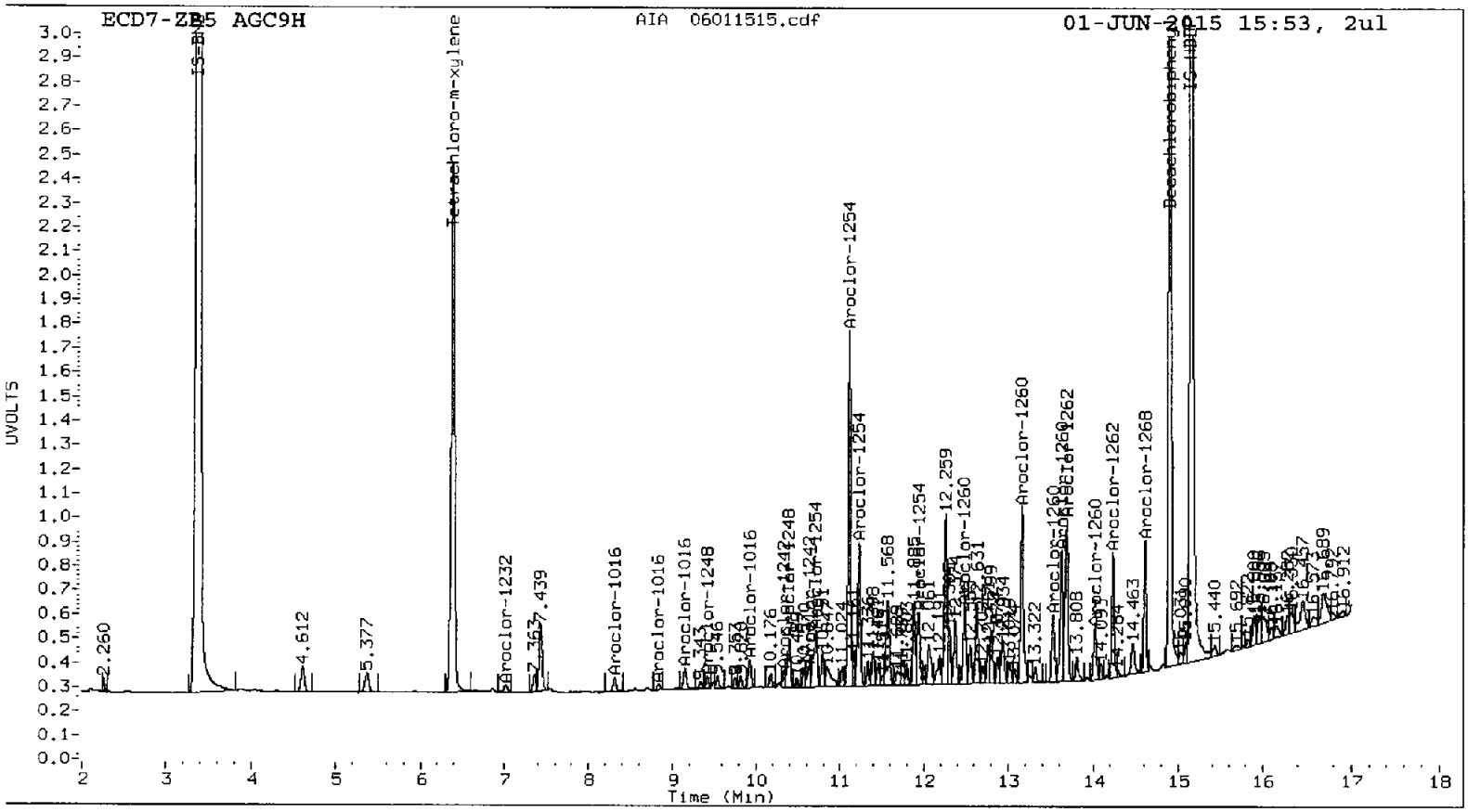
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Decachlorobiphenyl
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Aroclor-1262
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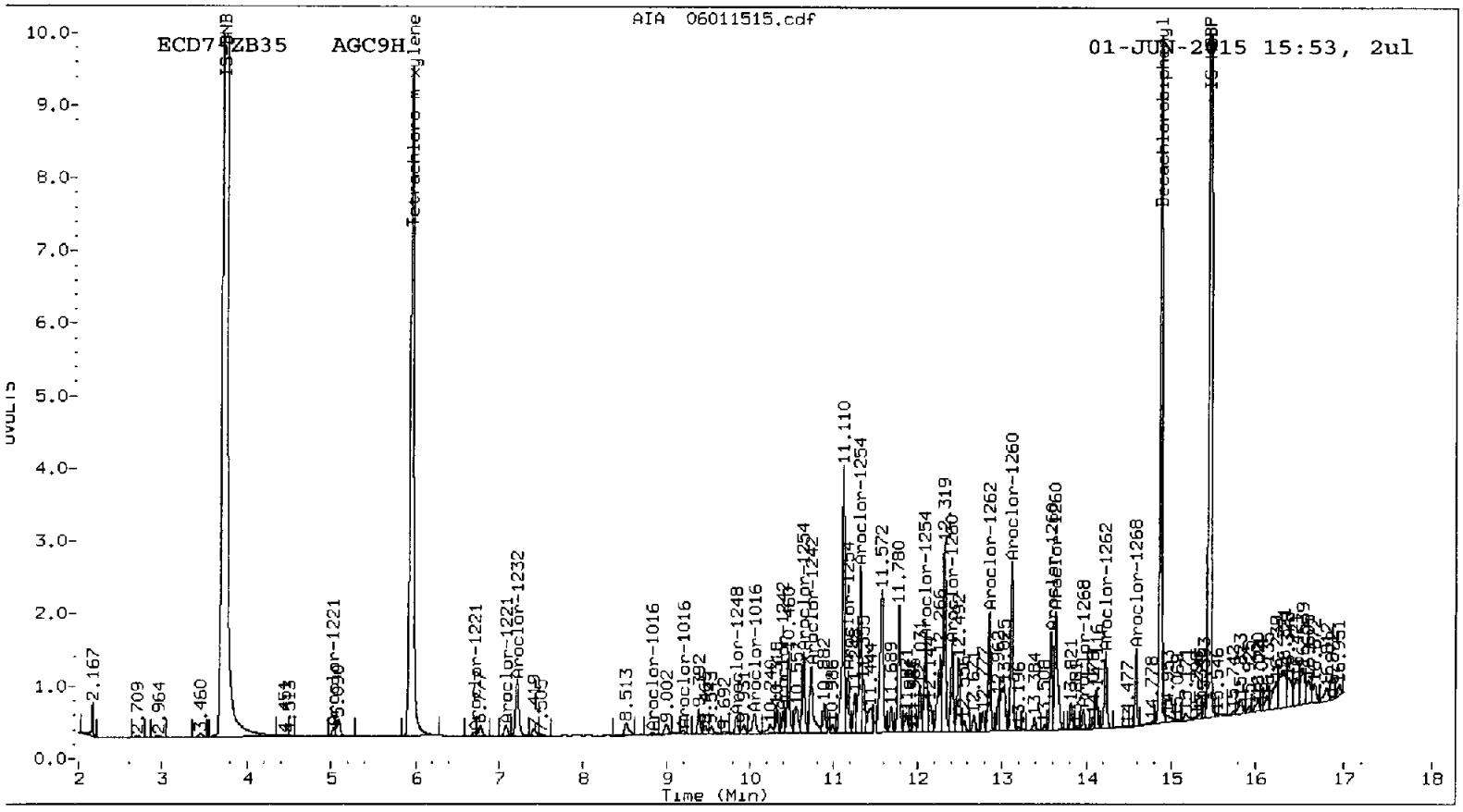
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ECD7-ZB35 AGC9H
01-JUN-2015 15:53, 2ul
UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011516.d
Data file 2: 20150527.b/0601-2.b/06011516.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9HMS
Client ID:
Injection Date: 01-JUN-2015 16:14
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1228550	5.948	0.000	5550747	30.6	29.4	4.2	Tetrachloro-m-xylene
14.899	0.000	2251193	14.871	-0.001	3701059	32.0	31.2	2.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	76.6	73.4
Decachlorobiphenyl	79.9	77.9

MR 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5916810	8.6
Hexabromobiphenyl	5633814	5597815	-0.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	14021004	7.4
Hexabromobiphenyl	8980422	9854598	9.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9: 20525

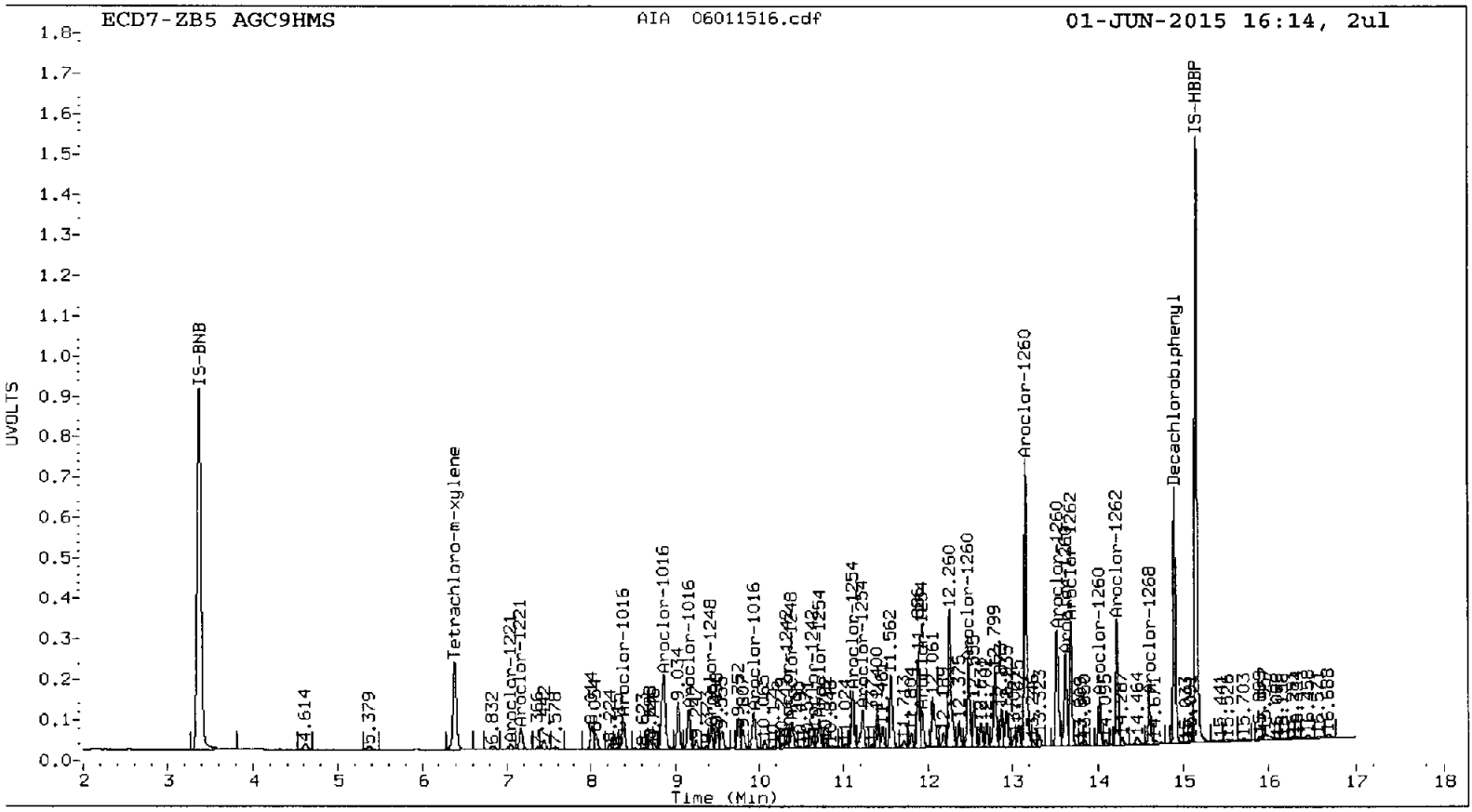
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.384	0.000	391481	411.4	1	8.068	0.001	2863002	372.5
Aroclor-1016	2	8.865	0.000	1223640	419.5	2	8.840	0.000	6120813	375.1
Aroclor-1016	3	9.159	0.000	464847	466.0	3	9.275	-0.001	1566561	372.1
Aroclor-1016	4	9.939	0.000	490265	463.0	4	10.034	-0.001	1150842	387.0
Total Col1Ave (4 peaks):					440.0	Total Col2Ave (4 peaks):				376.7 RPD = 16
Corrected Ave (3 peaks):					431.3	Corrected Ave (3 peaks):				373.2 RPD = 14
Aroclor-1221	1	---			0.0	1	5.091	0.073	218333	150.0
Aroclor-1221	2	7.043	0.044	79083	209.9	2	6.762	0.043	361181	148.3
Aroclor-1221	3	7.167	0.044	305522	287.3	3	7.058	0.043	328794	239.1
Aroclor-1221	NS	---			----	4	7.193	0.043	1615660	384.0
Col1Ave: <3 Quant Peaks						Col2Ave: 230.3				
Aroclor-1232	1	---			0.0	1	5.091	0.071	218333	246.5
Aroclor-1232	2	7.043	0.044	79083	303.9	2	7.193	0.040	1615660	543.9
Aroclor-1232	3	7.167	0.041	305522	430.2	3	8.068	0.038	2863002	822.0
Aroclor-1232	4	8.865	0.035	1223640	1030.9	4	9.275	0.028	1566561	876.6
Total Col1Ave (3 peaks):					588.3	Total Col2Ave (4 peaks):				622.2 RPD = 6
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				537.4
Aroclor-1242	1	8.865	-0.002	1223640	573.3	1	8.068	-0.002	2863002	507.7
Aroclor-1242	2	9.159	-0.002	464847	608.2	2	8.840	-0.002	6120813	514.1
Aroclor-1242	3	10.329	-0.001	89666	125.9	3	10.396	-0.003	355718	85.8
Aroclor-1242	4	10.633	0.000	92201	86.4	4	10.732	-0.024	629322	124.8
Total Col1Ave (4 peaks):					348.4	Total Col2Ave (4 peaks):				308.1 RPD = 12
Corrected Ave (3 peaks):					261.9	Corrected Ave (3 peaks):				239.4 RPD = 9
Aroclor-1248	1	9.426	-0.002	226829	333.7	1	8.840	0.001	6120813	792.1
Aroclor-1248	2	9.939	-0.002	490265	339.2	2	9.841	-0.003	2000931	324.1
Aroclor-1248	3	10.395	0.006	308333	183.6	3	10.396	-0.003	355718	54.4
Aroclor-1248	4	10.633	0.000	92201	54.3	4	10.732	-0.023	629322	74.5
Total Col1Ave (4 peaks):					227.7	Total Col2Ave (4 peaks):				311.3 RPD = 31
Corrected Ave (3 peaks):					190.5	Corrected Ave (3 peaks):				151.0 RPD = 23
Aroclor-1254	1	10.395	-0.001	308333	285.3	1	10.637	-0.002	1582518	214.3
Aroclor-1254	2	10.715	0.001	346938	224.6	2	10.732	-0.002	629322	179.8
Aroclor-1254	3	11.110	0.016	596240	476.0	3	11.167	-0.001	567410	98.3
Aroclor-1254	4	11.230	-0.002	544305	230.3	4	11.317	-0.002	1456192	118.3
Aroclor-1254	5	11.933	-0.010	395512	233.4	5	12.099	0.001	1691065	229.9
Total Col1Ave (5 peaks):					289.9	Total Col2Ave (5 peaks):				168.1 RPD = 53*
Corrected Ave (4 peaks):					243.4	Corrected Ave (4 peaks):				152.7 RPD = 46*
Aroclor-1260	1	12.486	0.000	907306	496.8	1	12.410	-0.001	3297689	373.2
Aroclor-1260	2	13.159	0.000	3060446	517.8	2	13.114	-0.003	8032685	390.3
Aroclor-1260	3	13.527	-0.001	1330874	484.7	3	13.582	-0.002	2501191	400.2
Aroclor-1260	4	13.626	0.000	969707	585.2	4	13.634	-0.001	5308439	391.4
Aroclor-1260	5	14.023	-0.001	500001	549.1	NS	---			----
Total Col1Ave (5 peaks):					526.7	Total Col2Ave (4 peaks):				388.8 RPD = 30
Corrected Ave (4 peaks):					512.1	Corrected Ave (3 peaks):				385.0 RPD = 28
Aroclor-1262	1	12.486	0.019	907306	274.9	1	12.410	0.015	3297689	211.1
Aroclor-1262	2	13.159	0.016	3060446	333.3	2	12.851	0.015	3891661	265.1
Aroclor-1262	3	13.527	0.014	1330874	459.9	3	13.114	0.014	8032685	266.6
Aroclor-1262	4	13.689	0.015	1268641	252.6	4	13.582	0.012	2501191	192.5
Aroclor-1262	5	14.228	0.013	1168249	260.0	5	14.223	0.011	2163153	211.8
Total Col1Ave (5 peaks):					316.1	Total Col2Ave (5 peaks):				229.4 RPD = 32

Corrected Ave (4 peaks):			280.2		Corrected Ave (4 peaks):			220.1	RPD = 24	
Aroclor-1268	1	13.626	0.014	969707	111.8	1	13.582	0.013	2501191	108.3
Aroclor-1268	2	13.689	0.016	1268641	124.7	2	13.634	0.006	5308439	243.3
Aroclor-1268	3	14.023	0.026	500001	55.0	3	13.964	0.011	161227	9.2
Aroclor-1268	4	14.608	0.011	459976	14.5	4	14.582	0.009	749603	15.1
Total Col1Ave (4 peaks):				76.5	Total Col2Ave (4 peaks):				94.0	RPD = 21
Corrected Ave (3 peaks):				60.4	Corrected Ave (3 peaks):				44.2	RPD = 31

Total PCB Area Col1 (6.483 - 14.799) = 27482458 Col1 Total PCB = 1.1 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 99576442 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical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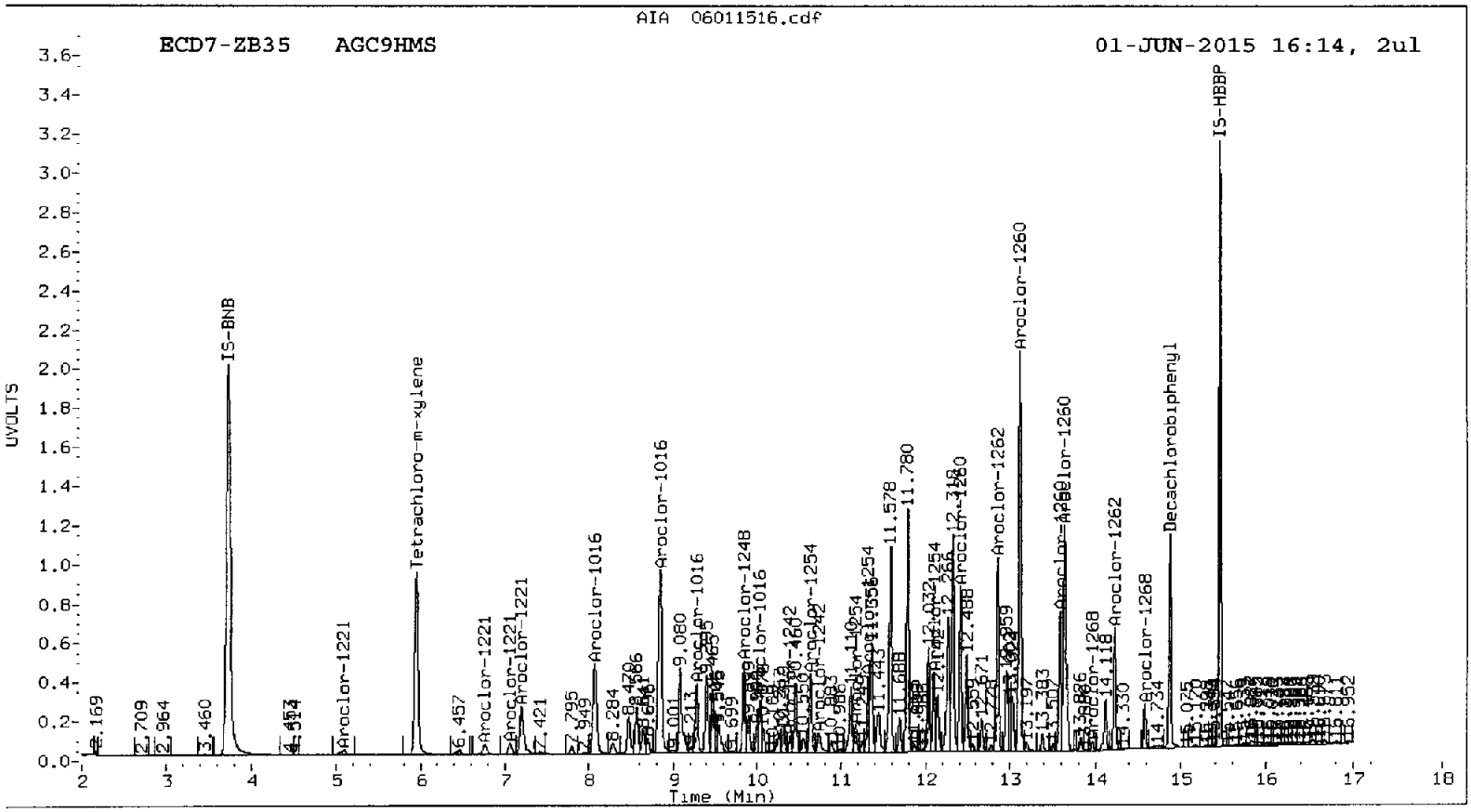
Time (Min)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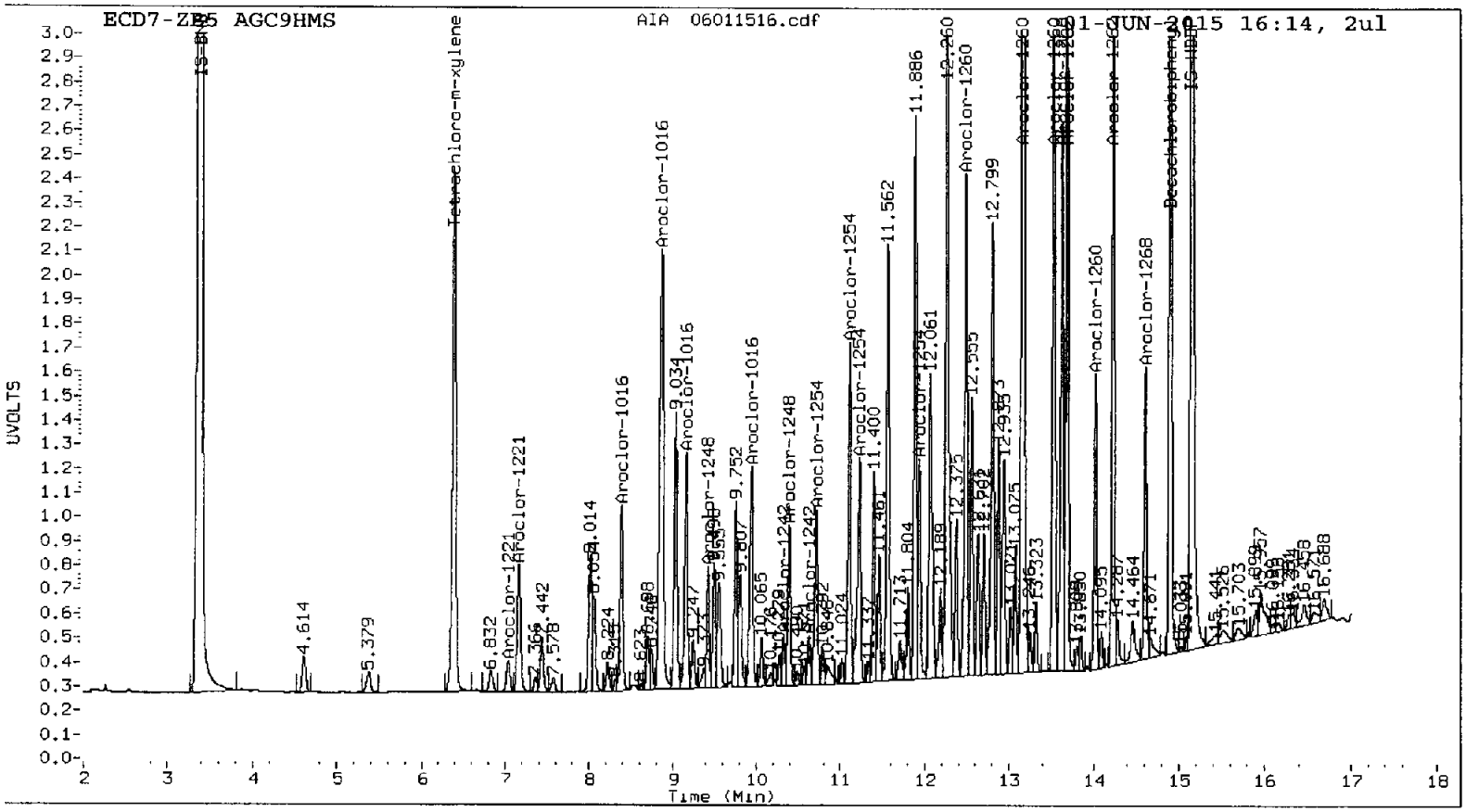
Time (Min)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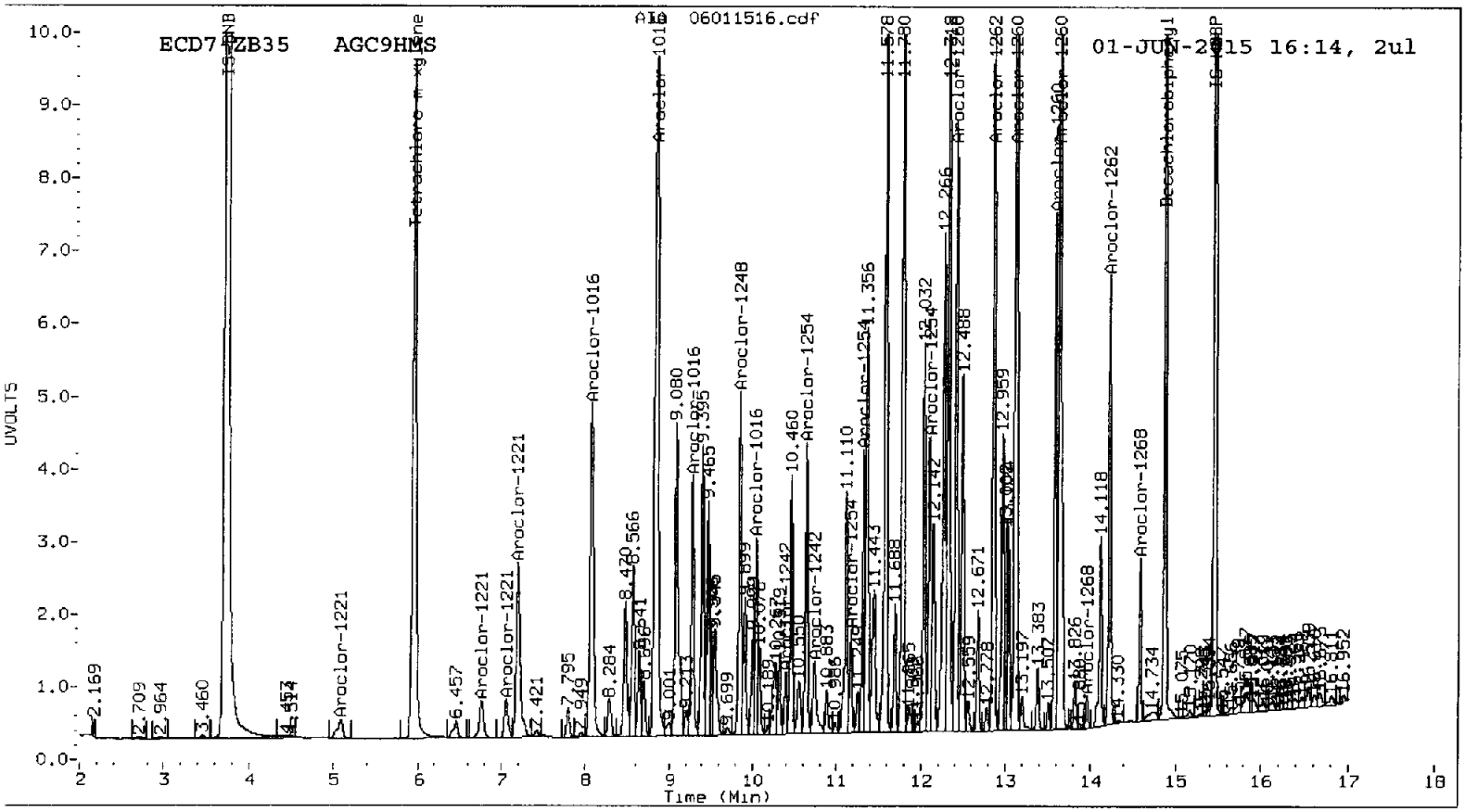
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl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Time (Min)
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Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011517.d
Data file 2: 20150527.b/0601-2.b/06011517.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9HMSD
Client ID:
Injection Date: 01-JUN-2015 16:35
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1251545	5.948	0.000	5539549	32.1	30.1	6.2	Tetrachloro-m-xylene
14.900	0.001	2212551	14.871	0.000	3606506	32.8	31.1	5.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	80.2	75.4
Decachlorobiphenyl	82.0	77.7

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5752364	5.6
Hexabromobiphenyl	5633814	5363111	-4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13625330	4.3
Hexabromobiphenyl	8980422	9621573	7.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9HMSD

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.383	-0.001	391695	423.4	1	8.066	-0.001	2843932	380.8
Aroclor-1016	2	8.865	-0.001	1222500	431.1	2	8.839	0.000	6058596	382.0
Aroclor-1016	3	9.159	-0.001	462050	476.4	3	9.275	-0.002	1547141	378.2
Aroclor-1016	4	9.939	-0.001	487655	473.7	4	10.034	-0.002	1125932	389.6
	Total Col1Ave (4 peaks):				451.2		Total Col2Ave (4 peaks):			382.7 RPD = 16
	Corrected Ave (3 peaks):				442.7		Corrected Ave (3 peaks):			380.3 RPD = 15
Aroclor-1221	1	---			0.0	1	5.091	0.072	253382	179.1
Aroclor-1221	2	7.042	0.043	76294	208.2	2	6.761	0.041	361270	152.6
Aroclor-1221	3	7.166	0.043	303479	293.5	3	7.056	0.041	327213	244.9
Aroclor-1221	NS	---			----	4	7.193	0.043	1619246	396.0
	Col1Ave: <3 Quant Peaks						Col2Ave: 243.2			
Aroclor-1232	1	---			0.0	1	5.091	0.070	253382	294.4
Aroclor-1232	2	7.042	0.042	76294	301.6	2	7.193	0.040	1619246	560.9
Aroclor-1232	3	7.166	0.040	303479	439.5	3	8.066	0.037	2843932	840.2
Aroclor-1232	4	8.865	0.034	1222500	1059.4	4	9.275	0.028	1547141	890.9
	Total Col1Ave (3 peaks):				600.2		Total Col2Ave (4 peaks):			646.6 RPD = 7
	Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			565.2
Aroclor-1242	1	8.865	-0.003	1222500	589.1	1	8.066	-0.004	2843932	519.0
Aroclor-1242	2	9.159	-0.002	462050	621.8	2	8.839	-0.002	6058596	523.7
Aroclor-1242	3	10.329	-0.001	89459	129.2	3	10.395	-0.004	351516	87.2
Aroclor-1242	4	10.633	0.000	91611	88.3	4	10.730	-0.026	586044	119.6
	Total Col1Ave (4 peaks):				357.1		Total Col2Ave (4 peaks):			312.4 RPD = 13
	Corrected Ave (3 peaks):				268.9		Corrected Ave (3 peaks):			241.9 RPD = 11
Aroclor-1248	1	9.425	-0.002	226321	342.4	1	8.839	0.000	6058596	806.8
Aroclor-1248	2	9.939	-0.003	487655	347.0	2	9.841	-0.003	1972566	328.7
Aroclor-1248	3	10.394	0.006	310539	190.2	3	10.395	-0.005	351516	55.3
Aroclor-1248	4	10.633	-0.001	91611	55.5	4	10.730	-0.025	586044	71.4
	Total Col1Ave (4 peaks):				233.8		Total Col2Ave (4 peaks):			315.6 RPD = 30
	Corrected Ave (3 peaks):				196.1		Corrected Ave (3 peaks):			151.8 RPD = 25
Aroclor-1254	1	10.394	-0.001	310539	295.6	1	10.638	-0.001	1560953	217.5
Aroclor-1254	2	10.715	0.001	349107	232.5	2	10.730	-0.003	586044	172.3
Aroclor-1254	3	11.110	0.016	589503	484.1	3	11.167	-0.001	563456	100.5
Aroclor-1254	4	11.230	-0.001	552646	240.5	4	11.317	-0.001	1455881	121.7
Aroclor-1254	5	11.934	-0.009	393351	238.8	5	12.100	0.002	1670871	233.8
	Total Col1Ave (5 peaks):				298.3		Total Col2Ave (5 peaks):			169.1 RPD = 55*
	Corrected Ave (4 peaks):				251.8		Corrected Ave (4 peaks):			153.0 RPD = 49*
Aroclor-1260	1	12.487	0.000	890252	508.8	1	12.411	-0.001	3166155	367.0
Aroclor-1260	2	13.160	0.000	2990981	528.2	2	13.115	-0.002	7773618	386.8
Aroclor-1260	3	13.528	0.000	1314579	499.7	3	13.584	-0.001	2397476	392.9
Aroclor-1260	4	13.627	0.000	942056	593.4	4	13.635	0.000	5121459	386.8
Aroclor-1260	5	14.023	-0.001	487074	558.3	NS	---			----
	Total Col1Ave (5 peaks):				537.7		Total Col2Ave (4 peaks):			383.4 RPD = 34
	Corrected Ave (4 peaks):				523.7		Corrected Ave (3 peaks):			380.2 RPD = 32
Aroclor-1262	1	12.487	0.020	890252	281.5	1	12.411	0.016	3166155	207.6
Aroclor-1262	2	13.160	0.017	2990981	340.0	2	12.852	0.016	3774300	263.3
Aroclor-1262	3	13.528	0.015	1314579	474.1	3	13.115	0.015	7773618	264.3
Aroclor-1262	4	13.689	0.014	1221358	253.8	4	13.584	0.013	2397476	189.0
Aroclor-1262	5	14.228	0.012	1137645	264.3	5	14.224	0.011	2142758	214.9
	Total Col1Ave (5 peaks):				322.8		Total Col2Ave (5 peaks):			227.8 RPD = 34

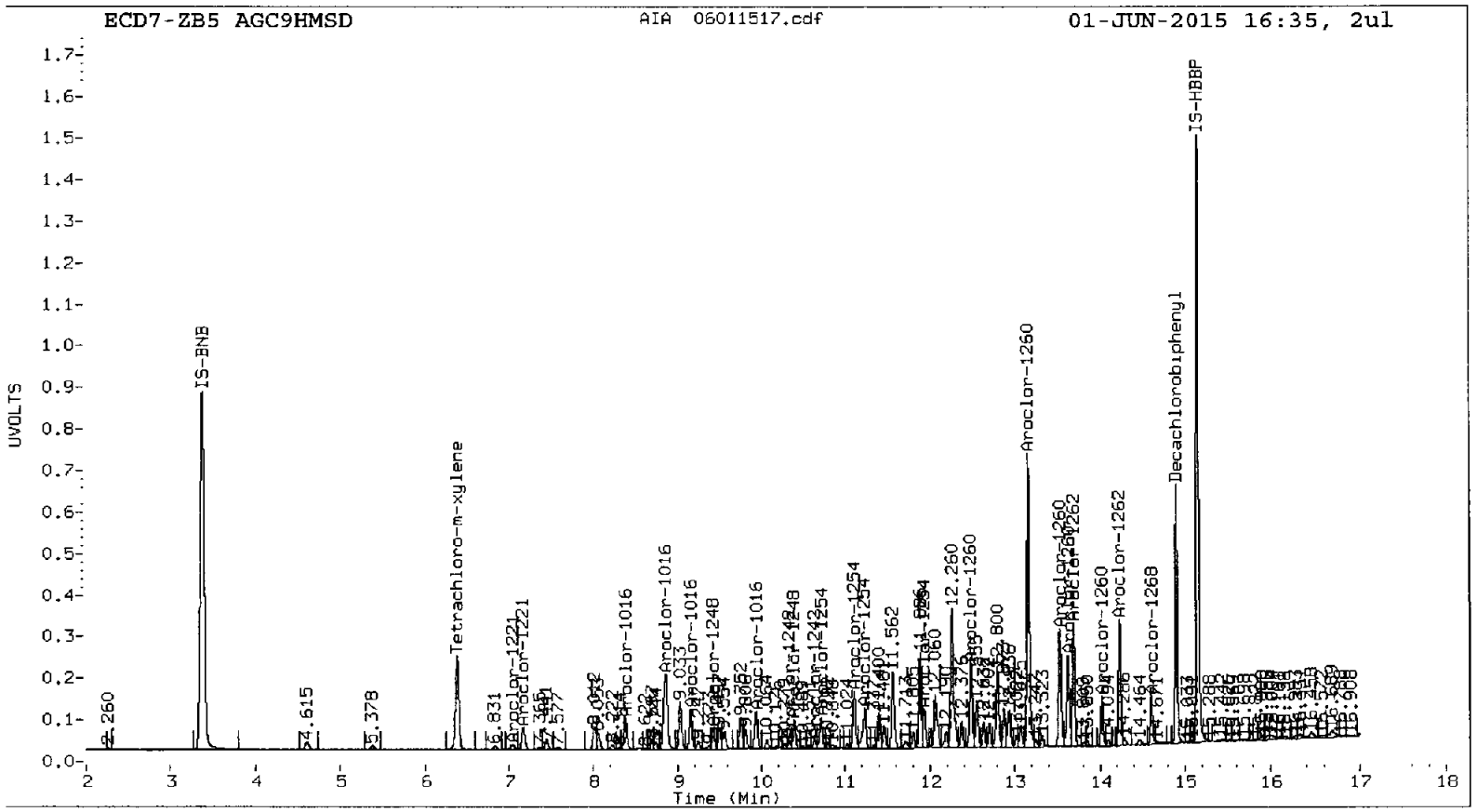
Corrected Ave (4 peaks):			284.9		Corrected Ave (4 peaks):			218.7	RPD = 26	
Aroclor-1268	1	13.627	0.015	942056	113.3	1	13.584	0.015	2397476	106.3
Aroclor-1268	2	13.689	0.015	1221358	125.3	2	13.635	0.007	5121459	240.4
Aroclor-1268	3	14.023	0.026	487074	55.9	3	13.965	0.012	151907	8.8
Aroclor-1268	4	14.608	0.011	440440	14.5	4	14.582	0.009	741164	15.3
Total Col1Ave (4 peaks):				77.3	Total Col2Ave (4 peaks):				92.7	RPD = 18
Corrected Ave (3 peaks):				61.2	Corrected Ave (3 peaks):				43.5	RPD = 34

Total PCB Area Col1 (6.483 - 14.799) = 27151146 Col1 Total PCB = 1.1 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 97360818 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

ACS 69948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IS-HBBP
Decachlorobiphenyl
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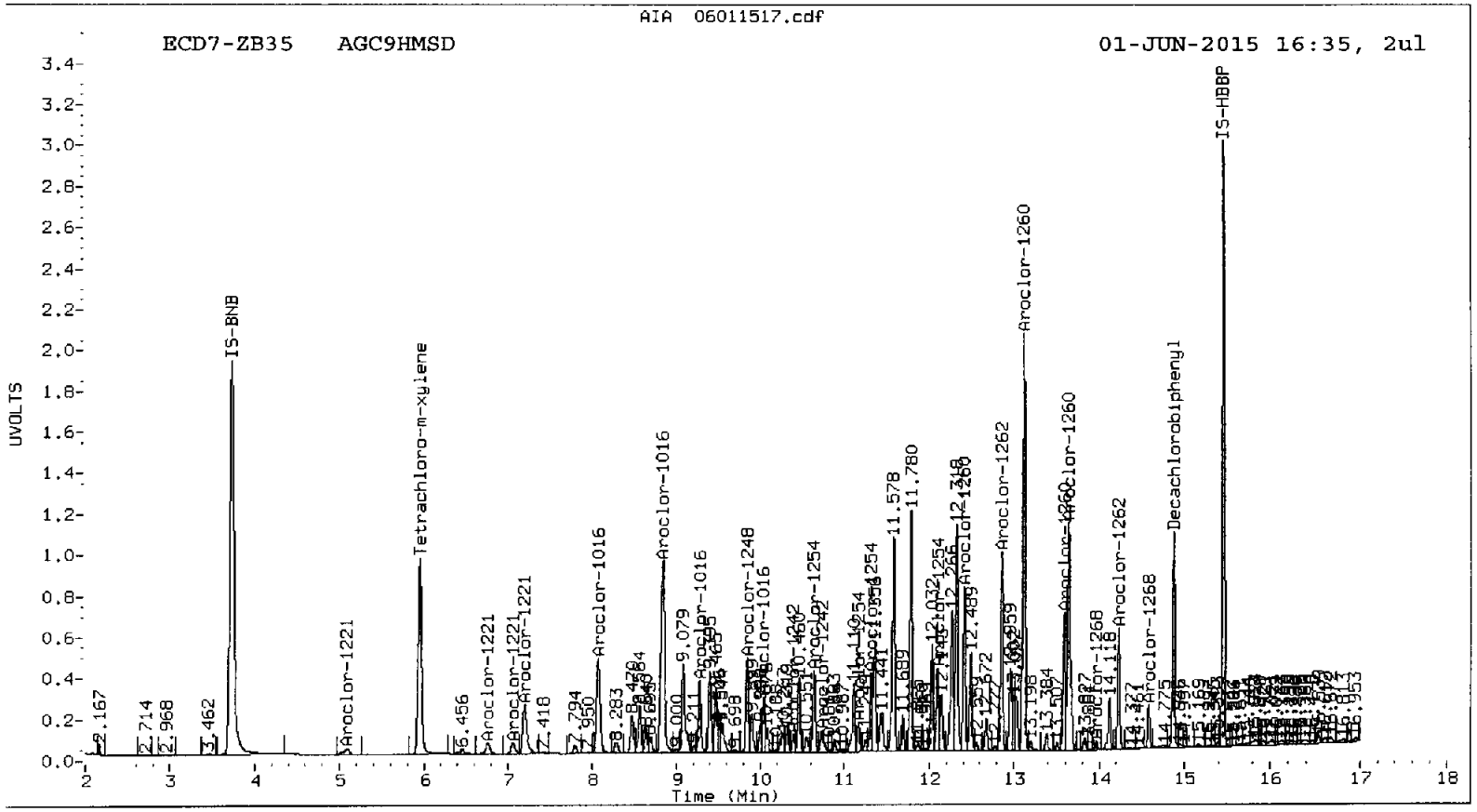
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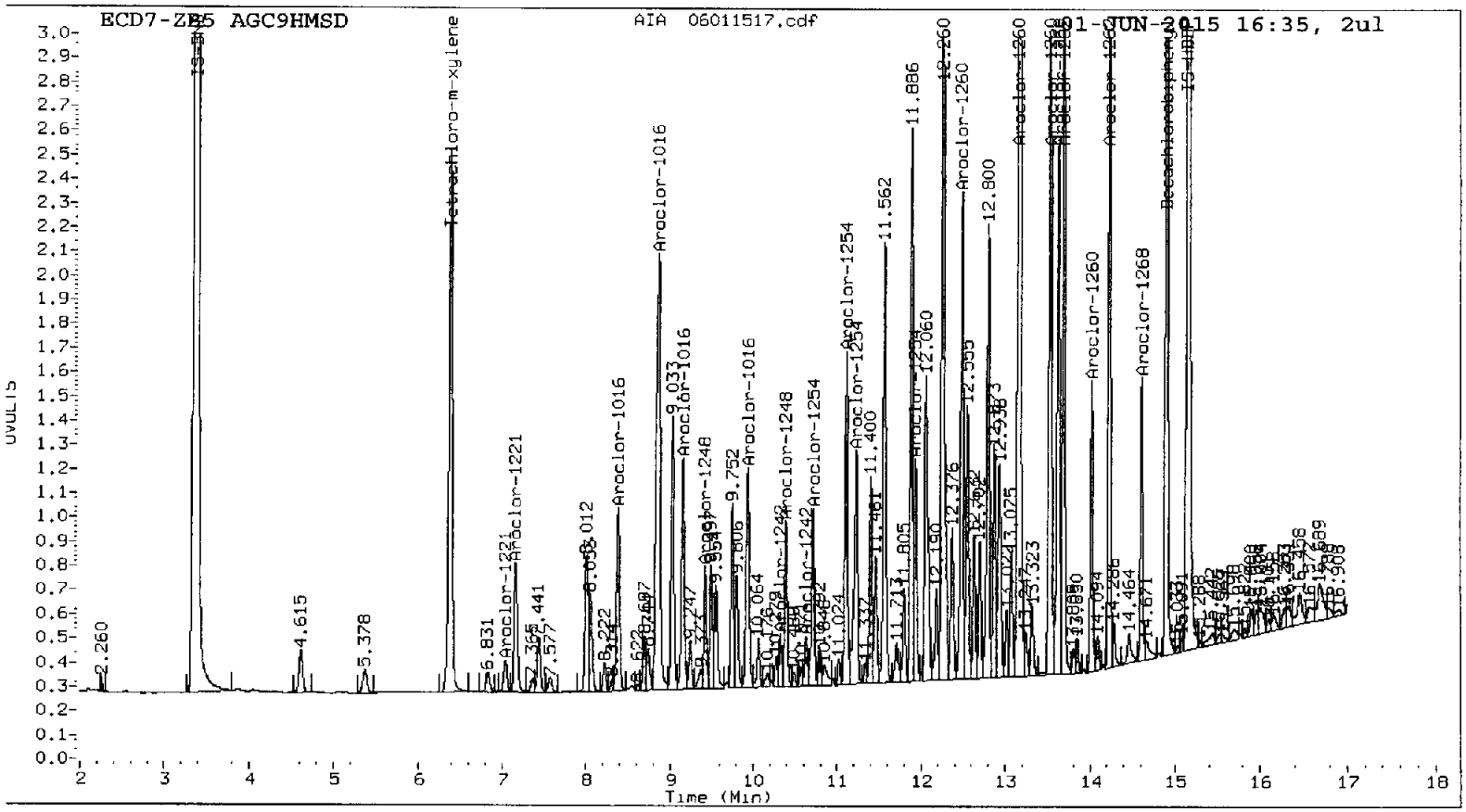
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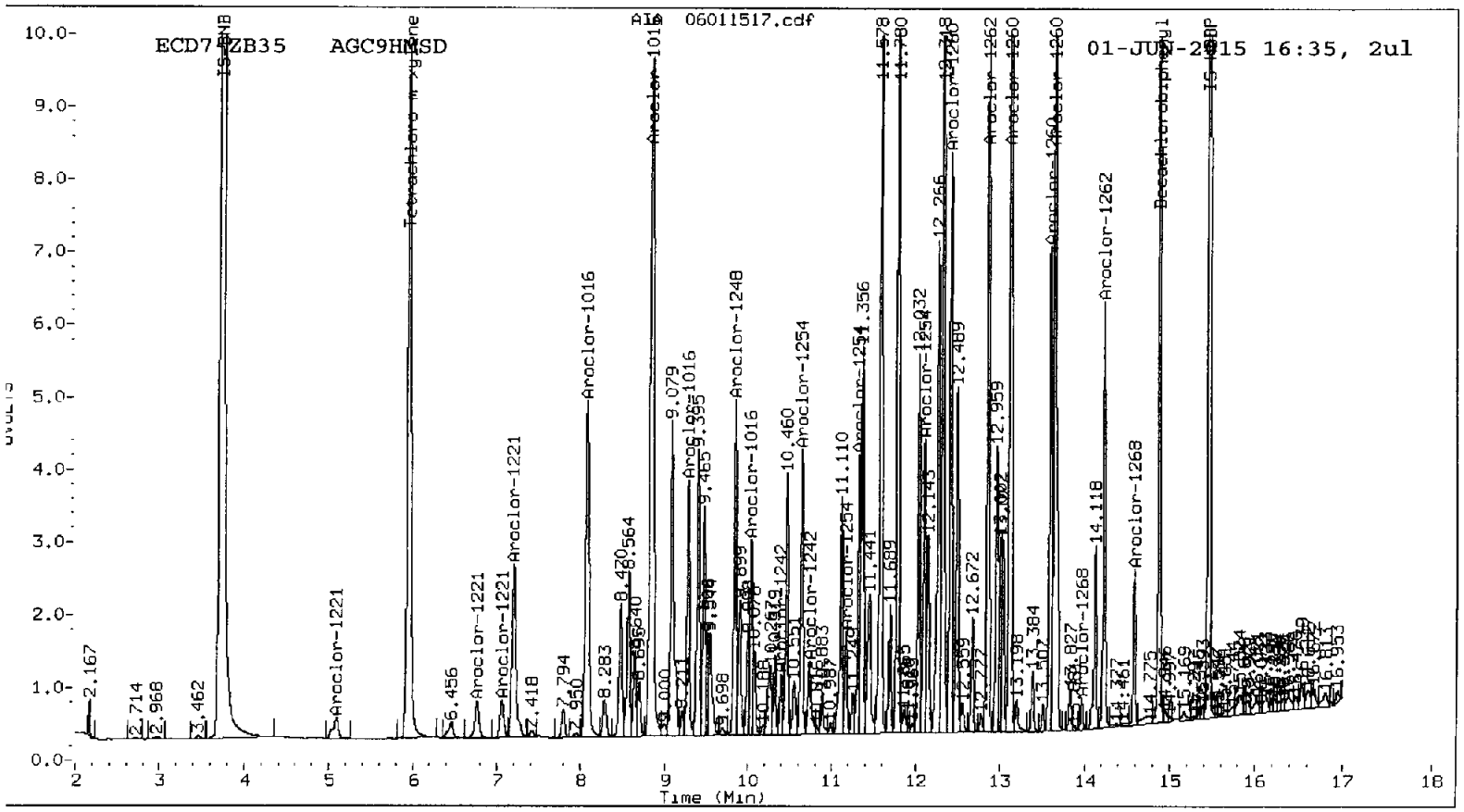
Decachlorobiphenyl
Time (Min)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Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268
Decachlorobiphenyl
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011518.d
Data file 2: 20150527.b/0601-2.b/06011518.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9I
Client ID:
Injection Date: 01-JUN-2015 16:57
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1181727	5.947	-0.001	5213798	30.0	29.4	1.9	Tetrachloro-m-xylene
14.899	0.000	2103965	14.870	-0.001	3662710	31.9	31.4	1.4	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
J Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	75.0	73.6
Decachlorobiphenyl	79.7	78.6

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5811891	6.7
Hexabromobiphenyl	5633814	5250297	-6.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13135636	0.6
Hexabromobiphenyl	8980422	9665821	7.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9I : 06/02/15

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.313	-0.071	22272	23.8	1	8.066	-0.001	99778	13.9
Aroclor-1016	2	8.843	-0.023	51532	18.0	2	8.829	-0.010	148545	9.7
Aroclor-1016	3	9.153	-0.006	76071	77.6	3	9.273	-0.003	31691	8.0
Aroclor-1016	4	9.929	-0.010	125461	120.6	4	10.036	0.001	456431	163.8
Total Col1Ave (4 peaks):					60.0	Total Col2Ave (4 peaks):				48.9 RPD = 21
Corrected Ave (3 peaks):					39.8	Corrected Ave (3 peaks):				10.5 RPD = 116*
Aroclor-1221	1	---			0.0	1	5.033	0.015	489506	358.9
Aroclor-1221	2	---			0.0	2	6.779	0.059	107760	47.2
Aroclor-1221	3	---			0.0	3	7.084	0.069	301921	234.4
Aroclor-1221	NS	---			----	4	---			0.0
Col1Ave: <3 Quant Peaks						Col2Ave: 213.5				
Aroclor-1232	1	---			0.0	1	5.033	0.013	489506	589.9
Aroclor-1232	2	7.026	0.027	13079	51.2	2	7.219	0.066	631673	227.0
Aroclor-1232	3	---			0.0	3	8.066	0.036	99778	30.6
Aroclor-1232	4	8.843	0.012	51532	44.2	4	9.273	0.026	31691	18.9
Col1Ave: <3 Quant Peaks						Col2Ave: 216.6				
Aroclor-1242	1	8.843	-0.024	51532	24.6	1	8.066	-0.004	99778	18.9
Aroclor-1242	2	9.153	-0.008	76071	101.3	2	8.829	-0.012	148545	13.3
Aroclor-1242	3	10.329	-0.002	137078	196.0	3	10.393	-0.006	475285	122.3
Aroclor-1242	4	10.633	0.000	131020	125.0	4	10.732	-0.024	1142201	241.7
Total Col1Ave (4 peaks):					111.7	Total Col2Ave (4 peaks):				99.1 RPD = 12
Corrected Ave (3 peaks):					83.6	Corrected Ave (3 peaks):				51.5 RPD = 48*
Aroclor-1248	1	9.425	-0.003	131605	197.1	1	8.829	-0.010	148545	20.5
Aroclor-1248	2	9.929	-0.012	125461	88.4	2	9.841	-0.003	505985	87.5
Aroclor-1248	3	10.394	0.005	330902	200.6	3	10.393	-0.006	475285	77.5
Aroclor-1248	4	10.633	0.000	131020	78.5	4	10.732	-0.023	1142201	144.3
Total Col1Ave (4 peaks):					141.2	Total Col2Ave (4 peaks):				82.5 RPD = 52*
Corrected Ave (3 peaks):					121.3	Corrected Ave (3 peaks):				61.8 RPD = 65*
Aroclor-1254	1	10.394	-0.002	330902	311.7	1	10.636	-0.003	1644562	237.7
Aroclor-1254	2	10.714	0.000	404334	266.5	2	10.732	-0.002	1142201	348.3
Aroclor-1254	3	11.103	0.009	544682	442.7	3	11.166	-0.002	1239320	229.2
Aroclor-1254	4	11.231	-0.001	657065	283.0	4	11.316	-0.003	2997803	259.9
Aroclor-1254	5	11.943	0.000	443205	266.3	5	12.092	-0.006	1629519	236.5
Total Col1Ave (5 peaks):					314.0	Total Col2Ave (5 peaks):				262.3 RPD = 18
Corrected Ave (4 peaks):					281.9	Corrected Ave (4 peaks):				240.8 RPD = 16
Aroclor-1260	1	12.487	0.000	179005	104.5	1	12.410	-0.002	563007	65.0
Aroclor-1260	2	13.160	0.000	474294	85.6	2	13.115	-0.002	1329942	65.9
Aroclor-1260	3	13.527	-0.001	236360	91.8	3	13.583	-0.002	460640	75.1
Aroclor-1260	4	13.628	0.002	211323	136.0	4	13.634	-0.001	1025840	77.1
Aroclor-1260	5	14.020	-0.004	88392	103.5	NS	---			----
Total Col1Ave (5 peaks):					104.3	Total Col2Ave (4 peaks):				70.8 RPD = 38
Corrected Ave (4 peaks):					96.3	Corrected Ave (3 peaks):				68.7 RPD = 34
Aroclor-1262	1	12.487	0.020	179005	57.8	1	12.410	0.015	563007	36.7
Aroclor-1262	2	13.160	0.017	474294	55.1	2	12.849	0.013	1075167	74.7
Aroclor-1262	3	13.527	0.014	236360	87.1	3	13.115	0.015	1329942	45.0
Aroclor-1262	4	13.687	0.013	311625	66.2	4	13.583	0.013	460640	36.2
Aroclor-1262	5	14.228	0.012	187908	44.6	5	14.222	0.009	433724	43.3
Total Col1Ave (5 peaks):					62.1	Total Col2Ave (5 peaks):				47.2 RPD = 27
Corrected Ave (4 peaks):					55.9	Corrected Ave (4 peaks):				40.3 RPD = 32

Aroclor-1268	1	13.628	0.016	211323	26.0	1	13.583	0.014	460640	20.3
Aroclor-1268	2	13.687	0.013	311625	32.7	2	13.634	0.006	1025840	47.9
Aroclor-1268	3	14.020	0.023	88392	10.4	3	13.964	0.012	65882	3.8
Aroclor-1268	4	14.608	0.011	175178	5.9	4	14.581	0.008	327365	6.7

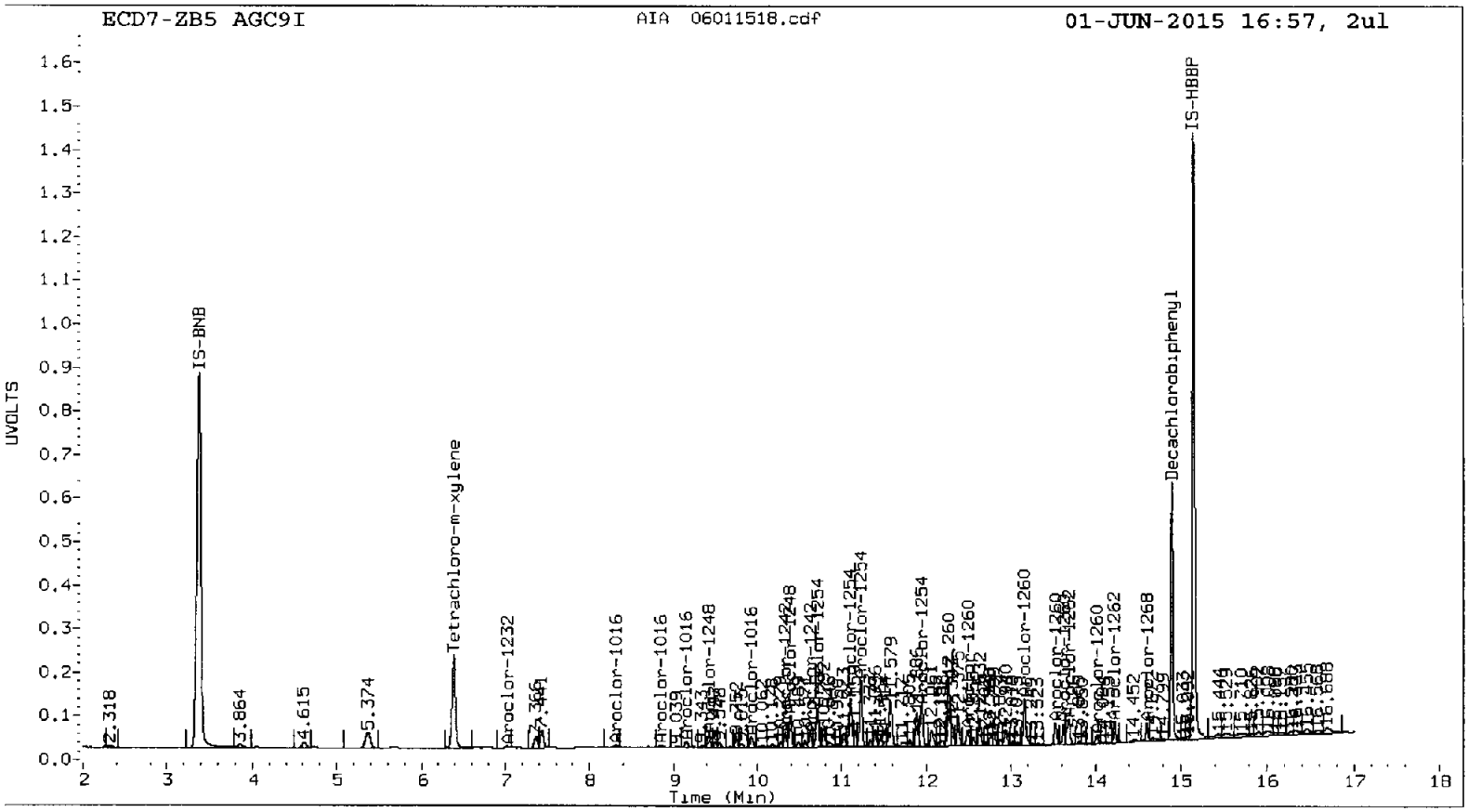
Total Col1Ave (4 peaks): 18.7 Total Col2Ave (4 peaks): 19.7 RPD = 5

Corrected Ave (3 peaks): 14.1 Corrected Ave (3 peaks): 10.3 RPD = 31

Total PCB Area Col1 (6.483 - 14.799) = 10384564 Col1 Total PCB = 0.4 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 38296805 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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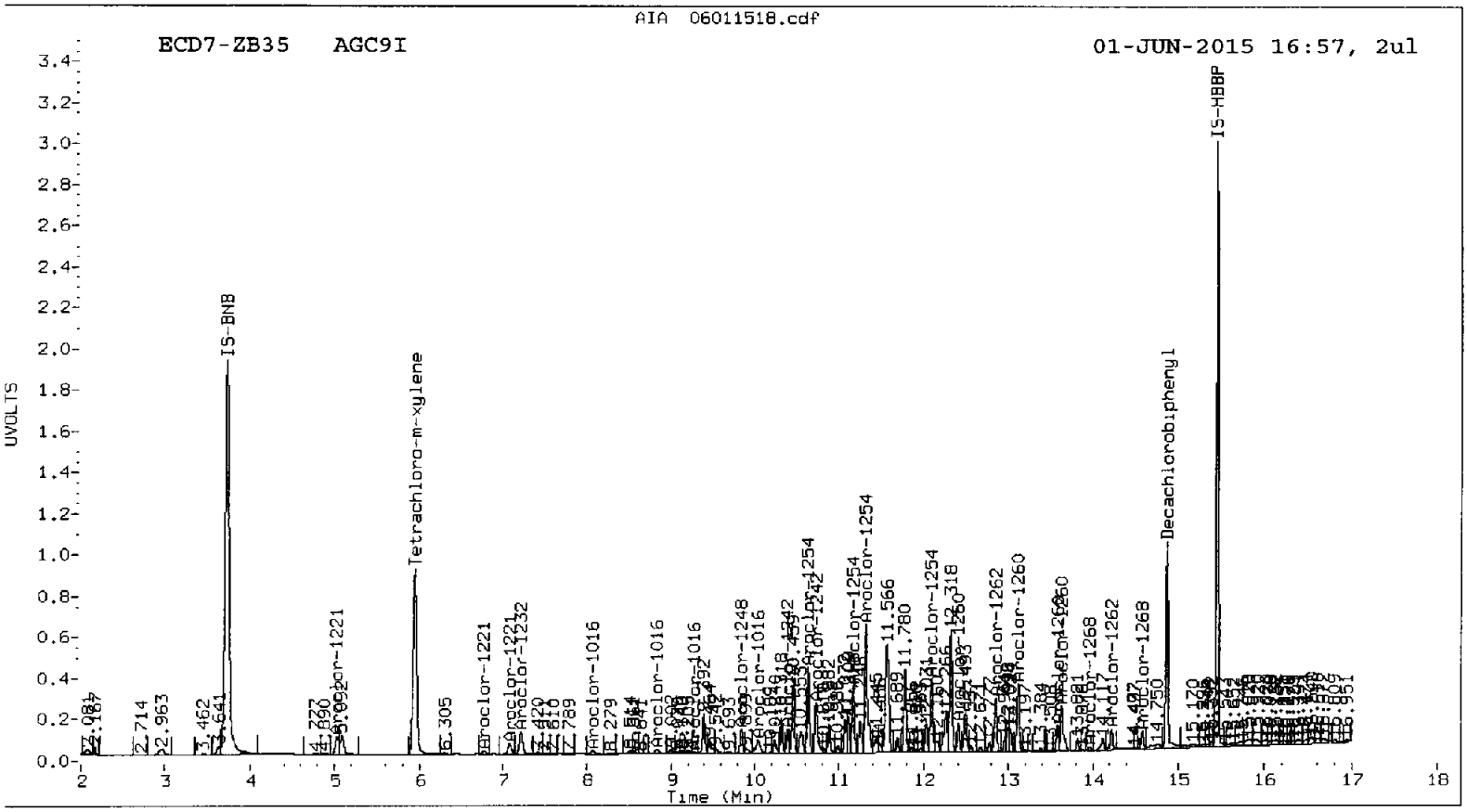
Aroclor-1016
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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Aroclor-1248
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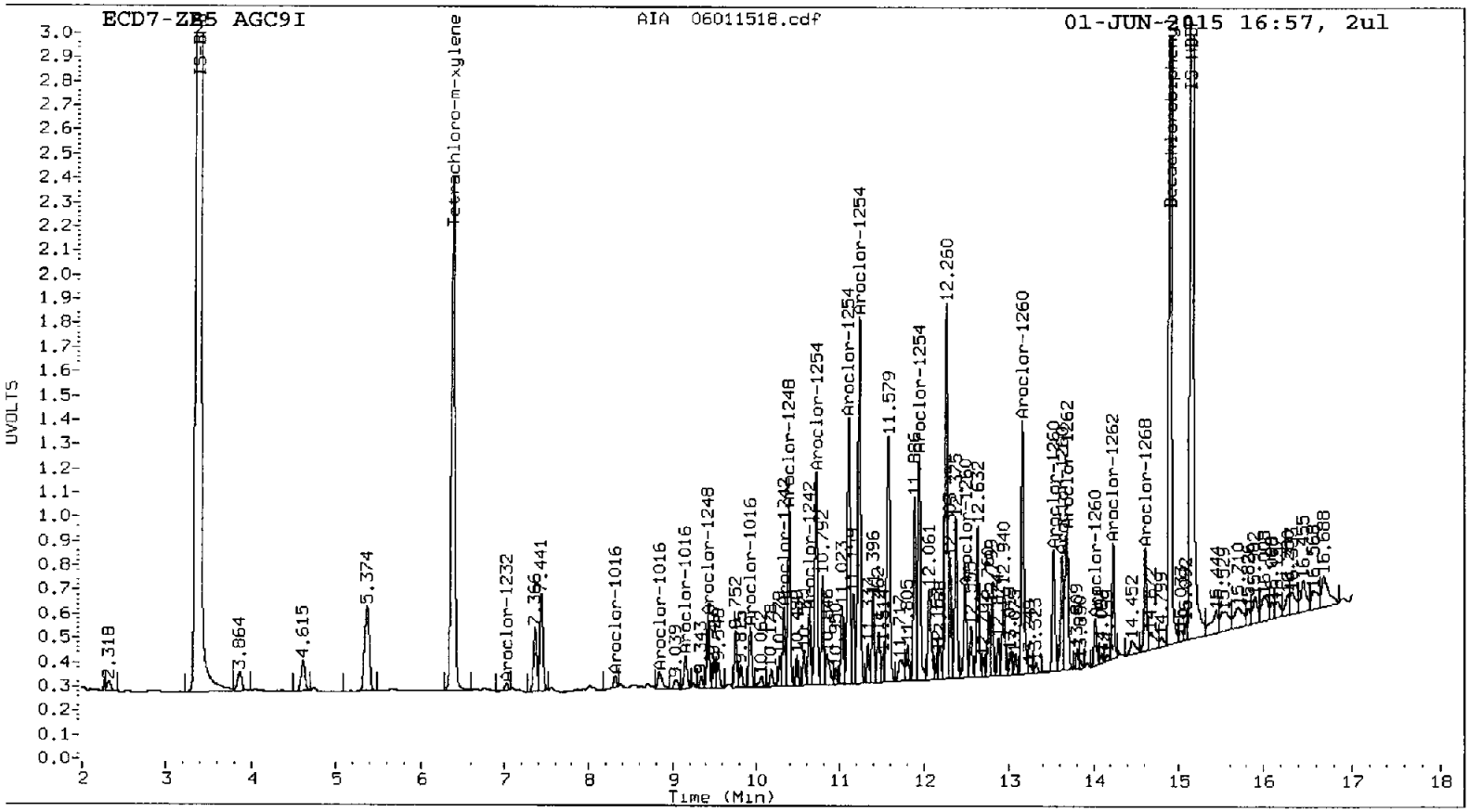
Aroclor-1260
Aroclor-1262
Aroclor-1268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Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
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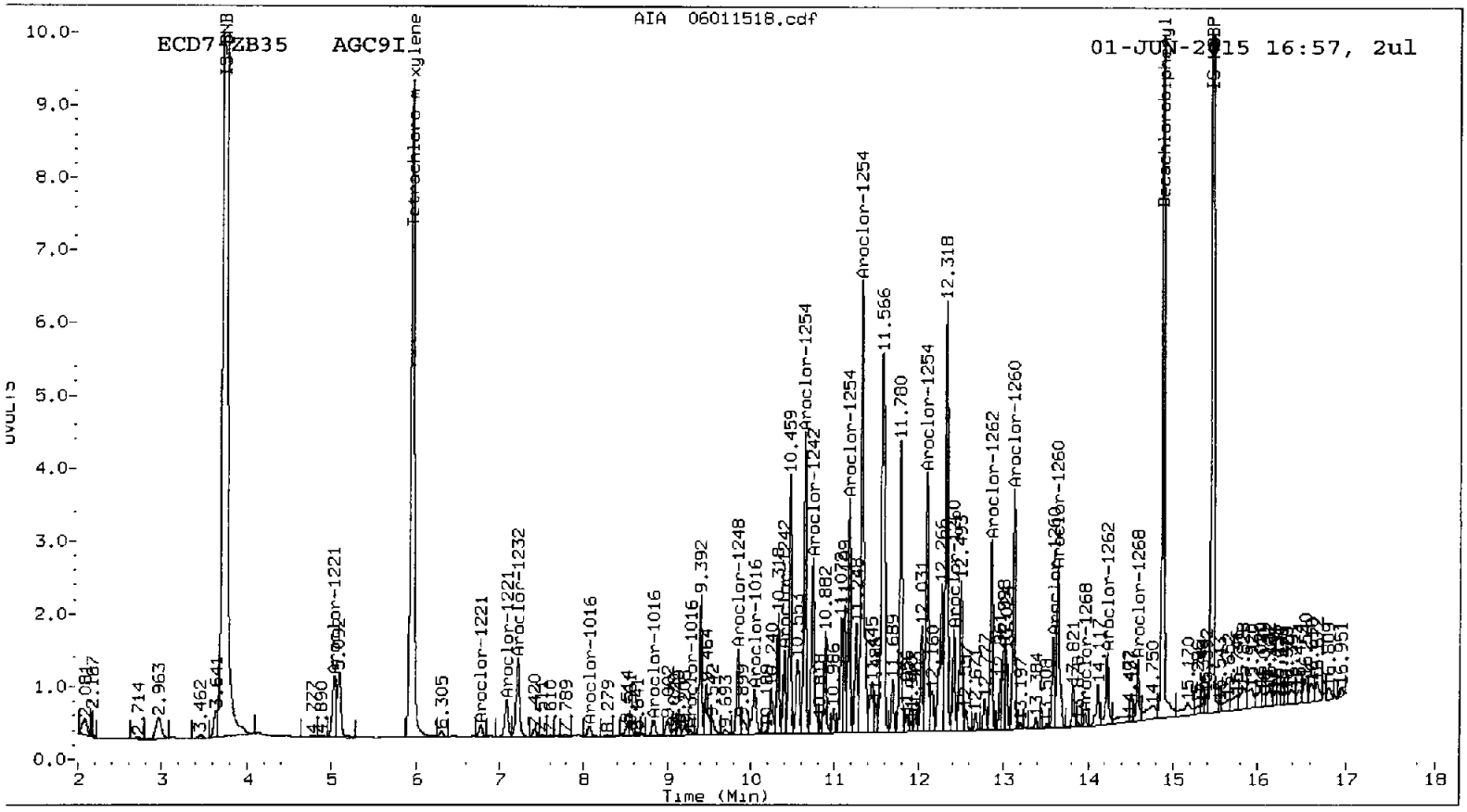
Aroclor-1262
Aroclor-1268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Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011519.d
Data file 2: 20150527.b/0601-2.b/06011519.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9J
Client ID:
Injection Date: 01-JUN-2015 17:18
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.387	0.003	1092424	5.948	0.001	5000489	28.1	27.7	1.4	Tetrachloro-m-xylene
14.900	0.000	2118369	14.872	0.001	3499085	30.1	29.9	0.8	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	70.2	69.2
Decachlorobiphenyl	75.3	74.7

06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5735307	5.2
Hexabromobiphenyl	5633814	5596398	-0.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13389023	2.5
Hexabromobiphenyl	8980422	9715678	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9J

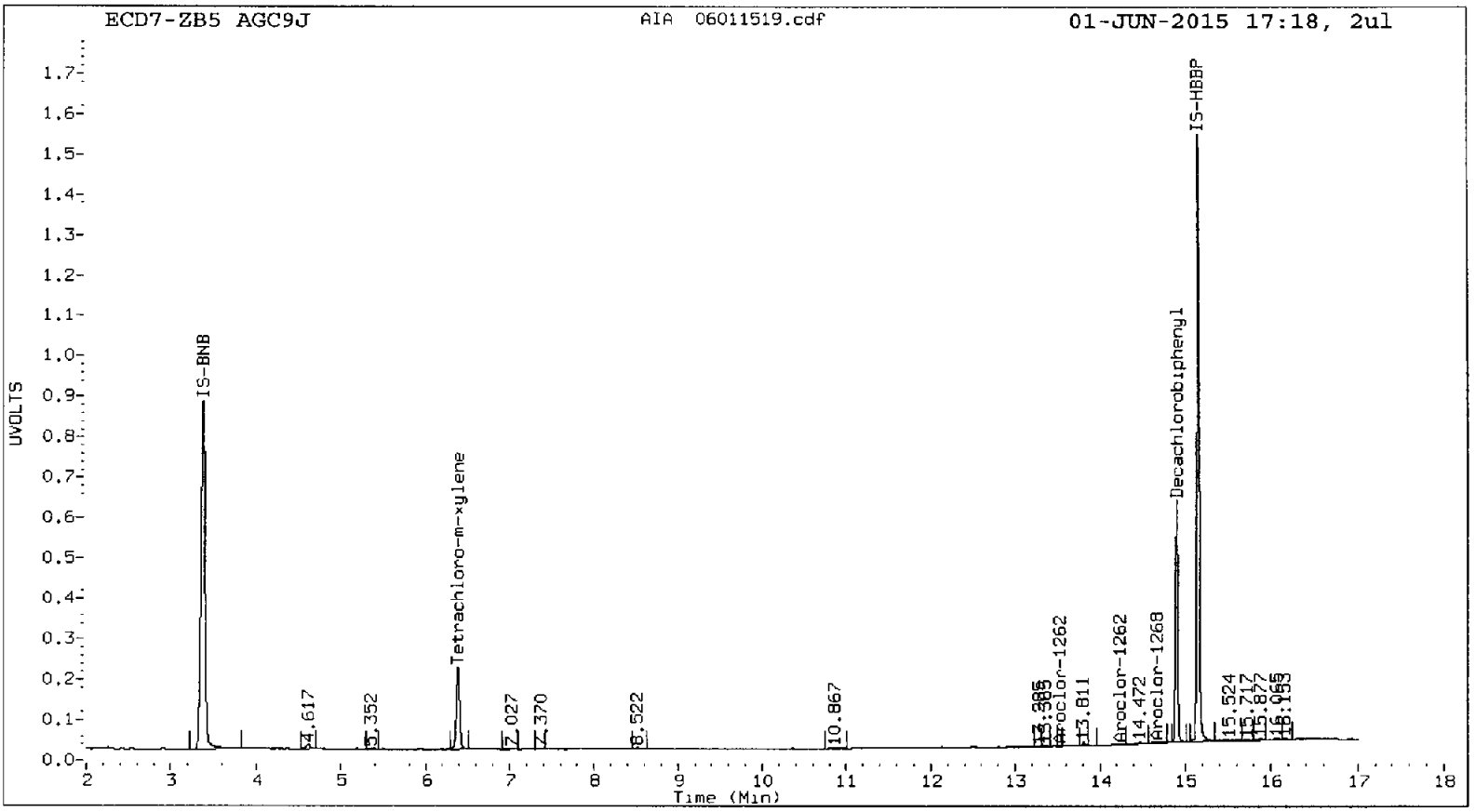
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1221	1	---			0.0	1	5.034	0.016	56521	40.7
Aroclor-1221	2	---			0.0	2	6.782	0.062	79510	34.2
Aroclor-1221	3	---			0.0	3	7.085	0.070	27411	20.9
Aroclor-1221	NS	---			----	4	7.201	0.051	6912	1.7
		Col1Ave: <3 Quant Peaks					Col2Ave: 24.4			
Aroclor-1232	1	---			0.0	1	5.034	0.014	56521	66.8
Aroclor-1232	2	---			0.0	2	7.201	0.048	6912	2.4
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	10.497	0.097	26937	4.3
Aroclor-1248	4	---			0.0	4	10.736	-0.019	8379	1.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1254	1	---			0.0	1	10.643	0.004	13196	1.9
Aroclor-1254	2	---			0.0	2	10.736	0.002	8379	2.5
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	11.317	-0.002	13012	1.1
Aroclor-1254	5	---			0.0	5	12.096	-0.002	3718	0.5
		Col1Ave: <3 Quant Peaks					Col2Ave: 1.5			
Aroclor-1260	1	---			0.0	1	12.414	0.003	35432	4.1
Aroclor-1260	2	---			0.0	2	13.115	-0.002	33689	1.7
Aroclor-1260	3	---			0.0	3	13.582	-0.003	14493	2.4
Aroclor-1260	4	---			0.0	4	13.643	0.008	40204	3.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave: 2.8			
Aroclor-1262	1	---			0.0	1	12.414	0.020	35432	2.3
Aroclor-1262	2	---			0.0	2	12.856	0.020	40693	2.8
Aroclor-1262	3	13.533	0.020	10116	3.5	3	13.115	0.015	33689	1.1
Aroclor-1262	4	---			0.0	4	13.582	0.011	14493	1.1
Aroclor-1262	5	14.230	0.015	17772	4.0	5	14.224	0.012	31886	3.2
		Col1Ave: <3 Quant Peaks					Col2Ave: 2.1			
Aroclor-1268	1	13.533	-0.078	10116	1.2	1	13.582	0.013	14493	0.6
Aroclor-1268	2	---			0.0	2	13.643	0.015	40204	1.9
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	14.666	0.070	56590	1.8	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			

Total PCB Area Col1 (6.483 - 14.799) = 257530 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 1400343 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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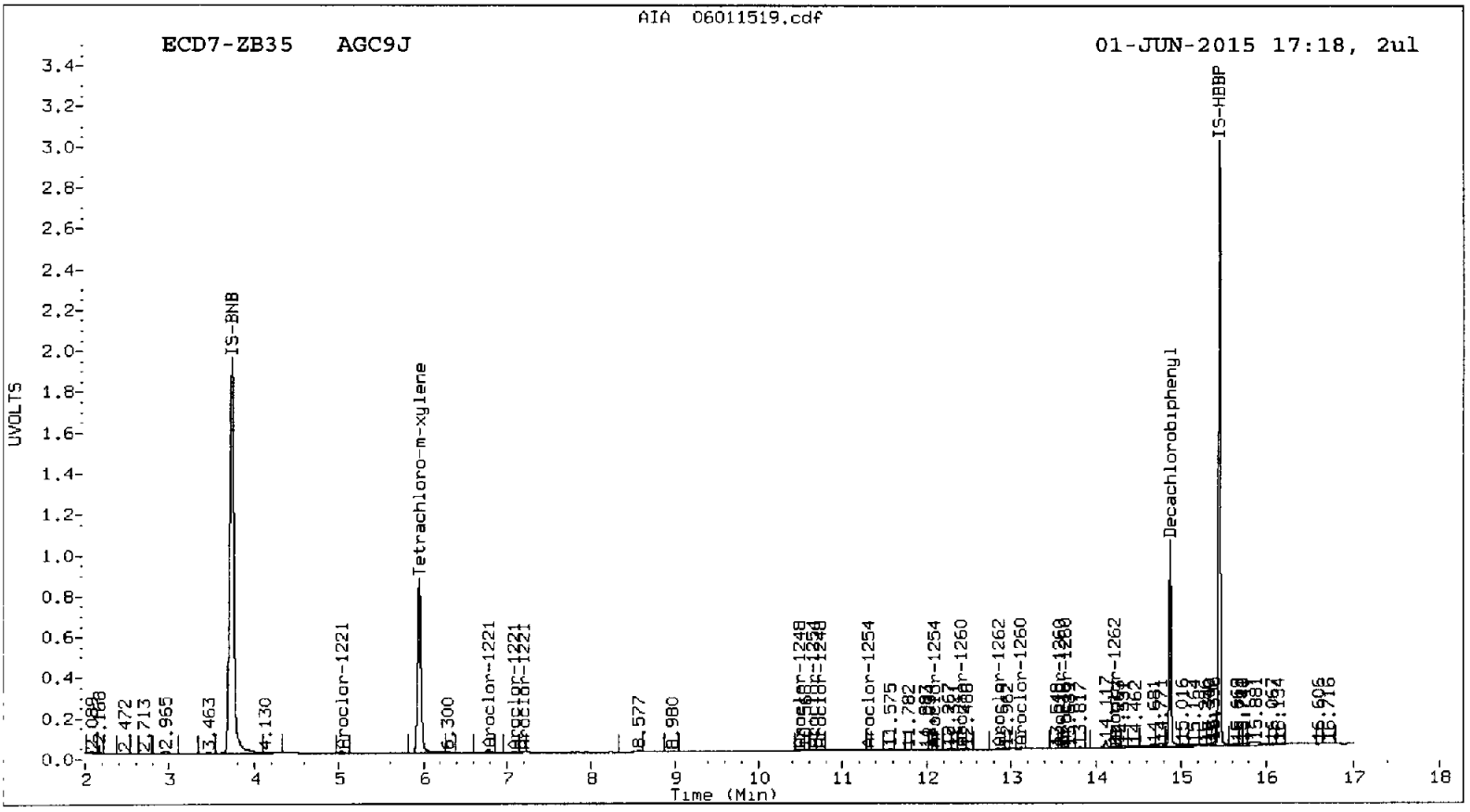
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1262
Aroclor-1268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Tetrachloro-m-xylene
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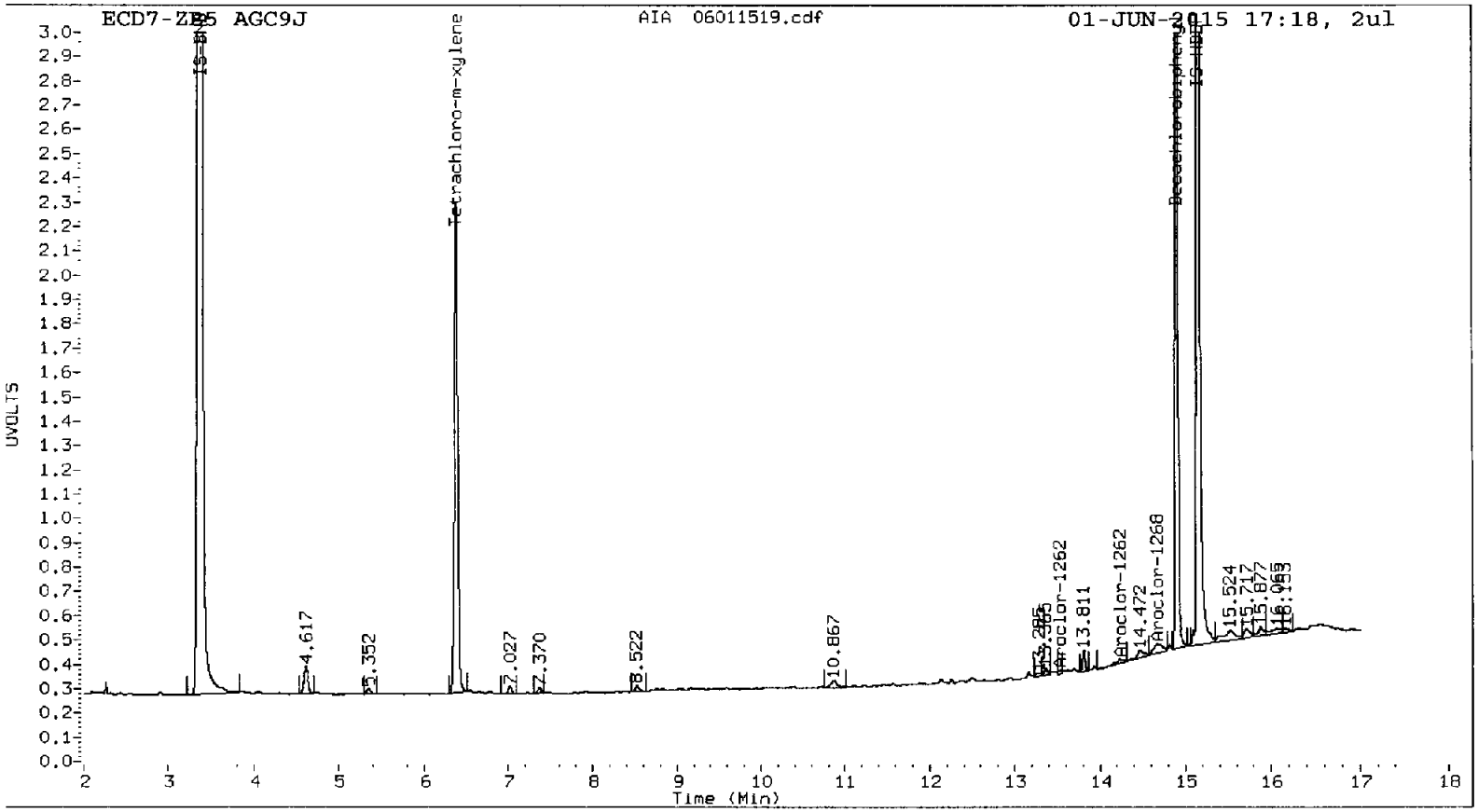
Aroclor-1262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Decachlorobiphenyl
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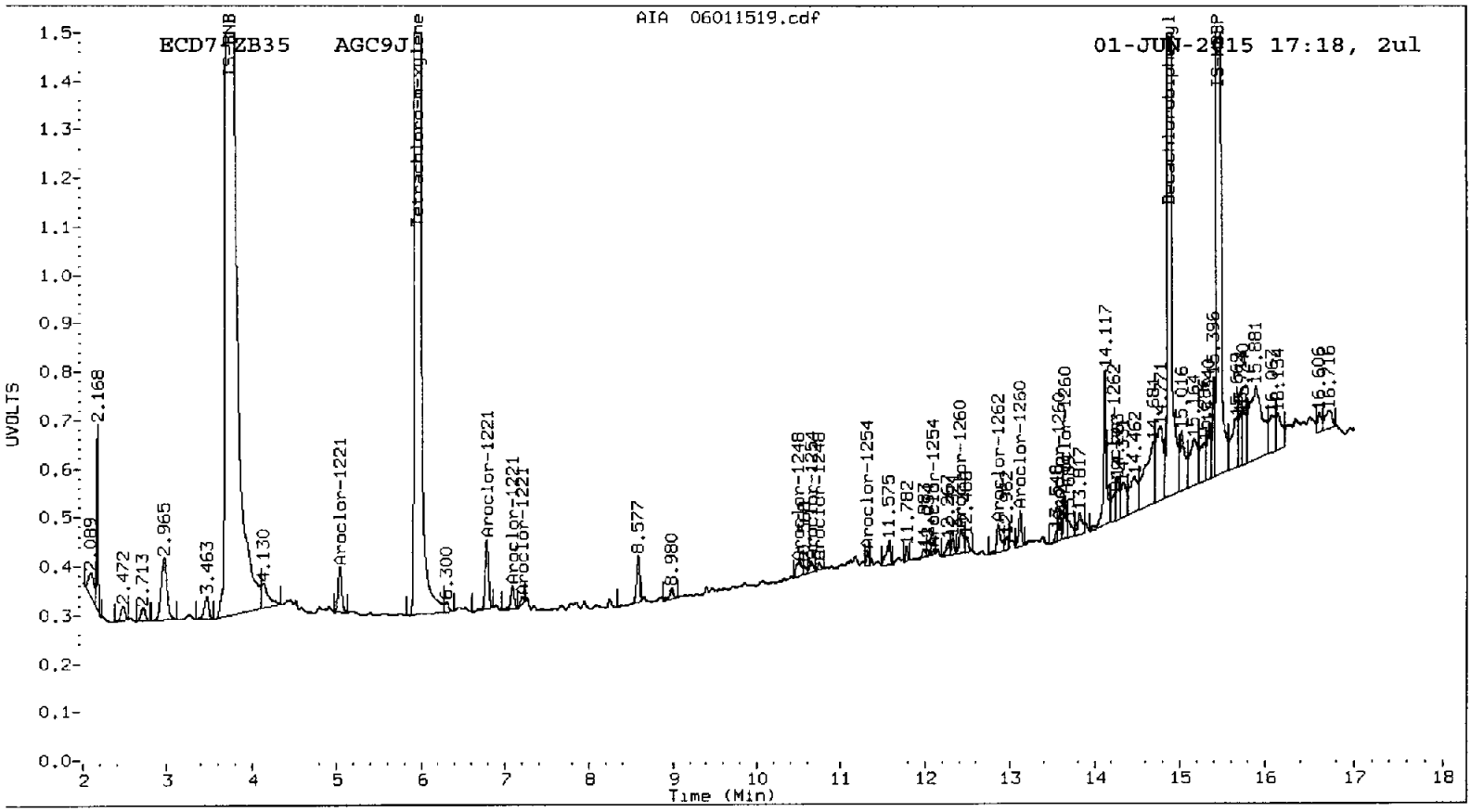
UVOLTS
Time (Min)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Decachlorobiphenyl
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3.463
4.130
Aroclor-1221
6.300
Aroclor-1221
8.577
8.980
Aroclor-1254
11.575
11.782
Aroclor-1262
Aroclor-1260
14.117
14.462
15.016
15.881
16.606
16.916
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011520.d
Data file 2: 20150527.b/0601-2.b/06011520.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9K
Client ID:
Injection Date: 01-JUN-2015 17:40
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.384	0.000	1111300	5.947	-0.001	5209904	27.5	27.5	0.1	Tetrachloro-m-xylene
14.899	-0.001	2353402	14.871	0.000	3735973	31.2	29.2	6.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	68.8	68.8
Decachlorobiphenyl	77.9	72.9

M 06/02/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5951278	9.2
Hexabromobiphenyl	5633814	6004275	6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	14037577	7.5
Hexabromobiphenyl	8980422	10625260	18.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 - 8082

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.780	0.060	66855	27.4
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.196	0.046	18364	4.4
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	10.700	0.061	21295	2.9
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	11.994	-0.104	22192	3.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	12.454	0.042	18953	2.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	13.549	-0.036	51800	7.7
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	12.454	0.059	18953	1.1
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	13.549	-0.022	51800	3.7
Aroclor-1262	5	---			0.0	5	14.263	0.050	100153	9.1
	Col1Ave: <3 Quant Peaks					Col2Ave: 4.6				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

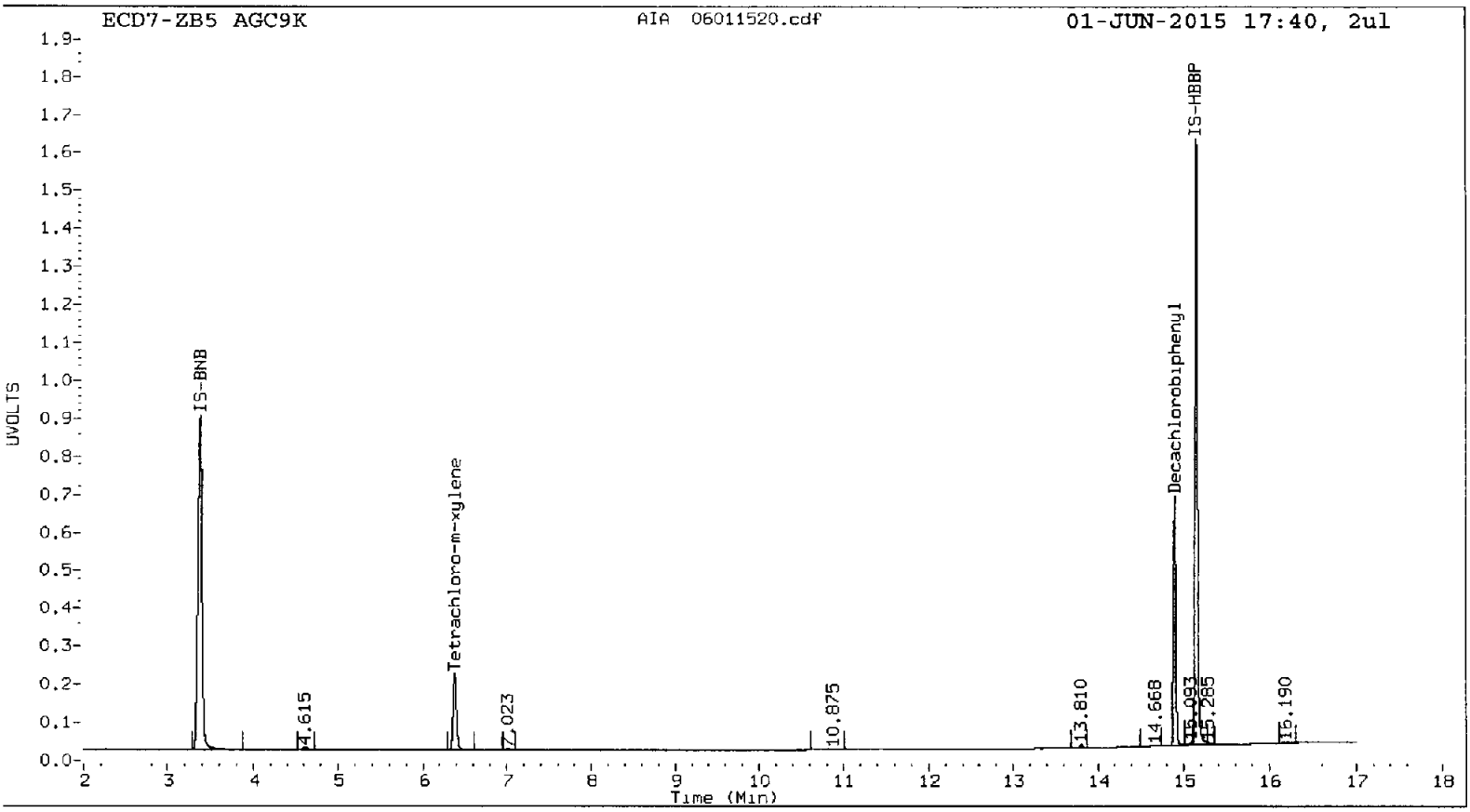
Total PCB Area Col1 (6.483 - 14.799) = 94318 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 780714 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

AGC9:9951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01-JUN-2015 17:40, 2ul
UVOLTS
Time (Min)
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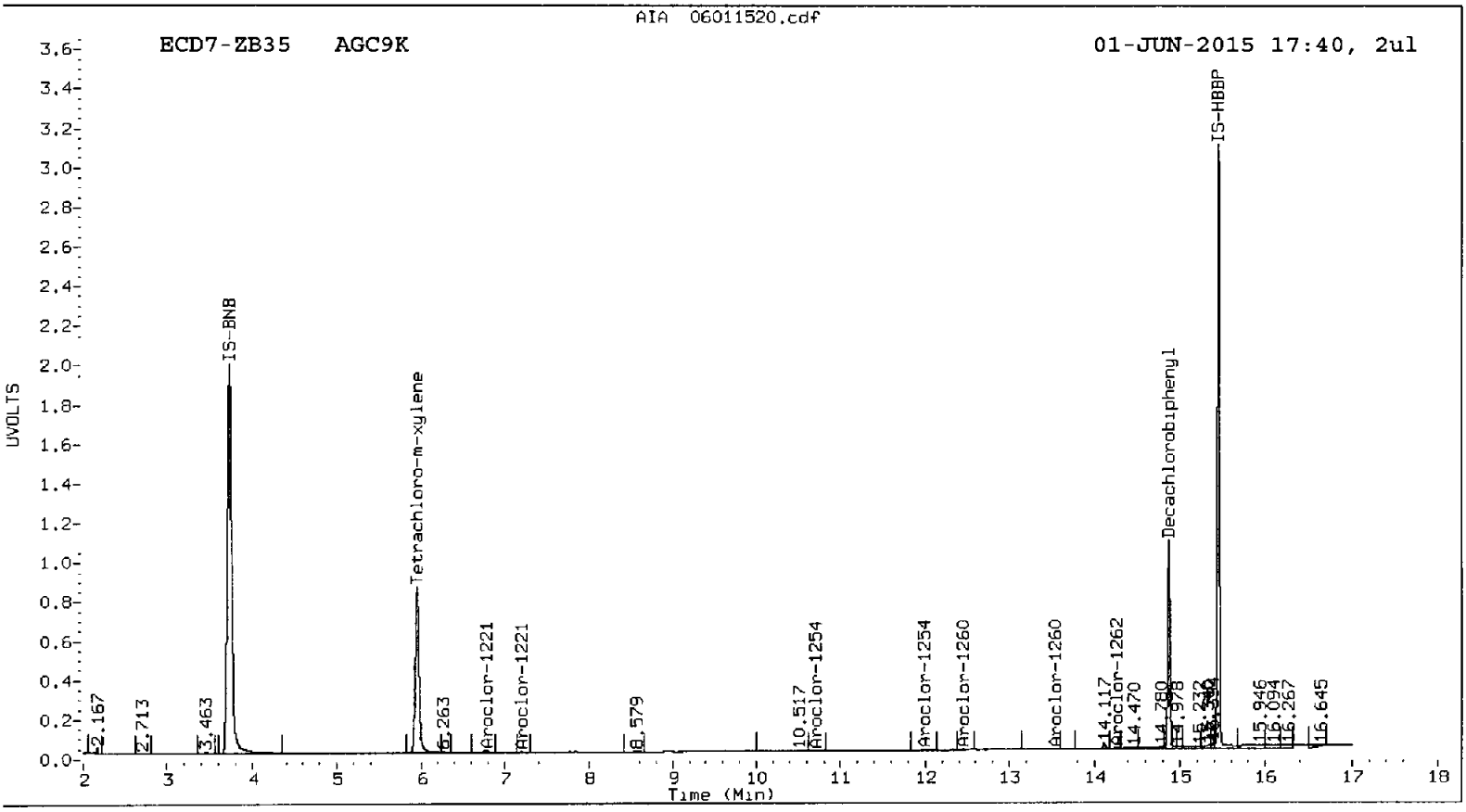
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
4.615
7.023
10.875
13.810
14.668
15.093
15.285
16.190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Time (Min)
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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1221
Aroclor-1221
Aroclor-1254
Aroclor-1254
Aroclor-1260
Aroclor-1260
Aroclor-1262
2.167
2.713
3.463
6.263
8.579
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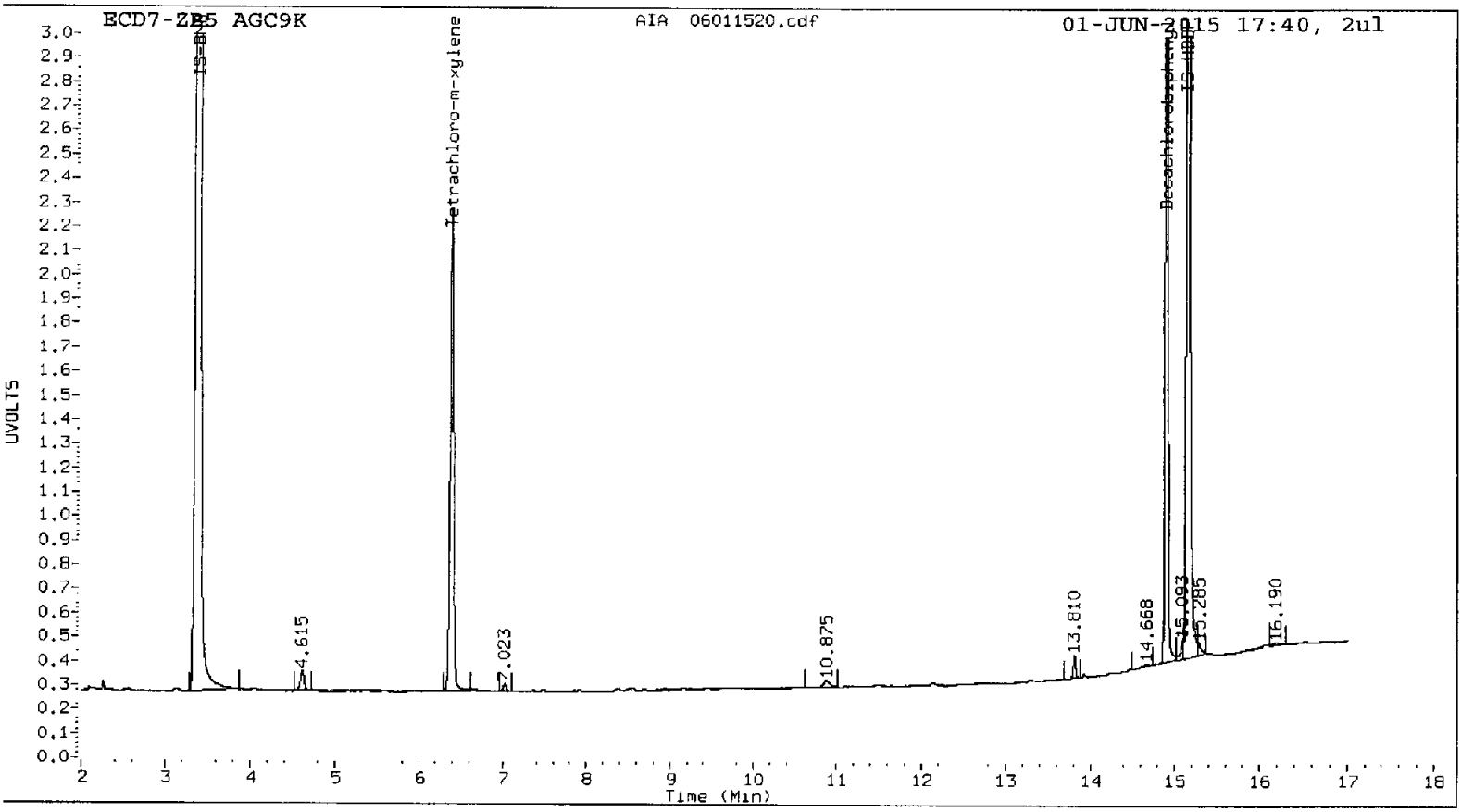
14.978
15.232
15.846
16.094
16.267
16.645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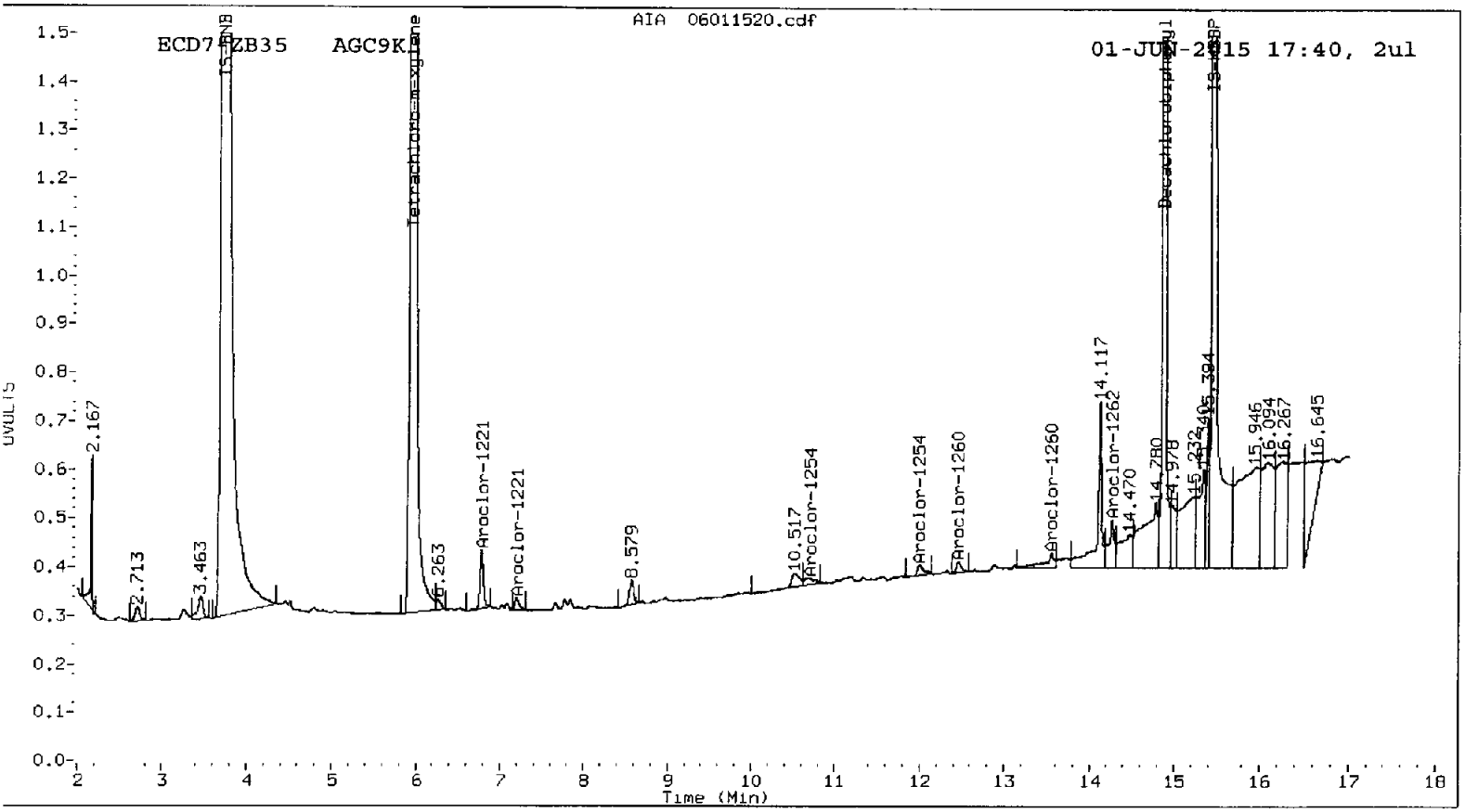
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-BBP
4.615
7.023
10.875
13.810
14.668
15.093
15.285
16.190
UVOLTS
Time (Min)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ECD7-ZB35 AGC9K
01-JUN-2015 17:40, 2ul
IS-DNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-DBP
2.167
2.713
3.463
6.263
Aroclor-1221
Aroclor-1221
8.579
10.517
Aroclor-1254
Aroclor-1254
Aroclor-1260
Aroclor-1260
14.117
Aroclor-1262
14.470
14.780
14.978
15.232
15.394
15.946
16.094
16.267
16.645
UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011521.d
Data file 2: 20150527.b/0601-2.b/06011521.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 01-JUN-2015 18:01
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1393621	5.949	0.001	6535571	37.4	37.0	1.0	Tetrachloro-m-xylene
14.899	0.000	2673316	14.871	0.000	4028020	39.1	35.8	8.8	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	93.5	92.6
Decachlorobiphenyl	97.8	89.6

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5497704	0.9
Hexabromobiphenyl	5633814	5431715	-3.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13088186	0.2
Hexabromobiphenyl	8980422	9321958	3.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

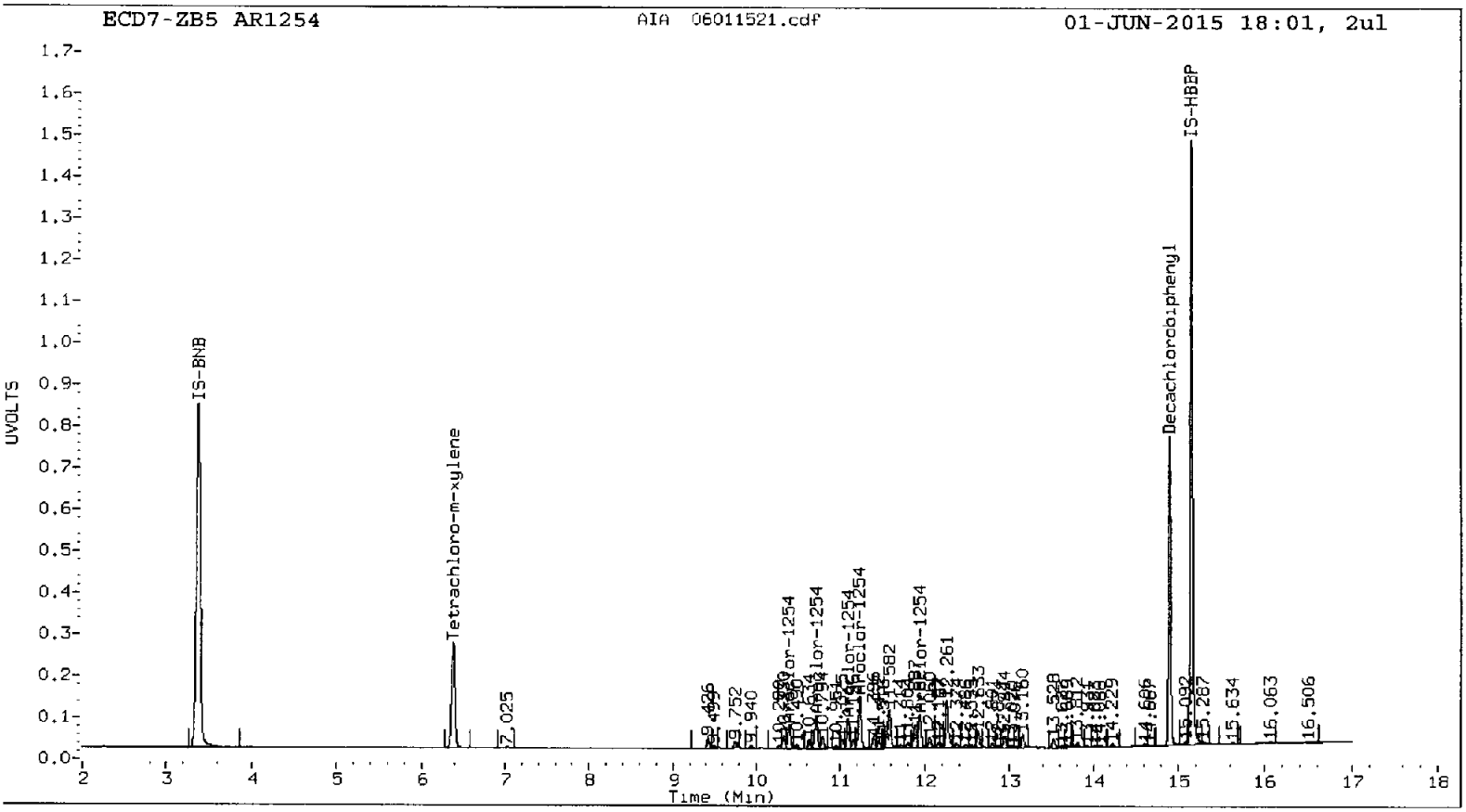
		ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.396	0.000	250964	249.9	1	10.639	0.000	1675407	243.0
Aroclor-1254	2	10.714	0.000	364590	254.1	2	10.734	0.000	814316	249.2
Aroclor-1254	3	11.094	0.000	297028	255.2	3	11.168	0.000	1306168	242.4
Aroclor-1254	4	11.232	0.000	561606	255.7	4	11.319	0.000	2692141	234.3
Aroclor-1254	5	11.943	0.000	402880	255.9	5	12.098	0.000	1653817	240.9
Total Col1Ave (5 peaks):					254.2	Total Col2Ave (5 peaks):				242.0 RPD = 5
Corrected Ave (4 peaks):					253.7	Corrected Ave (4 peaks):				240.1 RPD = 6
CalAmt %D:					1.7	CalAmt %D:				-3.2

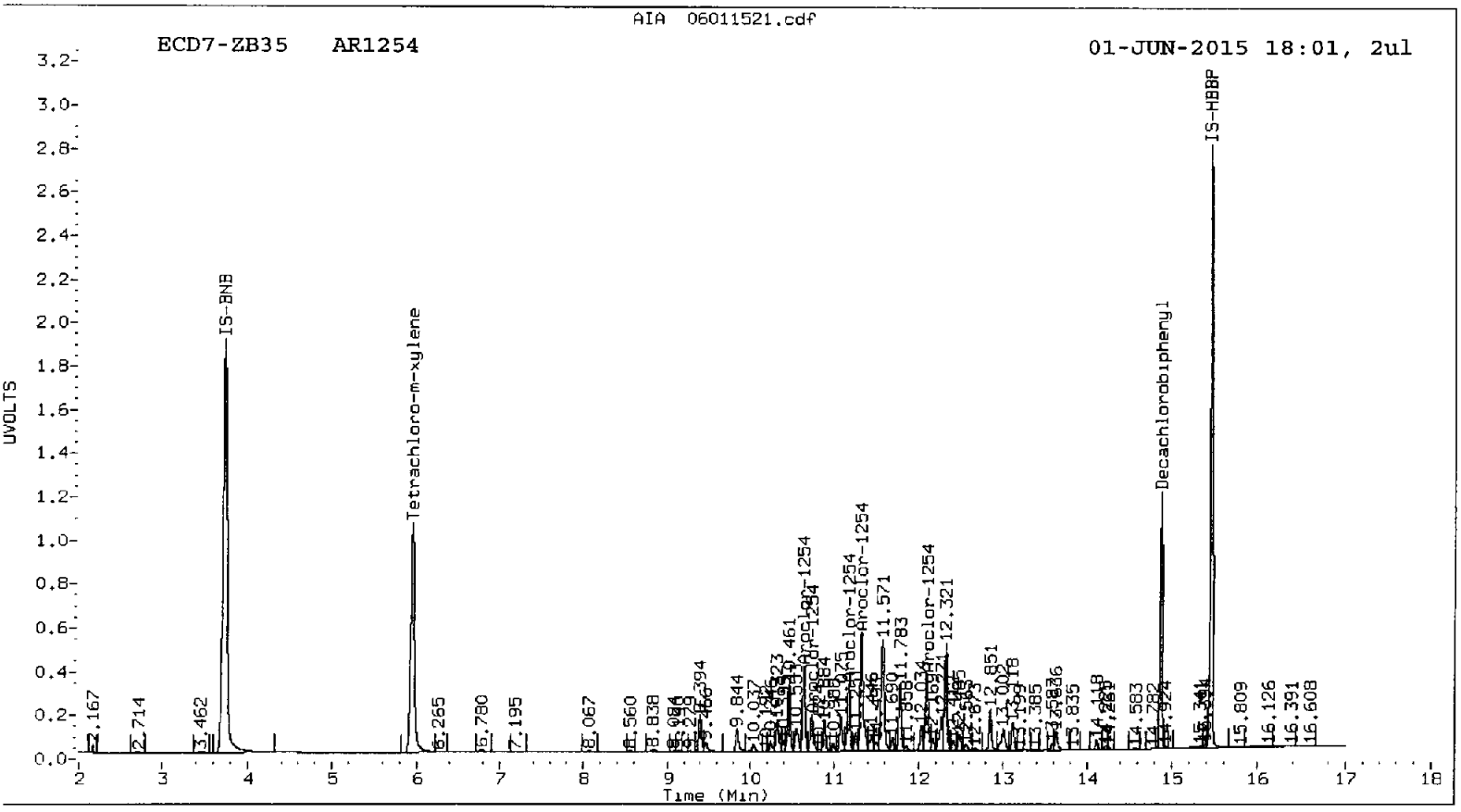
Total PCB Area Col1 (6.483 - 14.799) = 5660140 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 27540040 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1254
AIA 06011521.cdf
01-JUN-2015 18:01, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP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ECD7-ZB35 AR1254
01-JUN-2015 18:01, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0601-1.b/06011522.d
Data file 2: 20150527.b/0601-2.b/06011522.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 01-JUN-2015 18:23
Report Date: 06/02/2015 07:09
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.385	0.001	1406027	5.948	0.000	6532231	40.3	39.1	3.0	Tetrachloro-m-xylene
14.899	-0.001	2735415	14.872	0.000	4098500	42.3	38.1	10.4	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	100.8	97.8
Decachlorobiphenyl	105.8	95.3

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5143320	-5.6
Hexabromobiphenyl	5633814	5141482	-8.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	12379324	-5.2
Hexabromobiphenyl	8980422	8915634	-0.7

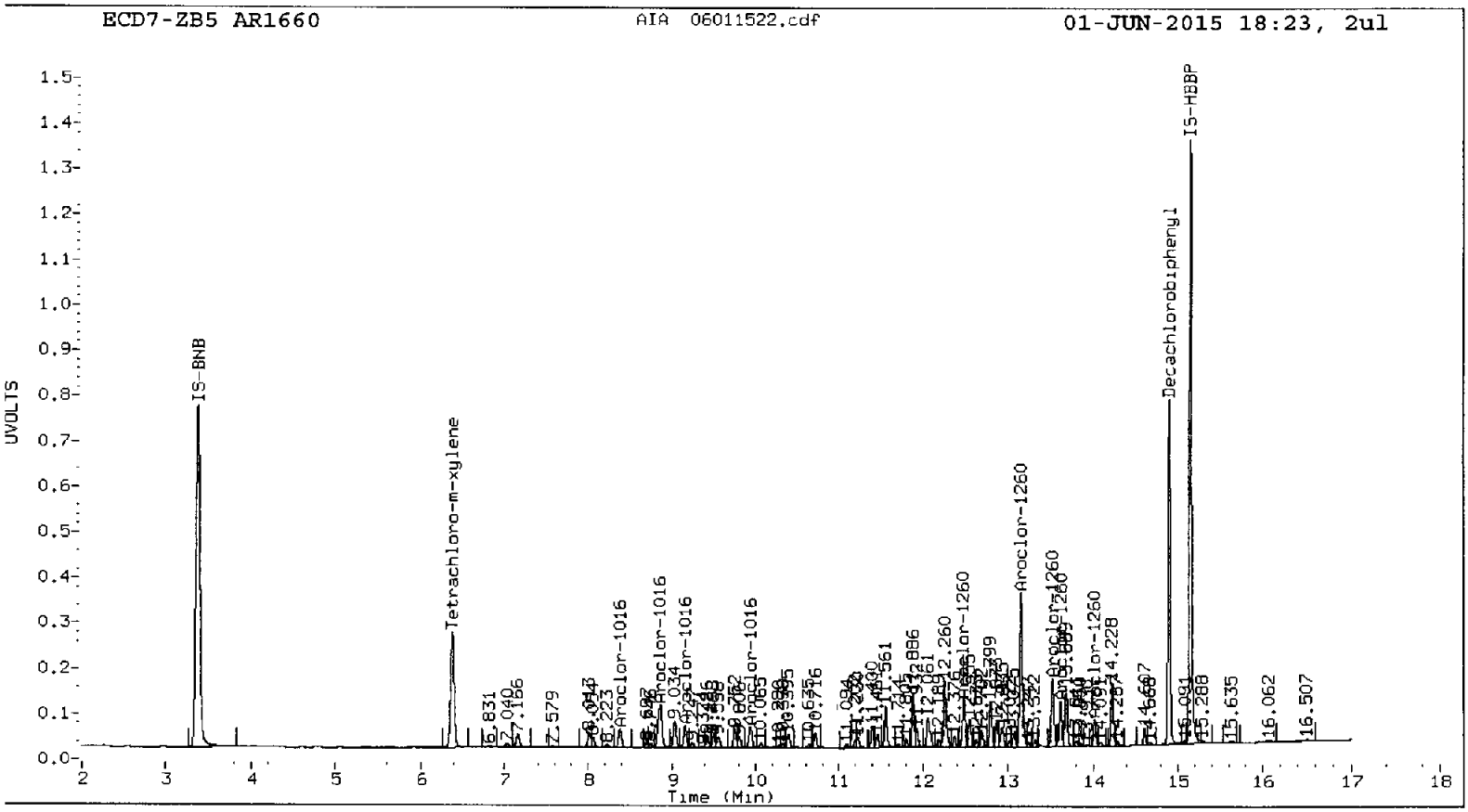
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.384	0.001	211749	256.0	1	8.068	0.001	1679111	247.5
Aroclor-1016	2	8.865	0.000	640623	252.7	2	8.841	0.001	3473088	241.1
Aroclor-1016	3	9.160	0.001	228485	263.5	3	9.277	0.001	923223	248.4
Aroclor-1016	4	9.940	0.001	238700	259.4	4	10.036	0.001	607401	231.3
Total Col1Ave (4 peaks):					257.9	Total Col2Ave (4 peaks):				242.1 RPD = 6
Corrected Ave (3 peaks):					256.0	Corrected Ave (3 peaks):				239.9 RPD = 6
CalAmt %D:					3.1	CalAmt %D:				-3.2
Aroclor-1260	1	12.487	0.000	455528	271.6	1	12.413	0.002	1852508	231.7
Aroclor-1260	2	13.160	0.000	1495209	275.4	2	13.117	0.000	4347017	233.4
Aroclor-1260	3	13.528	0.000	683356	270.9	3	13.585	0.000	1279904	226.4
Aroclor-1260	4	13.626	-0.001	415895	273.3	4	13.636	0.001	2830532	230.7
Aroclor-1260	5	14.023	-0.001	229339	274.2	NS	---			----
Total Col1Ave (5 peaks):					273.1	Total Col2Ave (4 peaks):				230.6 RPD = 17
Corrected Ave (4 peaks):					272.5	Corrected Ave (3 peaks):				229.6 RPD = 17
CalAmt %D:					9.2	CalAmt %D:				-7.8

Total PCB Area Col1 (6.483 - 14.799) = 12532598 Col1 Total PCB = 0.6 ppm*

Total PCB Area Col2 (6.048 - 14.771) = 51536507 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical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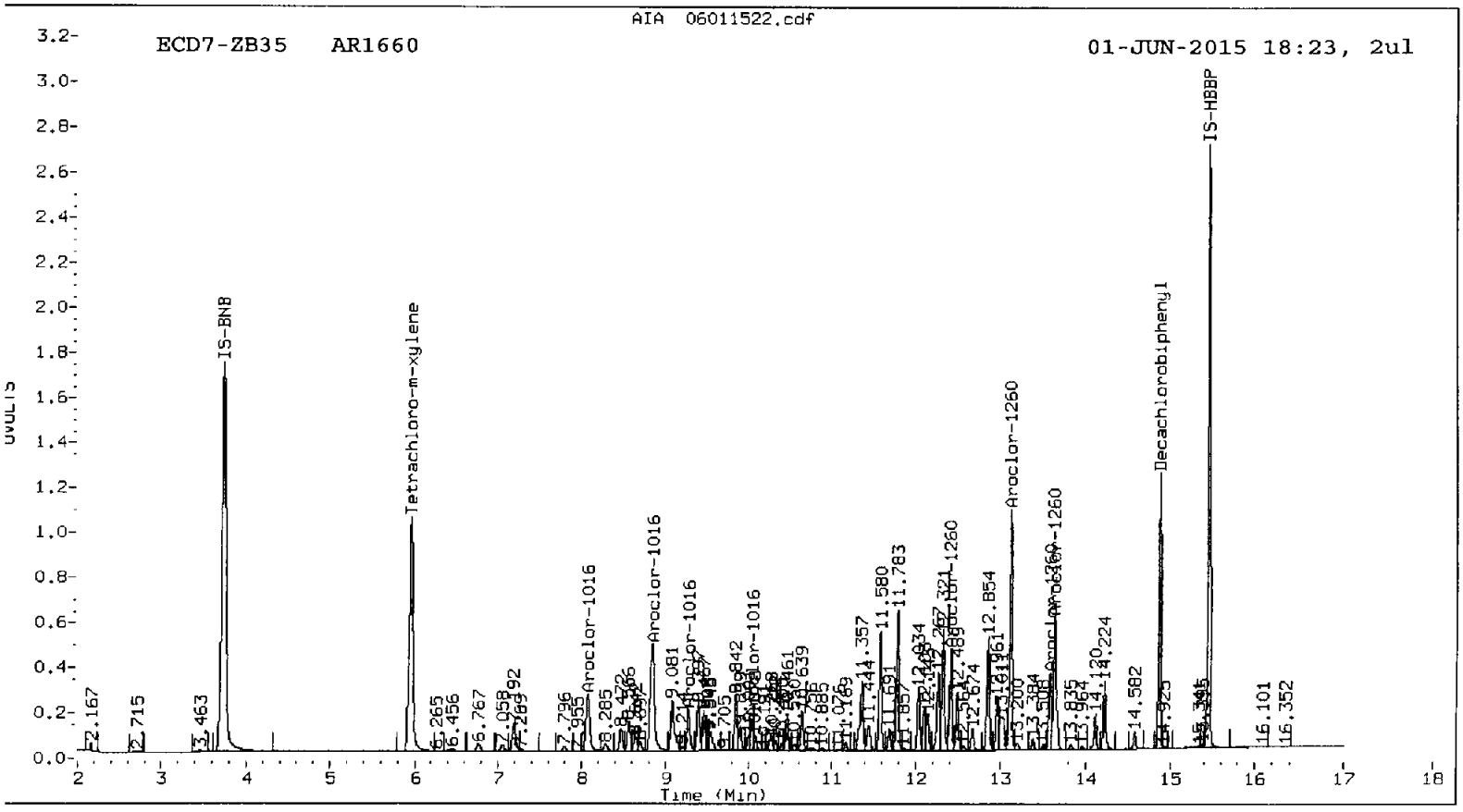
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: HGAB/AGC9 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00033 Analysis Start Date: 05/28/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ___	Method Blank in Control?	Y / N / ✓
Retention times within Windows?	Y / N / ✓	BS/BSD Recovery in Control?	Y / N / ✓
ICV/CCV met %D Criteria?	Y / N / ✓	BS/BSD RPD ≤30%?	NA / <5%
Surrogate Recovery in Control?	Y / N / ✓	MS / MSD Recovery in Control?	NA / N / ✓
Internal STD. within 50-200%?	NA / Y / N / ✓	MS / MSD RPD ≤30%?	NA / ✓
Manual Integrations?	Y / N / ✓	Samples Diluted?	Y / N / ✓
Integration Summary?	Y / N / ✓	Special Analysis Request?	Y / N / ✓

Detail problems, corrective actions and/or other pertinent information below

(Review 1) Analyst: [signature] **Date:** 05/29/15

(Review 2) Reviewer: [signature] **Date:** 6/1/15

Analytical Resources Inc.: Organics Instrument Log

ECD-7 Serial No.: US00003975

Date: 05/28/15 Analysis: PCB Analyst: [illegible]

Column 1 Serial No.: 213734 Column Type: ZB5

Column 2 Serial No.: 153388 Column Type: ZB35

GC Method: PCB ICal Date: 05/04/15 Injection Volume: 2µl

IS	Ical/Ccal	ICV
C971	C4641 C4646 D88-D92	D962-D963

Document All Maintenance Tasks In Element

GC LOG SUMMARY FOR DATABATCH - /chem2/ecd7.i/201505

	Inject Date/Time	Filename	DF	LabID
1	28-MAY-2015 17:14	05281501.d	1	0.1 PPM DDT
2	28-MAY-2015 17:36	05281502.d	1	DDT BD
3	28-MAY-2015 17:57	05281503.d	1	AR1254
4	28-MAY-2015 18:18	05281504.d	1	AR1660
5	28-MAY-2015 18:40	05281505.d	1	AGQ7MBW1
6	28-MAY-2015 19:01	05281506.d	1	AGQ7LCSW1
7	28-MAY-2015 19:23	05281507.d	1	AGQ7LCSDW1
8	28-MAY-2015 19:44	05281508.d	1	AGQ7A
9	28-MAY-2015 20:05	05281509.d	1	AGC9MBS1
10	28-MAY-2015 20:27	05281510.d	1	AGCLCSS1
11	28-MAY-2015 20:48	05281511.d	1	AGC9A
12	28-MAY-2015 21:10	05281512.d	1	AGC9B
13	28-MAY-2015 21:31	05281513.d	1	AGC9C
14	28-MAY-2015 21:53	05281514.d	1	AR1248
15	28-MAY-2015 22:14	05281515.d	1	AR1660
16	28-MAY-2015 22:35	05281516.d	1	AGC9D
17	28-MAY-2015 22:57	05281517.d	1	AGC9E
18	28-MAY-2015 23:18	05281518.d	1	AGC9F
19	28-MAY-2015 23:40	05281519.d	1	AGC9G
20	29-MAY-2015 00:01	05281520.d	1	AGC9H
21	29-MAY-2015 00:22	05281521.d	1	AGC9HMS
22	29-MAY-2015 00:44	05281522.d	1	AGC9HMSD
23	29-MAY-2015 01:05	05281523.d	1	AGC9I
24	29-MAY-2015 01:27	05281524.d	1	AGC9J
25	29-MAY-2015 01:48	05281525.d	1	AGC9K
26	29-MAY-2015 02:10	05281526.d	1	AR1242
27	29-MAY-2015 02:31	05281527.d	1	AR1660

06/02/15

e all entries legible.
ıtenance Tasks In Element

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

ARI Job No.: AR12 Method: PCB1.m Instrument: ecd7.i Date: 28-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0058	05271530.d	AR1254		1	NO MANUAL INTEGRATION
0119	05271531.d	AR1660		1	NO MANUAL INTEGRATION
0141	05271532.d	AGG2MBS1	AGG2MBS1	1	NO MANUAL INTEGRATION
0202	05271533.d	AGG2LCSS1	AGG2LCSS1	1	NO MANUAL INTEGRATION
0223	05271534.d	AGF9A	CS-2015051	1	NO MANUAL INTEGRATION
0245	05271535.d	AGF9B	HL-2015051	1	NO MANUAL INTEGRATION
0306	05271536.d	AGF8A	CS-2015050	1	NO MANUAL INTEGRATION
0328	05271537.d	AGF8B	HL-2015050	1	NO MANUAL INTEGRATION
0349	05271538.d	AGG2A	NTS2-05181	1	NO MANUAL INTEGRATION
0410	05271539.d	AGG2B	ST7-051815	1	NO MANUAL INTEGRATION
0432	05271540.d	AGG2C	7th-ST1-05	1	NO MANUAL INTEGRATION
0453	05271541.d	AGG2D	HP-ST6-051	1	NO MANUAL INTEGRATION
0515	05271542.d	AR1248		1	NO MANUAL INTEGRATION
0536	05271543.d	AR1660		1	NO MANUAL INTEGRATION
0557	05271544.d	AGA8MBS1	AGA8MBS1	1	NO MANUAL INTEGRATION
0619	05271545.d	AGA8LCSS1	AGA8LCSS1	1	NO MANUAL INTEGRATION
0640	05271546.d	AGA8A	SDP-10(13.	1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0702	05271547.d	AGA8B	SDP-10(15.	1	NO MANUAL INTEGRATION
0723	05271548.d	AGA8C	SDP-10(16.	1	NO MANUAL INTEGRATION
0745	05271549.d	AGA8D	SDP-09(2.5	1	NO MANUAL INTEGRATION
0806	05271550.d	AGA8E	SDP-08(12.	1	NO MANUAL INTEGRATION
0827	05271551.d	AGA8F	SDP-07(1.5	1	NO MANUAL INTEGRATION
0849	05271552.d	AGA8FMS	SDP-07(1.5	1	NO MANUAL INTEGRATION
0910	05271553.d	AGA8FMSD	SDP-07(1.5	1	NO MANUAL INTEGRATION
0932	05271554.d	AR1242		1	NO MANUAL INTEGRATION
0953	05271555.d	AR1660		1	NO MANUAL INTEGRATION
1014	05271556.d	AGA8G	SDP-07(8.5	1	NO MANUAL INTEGRATION
1036	05271557.d	AGA8H	SDP-06(12.	1	NO MANUAL INTEGRATION
1057	05271558.d	AGA8I	SDP-06(10.	1	NO MANUAL INTEGRATION
1119	05271559.d	AGA8MBW1		1	NO MANUAL INTEGRATION
1140	05271560.d	AGA8LCSW1		1	NO MANUAL INTEGRATION
1202	05271561.d	AGA8LCSDW1		1	NO MANUAL INTEGRATION
1223	05271562.d	AGA8J		1	NO MANUAL INTEGRATION
1245	05271563.d	AGC9L		1	NO MANUAL INTEGRATION
1306	05271564.d	AR1254		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/ecd7.i/20150527.b/0527-1.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1328	05271565.d	AR1660		1	NO MANUAL INTEGRATION

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271554.d
Data file 2: 20150527.b/0527-2.b/05271554.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1242
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1242
Client ID:
Injection Date: 28-MAY-2015 09:32
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.000	1392769	5.912	-0.001	6521098	37.9	36.9	2.6	Tetrachloro-m-xylene
14.890	0.000	2557488	14.863	0.001	4240986	38.2	38.2	0.0	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
2 Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	94.7	92.3
Decachlorobiphenyl	95.6	95.6

JK 05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5420555	-0.5
Hexabromobiphenyl	5633814	5318139	-5.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13103463	0.3
Hexabromobiphenyl	8980422	9200397	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1242	1	8.834	0.000	496244	253.8	1	8.033	0.000	1319265	250.3
Aroclor-1242	2	9.129	0.000	177214	253.1	2	8.810	-0.001	2755213	247.6
Aroclor-1242	3	10.305	0.000	164508	252.2	3	10.375	-0.001	940242	242.6
Aroclor-1242	4	10.608	0.000	248507	254.3	4	10.734	0.000	1147685	243.5

Total Col1Ave (4 peaks): 253.3 Total Col2Ave (4 peaks): 246.0 RPD = 3

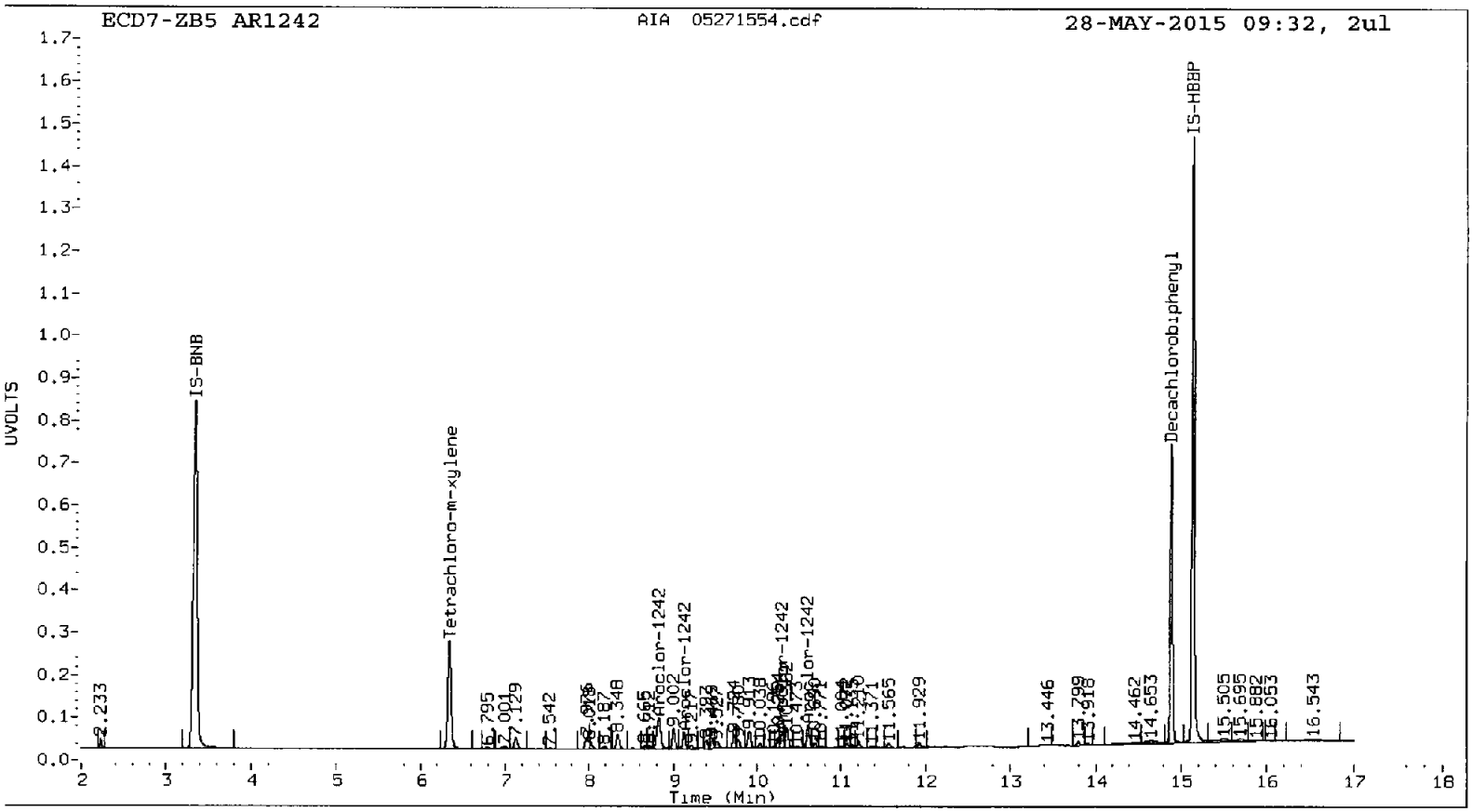
Corrected Ave (3 peaks): 253.0 Corrected Ave (3 peaks): 244.6 RPD = 3

CalAmt %D: 1.3 CalAmt %D: -1.6

Total PCB Area Col1 (6.447 - 14.791) = 3891082 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 20851001 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical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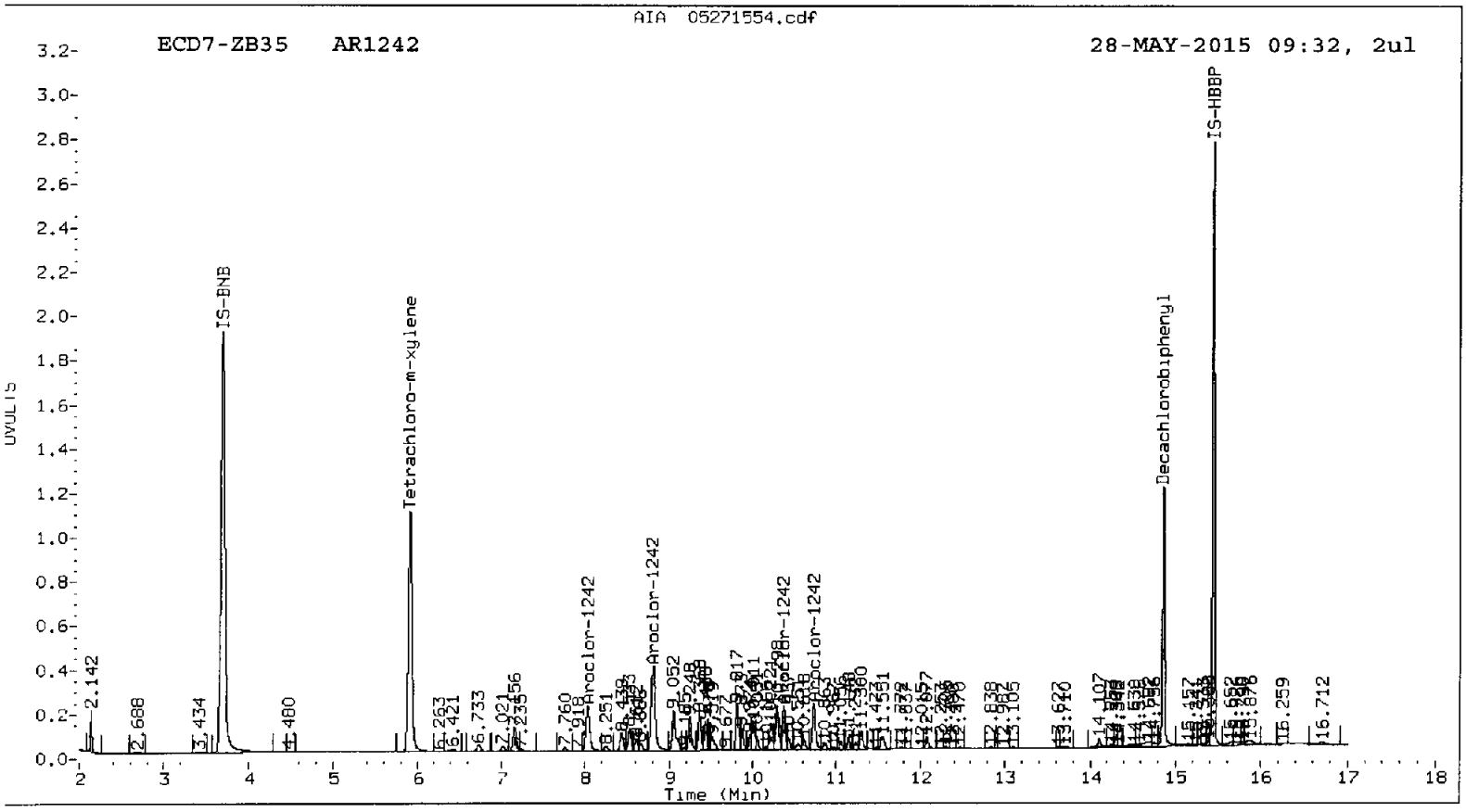
AIA 05271554.cdf
28-MAY-2015 09:32, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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28-MAY-2015 09:32, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271555.d
Data file 2: 20150527.b/0527-2.b/05271555.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 09:53
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.000	1425524	5.913	0.000	6699558	39.0	37.9	2.9	Tetrachloro-m-xylene
14.891	0.000	2699156	14.863	0.001	4254161	39.4	37.8	4.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.4	94.6
Decachlorobiphenyl	98.5	94.5

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5393241	-1.0
Hexabromobiphenyl	5633814	5446526	-3.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13124437	0.5
Hexabromobiphenyl	8980422	9338057	4.0

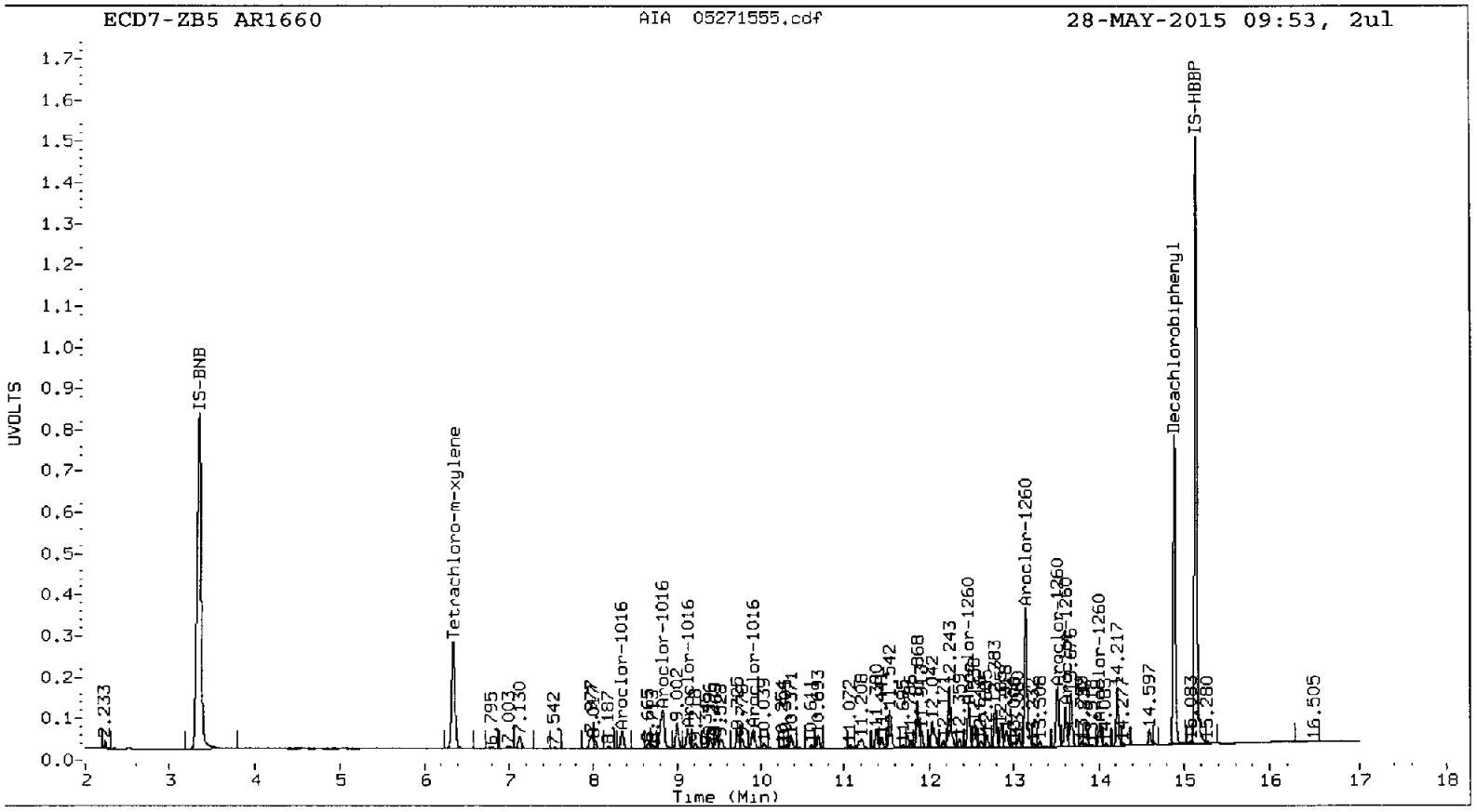
* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

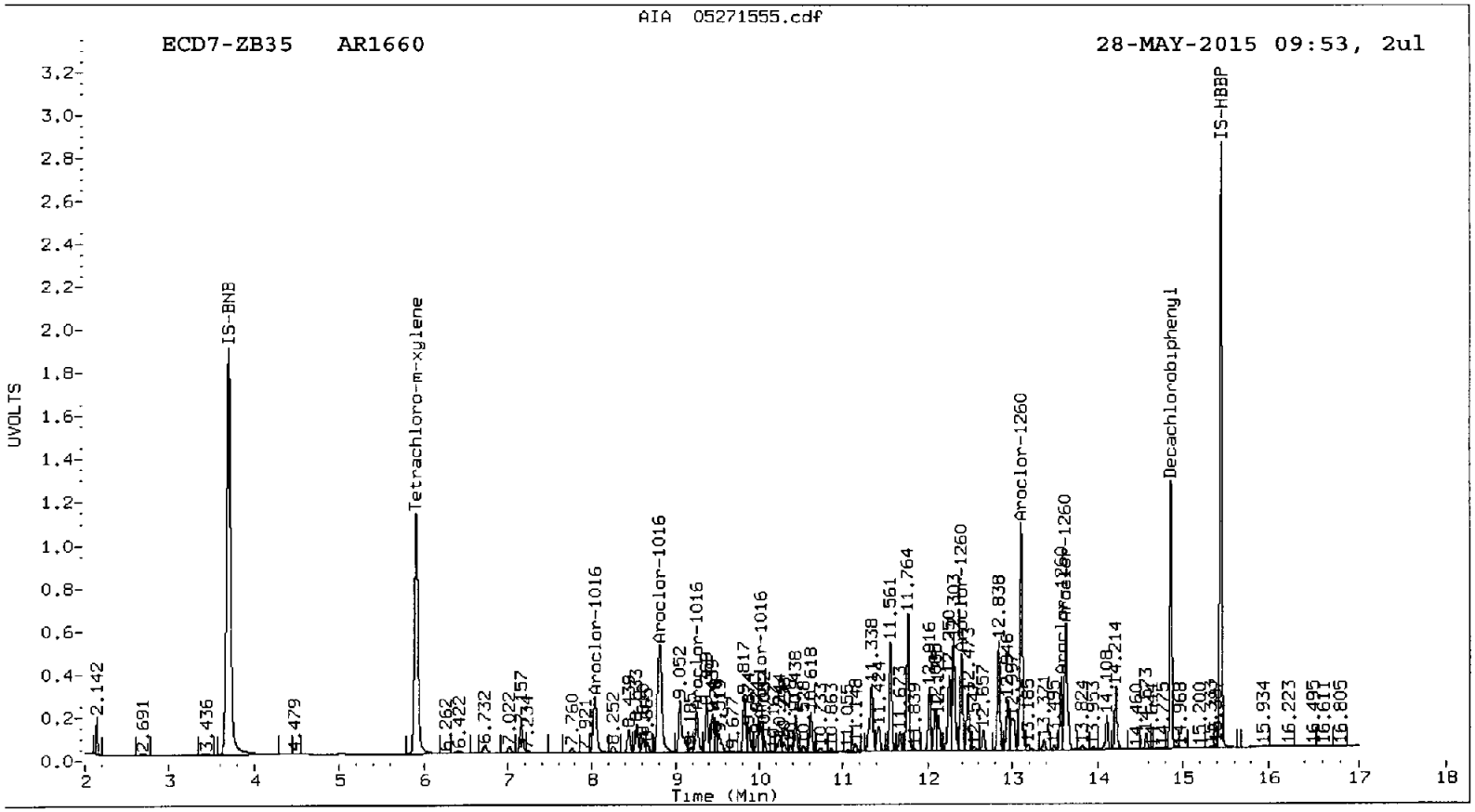
Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.348	0.000	211672	244.0	1	8.032	0.001	1715639	238.5
Aroclor-1016	2	8.833	-0.001	644419	242.4	2	8.810	-0.001	3605396	236.0
Aroclor-1016	3	9.129	0.000	229395	252.3	3	9.249	0.000	952880	241.8
Aroclor-1016	4	9.913	0.000	240666	249.4	4	10.011	-0.001	654796	235.2
Total Col1Ave (4 peaks):				247.0		Total Col2Ave (4 peaks):			237.9	RPD = 4
Corrected Ave (3 peaks):				245.3		Corrected Ave (3 peaks):			236.6	RPD = 4
CalAmt %D:				-1.2		CalAmt %D:			-4.8	
Aroclor-1260	1	12.469	-0.001	440432	247.9	1	12.396	-0.001	1875738	224.0
Aroclor-1260	2	13.145	0.000	1464112	254.6	2	13.102	-0.001	4372613	224.2
Aroclor-1260	3	13.514	-0.001	675173	252.7	3	13.573	-0.001	1283959	216.8
Aroclor-1260	4	13.613	-0.001	407925	253.0	4	13.624	-0.001	2839792	221.0
Aroclor-1260	5	14.012	-0.001	223987	252.8	NS	---			----
Total Col1Ave (5 peaks):				252.2		Total Col2Ave (4 peaks):			221.5	RPD = 13
Corrected Ave (4 peaks):				251.6		Corrected Ave (3 peaks):			220.6	RPD = 13
CalAmt %D:				0.9		CalAmt %D:			-11.4	

Total PCB Area Col1 (6.447 - 14.791) = 12314924 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 52420455 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical


ECD7-ZB5 AR1660
AIA 05271555.cdf
28-MAY-2015 09:53, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP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28-MAY-2015 09:53, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271559.d
Data file 2: 20150527.b/0527-2.b/05271559.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8MBW1
Client ID:
Injection Date: 28-MAY-2015 11:19
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.348	0.003	1087404	5.914	0.001	5259866	28.1	27.9	0.6	Tetrachloro-m-xylene
14.891	0.001	2307253	14.864	0.001	3702463	31.4	30.5	2.9	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	70.3	69.8
Decachlorobiphenyl	78.5	76.2

05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5703109	4.7
Hexabromobiphenyl	5633814	5845942	3.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13961066	6.9
Hexabromobiphenyl	8980422	10072454	12.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 - 05678

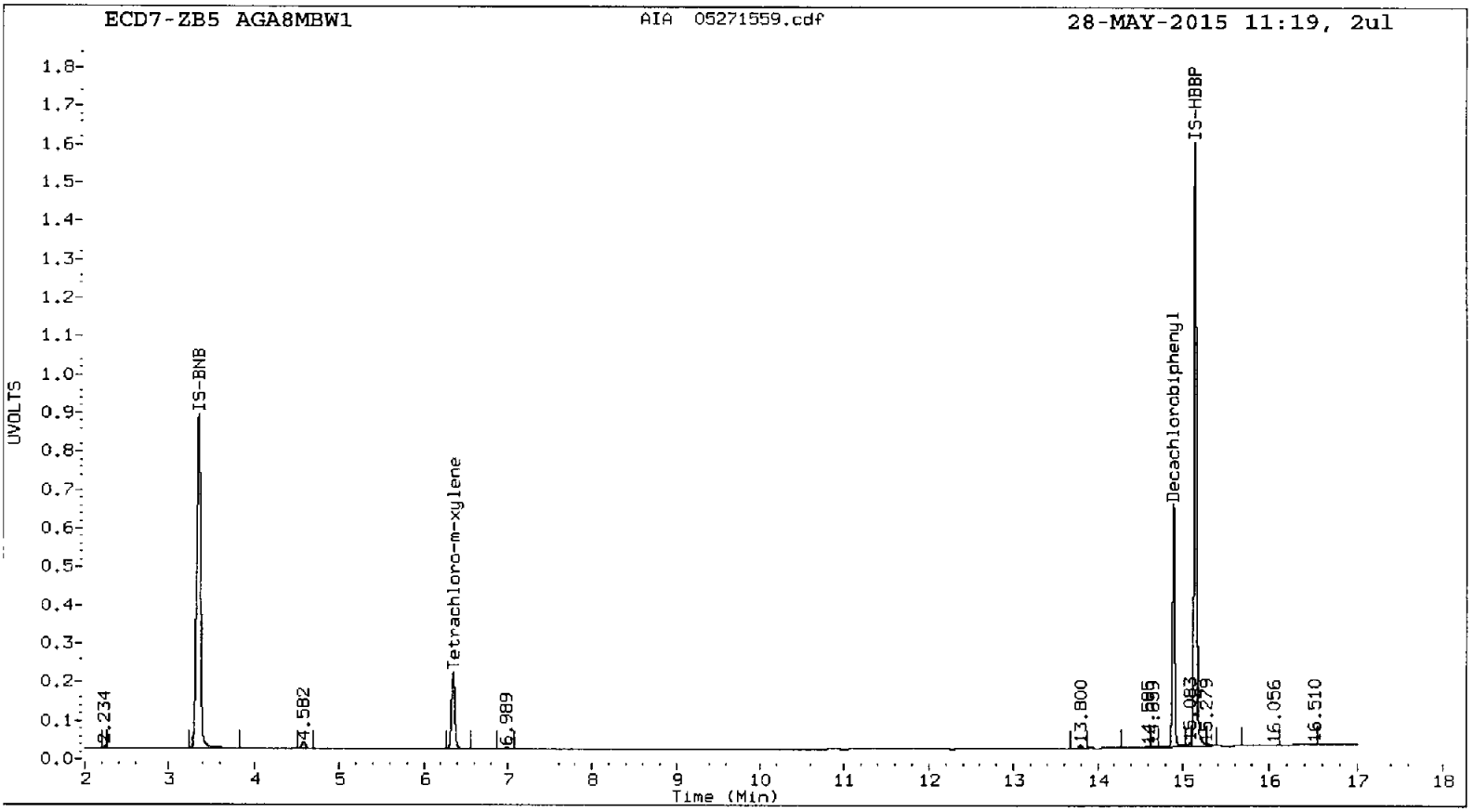
	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.746	0.026	76222	31.4
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.163	0.012	15666	3.7
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

Total PCB Area Col1 (6.445 - 14.790) = 76841 Col1 Total PCB = 0.0 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 479531 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.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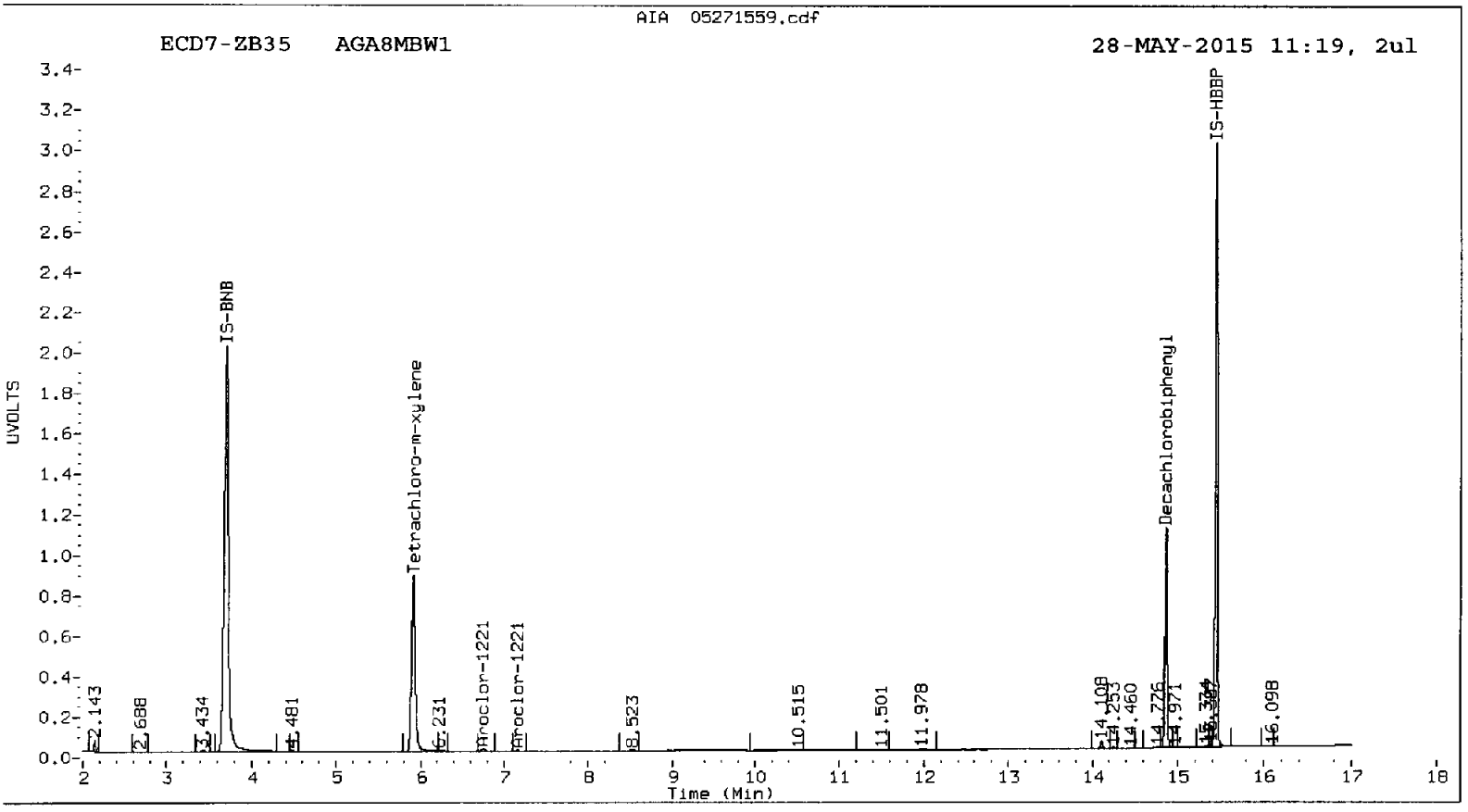
AIA 05271559.cdf
28-MAY-2015 11:19, 2ul
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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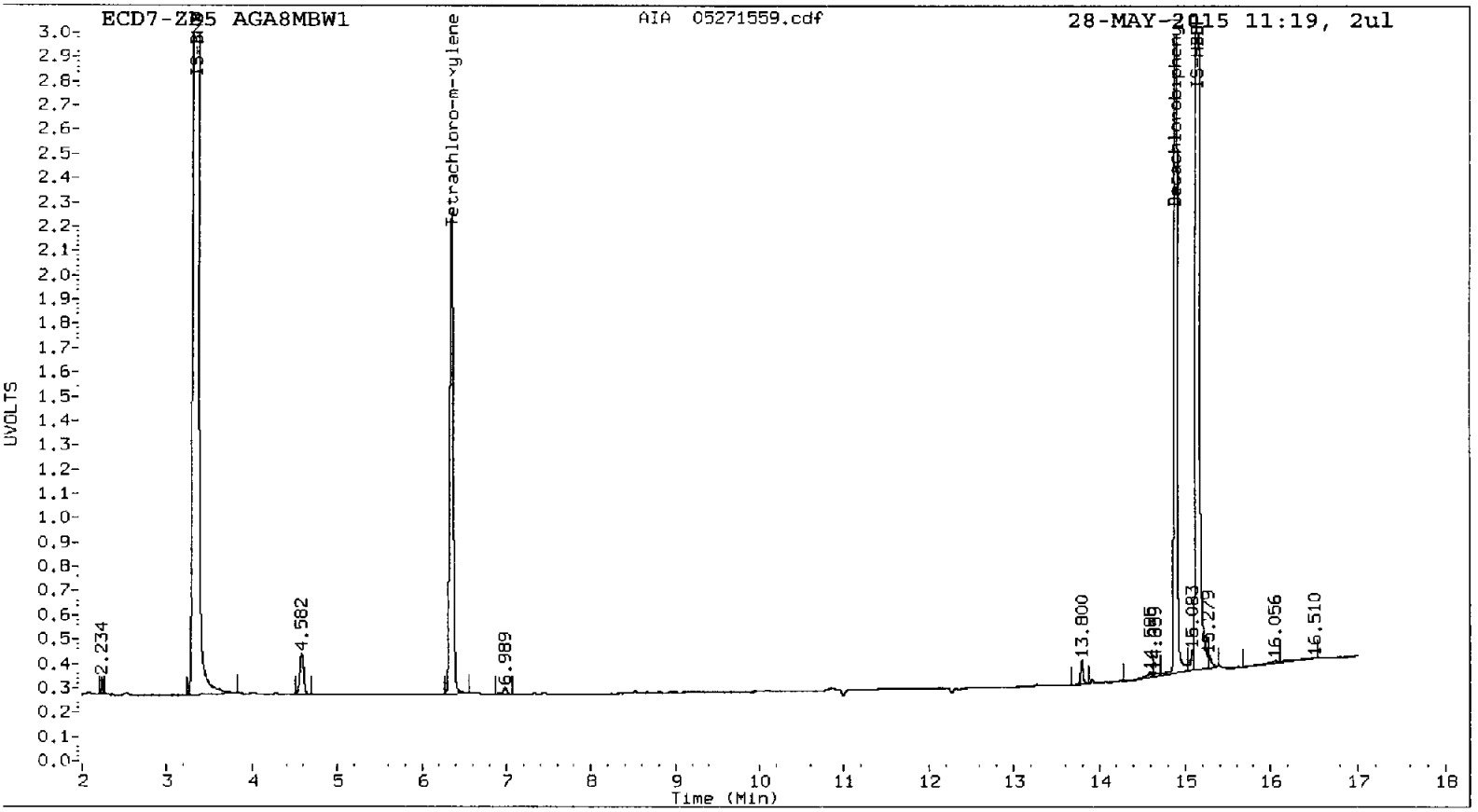
UVOLTS
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Time (Min)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Tetrachloro-m-xylene
Decachlorobiphenyl
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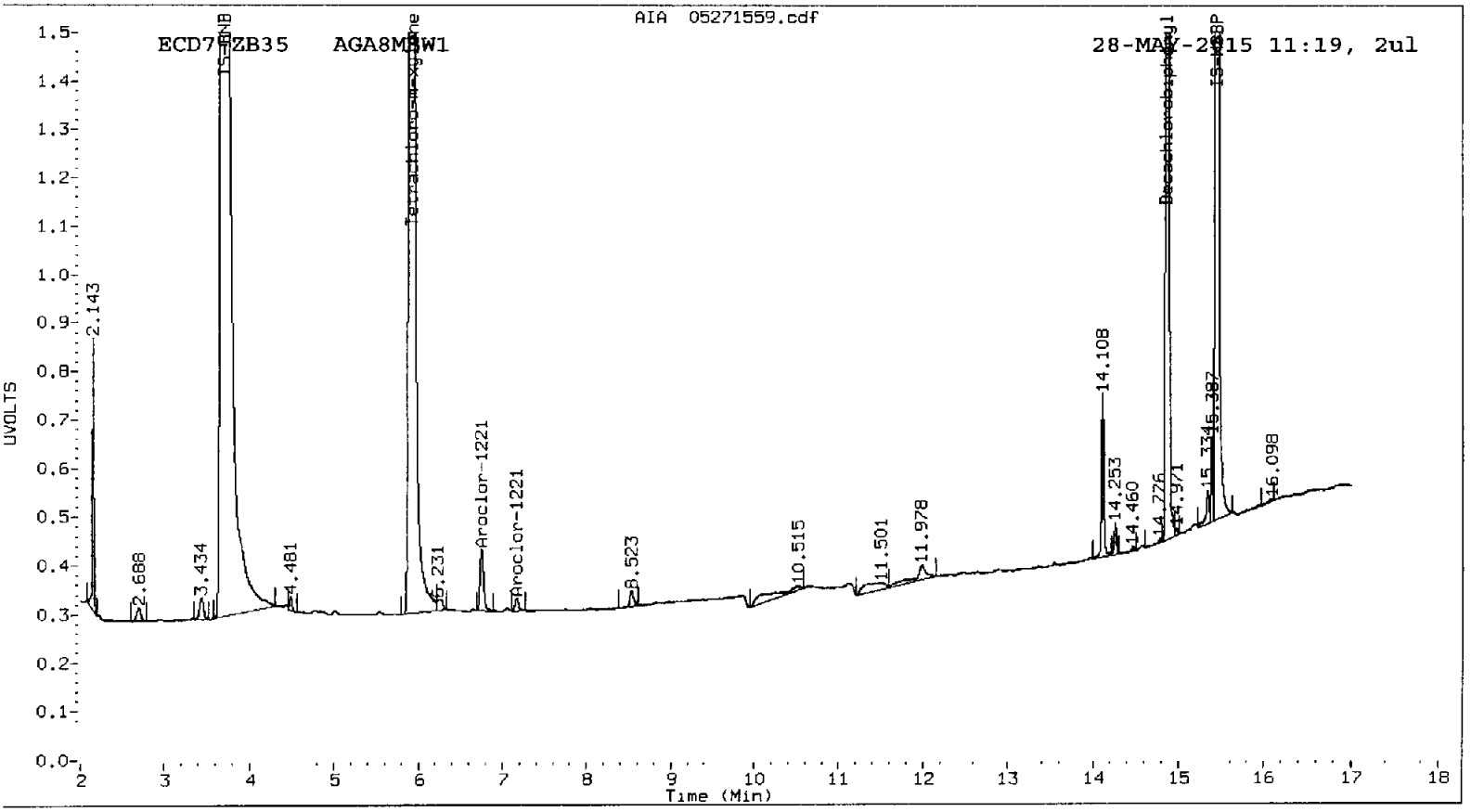
16.279
16.056
16.510
UVOLTS
Time (Min)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28-MAY-2015 11:19, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
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3.434
4.481
6.231
Aroclor-1221
Aroclor-1221
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11.501
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15.334
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UVOLTS
Time (Min)

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271560.d
Data file 2: 20150527.b/0527-2.b/05271560.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8LCSW1
Client ID:
Injection Date: 28-MAY-2015 11:40
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.349	0.004	1209498	5.915	0.002	5711333	31.3	30.4	2.9	Tetrachloro-m-xylene
14.890	0.000	2413903	14.863	0.000	3912047	32.5	31.8	2.2	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.4	76.1
Decachlorobiphenyl	81.3	79.5

5/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5691416	4.4
Hexabromobiphenyl	5633814	5903690	4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13914766	6.5
Hexabromobiphenyl	8980422	10200852	13.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGA8 : 88515

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	8.350	0.004	385170	420.8	1	8.035	0.003	3039701	398.5
Aroclor-1016	2	8.835	0.003	1199760	427.6	2	8.810	0.002	6693333	413.3
Aroclor-1016	3	9.131	0.003	429040	447.1	3	9.250	0.003	1777049	425.3
Aroclor-1016	4	9.915	0.002	450697	442.5	4	10.012	0.002	1703707	577.3
Total Col1Ave (4 peaks):		434.5				Total Col2Ave (4 peaks):			453.6	RPD = 4
Corrected Ave (3 peaks):		430.3				Corrected Ave (3 peaks):			412.4	RPD = 4
Aroclor-1221	1	---			0.0	1	5.021	0.003	24614	17.0
Aroclor-1221	2	7.007	0.008	77802	214.6	2	6.730	0.010	346546	143.3
Aroclor-1221	3	7.130	0.007	296880	290.2	3	7.023	0.007	305391	223.8
Aroclor-1221	NS	---			----	4	7.157	0.006	1296628	310.5
Col1Ave: <3 Quant Peaks						Col2Ave: 173.7				
Aroclor-1232	1	---			0.0	1	5.021	0.000	24614	28.0
Aroclor-1232	2	7.007	0.007	77802	310.8	2	7.157	0.004	1296628	439.8
Aroclor-1232	3	7.130	0.004	296880	434.6	3	8.035	0.005	3039701	879.4
Aroclor-1232	4	8.835	0.005	1199760	1050.8	4	9.250	0.003	1777049	1002.0
Total Col1Ave (3 peaks):		598.7				Total Col2Ave (4 peaks):			587.3	RPD = 2
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):			449.1	
Aroclor-1242	1	8.835	0.001	1199760	584.3	1	8.035	0.002	3039701	543.2
Aroclor-1242	2	9.131	0.002	429040	583.5	2	8.810	0.000	6693333	566.5
Aroclor-1242	3	10.306	0.002	59260	86.5	3	10.377	0.001	297547	72.3
Aroclor-1242	4	10.612	0.004	50760	49.5	4	10.734	0.000	203160	40.6
Total Col1Ave (4 peaks):		326.0				Total Col2Ave (4 peaks):			305.6	RPD = 6
Corrected Ave (3 peaks):		239.8				Corrected Ave (3 peaks):			218.7	RPD = 9
Aroclor-1248	1	9.398	0.005	205386	314.1	1	8.810	0.008	6693333	872.8
Aroclor-1248	2	9.915	0.006	450697	324.2	2	9.818	0.005	2143964	349.9
Aroclor-1248	3	10.372	0.013	233748	144.7	3	10.377	0.005	297547	45.8
Aroclor-1248	4	10.612	0.007	50760	31.1	4	10.734	0.005	203160	24.2
Total Col1Ave (4 peaks):		203.5				Total Col2Ave (4 peaks):			323.2	RPD = 45*
Corrected Ave (3 peaks):		163.3				Corrected Ave (3 peaks):			140.0	RPD = 15
Aroclor-1254	1	10.372	0.001	233748	224.9	1	10.618	0.001	1424711	194.4
Aroclor-1254	2	10.695	0.004	227550	153.2	2	10.734	0.021	203160	58.5
Aroclor-1254	3	11.074	0.002	51264	42.5	3	11.148	0.000	301072	52.6
Aroclor-1254	4	11.210	0.000	271359	119.3	4	11.338	0.039	3300409	270.1
Aroclor-1254	5	11.914	-0.011	284569	174.6	5	12.086	0.006	1498291	205.3
Total Col1Ave (5 peaks):		142.9				Total Col2Ave (5 peaks):			156.2	RPD = 9
Corrected Ave (4 peaks):		122.4				Corrected Ave (4 peaks):			127.7	RPD = 4
Aroclor-1260	1	12.471	0.002	800816	415.8	1	12.396	0.001	3485729	381.1
Aroclor-1260	2	13.146	0.001	2806930	450.3	2	13.102	0.000	8448498	396.5
Aroclor-1260	3	13.515	0.001	1284480	443.5	3	13.573	0.000	2438162	376.9
Aroclor-1260	4	13.614	0.001	753032	430.9	4	13.625	0.001	5462489	389.1
Aroclor-1260	5	14.012	0.001	418834	436.1	NS	---			----
Total Col1Ave (5 peaks):		436.3				Total Col2Ave (4 peaks):			385.9	RPD = 12
Corrected Ave (4 peaks):		431.6				Corrected Ave (3 peaks):			382.4	RPD = 12
Aroclor-1262	1	12.471	0.004	800816	230.1	1	12.396	0.002	3485729	215.6
Aroclor-1262	2	13.146	0.003	2806930	289.9	2	12.838	0.002	4039228	265.8
Aroclor-1262	3	13.515	0.002	1284480	420.9	3	13.102	0.002	8448498	270.9
Aroclor-1262	4	13.677	0.002	973433	183.8	4	13.573	0.002	2438162	181.3
Aroclor-1262	5	14.218	0.002	992239	209.4	5	14.215	0.002	2120294	200.6
Total Col1Ave (5 peaks):		266.8				Total Col2Ave (5 peaks):			226.8	RPD = 16

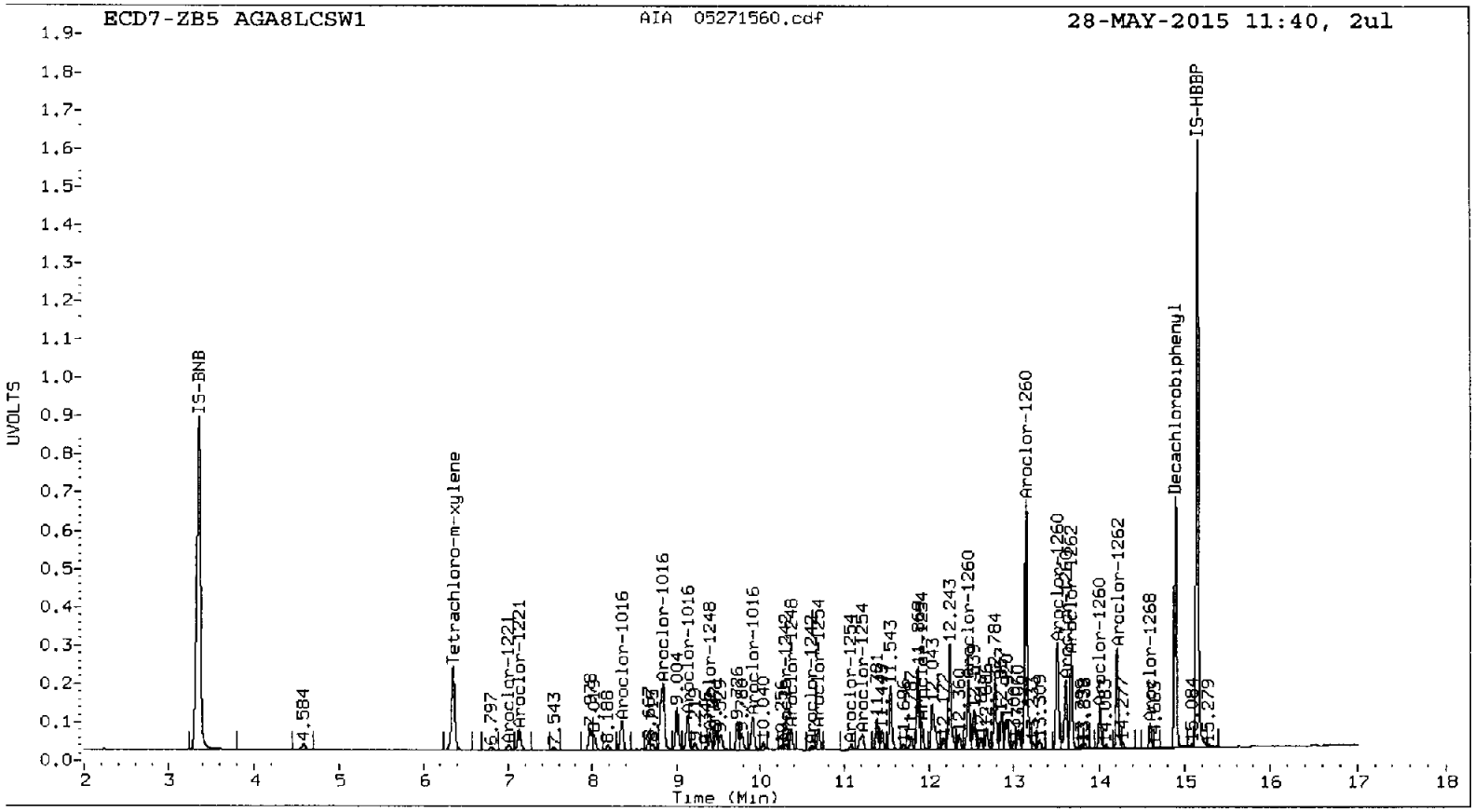
Corrected Ave (4 peaks):			228.3		Corrected Ave (4 peaks):			215.8	RPD = 6
Aroclor-1268 1	13.614	0.002	753032	82.3	1	13.573	0.004	2438162	102.0
Aroclor-1268 2	13.677	0.003	973433	90.8	2	13.625	-0.003	5462489	241.8
Aroclor-1268 3	14.012	0.016	418834	43.7	3	13.953	0.001	97658	5.4
Aroclor-1268 4	14.598	0.001	237746	7.1	4	14.573	0.000	480621	9.4
Total Col1Ave (4 peaks):			56.0		Total Col2Ave (4 peaks):			89.6	RPD = 46*
Corrected Ave (3 peaks):			44.4		Corrected Ave (3 peaks):			38.9	RPD = 13

Total PCB Area Col1 (6.445 - 14.790) = 22658858 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 98120388 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

ARC 86977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Time (Min)
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Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
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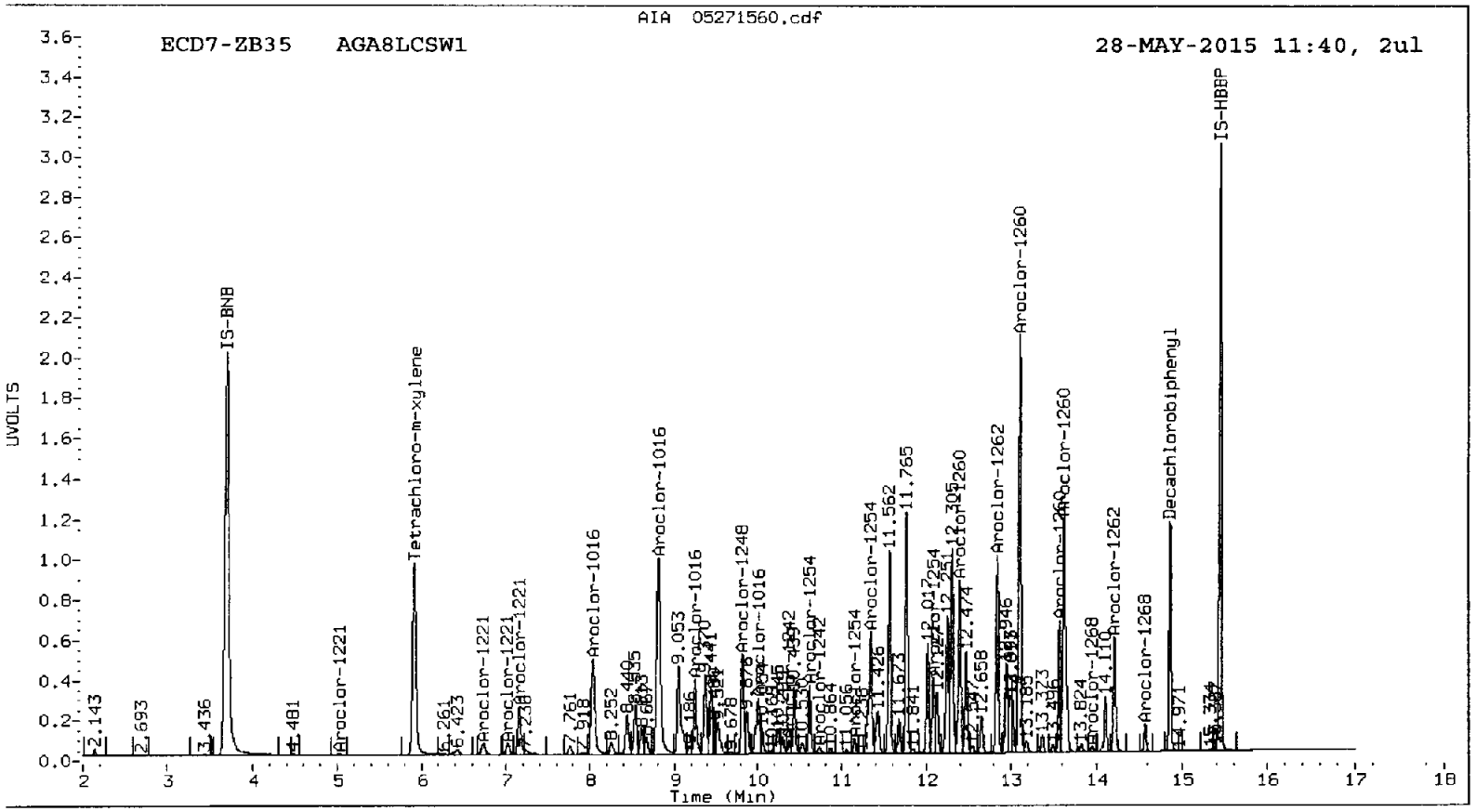
Aroclor-1221
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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IS-HBBP
Decachlorobiphenyl
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Aroclor-1221
Aroclor-1248
Aroclor-1254
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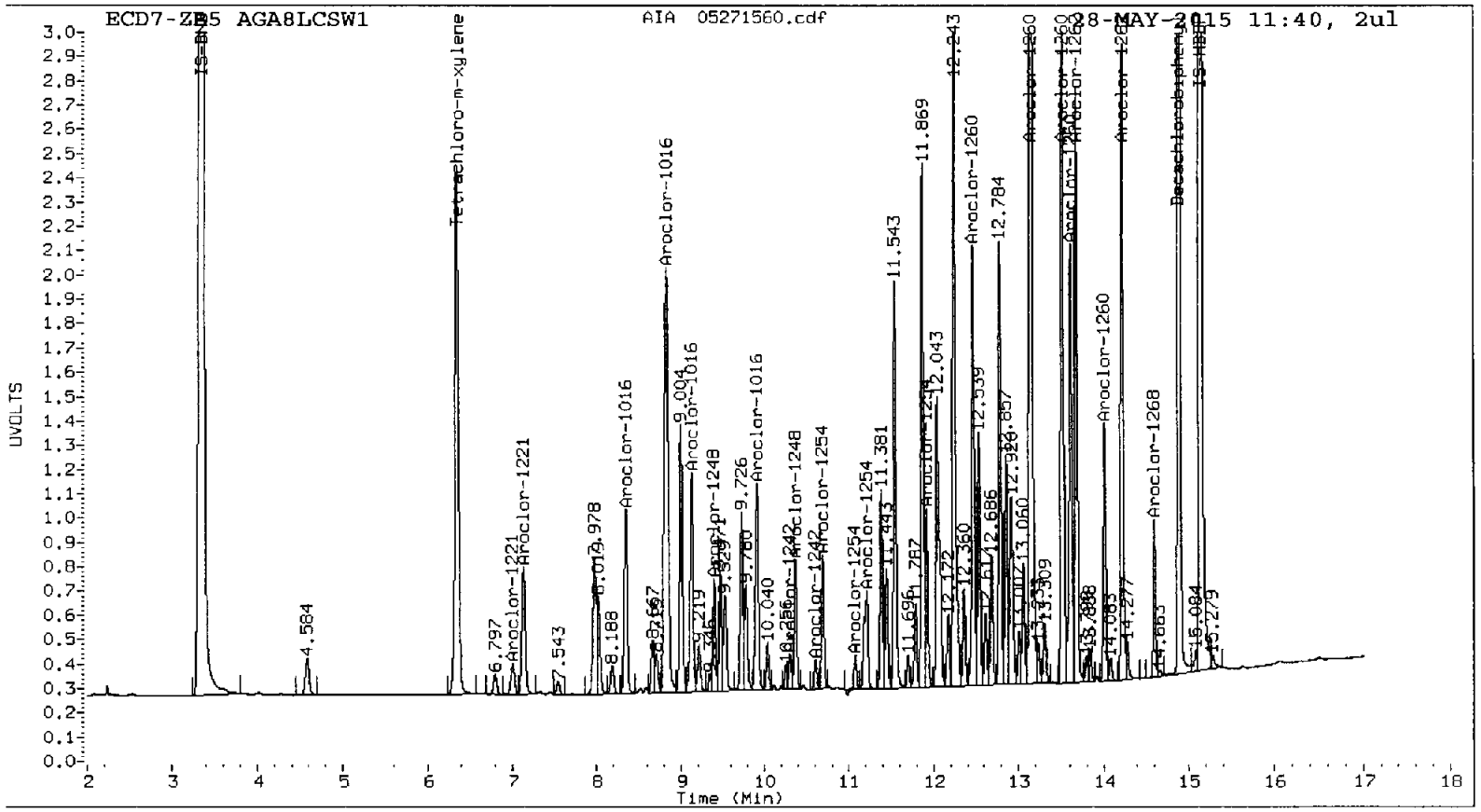
Aroclor-1262
Aroclor-1268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Time (Min)
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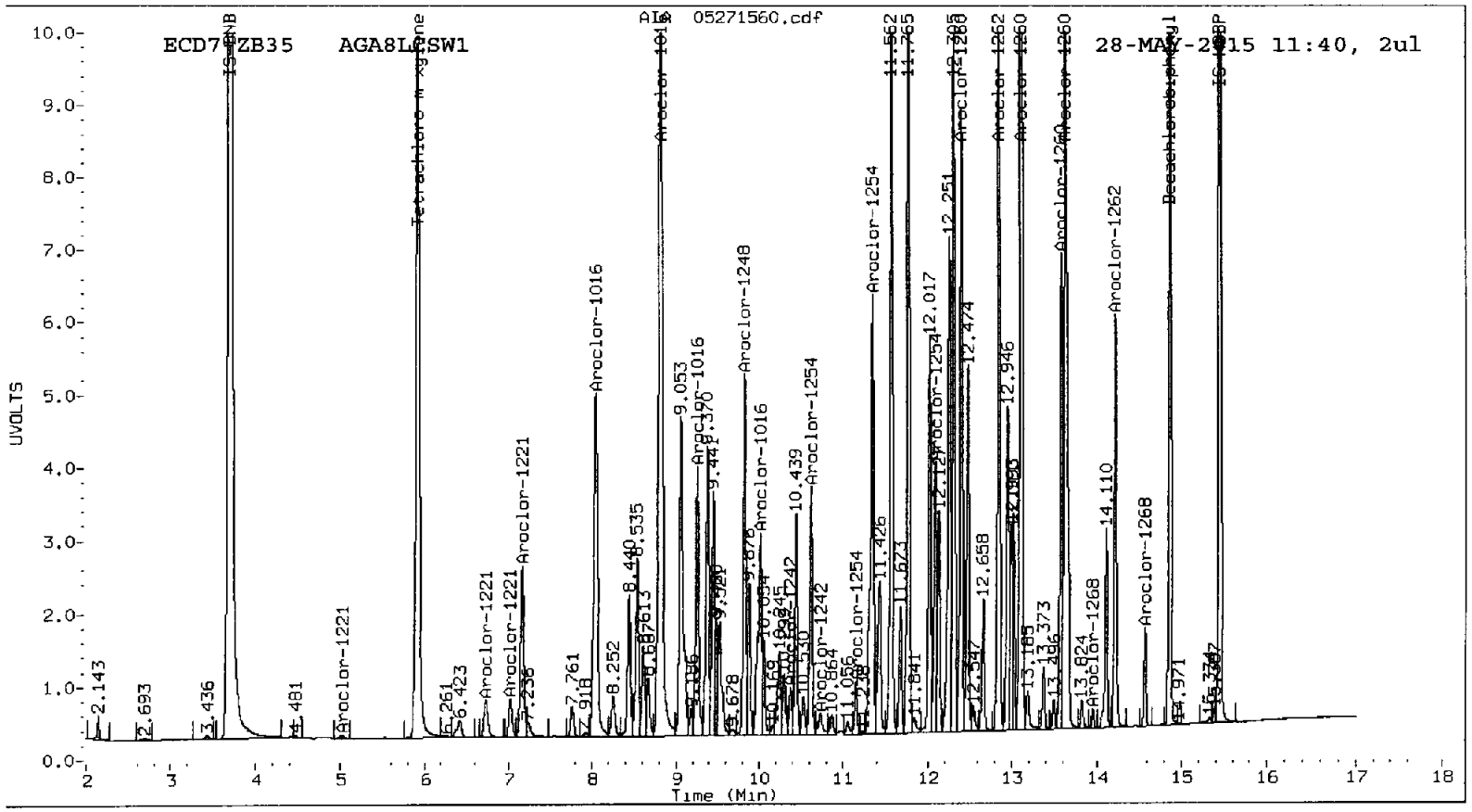
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268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UVOLTS
Time (Min)
Tetrachloro-m-xylene
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Aroclor-1262
Aroclor-1268

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271561.d
Data file 2: 20150527.b/0527-2.b/05271561.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGA8LCSDW1
Client ID:
Injection Date: 28-MAY-2015 12:02
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.349	0.004	1206743	5.914	0.002	5723400	31.5	30.2	4.1	Tetrachloro-m-xylene
14.891	0.001	2225223	14.863	0.000	3631102	30.2	29.7	1.7	Decachlorobiphenyl

* Indicates RPD > 40%
1 Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	78.7	75.6
Decachlorobiphenyl	75.5	74.2

M 05/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5653869	3.8
Hexabromobiphenyl	5633814	5856732	4.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	14041479	7.5
Hexabromobiphenyl	8980422	10142562	12.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

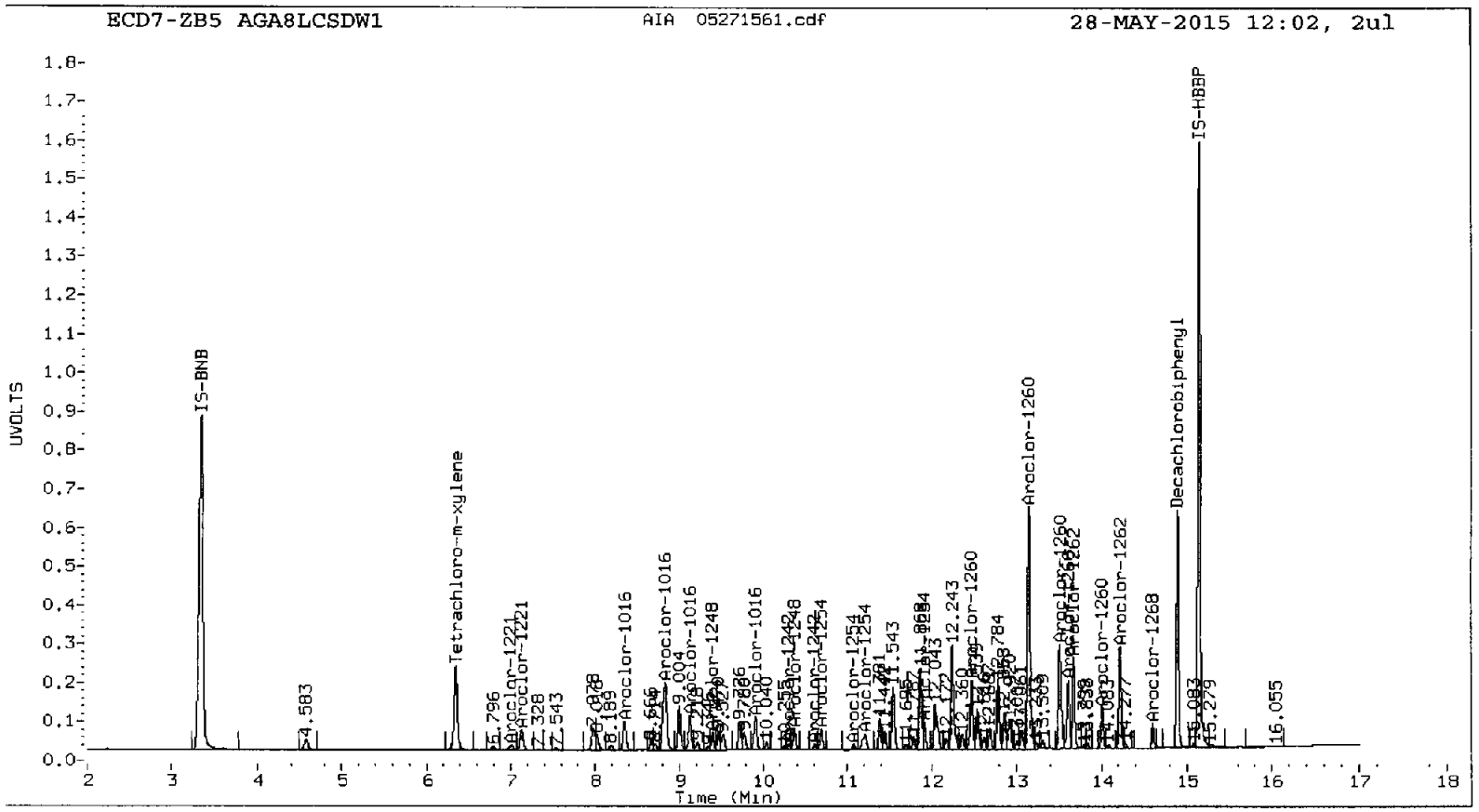
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.350	0.003	381687	419.7	1	8.033	0.002	3018292	392.2
Aroclor-1016	2	8.834	0.002	1187109	425.9	2	8.812	0.004	6622913	405.3
Aroclor-1016	3	9.130	0.001	423333	444.1	3	9.251	0.003	1758570	417.1
Aroclor-1016	4	9.914	0.002	445828	440.7	4	10.012	0.002	1670049	560.8
Total Col1Ave (4 peaks):					432.6	Total Col2Ave (4 peaks):				443.8 RPD = 3
Corrected Ave (3 peaks):					428.8	Corrected Ave (3 peaks):				404.8 RPD = 6
Aroclor-1221	1	---			0.0	1	5.007	-0.011	45880	31.5
Aroclor-1221	2	7.007	0.008	77487	215.2	2	6.730	0.011	345690	141.7
Aroclor-1221	3	7.131	0.008	296046	291.3	3	7.023	0.008	317375	230.5
Aroclor-1221	NS	---			----	4	7.158	0.008	1284513	304.9
Col1Ave: <3 Quant Peaks						Col2Ave: 177.1				
Aroclor-1232	1	---			0.0	1	5.007	-0.013	45880	51.7
Aroclor-1232	2	7.007	0.007	77487	311.6	2	7.158	0.005	1284513	431.8
Aroclor-1232	3	7.131	0.005	296046	436.2	3	8.033	0.004	3018292	865.3
Aroclor-1232	4	8.834	0.004	1187109	1046.6	4	9.251	0.004	1758570	982.6
Total Col1Ave (3 peaks):					598.2	Total Col2Ave (4 peaks):				582.8 RPD = 3
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks):				449.6
Aroclor-1242	1	8.834	0.000	1187109	582.0	1	8.033	0.000	3018292	534.5
Aroclor-1242	2	9.130	0.001	423333	579.6	2	8.812	0.002	6622913	555.5
Aroclor-1242	3	10.306	0.002	58597	86.1	3	10.377	0.001	293154	70.6
Aroclor-1242	4	10.612	0.004	49998	49.0	4	10.733	-0.001	193224	38.3
Total Col1Ave (4 peaks):					324.2	Total Col2Ave (4 peaks):				299.7 RPD = 8
Corrected Ave (3 peaks):					238.3	Corrected Ave (3 peaks):				214.4 RPD = 11
Aroclor-1248	1	9.398	0.006	203498	313.3	1	8.812	0.010	6622913	855.8
Aroclor-1248	2	9.914	0.005	445828	322.8	2	9.818	0.005	2116400	342.3
Aroclor-1248	3	10.371	0.012	231104	144.0	3	10.377	0.005	293154	44.7
Aroclor-1248	4	10.612	0.007	49998	30.8	4	10.733	0.004	193224	22.8
Total Col1Ave (4 peaks):					202.7	Total Col2Ave (4 peaks):				316.4 RPD = 44*
Corrected Ave (3 peaks):					162.7	Corrected Ave (3 peaks):				136.6 RPD = 17
Aroclor-1254	1	10.371	0.000	231104	223.8	1	10.619	0.001	1403385	189.7
Aroclor-1254	2	10.694	0.003	225093	152.5	2	10.733	0.021	193224	55.1
Aroclor-1254	3	11.073	0.001	48097	40.2	3	11.149	0.001	297044	51.4
Aroclor-1254	4	11.210	0.000	266591	118.0	4	11.340	0.040	3252843	263.8
Aroclor-1254	5	11.914	-0.011	281264	173.7	5	12.086	0.006	1476500	200.4
Total Col1Ave (5 peaks):					141.6	Total Col2Ave (5 peaks):				152.1 RPD = 7
Corrected Ave (4 peaks):					121.1	Corrected Ave (4 peaks):				124.2 RPD = 2
Aroclor-1260	1	12.471	0.002	781412	409.0	1	12.396	0.001	3425241	376.7
Aroclor-1260	2	13.145	0.000	2732296	441.8	2	13.102	0.000	8289890	391.3
Aroclor-1260	3	13.515	0.002	1251773	435.7	3	13.573	0.001	2398068	372.8
Aroclor-1260	4	13.614	0.001	735783	424.4	4	13.624	0.000	5360862	384.1
Aroclor-1260	5	14.012	0.001	407971	428.2	NS	---			----
Total Col1Ave (5 peaks):					427.8	Total Col2Ave (4 peaks):				381.2 RPD = 12
Corrected Ave (4 peaks):					424.3	Corrected Ave (3 peaks):				377.9 RPD = 12
Aroclor-1262	1	12.471	0.004	781412	226.3	1	12.396	0.002	3425241	213.1
Aroclor-1262	2	13.145	0.002	2732296	284.4	2	12.839	0.002	3977818	263.3
Aroclor-1262	3	13.515	0.002	1251773	413.4	3	13.102	0.002	8289890	267.3
Aroclor-1262	4	13.677	0.002	949396	180.7	4	13.573	0.003	2398068	179.4
Aroclor-1262	5	14.218	0.002	966140	205.5	5	14.214	0.002	2088654	198.7
Total Col1Ave (5 peaks):					262.1	Total Col2Ave (5 peaks):				224.4 RPD = 16

	Corrected Ave (4 peaks):		224.2			Corrected Ave (4 peaks):		213.6	RPD = 5
Aroclor-1268 1	13.614	0.002	735783	81.0	1	13.573	0.004	2398068	100.9
Aroclor-1268 2	13.677	0.003	949396	89.2	2	13.624	-0.004	5360862	238.7
Aroclor-1268 3	14.012	0.016	407971	42.9	3	13.954	0.002	95958	5.3
Aroclor-1268 4	14.598	0.001	222111	6.7	4	14.573	0.001	472016	9.3
	Total Col1Ave (4 peaks):		55.0			Total Col2Ave (4 peaks):		88.5	RPD = 47*
	Corrected Ave (3 peaks):		43.5			Corrected Ave (3 peaks):		38.5	RPD = 12

Total PCB Area Col1 (6.445 - 14.790) = 22221346 Col1 Total PCB = 0.9 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 96659607 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical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28-MAY-2015 12:02, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
IS-HBBP
Decachlorobiphenyl
Aroclor-1016
Aroclor-1221
Aroclor-1248
Aroclor-1254
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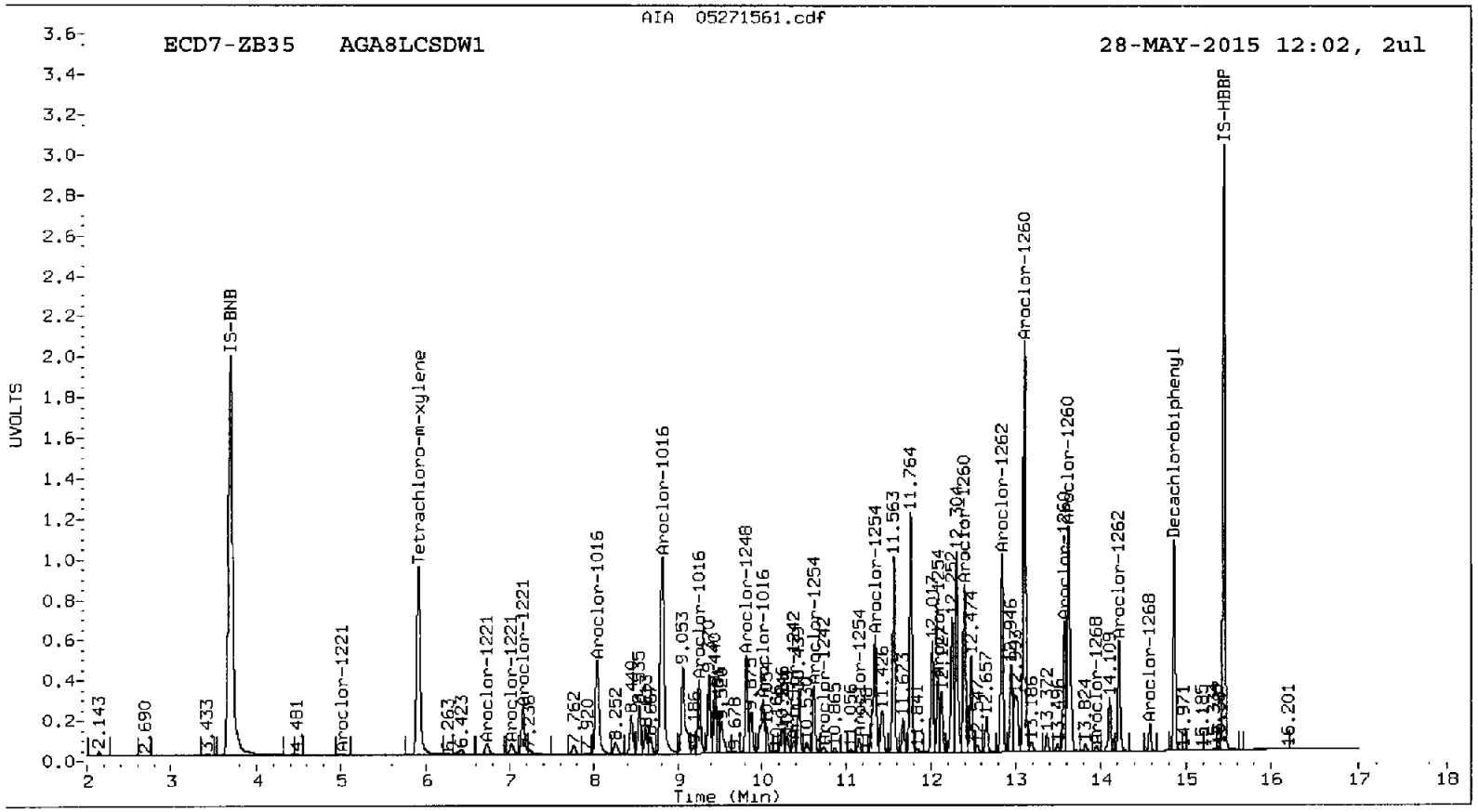
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IS-HBBP
Decachlorobiphenyl
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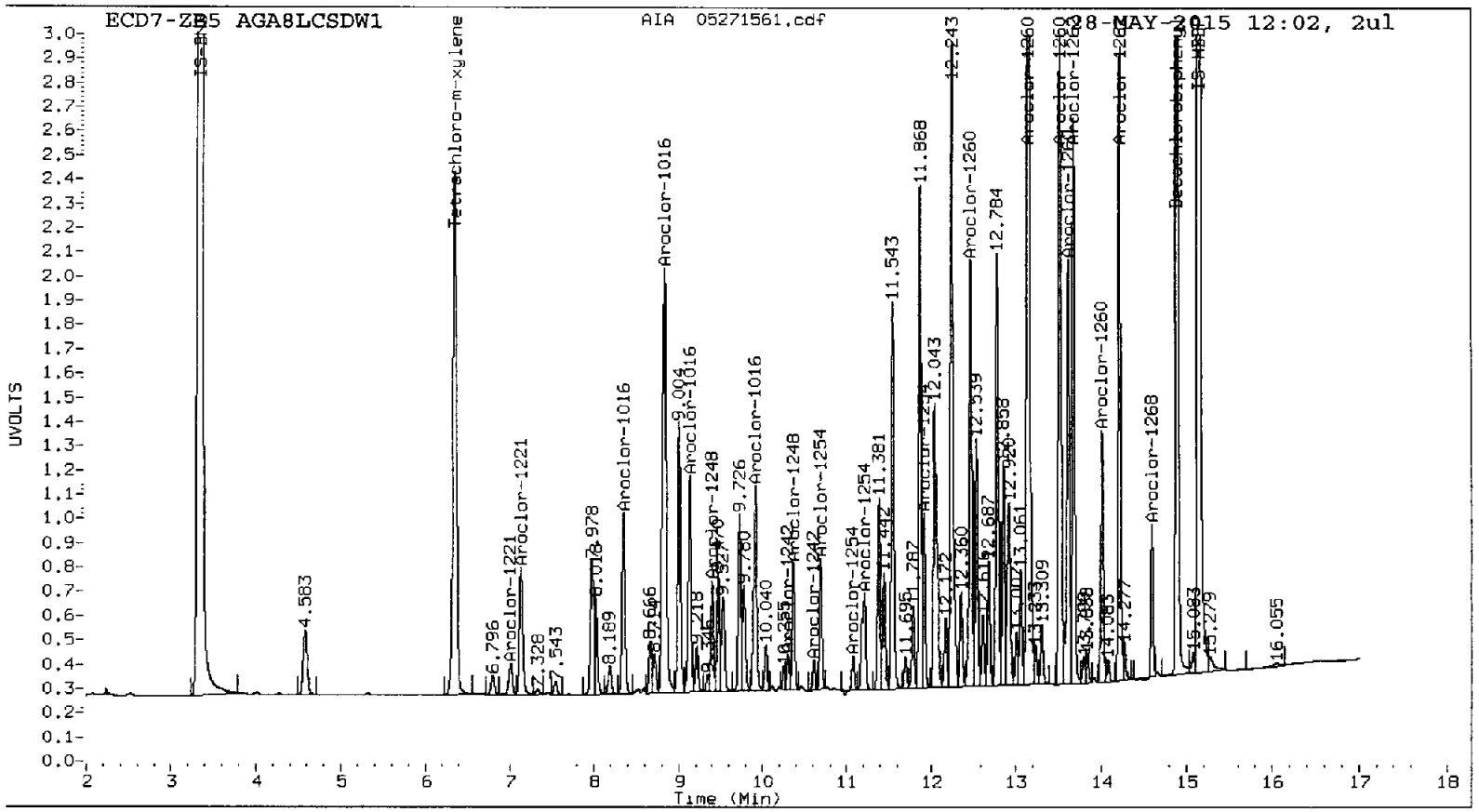
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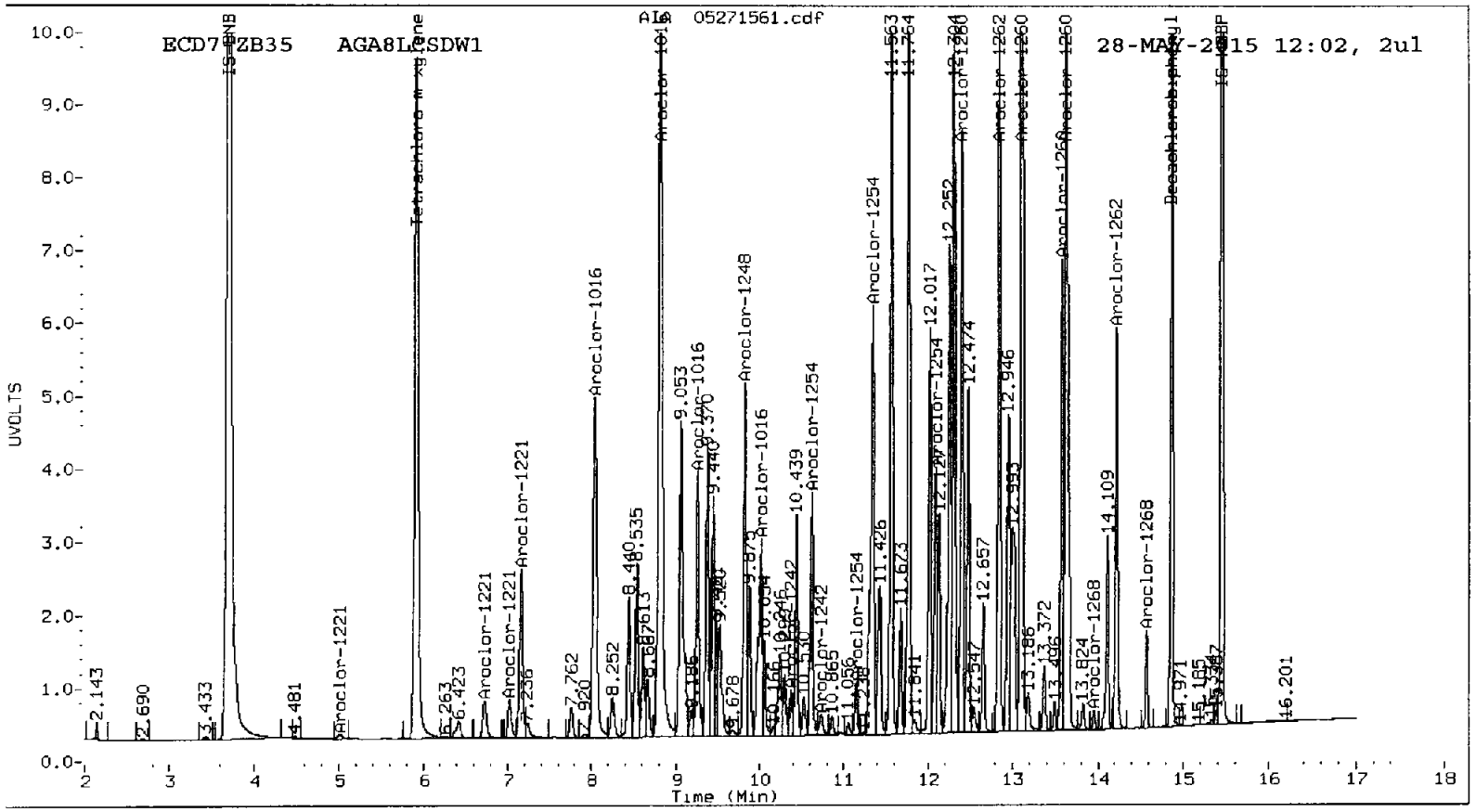
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13.372
13.824
14.109
14.971
16.201

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271563.d
Data file 2: 20150527.b/0527-2.b/05271563.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: PCB
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AGC9L
Client ID:
Injection Date: 28-MAY-2015 12:45
Report Date: 05/28/2015 14:18
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.351	0.006	1138625	5.916	0.004	5439291	29.0	28.7	1.0	Tetrachloro-m-xylene
14.890	0.000	2060996	14.862	-0.001	3345260	26.5	26.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	72.5	71.7
Decachlorobiphenyl	66.2	65.8

5/29/15

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5793312	6.3
Hexabromobiphenyl	5633814	6186299	9.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	14056128	7.6
Hexabromobiphenyl	8980422	10537392	17.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

AGC9 8654S

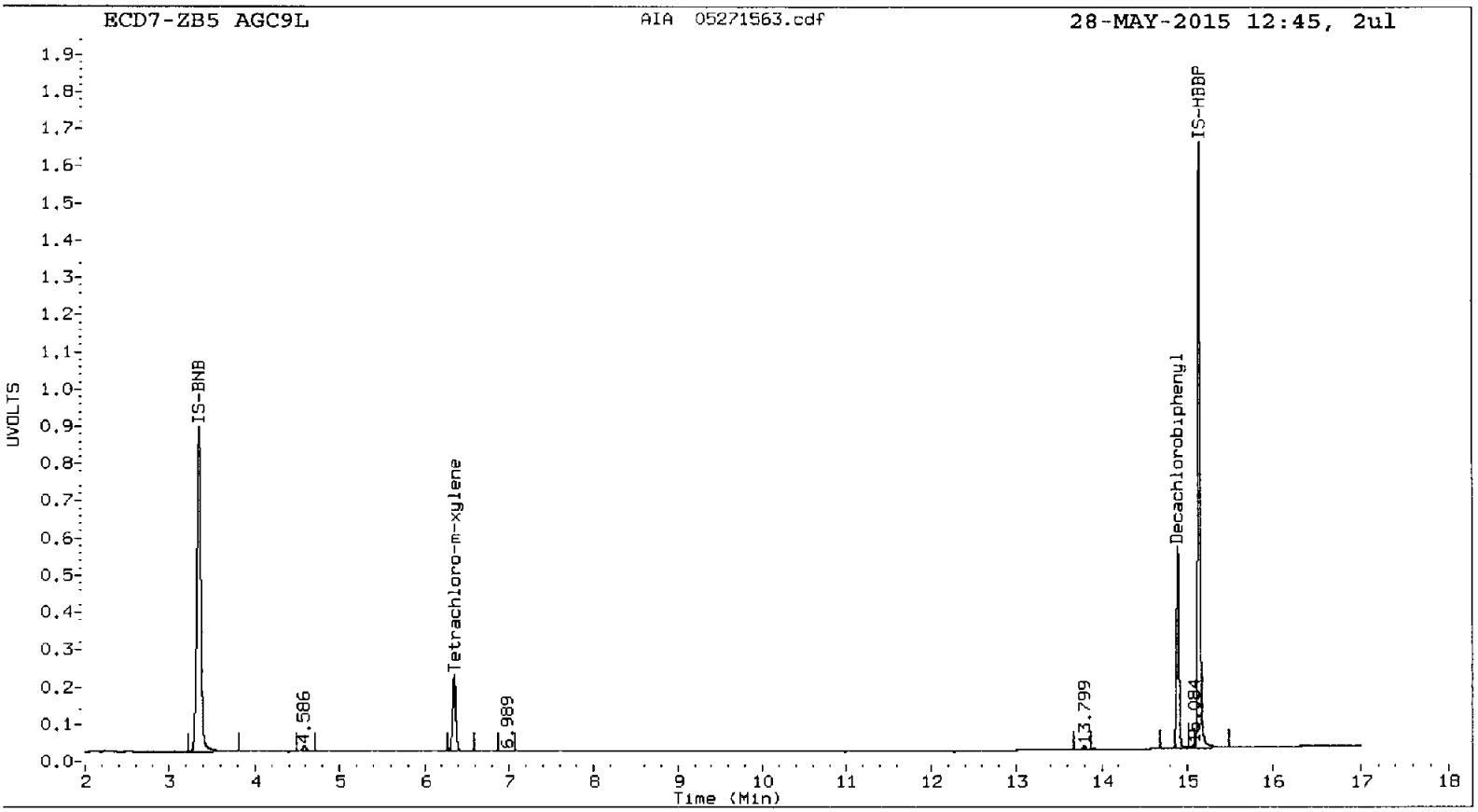
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.748	0.028	76225	31.2
Aroclor-1221	3	---			0.0	3	---			0.0
Aroclor-1221	NS	---			----	4	7.165	0.015	18327	4.3
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1248	1	---			0.0	1	---			0.0
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	---			0.0
Aroclor-1260	3	---			0.0	3	---			0.0
Aroclor-1260	4	---			0.0	4	---			0.0
Aroclor-1260	5	---			0.0	NS	---			----
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1262	1	---			0.0	1	---			0.0
Aroclor-1262	2	---			0.0	2	---			0.0
Aroclor-1262	3	---			0.0	3	---			0.0
Aroclor-1262	4	---			0.0	4	---			0.0
Aroclor-1262	5	---			0.0	5	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				
Aroclor-1268	1	---			0.0	1	---			0.0
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	---			0.0	3	---			0.0
Aroclor-1268	4	---			0.0	4	---			0.0
	Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks				

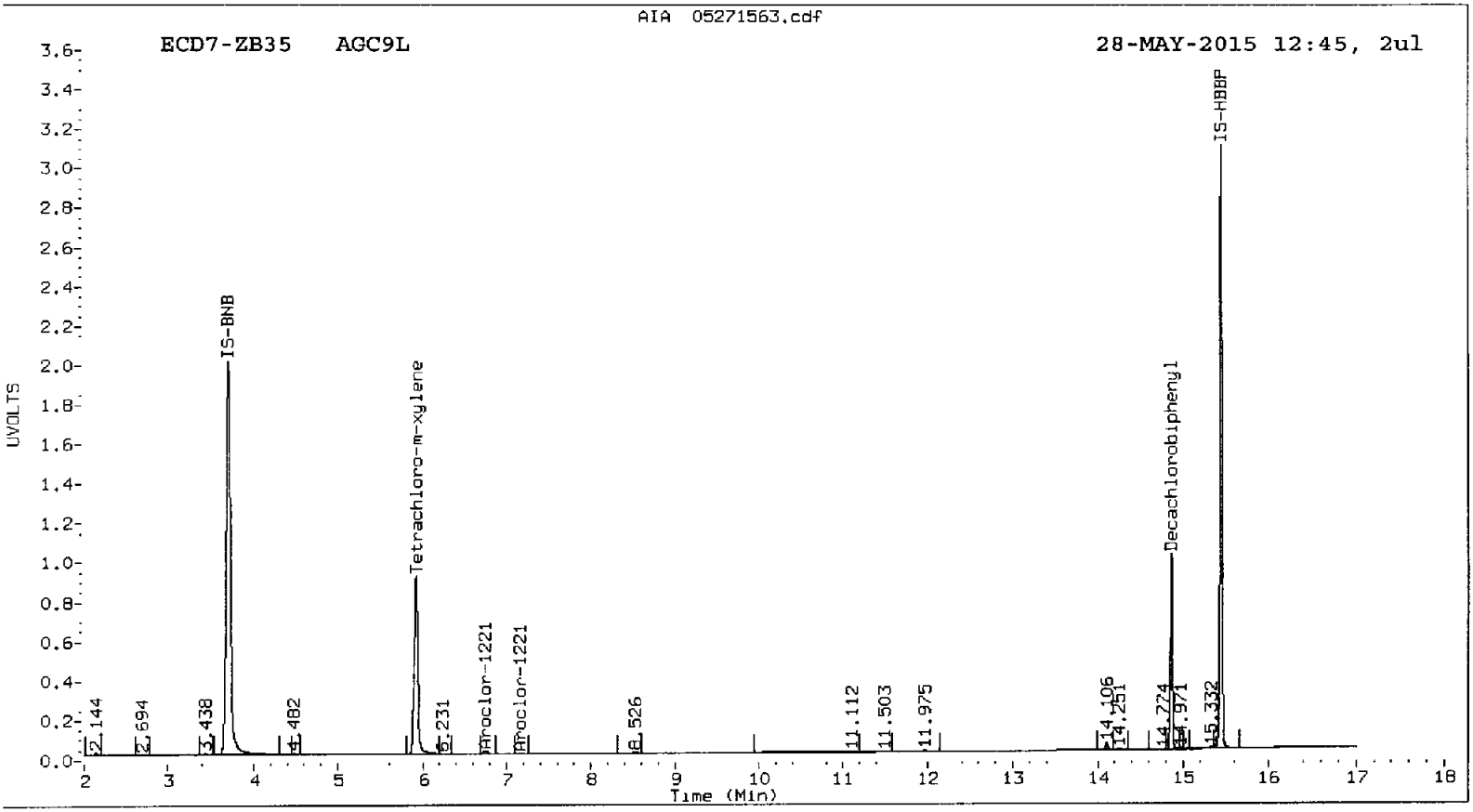
Total PCB Area Col1 (6.445 - 14.790) = 58443 Col1 Total PCB = 0.0 ppm*

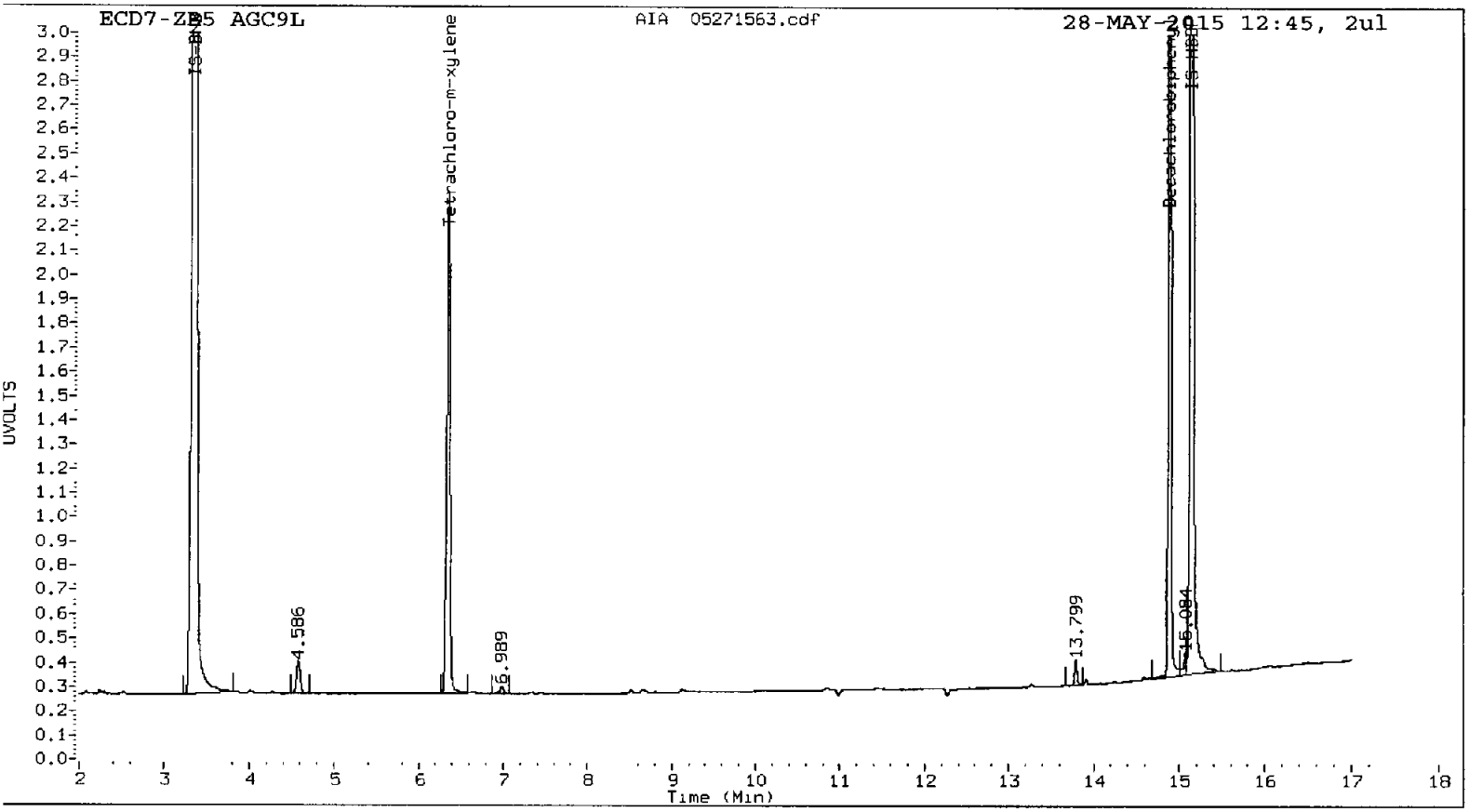
Total PCB Area Col2 (6.013 - 14.763) = 1005982 Col2 Total PCB = 0.0 ppm*

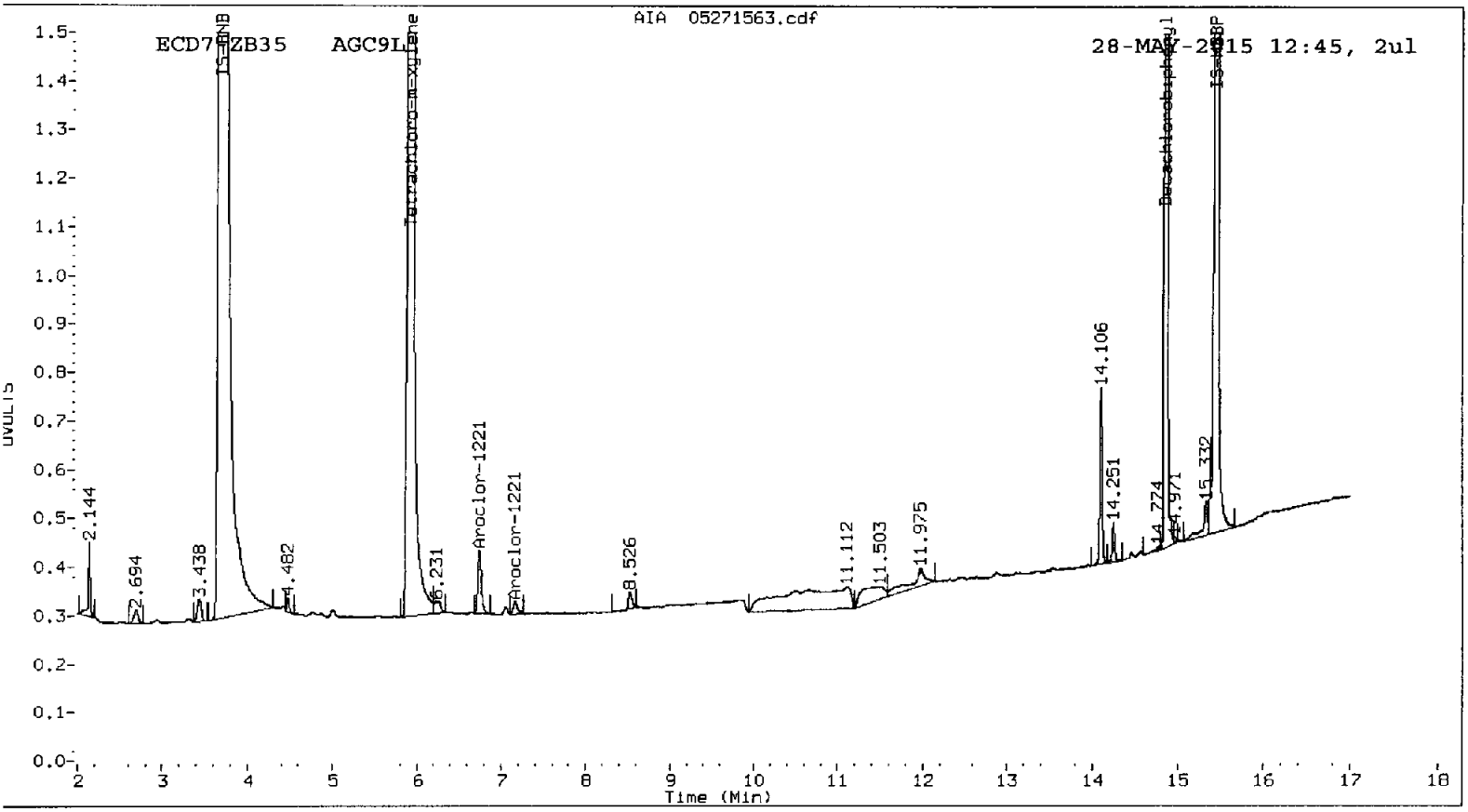
* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AGC9L
AIA 05271563.cdf
28-MAY-2015 12:45, 2ul
UVOLTS
IS-BNB
4.586
Tetrachloro-m-xylene
6.989
13.799
Decachlorobiphenyl
15.084
IS-HBBF
Time (Min)


AIA 05271563.cdf
ECD7-ZB35 AGC9L
28-MAY-2015 12:45, 2ul
UVOLTS
2.144
2.694
3.438
IS-BNB
4.482
Tetrachloro-m-xylene
6.231
Aroclor-1221
Aroclor-1221
6.526
11.112
11.503
11.975
14.106
14.251
14.724
14.971
15.332
Decachlorobiphenyl
IS-HBBF
Time (Min)


ECD7-ZB35 AGC9L
AIA 05271563.cdf
28-MAY-2015 12:45, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
4.586
6.989
13.799
16.084
UVOLTS
Time (Min)


ECD7-ZB35 AGC9L
AIA 05271563.cdf
28-MAY-2015 12:45, 2ul
Tetrachloro-m-xylene
Decachlorobiphenyl
2.144
2.694
3.438
4.482
6.231
Aroclor-1221
Aroclor-1221
8.526
11.112
11.503
11.975
14.106
14.251
14.774
14.971
15.332
UVOLTS
Time (Min)

AGC9 - 05388

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271564.d
Data file 2: 20150527.b/0527-2.b/05271564.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1254
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254
Client ID:
Injection Date: 28-MAY-2015 13:06
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.347	0.000	1381763	5.913	0.001	6555887	38.0	37.3	2.0	Tetrachloro-m-xylene
14.889	-0.001	2757016	14.863	0.000	4517579	38.5	37.6	2.3	Decachlorobiphenyl

* Indicates RPD > 40%
4 Indicates Column 1 peak was manually integrated
V Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	95.0	93.1
Decachlorobiphenyl	96.2	94.0

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5362657	-1.6
Hexabromobiphenyl	5633814	5699387	1.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13048646	-0.1
Hexabromobiphenyl	8980422	9966703	11.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

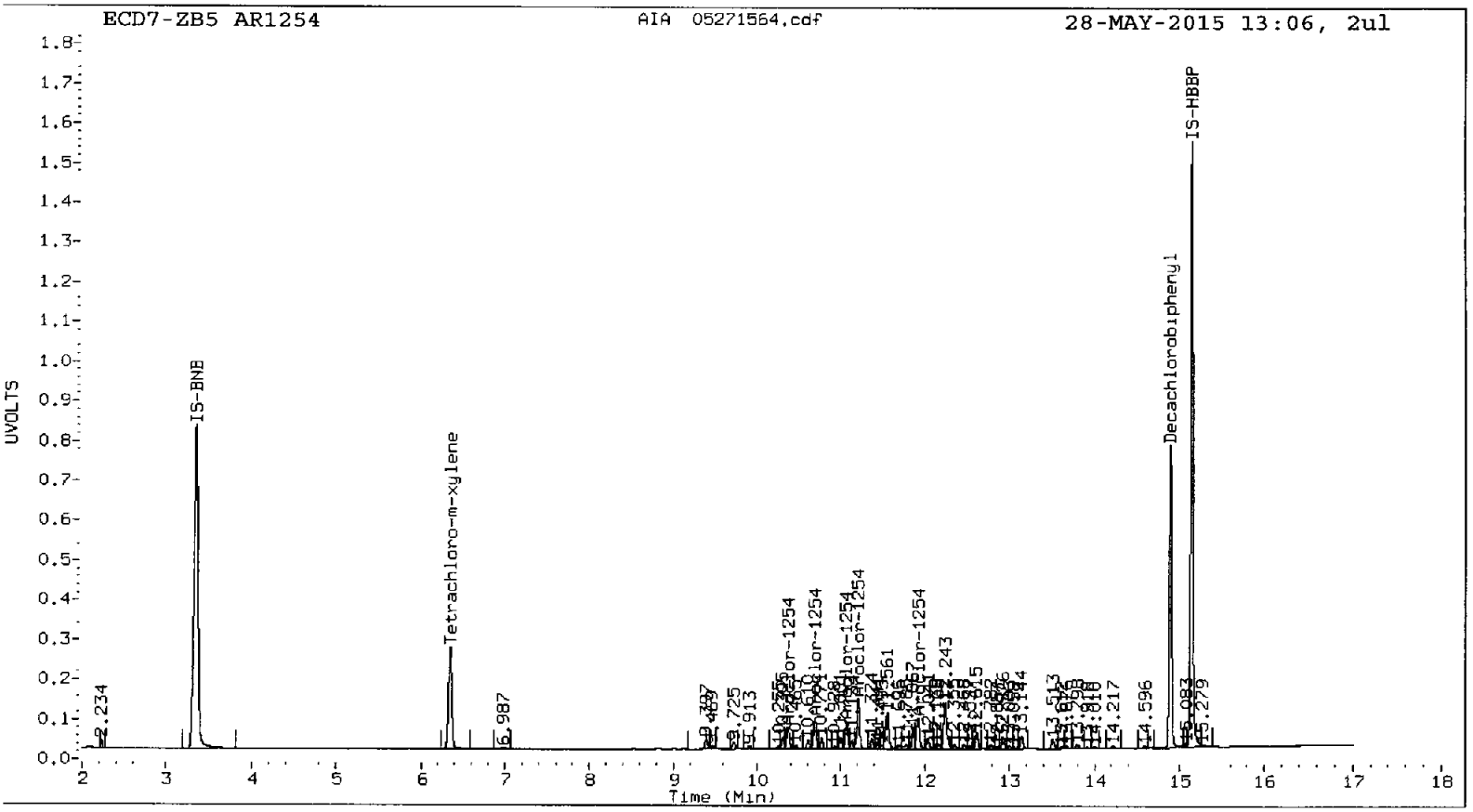
		ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	10.371	0.009	249286	254.5	1	10.617	0.010	1728151	251.4
Aroclor-1254	2	10.691	0.008	357036	255.1	2	10.713	0.010	825862	253.5
Aroclor-1254	3	11.072	0.007	290562	255.9	3	11.148	0.009	1353660	252.0
Aroclor-1254	4	11.210	0.007	547651	255.6	4	11.299	0.008	2870865	250.6
Aroclor-1254	5	11.925	0.006	397081	258.5	5	12.079	0.007	1729335	252.6
Total Col1Ave (5 peaks):					255.9	Total Col2Ave (5 peaks):				252.0 RPD = 2
Corrected Ave (4 peaks):					255.3	Corrected Ave (4 peaks):				251.6 RPD = 1
CalAmt %D:					2.4	CalAmt %D:				0.8

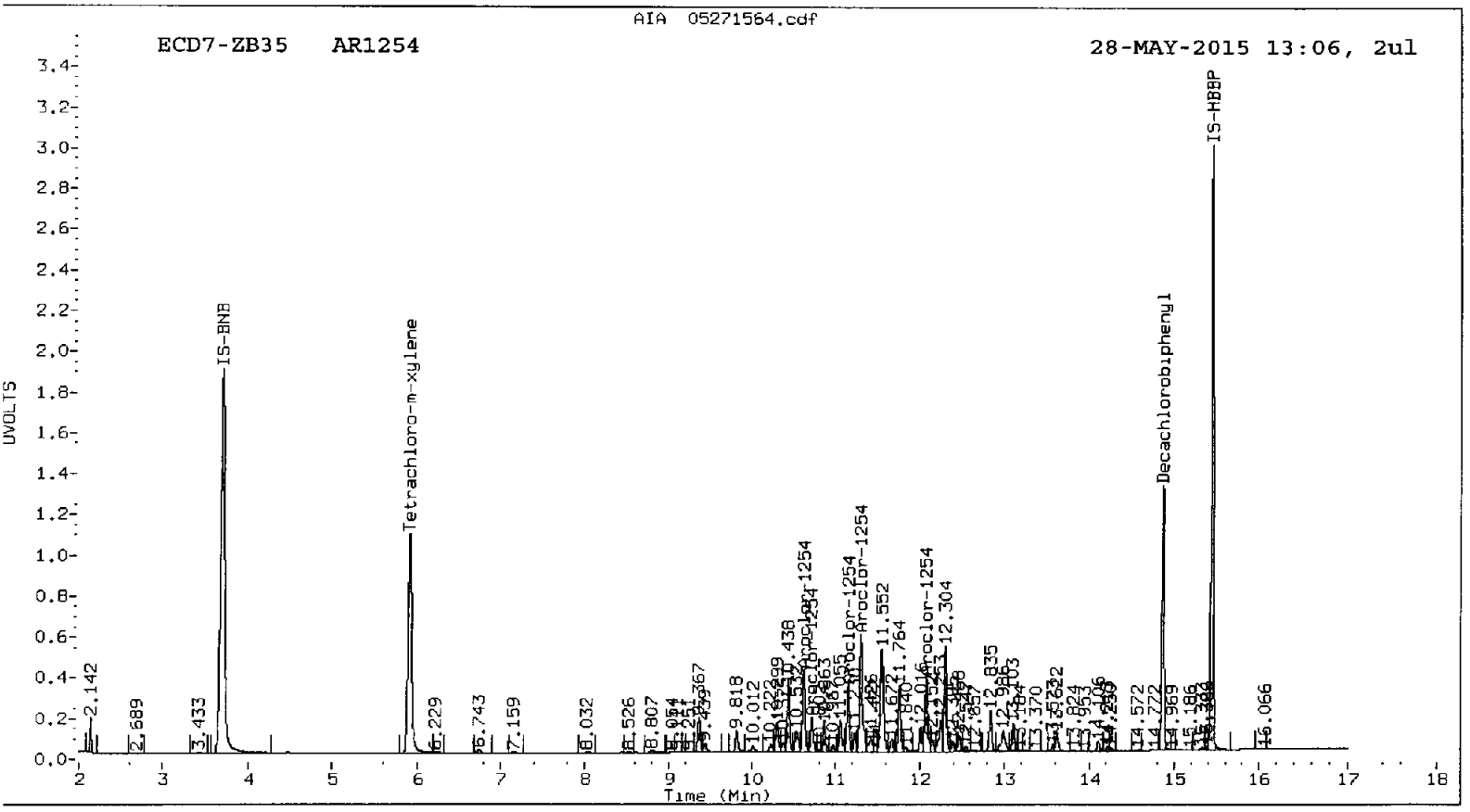
Total PCB Area Col1 (6.447 - 14.791) = 5549670 Col1 Total PCB = 0.2 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 28448913 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1254
AIA 05271564.cdf
28-MAY-2015 13:06, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1254


AIA 05271564.cdf
ECD7-ZB35 AR1254
28-MAY-2015 13:06, 2ul
UVOLTS
Time (Min)
IS-BNB
Tetrachloro-m-xylene
Decachlorobiphenyl
IS-HBBP
Aroclor-1254

Analytical Resources Inc.
Dual Column 8082 PCB Quantitation Report

Data file 1: 20150527.b/0527-1.b/05271565.d
Data file 2: 20150527.b/0527-2.b/05271565.d
Method: /chem2/ecd7.i/20150527.b/PCB1.m
Compound Sublist: AR1660
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660
Client ID:
Injection Date: 28-MAY-2015 13:28
Report Date: 05/29/2015 12:55
Matrix: NONE
Dilution Factor: 1.000

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
6.345	-0.002	1433560	5.913	0.000	6742709	39.1	37.9	3.0	Tetrachloro-m-xylene
14.890	0.000	2836095	14.863	0.000	4643347	39.2	37.9	3.4	Decachlorobiphenyl

* Indicates RPD > 40%
M Indicates Column 1 peak was manually integrated
N Indicates Column 2 peak was manually integrated

SURROGATE PERCENT RECOVERY

SURROGATE	Col1	Col2
Tetrachloro-m-xylene	97.7	94.8
Decachlorobiphenyl	98.1	94.8

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	5449431	5407167	-0.8
Hexabromobiphenyl	5633814	5748876	2.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	13059494	13180150	0.9
Hexabromobiphenyl	8980422	10153131	13.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 27-MAY-2015
<- Indicates standard response outside Limits (-50 to +100%)

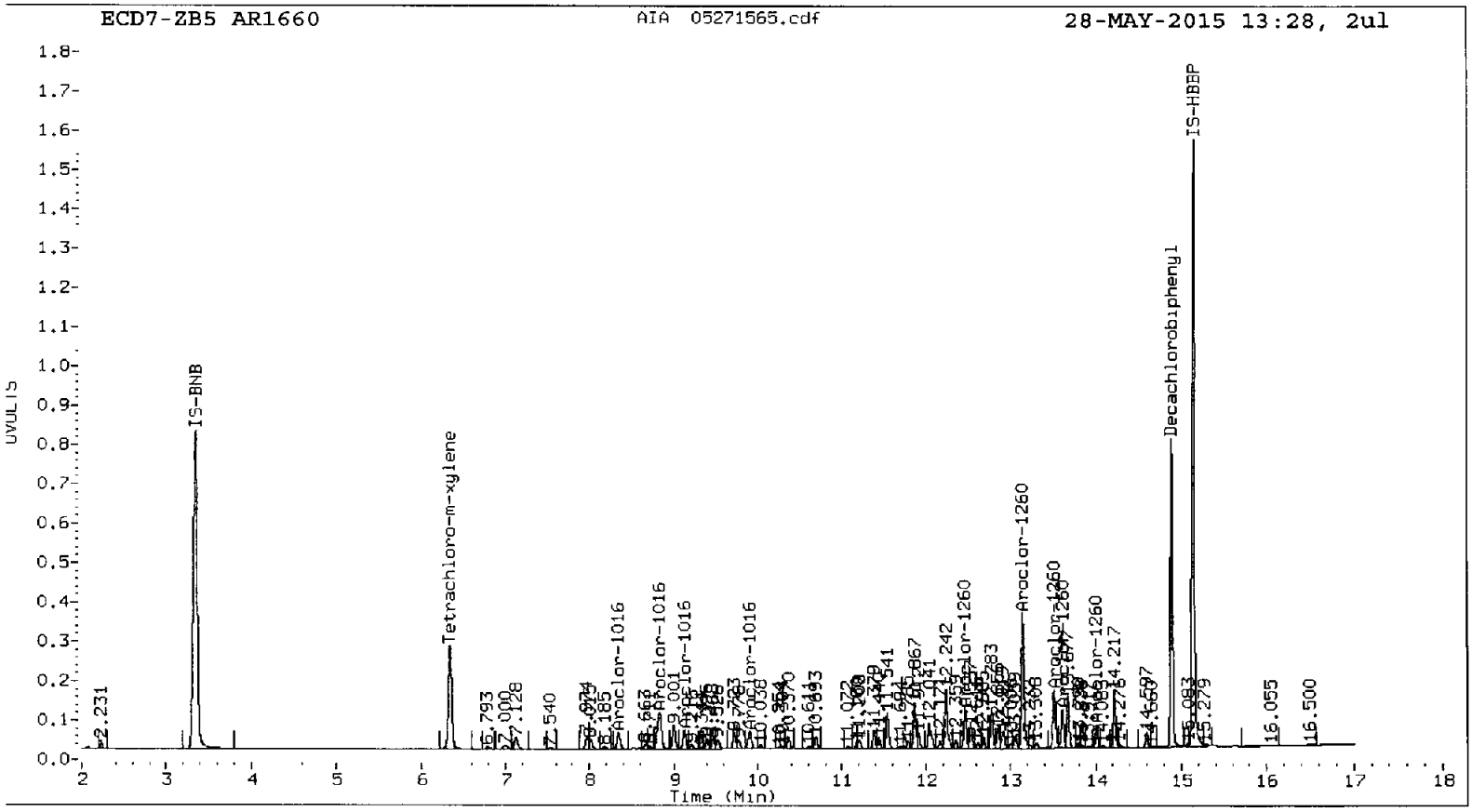
Aroclor	Peak#	RT	ZB5 Col Shift	Area	Amount	Peak#	RT	ZB35 Col Shift	Area	Amount
Aroclor-1016	1	8.346	-0.002	212723	244.6	1	8.032	0.001	1727441	239.1
Aroclor-1016	2	8.832	-0.002	645791	242.3	2	8.808	-0.002	3619609	236.0
Aroclor-1016	3	9.129	0.000	228970	251.1	3	9.248	-0.001	951082	240.3
Aroclor-1016	4	9.913	-0.001	241083	249.2	4	10.011	-0.002	659076	235.8
Total Col1Ave (4 peaks):					246.8	Total Col2Ave (4 peaks):				237.8 RPD = 4
Corrected Ave (3 peaks):					245.3	Corrected Ave (3 peaks):				236.9 RPD = 3
CalAmt %D:					-1.3	CalAmt %D:				-4.9
Aroclor-1260	1	12.469	-0.001	448881	239.3	1	12.396	-0.001	1965552	215.9
Aroclor-1260	2	13.145	0.000	1491210	245.7	2	13.102	-0.001	4715228	222.4
Aroclor-1260	3	13.514	-0.001	690415	244.8	3	13.573	-0.001	1416789	220.0
Aroclor-1260	4	13.613	-0.001	418749	246.1	4	13.624	-0.001	3128579	223.9
Aroclor-1260	5	14.012	-0.001	233220	249.4	NS	---			----
Total Col1Ave (5 peaks):					245.1	Total Col2Ave (4 peaks):				220.6 RPD = 11
Corrected Ave (4 peaks):					244.0	Corrected Ave (3 peaks):				219.4 RPD = 11
CalAmt %D:					-2.0	CalAmt %D:				-11.8

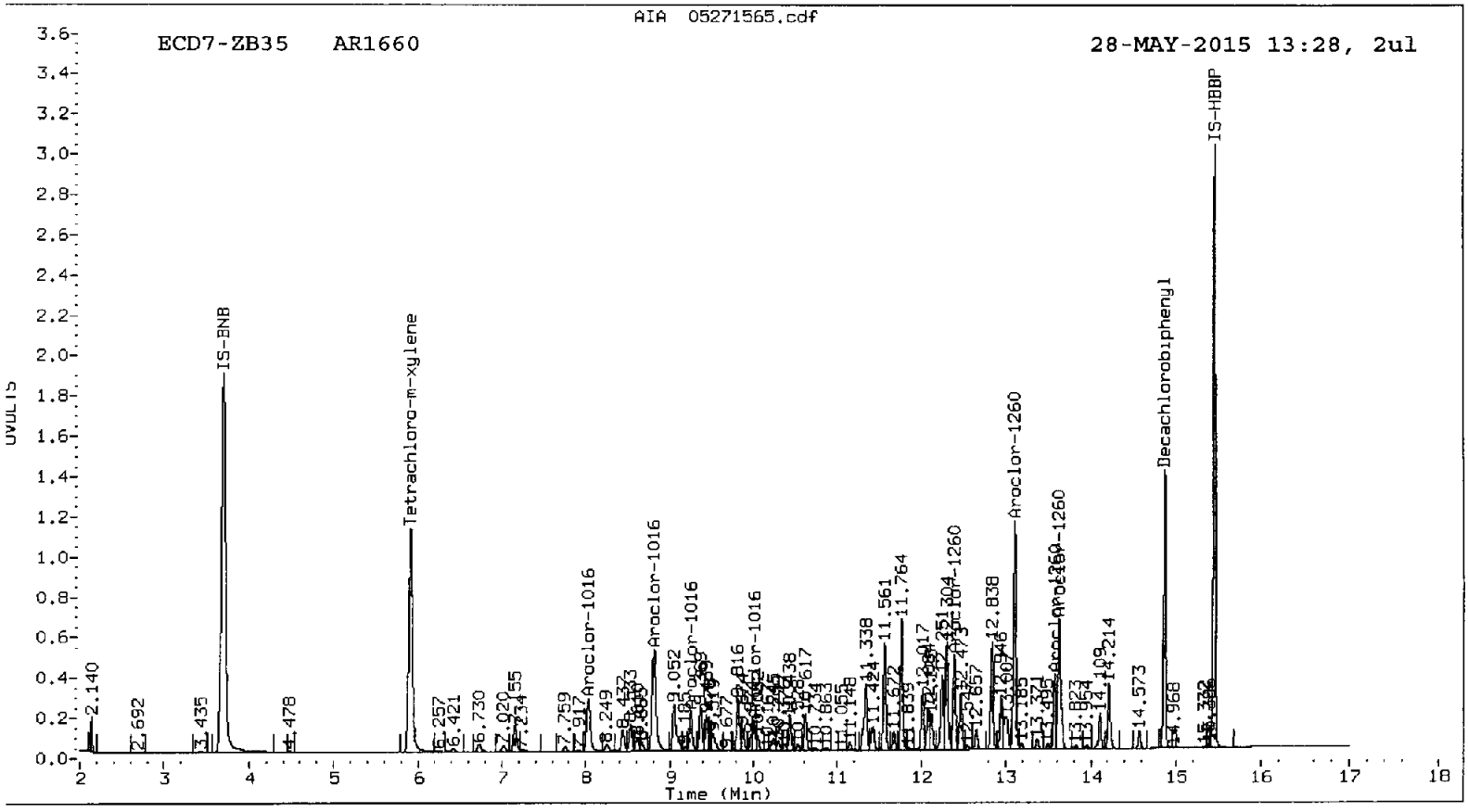
Total PCB Area Col1 (6.447 - 14.791) = 12551975 Col1 Total PCB = 0.5 ppm*

Total PCB Area Col2 (6.013 - 14.763) = 54489280 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.


ECD7-ZB5 AR1660
AIA 05271565.cdf
28-MAY-2015 13:28, 2ul
UVUL15
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)


AIA 05271565.cdf
ECD7-ZB35 AR1660
28-MAY-2015 13:28, 2ul
UVUL15
IS-BNB
Tetrachloro-m-xylene
Aroclor-1016
Aroclor-1260
Decachlorobiphenyl
IS-HBBP
Time (Min)

TPHD Raw Data
Extraction Bench Sheets and Notes

ARI Job ID: AGC9

AGC9 - 6695

Analytical Chemists and Consultants

Element BOE0045

(8015C) NWTPHD-Soil/Sediment
Microwave (3546) (SOP # 3304S)

Preparation Test TPHD # 3 (DIESMI)
ARI Job No(s) AGA8/AGC9 (15E0011/15E0013) Page 1 of 1

In-House (5ppm)
Batch set up by: SP

Bottle #	Extraction Requirements	Weight Extracted (wet wt)	Acid Clean (1:1) Y/N	Silica Gel Clean (1:1) Y/N	Final Effective Volume	Volume to Lab	Comments	Verify Client ID
	AGA8 MBS	10.00g	(1:1) Y/N	(1:1) Y/N	1mL	1mL	Element ID	MP 05/20/15
	SBS	10.00g	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
	~~SBS Dup.~~	~~10.00g~~	~~(1:1) Y/N~~	~~(1:1) Y/N~~	~~1mL~~	~~1mL~~		
	QLS	10.00g	(1:1) Y/N	~~(1:1) Y/N~~	~~1mL~~	~~1mL~~		Microwave 1 2 3
1	AGA8 B	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-02	CT 5/24/15
1	E	10.00	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-05	MP
1	F	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-06	
1	Fms	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
1	FmsD	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
1	H	10.04	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-08	TurboVap 1 2 3 4
1	I	10.07	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0011-09	~~Pre-Acid/Silica Clean~~ SP 5/26/15
1	AGC9 C	10.01	(1:1) Y/N	(1:1) Y/N	~~1mL~~ 5mL	1mL	15E0013-03	
1	D	10.05	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-04	
1	E	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-05	
1	H	10.01	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-08	SP 5/26/15 Analyst/Date
1 2	Hms	10.03	(1:1) Y/N	(1:1) Y/N	1mL	1mL		TurboVap 1 2 3 Post Acid/Silica Clean
1 2	HmsD	10.02	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
1	I	10.06	(1:1) Y/N	(1:1) Y/N	1mL	1mL	15E0013-09	
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
		10.	(1:1) Y/N	(1:1) Y/N	1mL	1mL		
Analyst/Date				SP 5/26/15	SP 5/26/15		SP 5/26/15	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O (D0041559)	450µg/mL	100µL	4/16/16	LH	MP
Spike	11 (CA043362)	15000µg/mL	100µL	5/19/15	LH	MP
~~QLS Spike~~	~~18 ( )~~	1000µg/mL	~~50µL~~			
Extraction Time: 15:10				Balance ID: B139298041		

SPECIAL INSTRUCTIONS 1. Weigh into 100mL beakers-dry with Sodium Sulfate 2. Transfer to microwave vessel. 3. Add DCM to the vessel until the solvent is 1" above soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then let cool 15 min. in cold water bath. Re-homogenize while cool. 7. Collect into turbo tube with sm. funnel containing glasswool and 1" sodium sulfate. 8. Add (2) 10mL DCM rinses to vessel and transfer to turbo tube 9. TurboVap. 10. Acid/Silica Clean-up?= Y (N) 11. TurboVap (if Silica Clean). 12. Vial in DCM.

A. Need Total Solids Y (N) B. Archive/Freeze Y (N)

Organic Extractions
Reagent and Solutions Identification

(8015C) NWTPHD-Soil/Sediment
Microwave (3546) (SOP # 3304S)

ARI Job No(s) 46A8/A6C9 (15E0011/15E0013)

(8015C) NWTPHD Soil/Sediment/Solid/Other:	Analyst/Date
Microwave Station:	Microwave
Methylene Chloride: (I#) D442479	CT 5/24/15
Anhydrous Sodium Sulfate: (I# + jar date) D441874	TMP
Neutral Glasswool: (I# + jar date) D441494	
Vialing Station:	Vialing
Methylene Chloride: (I#) D442078	SC 5/26/15
Concentrated Sulfuric Acid: (I# N/A)	
Silica Gel (SPE) Darts: (I# N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8/15E0411 Client ID: Kennedy Jenks Consultants

Parameter: TPHD Client Project: POS Silver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☒ No Anomalies (standard soil/wet sediment/sand/gravel)= B C, E, G, B 5/14/15	MP 05/14/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☒ Clay/Clumps (Difficult to homogenize)= H, I.	MP 05/14/15
☒ Rocks (%+size)? 20.0% A, 10.0% B, 25.0% D T,	MP 05/14/15
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date: B 5/18/15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory
Analyst Notes

ARI Job No.: AGC9/15E0013 Client ID: Kennedy Jenks Consultants

Parameter: TPHD Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= A-K	VA 5/19/15
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☒ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations) Sample 'C' - dark, viscous. Took to a Sink FEV.	SP 5/26/15

Reviewed by/Date: [signature] 5/20/15

0056F

Revision 10
09/12/13

ARI 0056

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Element Batch BOEΦΦ4Φ

Organic Extractions Benchsheet

(8015C) NWTPHD / NWHCID –Water Separatory Funnel (3510C) (SOP # 3311S)

Preparation Test TPHD/HCID # 1

In-House (0.25-0.50ppm)

ARI Job No(s) AGA8, AGC9

Page 1 of 1

Batch set up by: SF

Bottle #	Extraction Requirements	Volume Extracted	DryVap Module # Y/(N)	Acid/Silica Clean (1:1) (1mL) Y/(N)	Final Effective Volume	Volume to Lab	Comments	Verify Client ID
	AGA8 MBW	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		PD 5/20/15
	SBW	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		
	SBW Dup.	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL		
	~~QLS~~	~~500mL~~	# Y/N	(1:1) Y/N	~~1mL~~	~~1mL~~		
6	AGA8 J	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL	15EΦΦ11-14 B	Analyst/Date
4	AGC9 L	500mL	# Y/(N)	(1:1) Y/(N)	1mL	1mL	15EΦΦ13-12 B	KD 80-85°C (Y) N
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		(1)2 3 4 5 6
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		RH 5/20/15
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		Analyst/Date
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		Turbo Vap (1)2 3
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1 1) Y/N	1mL	1mL		DD 5/27/15
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		500mL	# Y/N	(1:1) Y/N	1mL	1mL		
		~~500mL~~	# Y/N	(1:1) Y/N	1mL	1mL	DC 5/27/15	
Analyst/Date	PD 5/20/15	—	—		DC 5/27/15	DC 5/27/15	Reviewed by/Date	Analyst/Date

Standard	Standard ID	Concentration	Volume	Expiration Date	Analyst	Witness
Surrogate	O (DΦΦ1559)	450µg/mL	100µL	1/16/16	PD	SF
Spike	11 (CΦΦ3362)	15000µg/mL	100µL	9/14/15	PD	SF
~~QLS Spike~~	~~18 ( )~~	~~1000µg/mL~~	~~50µL~~			
Extraction Time:	0844					

SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH.

4. ~~IF HCID ONLY USE LOW LEVEL DCM ONLY~~! 5. Extract 2X with 30mL DCM.

6. ~~DryVap or~~ KD at 80°. 7. TurboVap if KD. 8. Acid/Silica Clean-ups? Y (N) 9. If NO clean-ups: Vial 1.0mL in DCM.

10. If ~~Clean-ups: Vial approximately 1.0mL in DCM. (Mark the bottom of the miniscus of the volume of the clear vial for GC.)~~

A. Archive Y (N)

Reagent and Solutions Identification

(8015C) NWTPHD / NWHCID –Water
Separatory Funnel (3510C) (SOP # 3311S)

ARI Job No(s) AGA8, AGC9

(8015C)TPHD/HCID Aqueous:	Analyst/Date
Separatory Funnel Station:	Sep. Funnel
1:1 Sulfuric Acid/DI H2O: (DD01673)	RD 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: ( )	
Anhydrous Sodium Sulfate: (DD01874)	KD
KD Station:	RH 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: ( )	Vialing
Vialing Station:	DG 5/20/15
Methylene Chloride: (DD01906)	
Low Level Methylene Chloride: (N/A)	
Concentrated Sulfuric Acid: (N/A)	
0% Silica Gel: (N/A)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

ARI Job No.: AGA8 / AGC9 Client ID: Kennedy Jenks Consultants

Parameter: TPHD Client Project: Pos Sliver

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
Aqueous:	
☑ No Anomalies AGA8 J & AGC9 L	10/5/24/15
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
(Centrifuge#1 used for all Centrifugations)	

Reviewed by/Date:_____

3058F

TPHD Raw Data
Initial Calibration

ARI Job ID: AGC9

Analysis	Matrix	Method

Checklist: Initial Calibration Checklist-FID

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	JLW	03/17/2015
	Comments: *YC00022*			
2	ICal %RSD < 20%	YES	JLW	03/17/2015
3	Manual integrations include before/after pictures	YES	JLW	03/17/2015
4	All SCV within +/- 20% (DOD)	YES	JLW	03/17/2015
5	All SCV within +/- 30%	YES	JLW	03/17/2015
6	NO Linear or Quadratic fits used	YES	JLW	03/17/2015
7	NO Calibration points dropped	YES	JLW	03/17/2015
8	Additonal Notes	YES	JLW	03/17/2015
	Comments: *Two high pts for triac surr outside +/-0.05mın wiindow, surr not spiked at this level no further CA needed.*			
9	Reviewer Approval (Reviewer)	YES	BB	03/17/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 3/16/2015 5:18:51PM

ANALYSIS SEQUENCE

SDC0026

Instrument: FID4
Calibration ID: UNASSIGNED
MS Energy:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SDC0026-IBL1	Retention Time Std	QC		1	D000116		
SDC0026-IBL2	Instrument Blank	QC		2	D000115		
SDC0026-CAL1	Diesel 50	QC		3	D000830		
SDC0026-CAL2	Diesel 100	QC		4	D000831		
SDC0026-CAL3	Diesel 250	QC		5	D000832		
SDC0026-CAL4	Diesel 500	QC		6	D000833		
SDC0026-CAL5	Diesel 1000	QC		7	D000834		
SDC0026-CAL6	Diesel 2500	QC		8	D000821		
SDC0026-SCV1	Diesel SCV 250	QC		9	C003250		
SDC0026-CAL7	Moil 100	QC		10	C002139		
SDC0026-CAL8	Moil 250	QC		11	C002138		
SDC0026-CAL9	Moil 500	QC		12	C002137		
SDC0026-CALA	Moil 1000	QC		13	C002136		
SDC0026-CALB	Moil 2500	QC		14	C002135		
SDC0026-CALC	Moil 5000	QC		15	D000203		
SDC0026-SCV2	Moil SCV 500	QC		16	D000209		

Samples Loaded By Date

Data Processed By Date

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150316.b

ARI Job No.: SDC0 Method: ftphfid4a.m Instrument: fid4a.i Date: 16-MAR-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1037	0316a002.d	SDC0026-IBL1		1	NO MANUAL INTEGRATION
1101	0316a003.d	SDC0026-IBL2		1	NO MANUAL INTEGRATION
1125	0316a004.d	SDC0026-CAL1		1	o-terph,
1149	0316a005.d	SDC0026-CAL2		1	o-terph,
1213	0316a006.d	SDC0026-CAL3		1	o-terph,
1237	0316a007.d	SDC0026-CAL4		1	o-terph,
1301	0316a008.d	SDC0026-CAL5		1	o-terph,
1325	0316a009.d	SDC0026-CAL6		1	o-terph,
1349	0316a010.d	SDC0026-SCV1		1	o-terph,
1412	0316a011.d	SDC0026-CAL7		1	Triacon Surr,
1436	0316a012.d	SDC0026-CAL8		1	Triacon Surr,
1500	0316a013.d	SDC0026-CAL9		1	Triacon Surr,
1524	0316a014.d	SDC0026-CALA		1	Triacon Surr,
1548	0316a015.d	SDC0026-CALB		1	Triacon Surr,
1612	0316a016.d	SDC0026-CALC		1	Triacon Surr,
1636	0316a017.d	SDC0026-SCV2		1	Triacon Surr,

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150316

Instrument: FID4A.I Project:

Calibration Date: 16-MAR-2015 SDG No.: 20150316

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	16883	16837	16662	16474	16073	16315	16541	1.9
AK Diesel	20602	20180	19759	19321	19009	19111	19664	3.2
OR Diesel	20711	20284	19885	19446	19141	19237	19784	3.2
Cal Diesel	20550	20136	19710	19279	18948	19058	19614	3.2
o-Terph	24171	23714	23513	23246	22946	20666	23043	5.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.522-7.247)
AK Diesel C10-C25 (2.648-7.546)
OR Diesel C10-C28 (2.648-8.396)
Cal Diesel C10-C24 (2.648-7.247)

Calibration Files	Analysis Time
0316a004.d	16-MAR-2015 11:25
0316a005.d	16-MAR-2015 11:49
0316a006.d	16-MAR-2015 12:13
0316a007.d	16-MAR-2015 12:37
0316a008.d	16-MAR-2015 13:01
0316a009.d	16-MAR-2015 13:25

8

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client:

SDG No.: Project:

Instrument ID: FID4A GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.52 TRIAC: 9.00

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		RINSE	03/16/15	1014	5.53	9.01
02		SDC0026-IBL1	03/16/15	1037	5.52	9.00
03		SDC0026-IBL2	03/16/15	1101	5.52	8.99
04		SDC0026-CAL1	03/16/15	1125	5.52	8.99
05		SDC0026-CAL2	03/16/15	1149	5.52	8.99
06		SDC0026-CAL3	03/16/15	1213	5.53	8.99
07		SDC0026-CAL4	03/16/15	1237	5.54	8.99
08		SDC0026-CAL5	03/16/15	1301	5.55	8.98
09		SDC0026-CAL6	03/16/15	1325	5.57	8.98
10		SDC0026-SCV1	03/16/15	1349	5.53	8.99
11		SDC0026-CAL7	03/16/15	1412	5.52	8.98
12		SDC0026-CAL8	03/16/15	1436	5.52	8.99
13		SDC0026-CAL9	03/16/15	1500	5.52	9.00
14		SDC0026-CALA	03/16/15	1524	5.52	9.02
15		SDC0026-CALB	03/16/15	1548	5.52	9.06*
16		SDC0026-CALC	03/16/15	1612	5.52	9.10*
17		SDC0026-SCV2	03/16/15	1636	5.52	9.00

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

FORM VIII TPH

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0316a004	0316a005	0316a006	0316a007	0316a008	0316a009
INJ.DATE:	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015
INJ.TIME:	11:25	11:49	12:13	12:37	13:01	13:25

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	Toluene	0.808	0.814	0.815	0.814	0.813	0.816	0.817	0.717-0.917	0.813	0.003
40	Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.023	0.973-1.073	+++++	+++++
39	Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.542	0.492-0.592	+++++	+++++
36	JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.794	0.744-0.844	+++++	+++++
37	Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.729	0.679-0.779	+++++	+++++
38	Hydraulic Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.197	1.147-1.247	+++++	+++++
2	C8	1.088	1.090	1.092	1.090	1.088	1.091	1.100	1.000-1.200	1.090	0.001
3	C10	2.648	2.647	2.647	2.645	2.647	2.648	2.648	2.598-2.698	2.647	0.001
4	C12	3.522	3.521	3.522	3.522	3.523	3.526	3.522	3.472-3.572	3.523	0.002
5	C14	4.198	4.197	4.198	4.198	4.200	4.204	4.199	4.149-4.249	4.199	0.002
6	C16	4.787	4.785	4.787	4.787	4.789	4.795	4.786	4.736-4.836	4.788	0.003
7	C18	5.368	5.368	5.371	5.373	5.375	5.385	5.371	5.321-5.421	5.373	0.006
$ 8	o-terph	5.519	5.522	5.529	5.537	5.548	5.571	5.524	5.474-5.574	5.538	0.019
9	C20	5.997	5.995	5.996	5.996	5.996	6.001	5.997	5.947-6.047	5.997	0.002
10	C22	6.632	6.631	6.629	6.629	6.628	6.632	6.630	6.580-6.680	6.630	0.002
11	C24	7.252	7.249	7.248	7.247	7.244	7.246	7.247	7.197-7.297	7.248	0.003
12	C25	7.549	7.545	7 545	7.543	7.543	7.543	7.546	7.496-7.596	7.545	0.003

Reviewer 1 _____ Date: 3/16/15
Reviewer 2 _____ Date: 3/17/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.836	7.836	7.836	7.835	7.833	7.830	7.835	7.785-7.885	7.834	0.003
14 C28	8.397	8.397	8.397	8.395	8.394	8.393	8.396	8.346-8.446	8.395	0.002
$ 15 Triacon Surr	8.985	8.992	8.989	8.990	8.983	8.981	8.997	8.947-9.047	8.986	0.004
16 C32	9.586	9.588	9.586	9.587	9.586	9.584	9.614	9.564-9.664	9.586	0.002
17 C34	10.236	10.257	10.254	10.252	10.255	10.251	10.257	10.207-10.307	10.251	0.008
18 Filter Peak	11.830	11.818	11.819	11.832	11.853	11.833	11.842	11.742-11.942	11.831	0.013
19 C36	10.907	10.905	10.905	10.909	10.907	10.909	10.905	10.855-10.955	10.907	0.002
20 C38	11.535	11.537	11.535	11.539	11.532	11.536	11.542	11.492-11.592	11.536	0.002
21 C40	12.148	12.147	12.143	12.149	12.149	12.147	12.162	12.112-12.212	12.147	0.002
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.683	0.633-0.733	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.499	0.449-0.549	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.662	0.612-0.712	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.615	0.565-0.665	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a002.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-IBL1
Client ID:
Injection: 16-MAR-2015 10:37

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.817	0.000	327126	436747	WATPHG	(Tol-C12)	1980679	80.24
C8	1.100	0.000	224612	466834	WATPHD	(C12-C24)	2422212	146.44
C10	2.648	0.000	177850	290006	WATPHM	(C24-C38)	2897211	190.33
C12	3.522	0.000	383591	316219	AK102	(C10-C25)	3278824	166.74
C14	4.199	0.000	500081	393730	AK103	(C25-C36)	2477933	269.28
C16	4.786	0.000	530296	395918				
C18	5.371	0.000	401445	390579				
C20	5.997	0.000	367215	383100				
C22	6.630	0.000	348597	384820				
C24	7.247	0.000	343525	370020				
C25	7.546	0.000	325312	367952				
C26	7.835	0.000	346972	401602				
C28	8.396	0.000	337754	403983				
C32	9.614	0.000	268506	398985				
C34	10.257	0.000	240575	397177				
Filter Peak	11.842	0.000	1631	7718				
C36	10.905	0.000	253050	394184				
C38	11.542	0.000	218055	373902				
C40	12.162	0.000	208395	377496				
o-terph	5.524	0.000	876196	1035912				
Triacon Surr	8.997	0.000	622077	908211	NAS DIES	(C10-C24)	3266281	166.53

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1035912	45.0	99.9
Triacontane	908211	45.3	100.7

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a002.d

Date : 16-MAR-2015 10:37

Client ID:

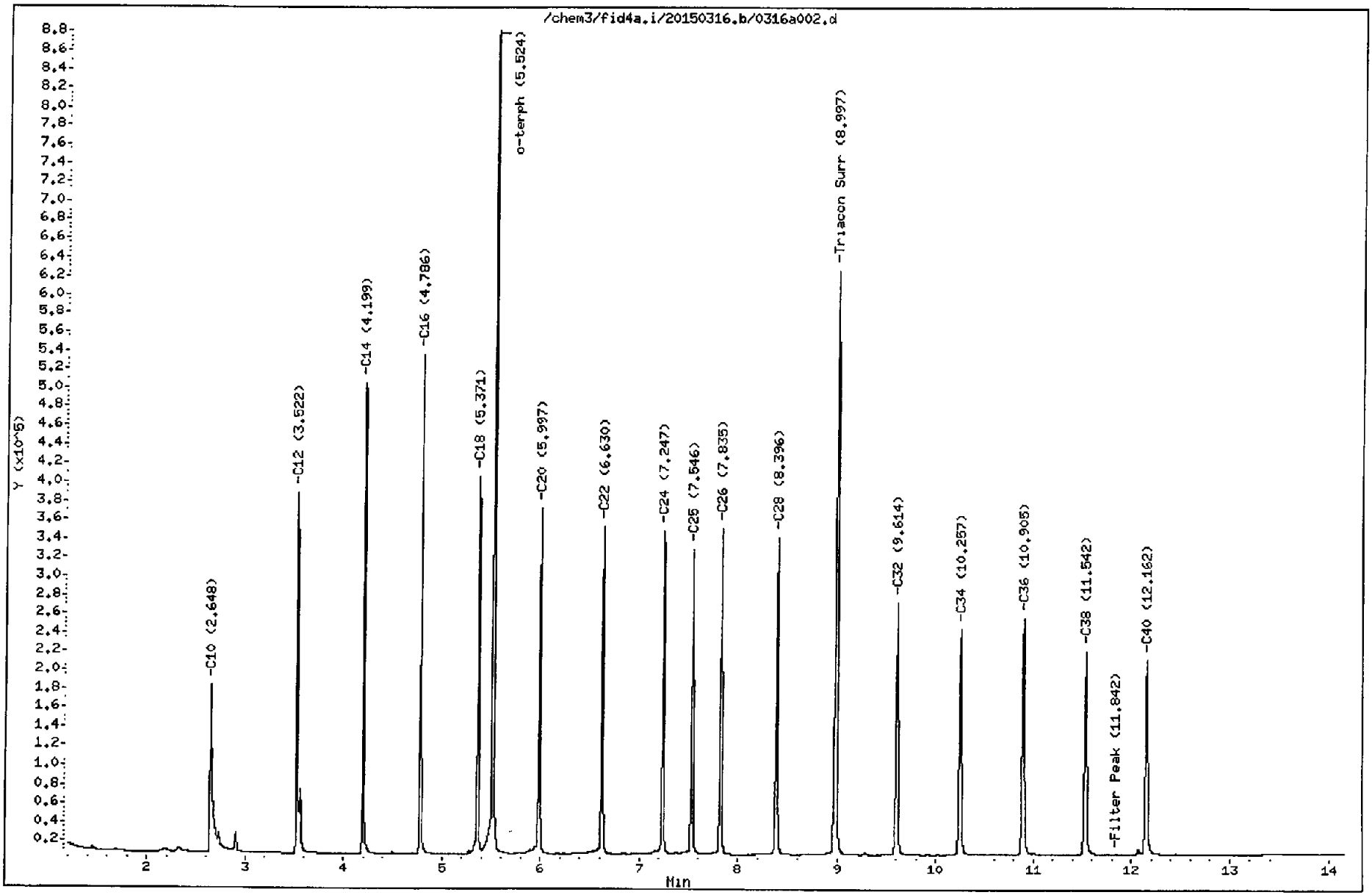
Sample Info: SDC0026-IBL1

Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a003.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-IBL2
Client ID:
Injection: 16-MAR-2015 11:01

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.822	0.005	8897	77310	WATPHG	(Tol-C12)	265972	10.78
C8	1.151	0.051	6208	34984	WATPHD	(C12-C24)	17712	1.07
C10	2.622	-0.025	1274	4085	WATPHM	(C24-C38)	125466	8.24
C12	----				AK102	(C10-C25)	41912	2.13
C14	4.200	0.000	34	85	AK103	(C25-C36)	98297	10.68
C16	4.792	0.006	55	167				
C18	5.396	0.025	87	116				
C20	6.003	0.006	225	988				
C22	6.638	0.008	169	954				
C24	7.246	-0.001	208	1025				
C25	7.543	-0.003	267	1632				
C26	7.832	-0.003	276	742				
C28	8.397	0.001	754	1873				
C32	9.607	-0.006	5274	15891				
C34	10.253	-0.004	688	4019				
Filter Peak	11.872	0.030	973	3759				
C36	10.898	-0.007	929	5947				
C38	11.526	-0.015	1091	6987				
C40	12.144	-0.018	1373	6795				
o-terph	5.525	0.000	993475	1030218				
Triacon Surr	8.995	-0.002	612844	908345	NAS DIES	(C10-C24)	39918	2.04

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1030218	44.7	99.4
Triacontane	908345	45.3	100.7

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a003.d

Date : 16-MAR-2015 11:01

Client ID:

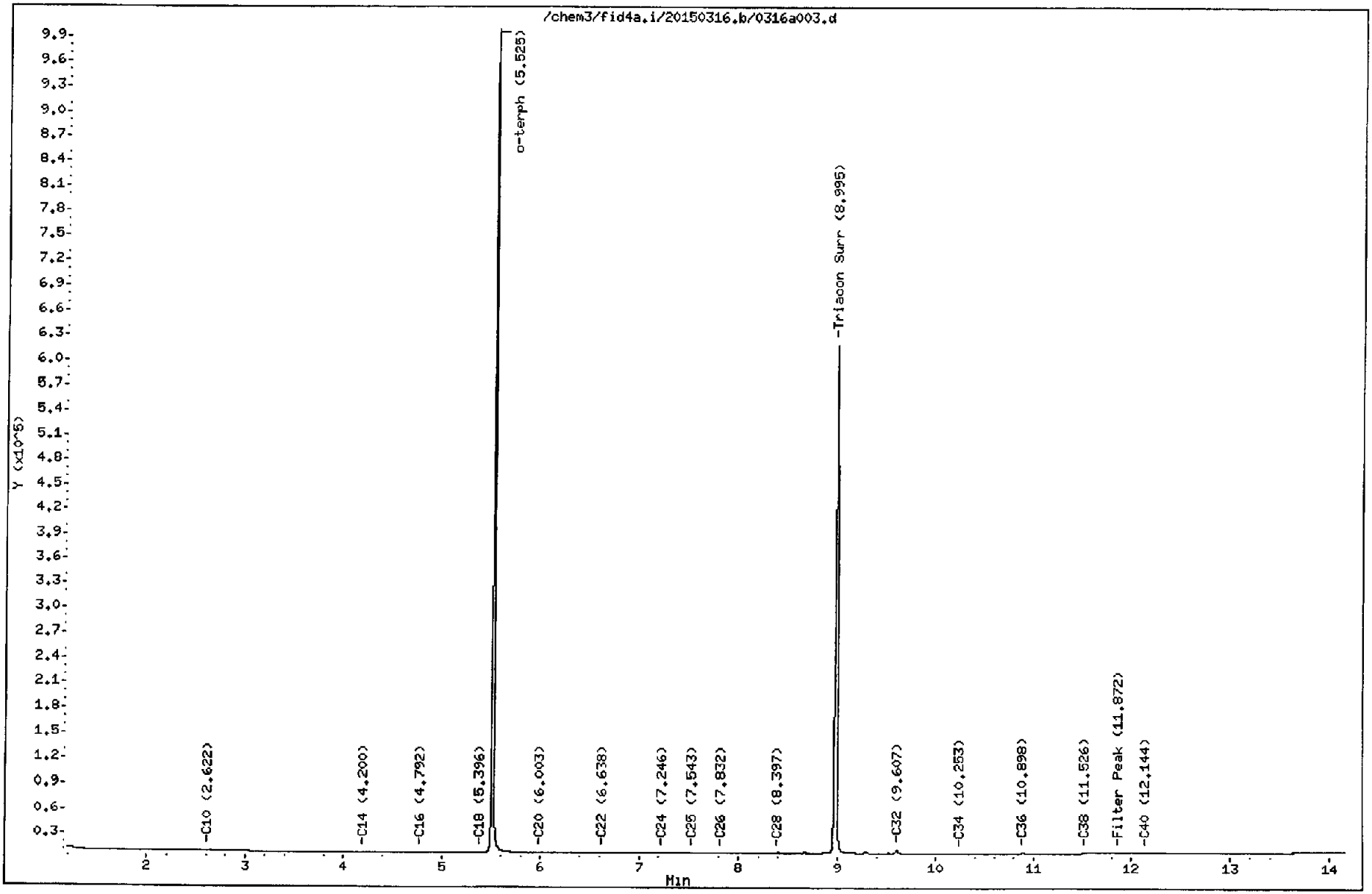
Sample Info: SDC0026-IBL2

Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a004.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL1
Client ID:
Injection: 16-MAR-2015 11:25

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.808	-0.008	5450	18413	WATPHG	(Tol-C12)	455934	18.47
C8	1.088	-0.012	4783	40553	WATPHD	(C12-C24)	844137	51.03
C10	2.648	0.001	3526	7805	WATPHM	(C24-C38)	39443	2.59
C12	3.522	0.000	6903	8569	AK102	(C10-C25)	1030093	52.38
C14	4.198	-0.001	10264	26246	AK103	(C25-C36)	22490	2.44
C16	4.787	0.001	16773	44279				
C18	5.368	-0.003	16069	31231				
C20	5.997	0.000	7263	24304				
C22	6.632	0.002	3094	10217				
C24	7.252	0.005	981	3440				
C25	7.549	0.003	466	1680				
C26	7.836	0.001	220	544				
C28	8.397	0.001	49	117				
C32	9.586	-0.028	269	773				
C34	10.236	-0.021	175	881				
Filter Peak	11.830	-0.012	600	1090				
C36	10.907	0.002	452	3643				
C38	11.535	-0.007	486	1694				
C40	12.148	-0.014	807	4265				
o-terph	5.519	-0.005	231436	217536				
Triacon Surr	8.985	-0.012	73	232	NAS DIES	(C10-C24)	1027512	52.39

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	217536	9.4	21.0 M
Triacontane	232	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

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Data File: /chem3/fid4a.i/20150316.b/0316a004.d

Date : 16-MAR-2015 11:25

Client ID:

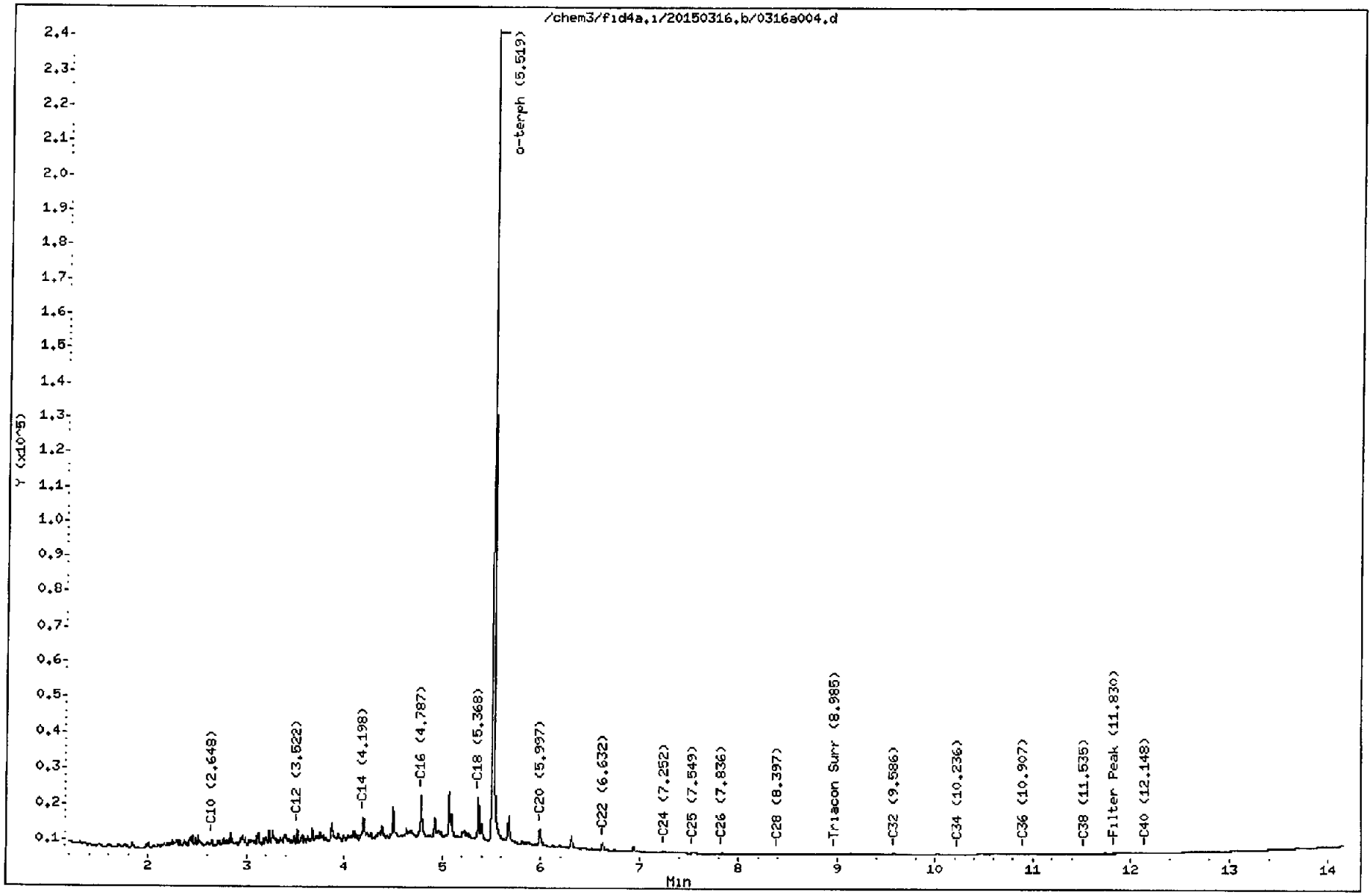
Sample Info: SDC0026-CAL1

Column phase: RTX-1

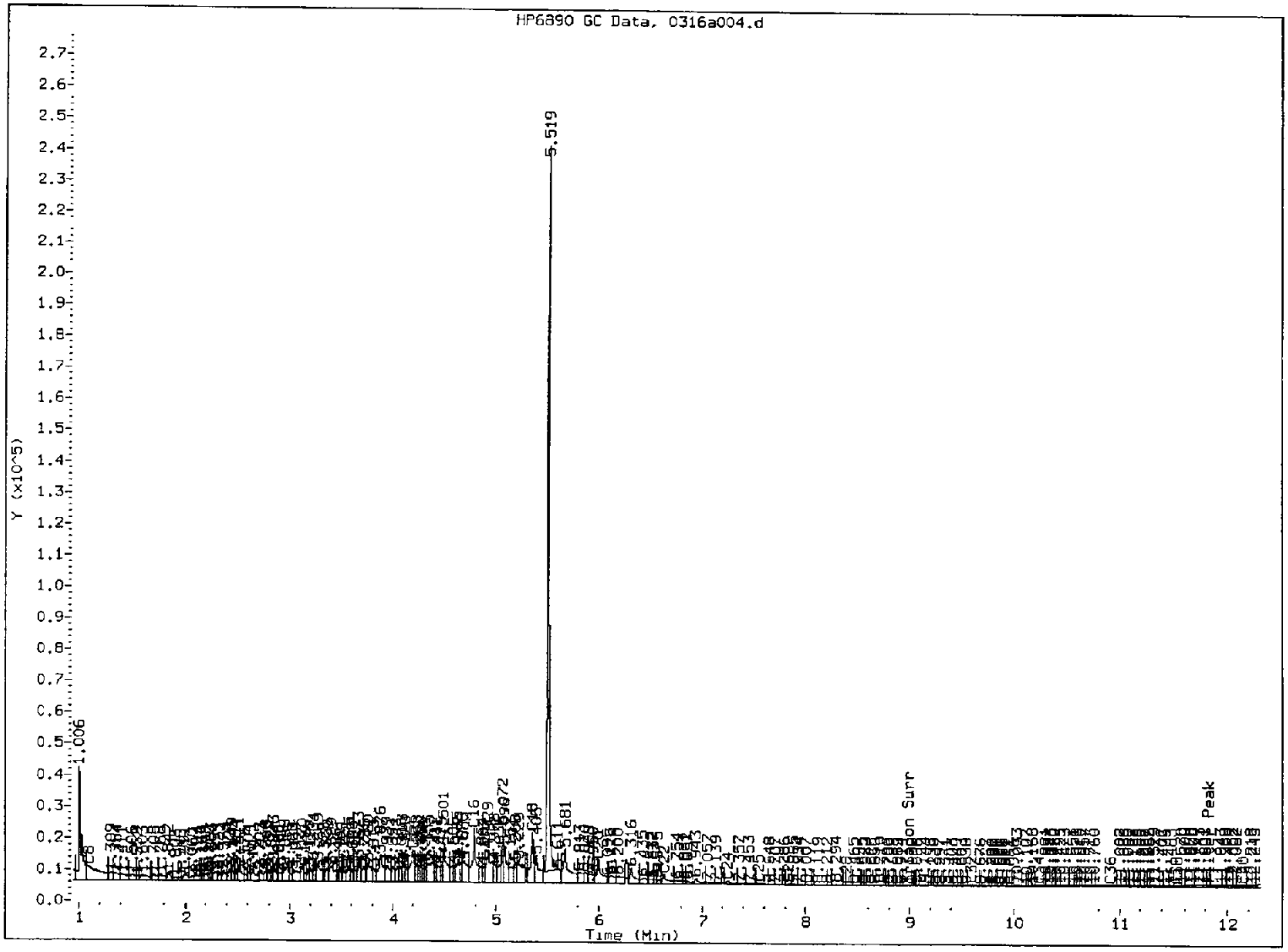
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: BJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a005.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL2
Client ID:
Injection: 16-MAR-2015 11:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	5970	18618	WATPHG	(Tol-C12)	654583	26.52
C8	1.090	-0.010	5478	30518	WATPHD	(C12-C24)	1683704	101.79
C10	2.647	-0.001	6247	9460	WATPHM	(C24-C38)	43734	2.87
C12	3.521	-0.001	15304	17520	AK102	(C10-C25)	2017958	102.62
C14	4.197	-0.002	23410	53428	AK103	(C25-C36)	26547	2.88
C16	4.785	-0.001	37257	88308				
C18	5.368	-0.003	34013	50851				
C20	5.995	-0.002	15775	48885				
C22	6.631	0.001	6891	21166				
C24	7.249	0.002	2215	6845				
C25	7.545	-0.001	1107	3286				
C26	7.836	0.001	490	1114				
C28	8.397	0.001	92	382				
C32	9.588	-0.025	275	757				
C34	10.257	0.000	178	723				
Filter Peak	11.818	-0.024	560	937				
C36	10.905	0.000	429	1825				
C38	11.537	-0.004	498	1781				
C40	12.147	-0.015	748	3656				
o-terph	5.522	-0.003	476461	426851				
Triacon Surr	8.992	-0.005	49	129	NAS DIES	(C10-C24)	2013624	102.66

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	426851	18.5	41.2 M
Triacontane	129	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a005.d

Date : 16-MAR-2015 11:49

Client ID:

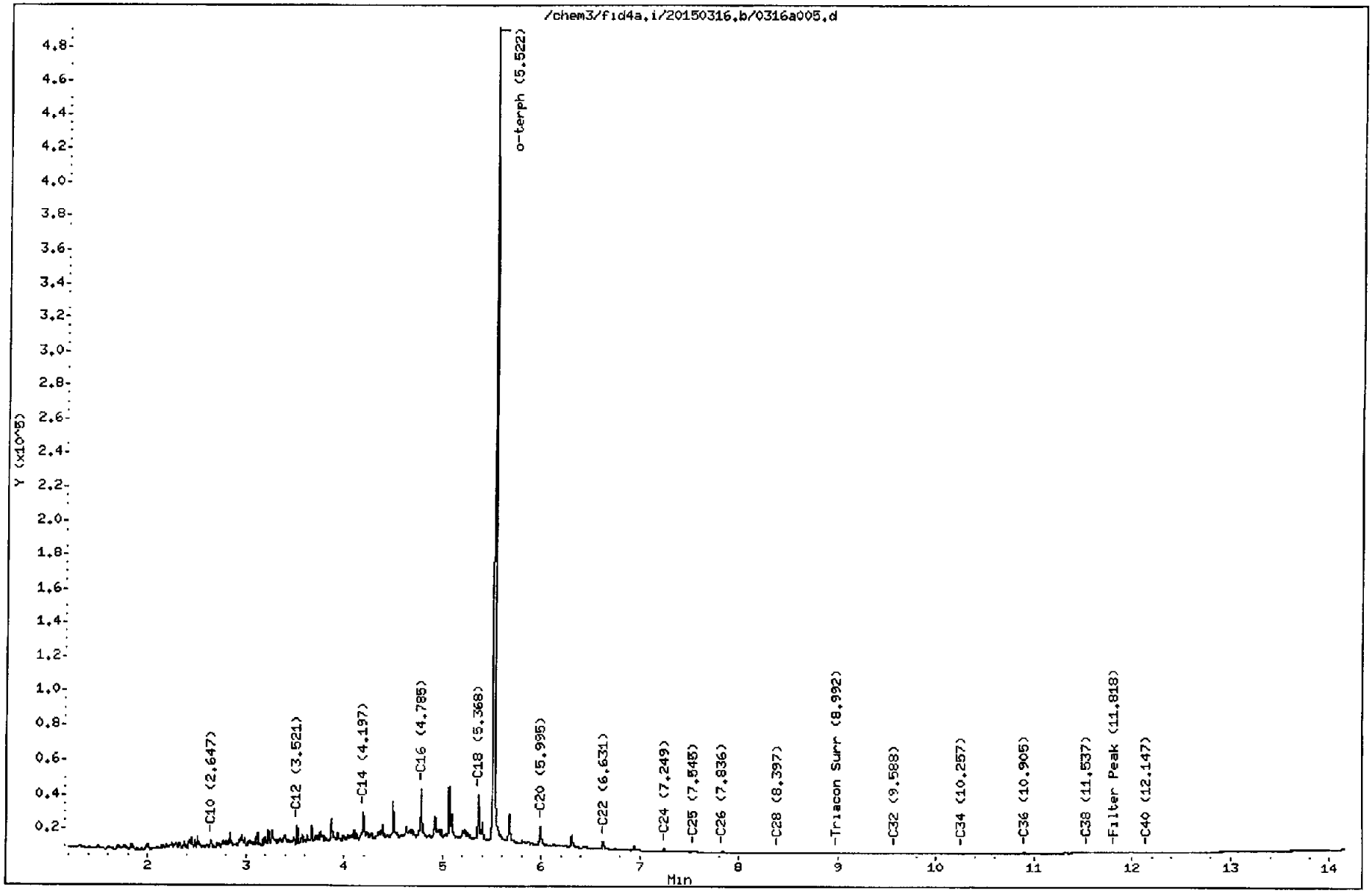
Sample Info: SDC0026-CAL2

Column phase: RTX-1

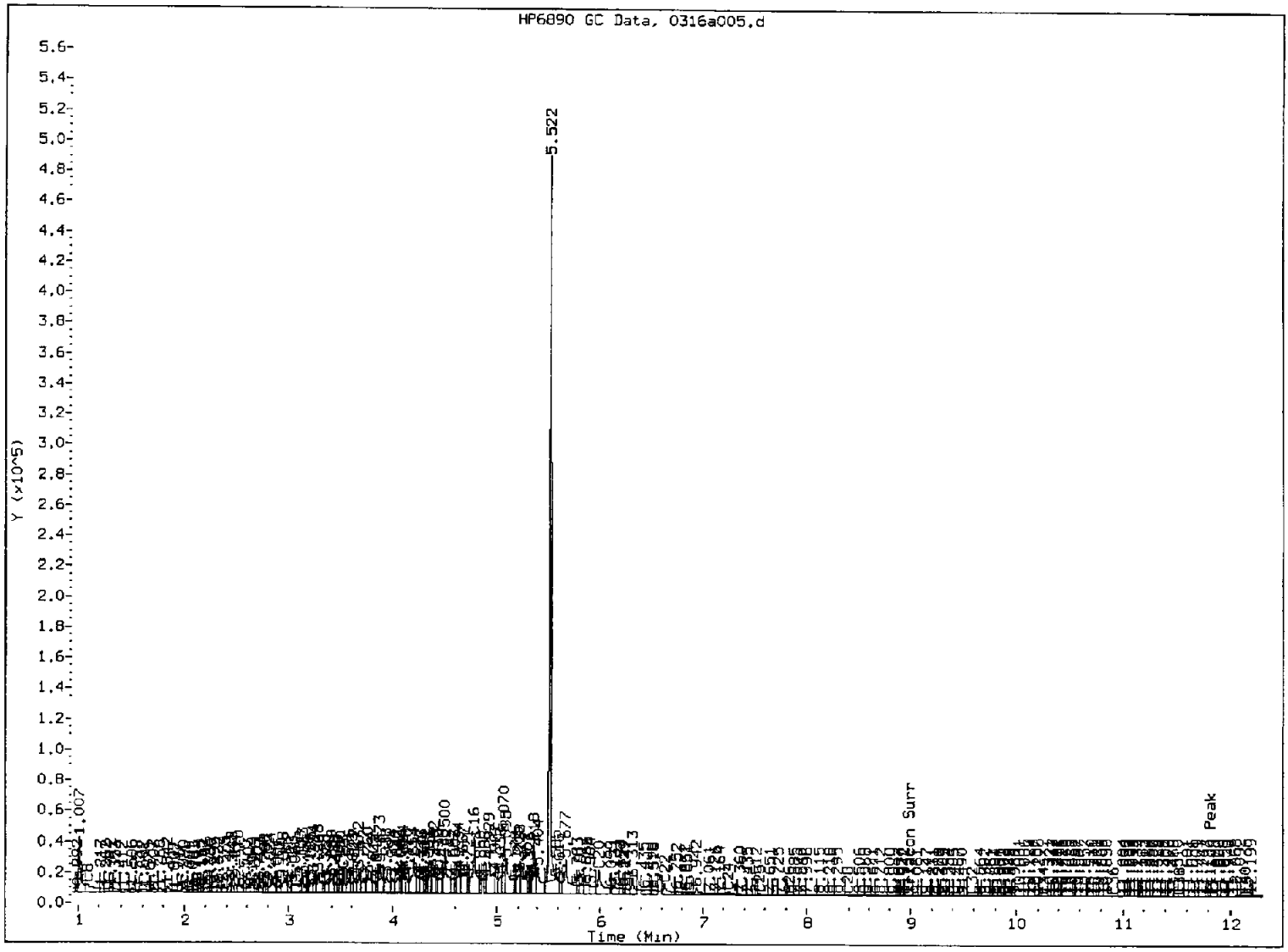
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL2 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: TW Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a006.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL3
Client ID:
Injection: 16-MAR-2015 12:13

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.815	-0.002	7469	19699	WATPHG	(Tol-C12)	1284181	52.02
C8	1.092	-0.008	7581	18554	WATPHD	(C12-C24)	4165385	251.82
C10	2.647	-0.001	16334	21341	WATPHM	(C24-C38)	104205	6.85
C12	3.522	0.000	42096	43463	AK102	(C10-C25)	4939809	251.21
C14	4.198	-0.002	61742	133978	AK103	(C25-C36)	72744	7.91
C16	4.787	0.001	95227	215593				
C18	5.371	0.000	85039	122078				
C20	5.996	-0.001	43802	93183				
C22	6.629	-0.001	17968	51347				
C24	7.248	0.001	6234	14866				
C25	7.545	-0.001	3020	9114				
C26	7.836	0.001	1351	3143				
C28	8.397	0.001	227	650				
C32	9.588	-0.026	2604	4036				
C34	10.254	-0.003	136	653				
Filter Peak	11.819	-0.023	536	1592				
C36	10.905	0.000	5662	11319				
C38	11.535	-0.007	414	1906				
C40	12.143	-0.018	2463	7367				
o-terph	5.529	0.005	1023965	1058096				
Triacon Surr	8.989	-0.008	117	263	NAS DIES	(C10-C24)	4927591	251.23

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1058096	45.9	102.0 M
Triacontane	263	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

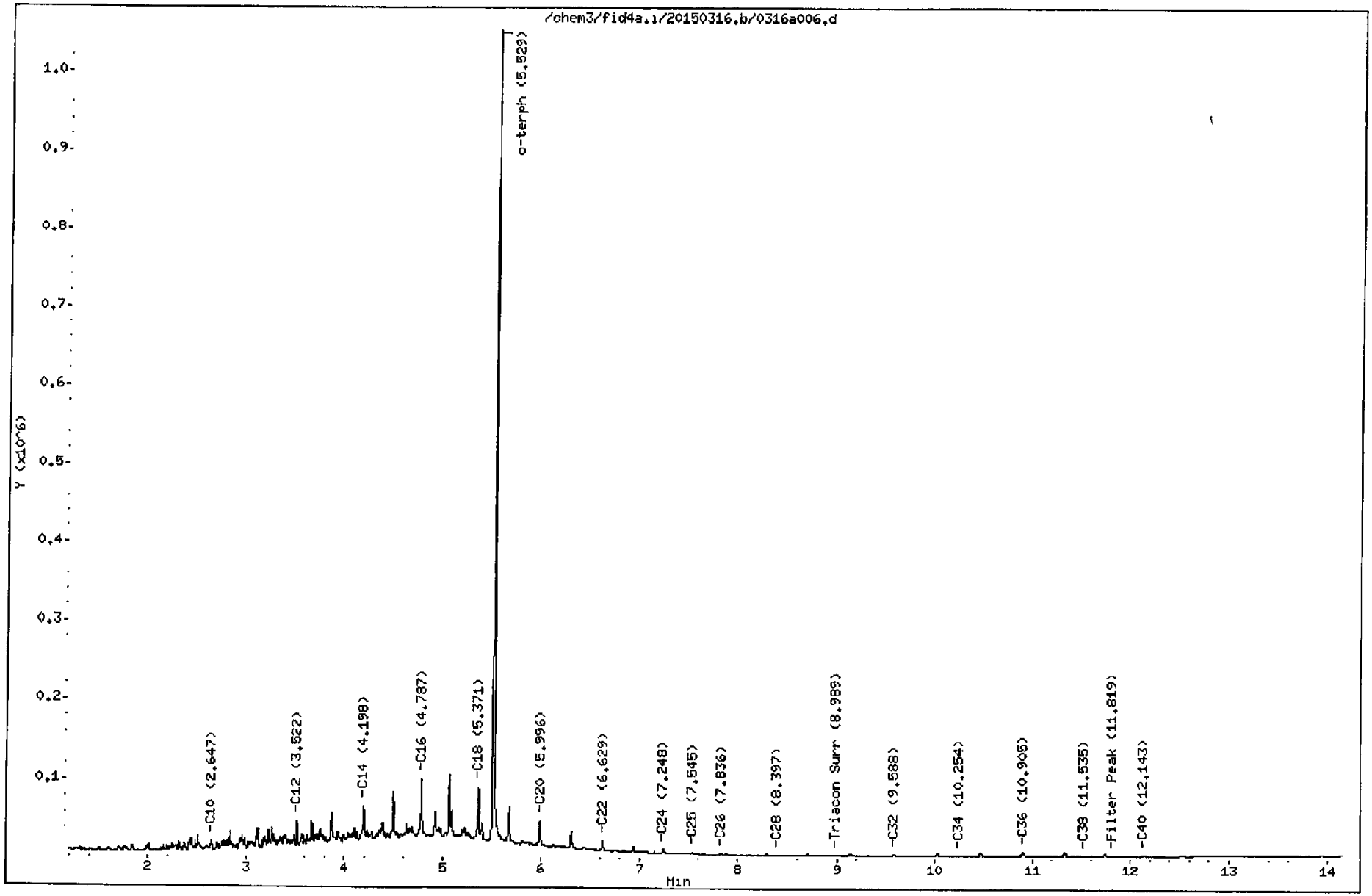
JW 3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a006.d
Date : 16-MAR-2015 12:13
Client ID:
Sample Info: SDC0026-CAL3

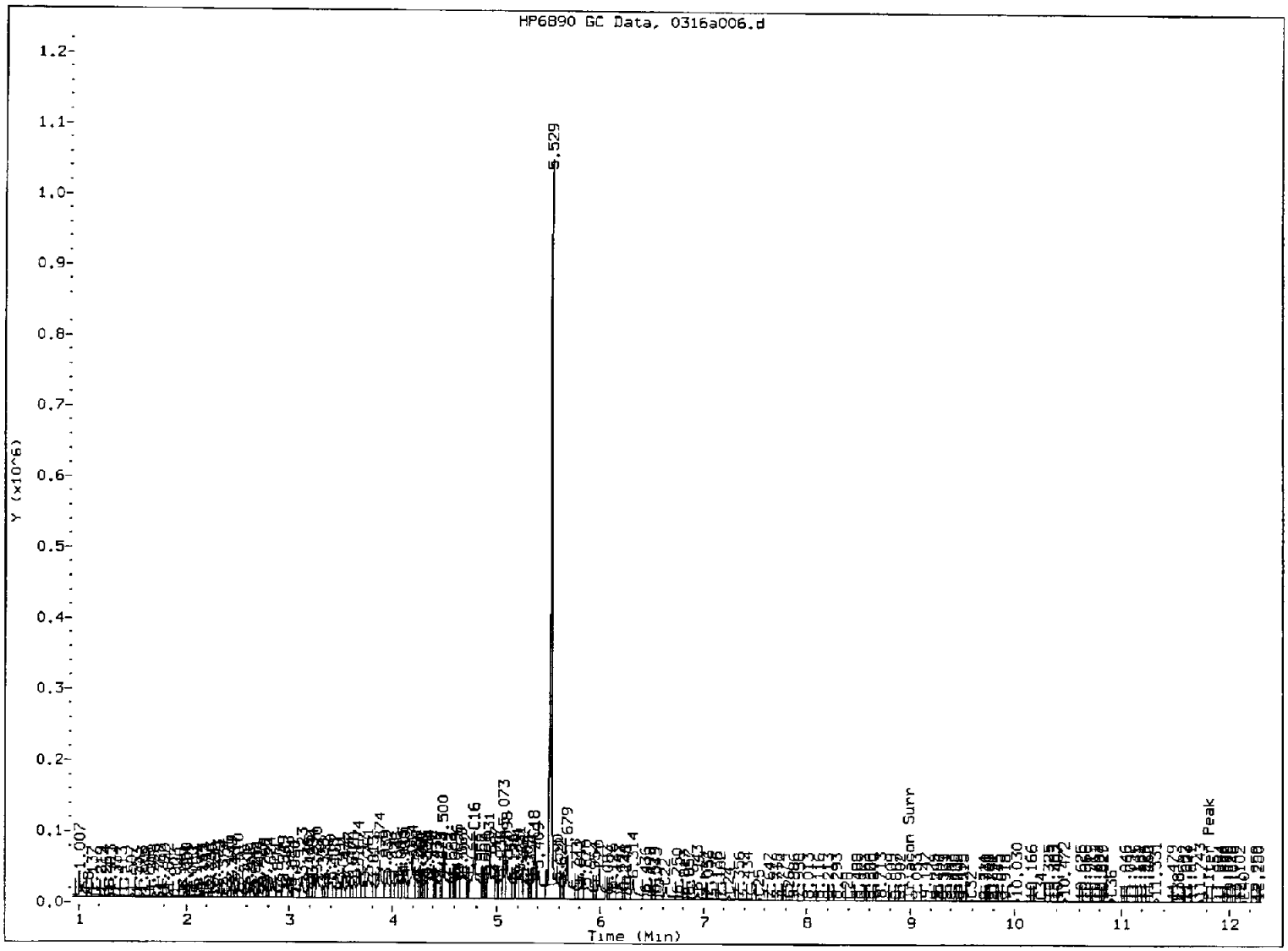
Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: BD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a007.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL4
Client ID:
Injection: 16-MAR-2015 12:37

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	9789	22443	WATPHG	(Tol-C12)	2221537	90.00
C8	1.090	-0.011	10890	23406	WATPHD	(C12-C24)	8237059	497.98
C10	2.645	-0.002	34753	42046	WATPHM	(C24-C38)	118212	7.77
C12	3.522	0.000	81672	88424	AK102	(C10-C25)	9660628	491.29
C14	4.198	-0.002	129046	262842	AK103	(C25-C36)	85491	9.29
C16	4.787	0.001	193810	428069				
C18	5.373	0.002	158622	299833				
C20	5.996	-0.001	85093	230377				
C22	6.629	-0.002	36803	91268				
C24	7.247	0.000	12410	35420				
C25	7.543	-0.003	6233	19157				
C26	7.835	0.000	2888	7163				
C28	8.395	-0.001	503	1975				
C32	9.587	-0.027	1357	2150				
C34	10.252	-0.005	132	468				
Filter Peak	11.832	-0.010	446	1178				
C36	10.909	0.003	1531	4028				
C38	11.539	-0.003	404	1991				
C40	12.149	-0.013	1166	6246				
o-terph	5.537	0.013	1697294	2092105				
Triacon Surr	8.990	-0.007	119	266	NAS DIES	(C10-C24)	9639593	491.46

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2092105	90.8	201.8 M
Triacontane	266	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

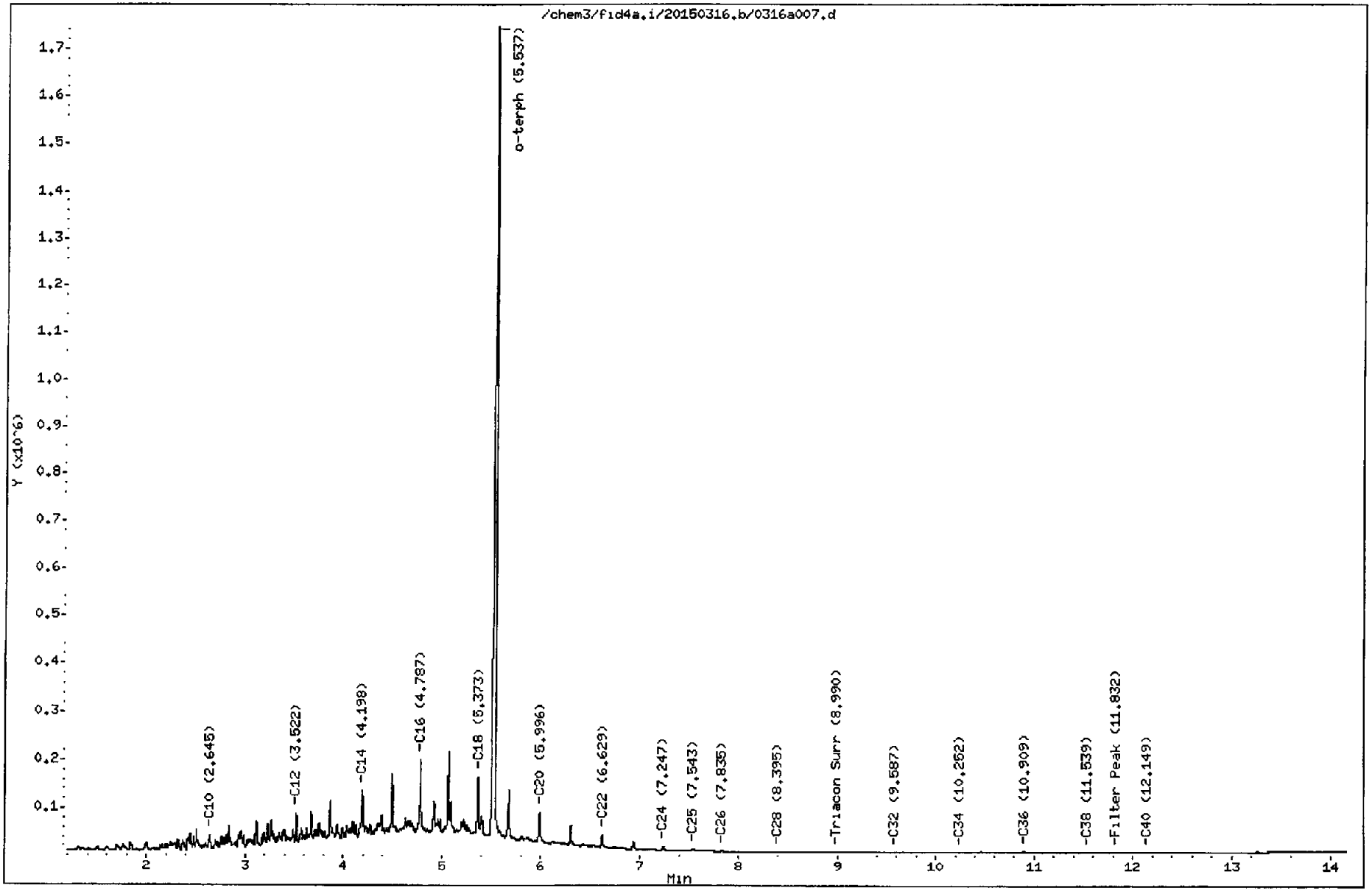
3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a007.d
Date : 16-MAR-2015 12:37
Client ID:
Sample Info: SDC0026-CAL4

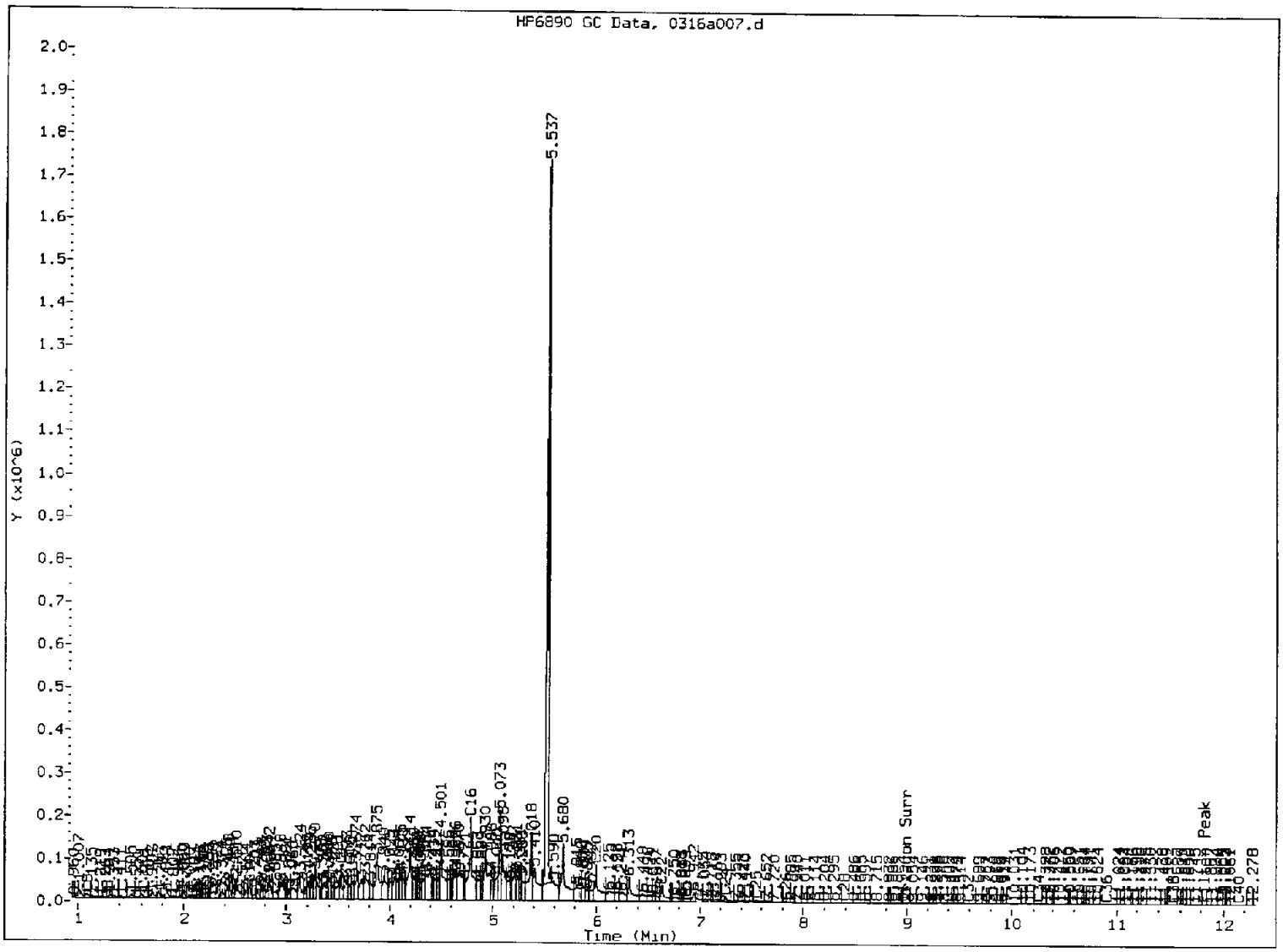
Instrument: fid4a.i

Operator: JR/VTS/JW

Column phase: RTX-1
Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JW Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a008.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL5
Client ID:
Injection: 16-MAR-2015 13:01

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.813	-0.004	13603	29478	WATPHG	(Tol-C12)	4321186	175.06
C8	1.088	-0.012	18330	35266	WATPHD	(C12-C24)	16073044	971.71
C10	2.647	-0.001	78011	87882	WATPHM	(C24-C38)	213169	14.00
C12	3.523	0.001	157046	172387	AK102	(C10-C25)	19009125	966.70
C14	4.200	0.001	237427	522999	AK103	(C25-C36)	144426	15.69
C16	4.789	0.003	359993	854658				
C18	5.375	0.004	299340	493779				
C20	5.996	-0.001	169597	339341				
C22	6.628	-0.002	77574	169827				
C24	7.244	-0.003	24334	72355				
C25	7.543	-0.004	13120	40977				
C26	7.833	-0.003	5818	19466				
C28	8.394	-0.002	1073	4099				
C32	9.586	-0.028	225	444				
C34	10.255	-0.002	84	228				
Filter Peak	11.853	0.011	356	994				
C36	10.907	0.001	308	1070				
C38	11.532	-0.010	292	1697				
C40	12.149	-0.013	608	3455				
o-terph	5.548	0.024	2664742	4130212				
Triacon Surr	8.983	-0.014	204	636	NAS DIES	(C10-C24)	18948014	966.05

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4130212	179.2	398.3 M
Triacontane	636	0.0	0.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

JW 3/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a008.d

Date : 16-MAR-2015 13:01

Client ID:

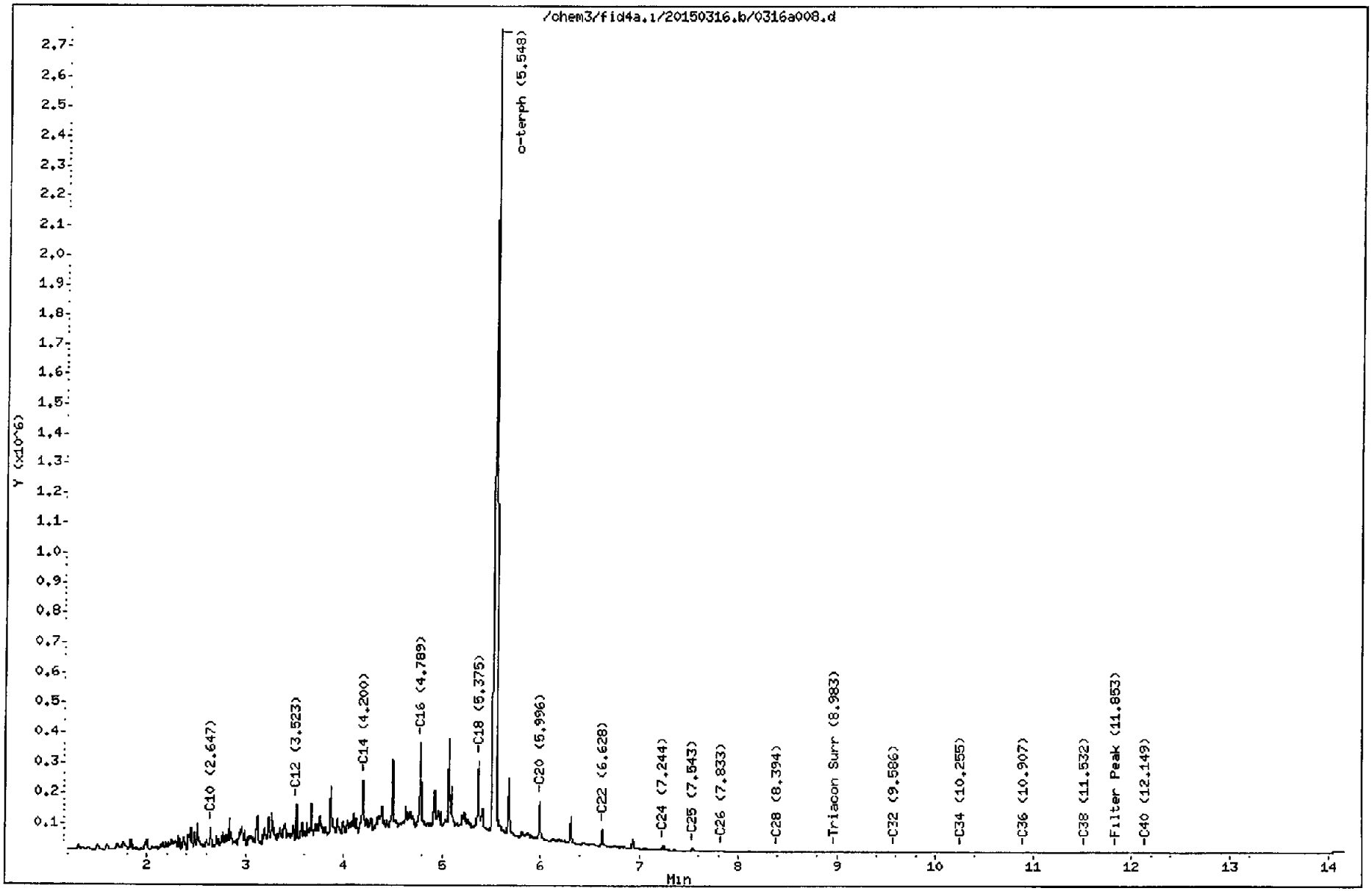
Sample Info: SDC0026-CAL5

Column phase: RTX-1

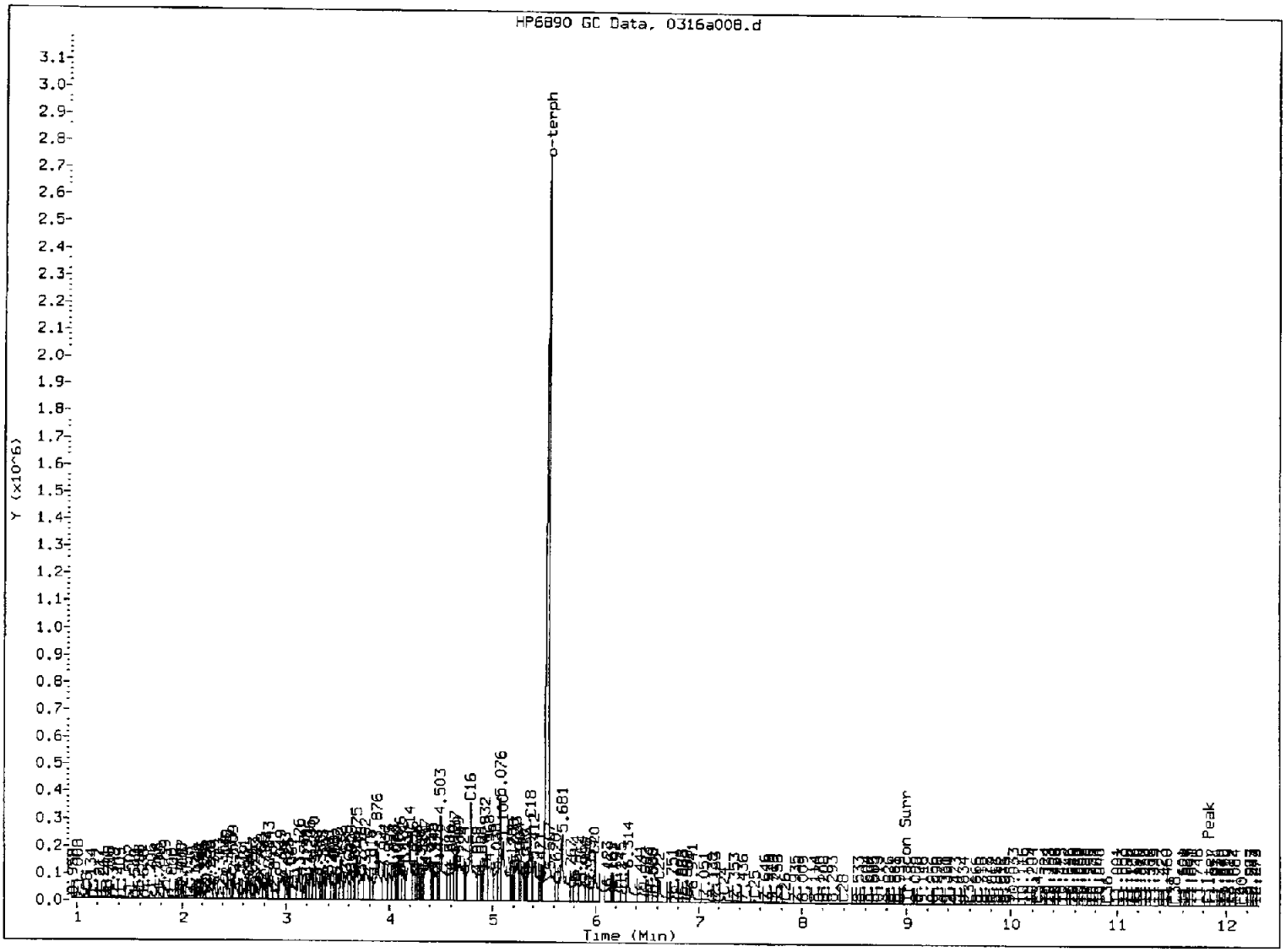
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL5 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a009.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL6
Client ID:
Injection: 16-MAR-2015 13:25

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.816	-0.001	29150	35783	WATPHG	(Tol-C12)	10202799	413.34
C8	1.091	-0.009	37019	69144	WATPHD	(C12-C24)	40787065	2465.82
C10	2.648	0.000	193473	251218	WATPHM	(C24-C38)	480634	31.57
C12	3.526	0.004	344566	454470	AK102	(C10-C25)	47778433	2429.74
C14	4.204	0.004	538770	1316926	AK103	(C25-C36)	343850	37.37
C16	4.795	0.009	804765	2067596				
C18	5.385	0.014	681210	1718480				
C20	6.001	0.004	404216	798030				
C22	6.632	0.002	179269	498716				
C24	7.246	-0.001	63273	156114				
C25	7.543	-0.003	30601	95942				
C26	7.830	-0.006	15091	37229				
C28	8.393	-0.003	2737	8970				
C32	9.584	-0.030	576	1157				
C34	10.251	-0.006	72	250				
Filter Peak	11.833	-0.009	235	300				
C36	10.909	0.004	598	1308				
C38	11.536	-0.006	197	737				
C40	12.147	-0.015	618	2633				
o-terph	5.571	0.046	4249209	9299672				
Triacon Surr	8.981	-0.016	547	1767	NAS DIES	(C10-C24)	47646190	2429.19

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	9299672	403.6	896.9 M
Triacontane	1767	0.1	0.2

3/16/15

M Indicates the peak was manually integrated

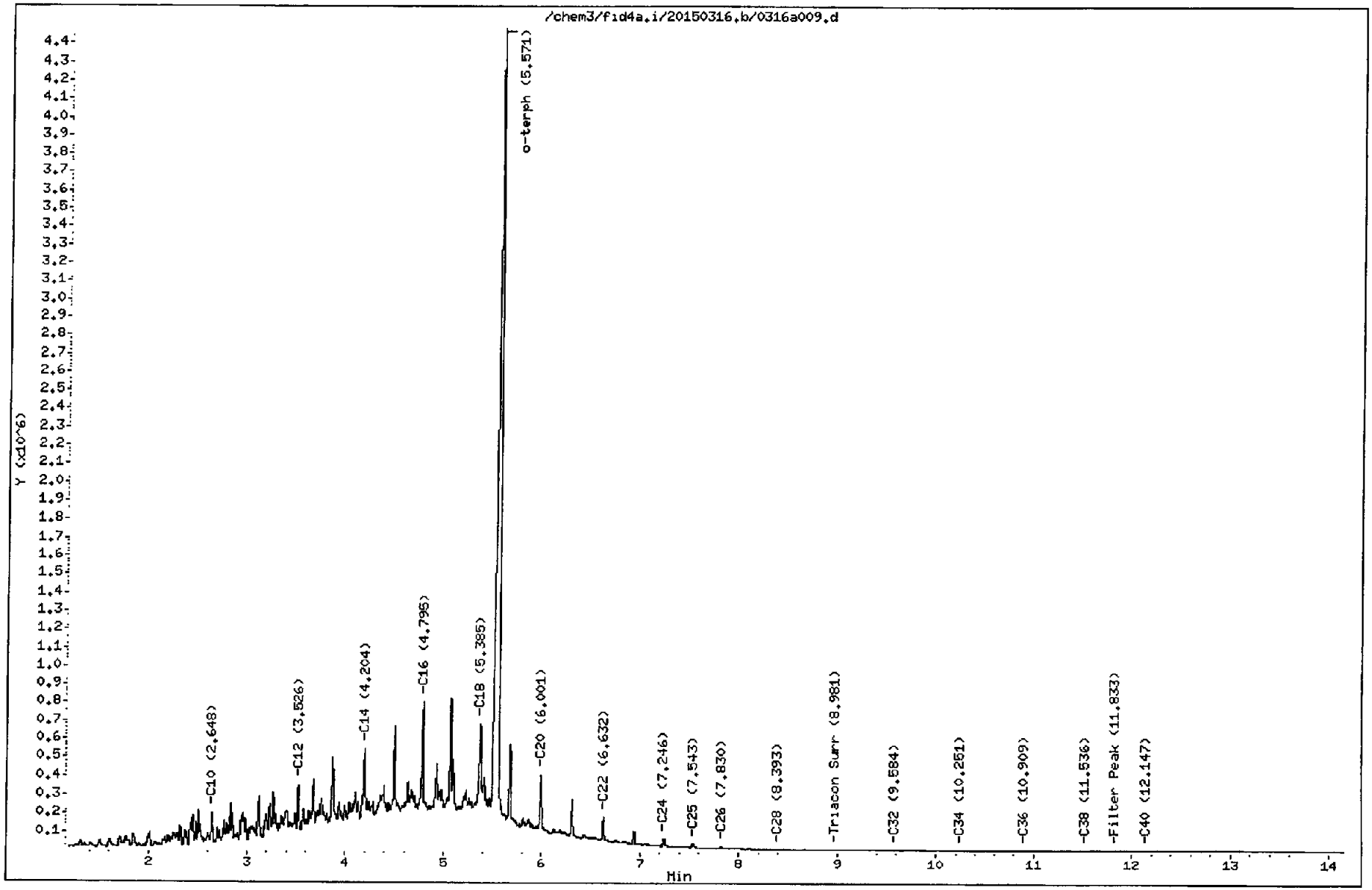
Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a009.d
Date : 16-MAR-2015 13:25
Client ID:
Sample Info: SDC0026-CAL6

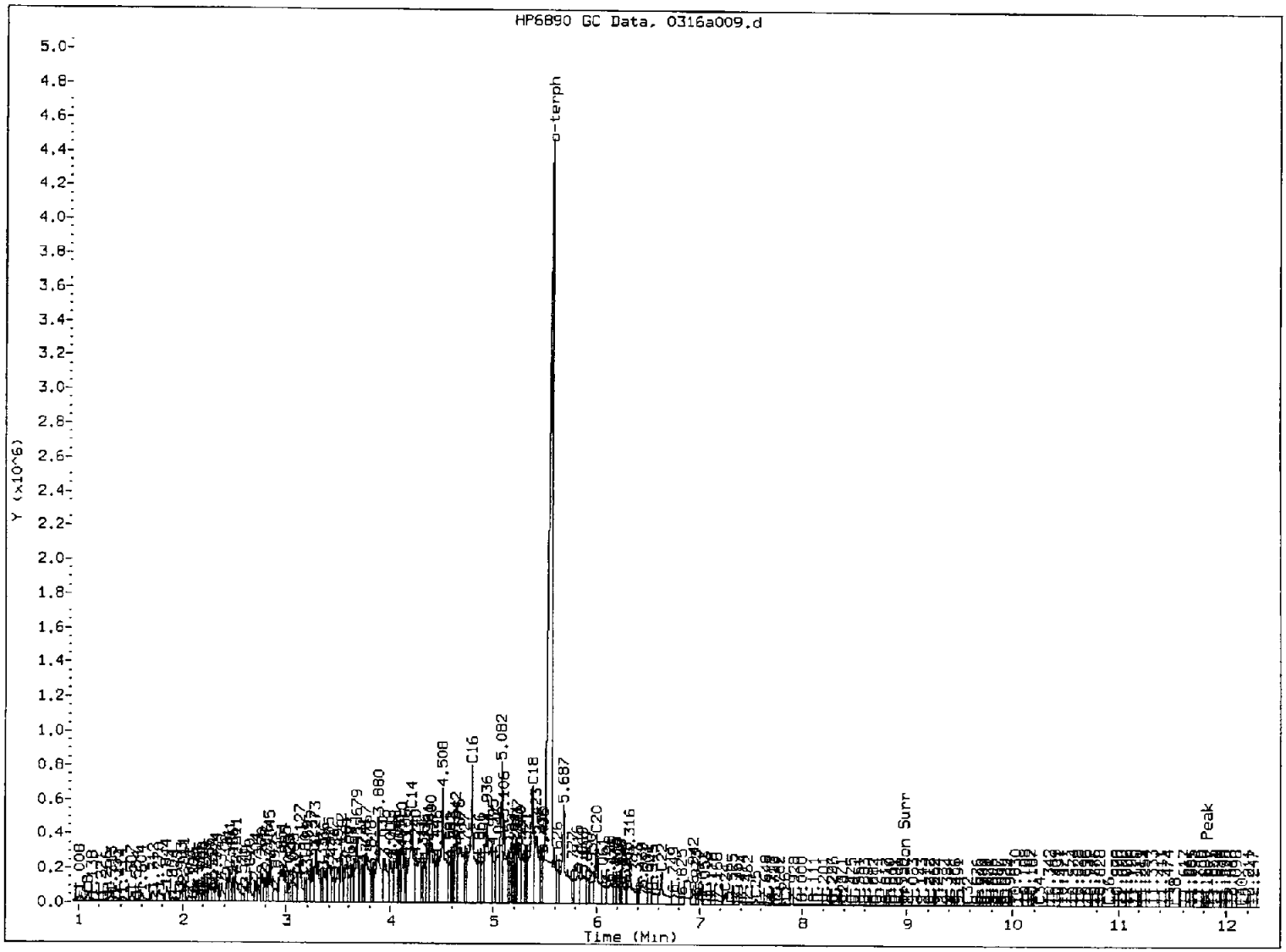
Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 SDC0026-CAL6 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: TJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a010.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-SCV1
Client ID:
Injection: 16-MAR-2015 13:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.814	-0.003	13263	18973	WATPHG	(Tol-C12)	1642275	66.53
C8	1.097	-0.003	16128	28301	WATPHD	(C12-C24)	4647345	280.96
C10	2.646	-0.002	53339	49232	WATPHM	(C24-C38)	53361	3.51
C12	3.522	0.000	109943	101349	AK102	(C10-C25)	5728420	291.32
C14	4.198	-0.001	110229	165834	AK103	(C25-C36)	37554	4.08
C16	4.786	0.000	100399	226030				
C18	5.370	-0.001	61427	87103				
C20	5.994	-0.003	27126	79434				
C22	6.629	-0.001	6583	24413				
C24	7.251	0.004	1684	4975				
C25	7.547	0.001	938	3069				
C26	7.836	0.001	398	719				
C28	8.362	-0.034	111	221				
C32	9.590	-0.024	1129	1966				
C34	10.259	0.002	170	322				
Filter Peak	11.818	-0.024	321	541				
C36	10.907	0.002	1426	3477				
C38	11.535	-0.007	255	550				
C40	12.148	-0.013	759	2643				
o-terph	5.530	0.006	1160020	1172803				
Triacon Surr	8.986	-0.011	207	219	NAS DIES	(C10-C24)	5721259	291.69

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1172803	50.9	113.1 M
Triacontane	219	0.0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

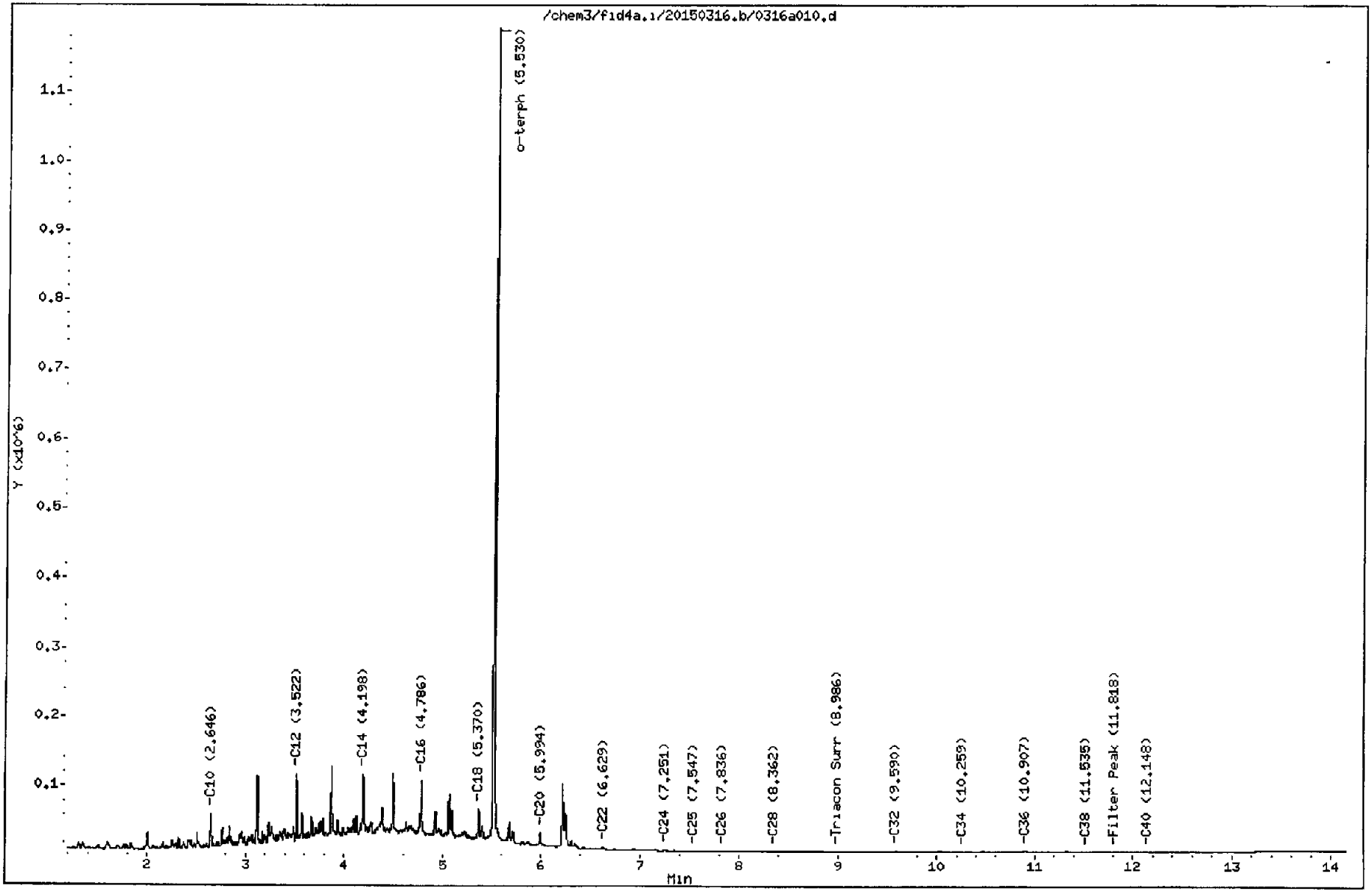
JW
5/16/15

Data File: /chem3/fid4a.i/20150316.b/0316a010.d
Date : 16-MAR-2015 13:49
Client ID:
Sample Info: SDC0026-SCV1

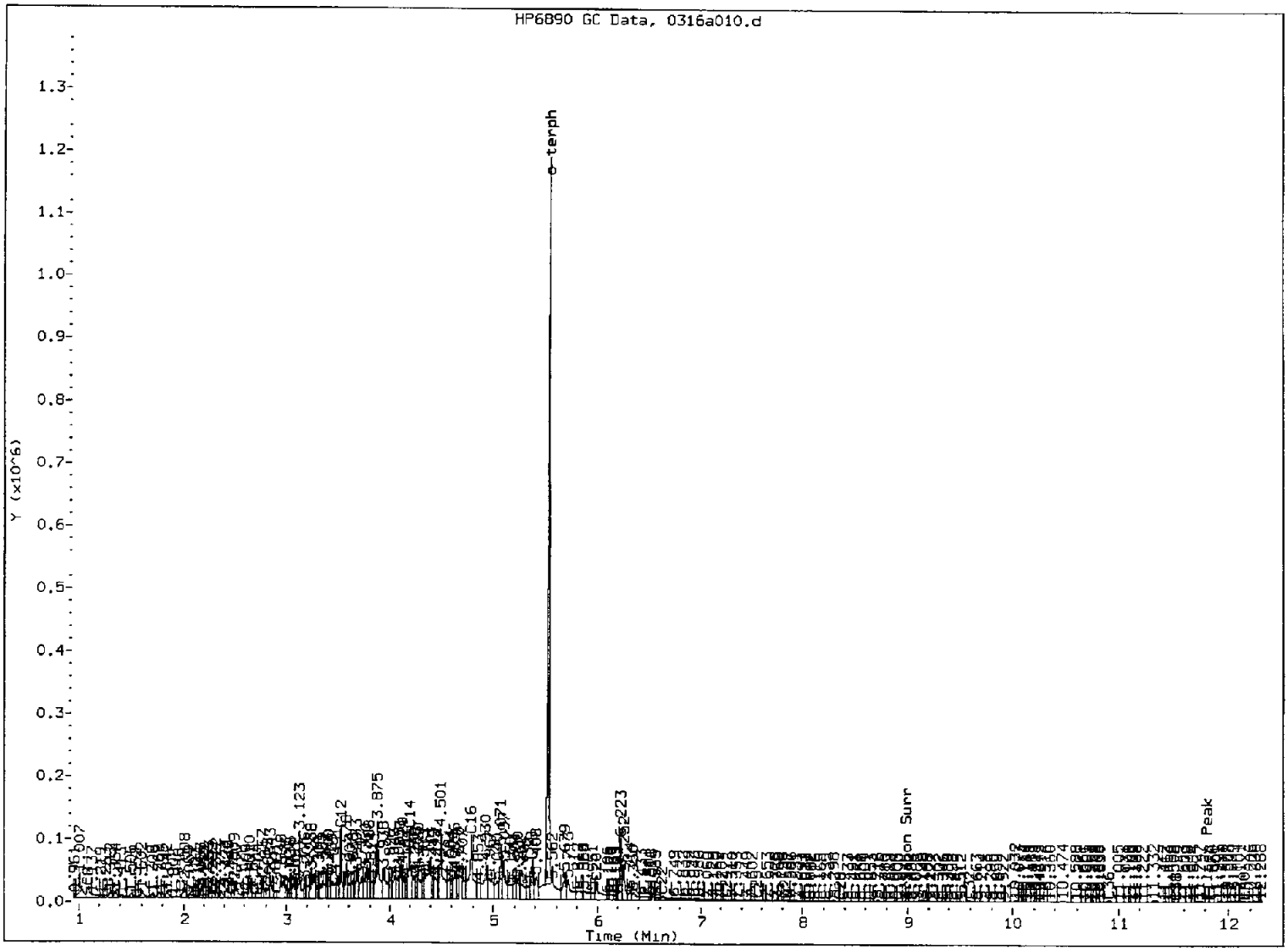
Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 SDC0026-SCV1 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JD Date: 3/16/K

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20150316

Instrument: FID4A.I

Project:

Calibration Date: 16-MAR-2015

SDG No.: 20150316

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	16578	15811	15675	15221	14468	13582	15222	7.0
Triac Surr	20574	20462	20163	20117	19665	19261	20040	2.5

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
0316a011.d	16-MAR-2015 14:12
0316a012.d	16-MAR-2015 14:36
0316a013.d	16-MAR-2015 15:00
0316a014.d	16-MAR-2015 15:24
0316a015.d	16-MAR-2015 15:48
0316a016.d	16-MAR-2015 16:12

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	0316a011	0316a012	0316a013	0316a014	0316a015	0316a016
INJ.DATE:	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015	16-MAR-2015
INJ.TIME:	14:12	14:36	15:00	15:24	15:48	16:12

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	Toluene	+++++	0.717	0.717	0.717	0.717	0.718	0.817	0.717-0.917	0.717	0.000
40	Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.023	0.973-1.073	+++++	+++++
39	Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.542	0.492-0.592	+++++	+++++
36	JetA	+++++	+++++	+++++	+++++	+++++	+++++	0.794	0.744-0.844	+++++	+++++
37	Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.729	0.679-0.779	+++++	+++++
38	Hydraulic Oil	+++++	+++++	+++++	+++++	+++++	+++++	1.197	1.147-1.247	+++++	+++++
2	C8	1.007	1.006	1.076	1.007	1.151	1.030	1.100	1.000-1.200	1.046	0.058
3	C10	2.656	2.647	2.637	2.655	2.648	2.645	2.648	2.598-2.698	2.648	0.007
4	C12	+++++	+++++	+++++	+++++	3.520	3.523	3.522	3.472-3.572	3.522	0.002
5	C14	4.183	4.206	4.208	4.208	4.184	4.183	4.199	4.149-4.249	4.195	0.013
6	C16	4.793	4.797	4.766	4.786	4.757	4.786	4.786	4.736-4.836	4.781	0.016
7	C18	5.380	5.372	5.370	5.370	5.370	5.369	5.371	5.321-5.421	5.372	0.004
$ 8	o-terph	5.519	5.518	5.516	5.517	5.520	5.519	5.524	5.474-5.574	5.518	0.002
9	C20	5.984	5.981	5.982	5.981	5.981	5.983	5.997	5.947-6.047	5.982	0.001
10	C22	6.633	6.662	6.668	6.660	6.646	6.629	6.630	6.580-6.680	6.650	0.016
11	C24	7.236	7.244	7.264	7.251	7.238	7.224	7.247	7.197-7.297	7.245	0.015
12	C25	7.546	7.542	7.544	7.555	7.555	7.562	7.546	7.496-7.596	7.551	0.008

Reviewer 1 _____ Date: 3/16/15

Reviewer 2 _____ Date: 3/17/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Batch File: /chem3/fid4a.i/20150316.b
Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
13 C26	7.838	7.844	7.827	7.817	7.840	7.838	7.835	7.785-7.885	7.834	0.010
14 C28	8.392	8.388	8.412	8.391	8.381	8.410	8.396	8.346-8.446	8.396	0.012
$ 15 Triacon Surr	8.983	8.990	9.004	9.021	9.055	9.096	8.997	8.947-9.047	9.025	0.043
16 C32	9.610	9.605	9.610	9.619	9.600	9.602	9.614	9.564-9.664	9.608	0.007
17 C34	10.253	10.236	10.247	10.237	10.251	10.259	10.257	10.207-10.307	10.247	0.009
18 Filter Peak	11.847	11.841	11.843	11.844	11.826	11.837	11.842	11.742-11.942	11.840	0.007
19 C36	10.898	10.892	10.895	10.915	10.902	10.927	10.905	10.855-10.955	10.905	0.013
20 C38	11.557	11.533	11.544	11.529	11.548	11.519	11.542	11.492-11.592	11.538	0.014
21 C40	12.176	12.145	12.152	12.164	12.130	12.160	12.162	12.112-12.212	12.154	0.016
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.683	0.633-0.733	+++++	+++++
42 Cal(IT) Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.499	0.449-0.549	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.662	0.612-0.712	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 CRUDE	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	0.615	0.565-0.665	+++++	+++++
41 ABUNKERC	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a011.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL7
Client ID:
Injection: 16-MAR-2015 14:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	175903	7.13
C8	1.007	-0.093	35827	44475	WATPHD	(C12-C24)	162137	9.80
C10	2.656	0.008	1327	1965	WATPHM	(C24-C38)	1657760	108.91
C12	----				AK102	(C10-C25)	256814	13.06
C14	4.183	-0.016	26	86	AK103	(C25-C36)	1383896	150.39
C16	4.793	0.007	46	132				
C18	5.380	0.009	151	461				
C20	5.984	-0.013	404	1043				
C22	6.633	0.002	1262	1820				
C24	7.236	-0.011	4451	5824				
C25	7.546	0.000	5986	23585				
C26	7.838	0.003	6905	19574				
C28	8.392	-0.004	7811	15272				
C32	9.610	-0.003	8197	24463				
C34	10.253	-0.004	7109	33787				
Filter Peak	11.847	0.005	5359	19333				
C36	10.898	-0.008	6464	7199				
C38	11.557	0.015	5574	8385				
C40	12.176	0.014	4872	5985				
o-terph	5.519	-0.005	256	851				
Triacon Surr	8.983	-0.013	150428	185168	NAS DIES	(C10-C24)	195118	9.95

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	851	0.0	0.1
Triacontane	185168	9.2	20.5 M

M Indicates the peak was manually integrated

JW 3/16/15

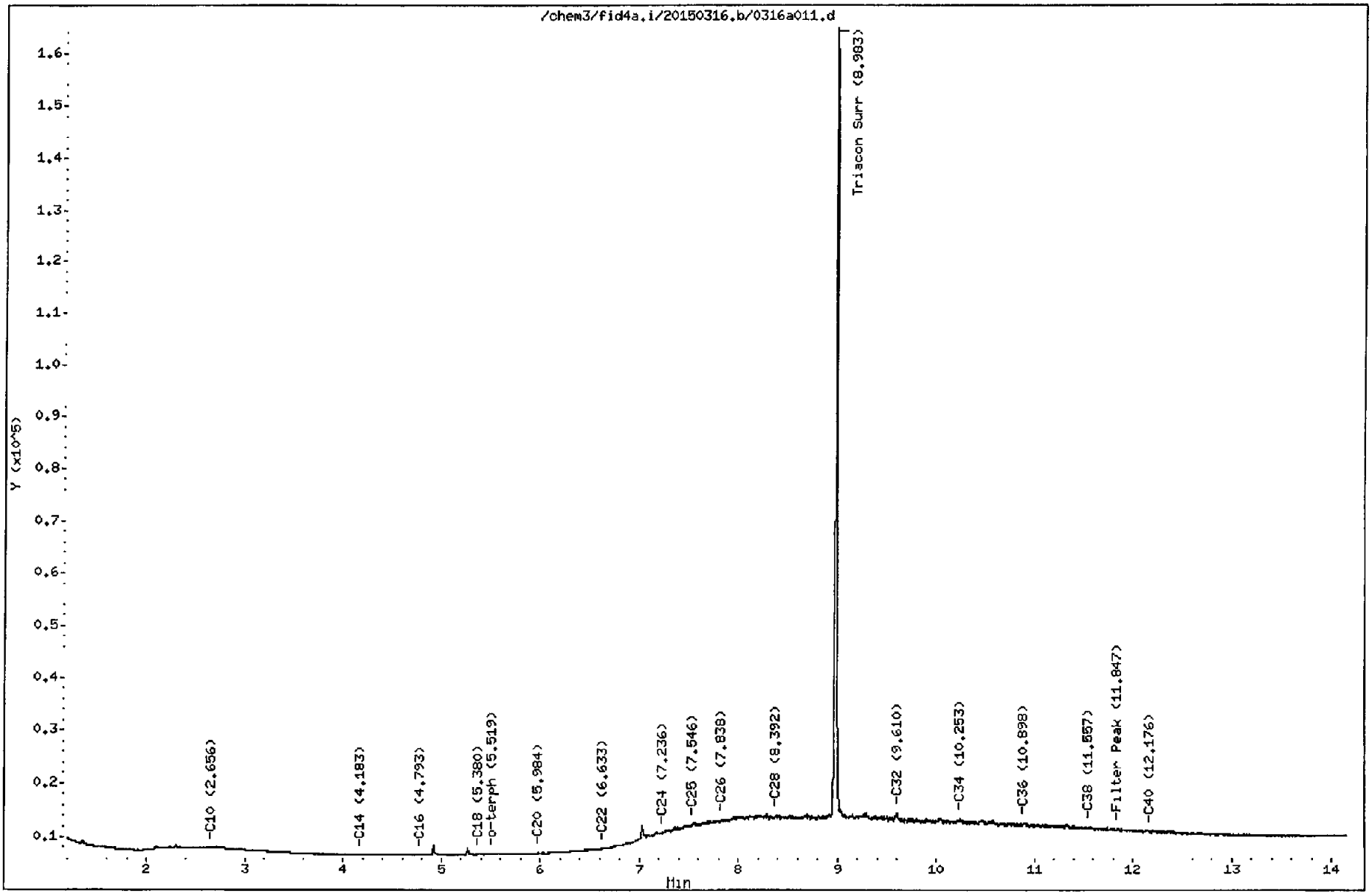
Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a011.d
Date : 16-MAR-2015 14:12
Client ID:
Sample Info: SDC0026-CAL7

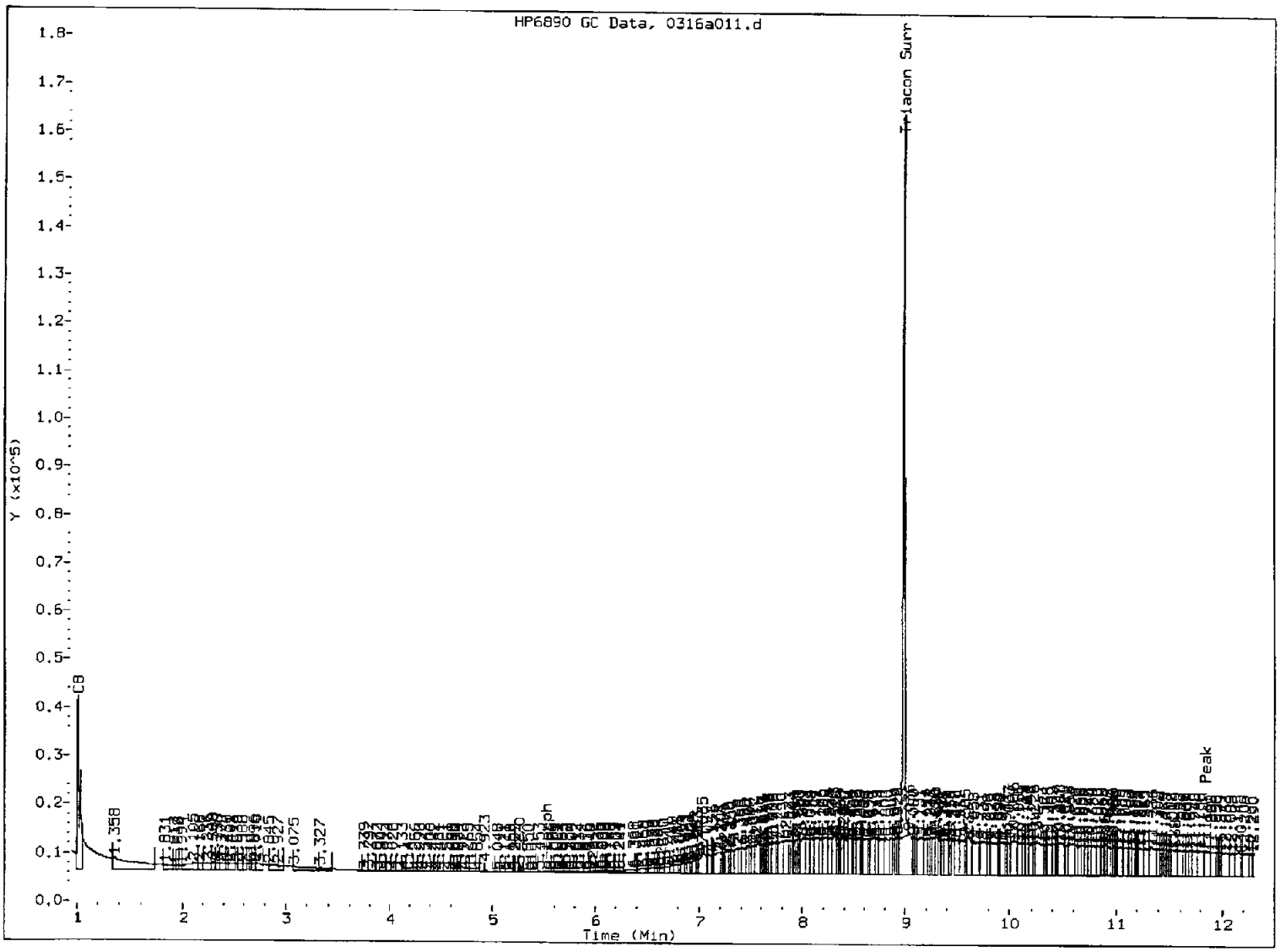
Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 SDC0026-CAL7 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a012.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL8
Client ID:
Injection: 16-MAR-2015 14:36

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8127	89443	WATPHG	(Tol-C12)	162068	6.57
C8	1.006	-0.094	36058	44590	WATPHD	(C12-C24)	376959	22.79
C10	2.647	-0.001	1280	2412	WATPHM	(C24-C38)	3952743	259.67
C12	----				AK102	(C10-C25)	553602	28.15
C14	4.206	0.007	94	258	AK103	(C25-C36)	3338658	362.82
C16	4.797	0.011	77	319				
C18	5.372	0.001	254	1339				
C20	5.981	-0.016	1005	2389				
C22	6.662	0.032	3342	15919				
C24	7.244	-0.003	10905	11791				
C25	7.542	-0.004	14570	24432				
C26	7.844	0.009	17160	45369				
C28	8.388	-0.008	18370	18816				
C32	9.605	-0.009	20693	72554				
C34	10.236	-0.021	16994	49599				
Filter Peak	11.841	-0.001	11992	42251				
C36	10.892	-0.013	14691	15925				
C38	11.533	-0.009	12987	17645				
C40	12.145	-0.017	10987	34778				
o-terph	5.518	-0.006	426	1432				
Triacon Surr	8.990	-0.007	373621	460394	NAS DIES	(C10-C24)	406254	20.71

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1432	0.1	0.1
Triacontane	460394	23.0	51.1 M

M Indicates the peak was manually integrated

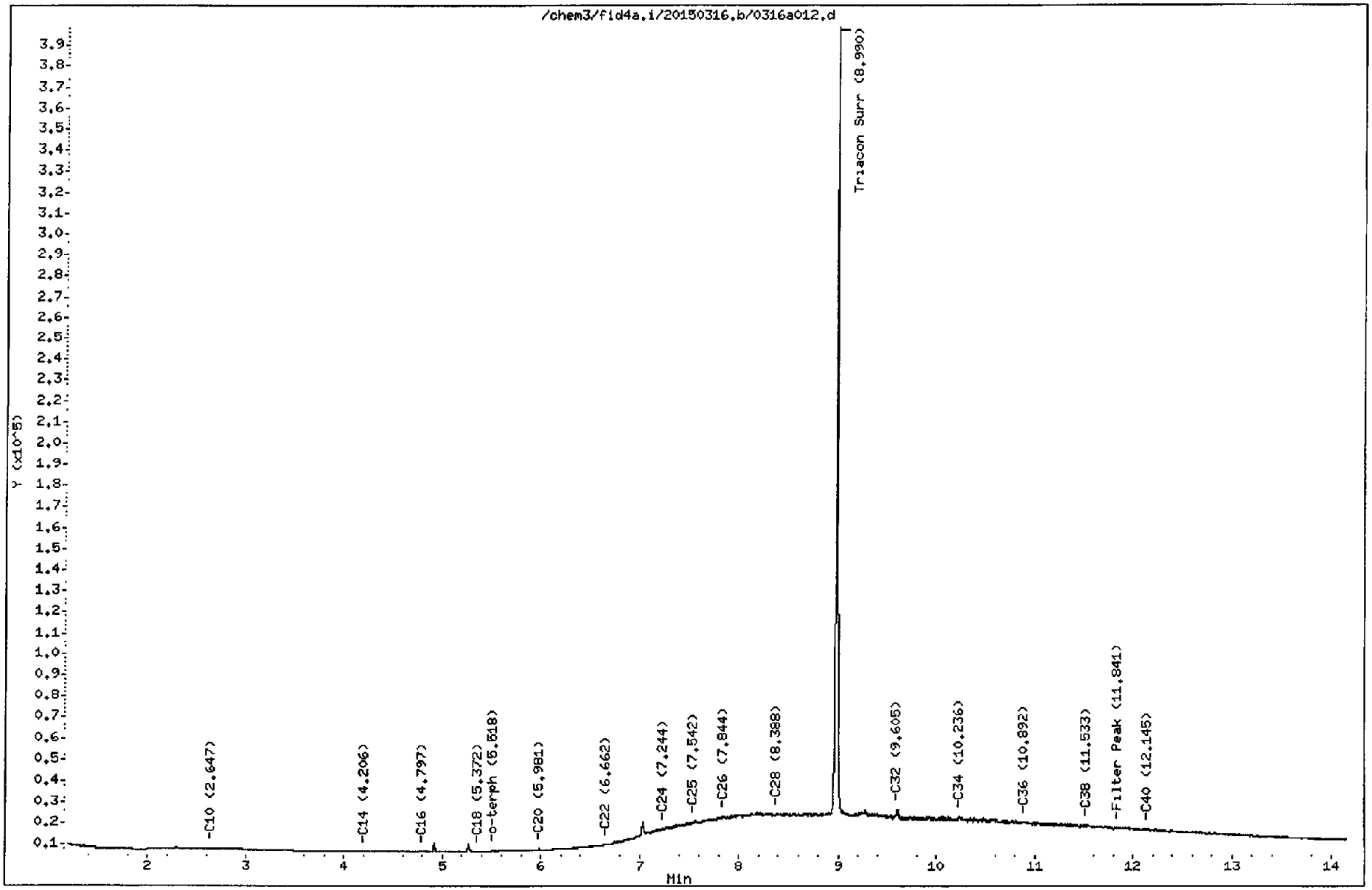
fw 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

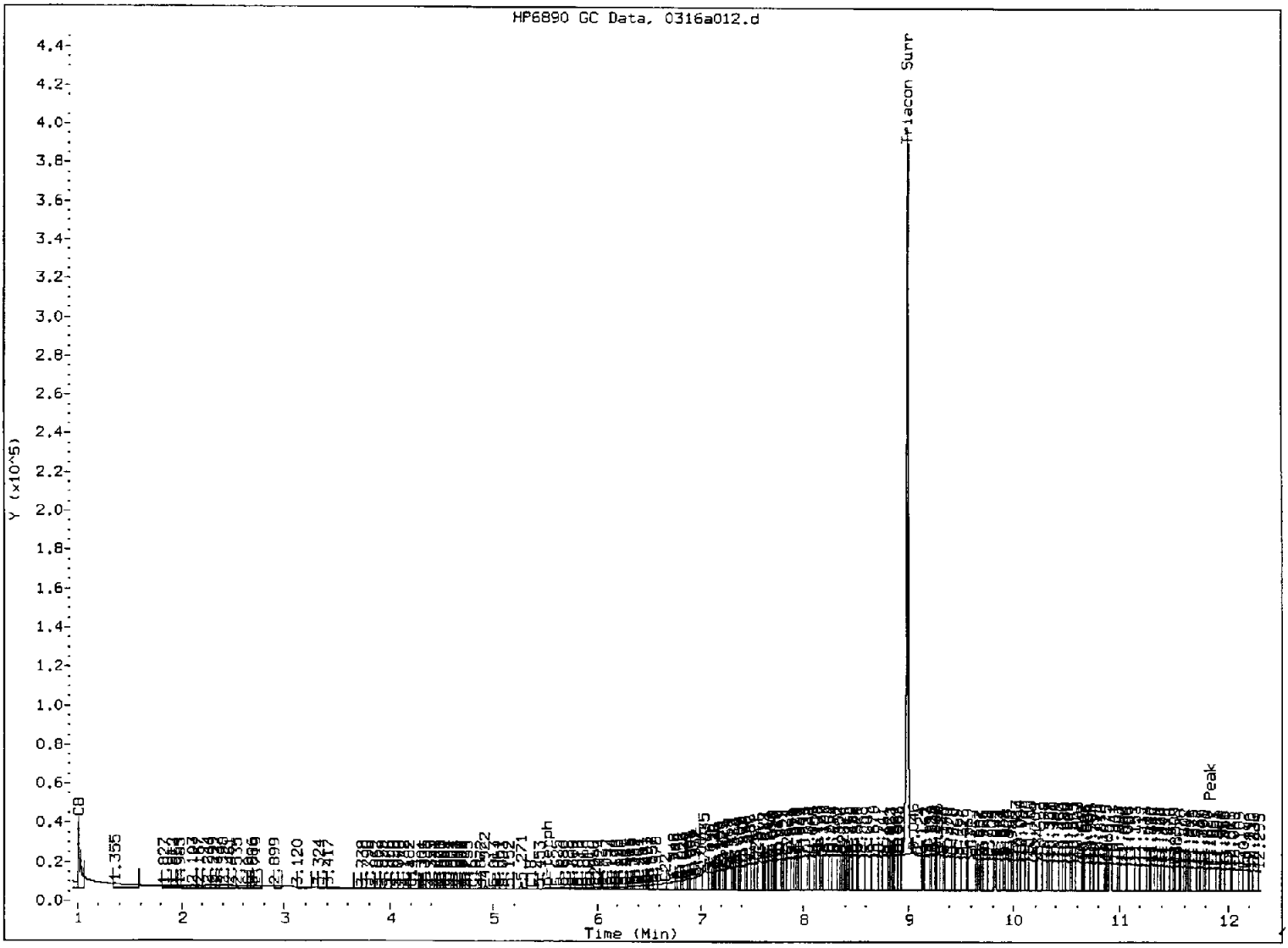
Data File: /chem3/fid4a.i/20150316.b/0316a012.d
Date : 16-MAR-2015 14:36
Client ID:
Sample Info: SDC0026-CAL8

Instrument: fid4a.i

Operator: JR/VTS/JW
Column phase: RTX-1
Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CAL8 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a013.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CAL9
Client ID:
Injection: 16-MAR-2015 15:00

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8088	88618	WATPHG	(Tol-C12)	239934	9.72
C8	1.076	-0.025	5850	53954	WATPHD	(C12-C24)	750186	45.35
C10	2.637	-0.011	1300	3344	WATPHM	(C24-C38)	7837555	514.88
C12	----				AK102	(C10-C25)	1087595	55.31
C14	4.208	0.009	84	181	AK103	(C25-C36)	6583725	715.46
C16	4.766	-0.020	155	715				
C18	5.370	-0.001	453	1606				
C20	5.982	-0.015	2013	4765				
C22	6.668	0.038	6620	37489				
C24	7.264	0.017	21719	37750				
C25	7.544	-0.002	27913	24660				
C26	7.827	-0.008	32426	39331				
C28	8.412	0.015	36641	88487				
C32	9.610	-0.004	39722	165067				
C34	10.247	-0.010	33468	64584				
Filter Peak	11.843	0.001	22799	28804				
C36	10.895	-0.010	27864	88699				
C38	11.544	0.002	24574	73134				
C40	12.152	-0.010	21153	67559				
o-terph	5.516	-0.009	761	1891				
Triacon Surr	9.004	0.007	597788	907315	NAS DIES	(C10-C24)	791330	40.35

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1891	0.1	0.2
Triacontane	907315	45.3	100.6 M

JW 3/16/15

M Indicates the peak was manually integrated

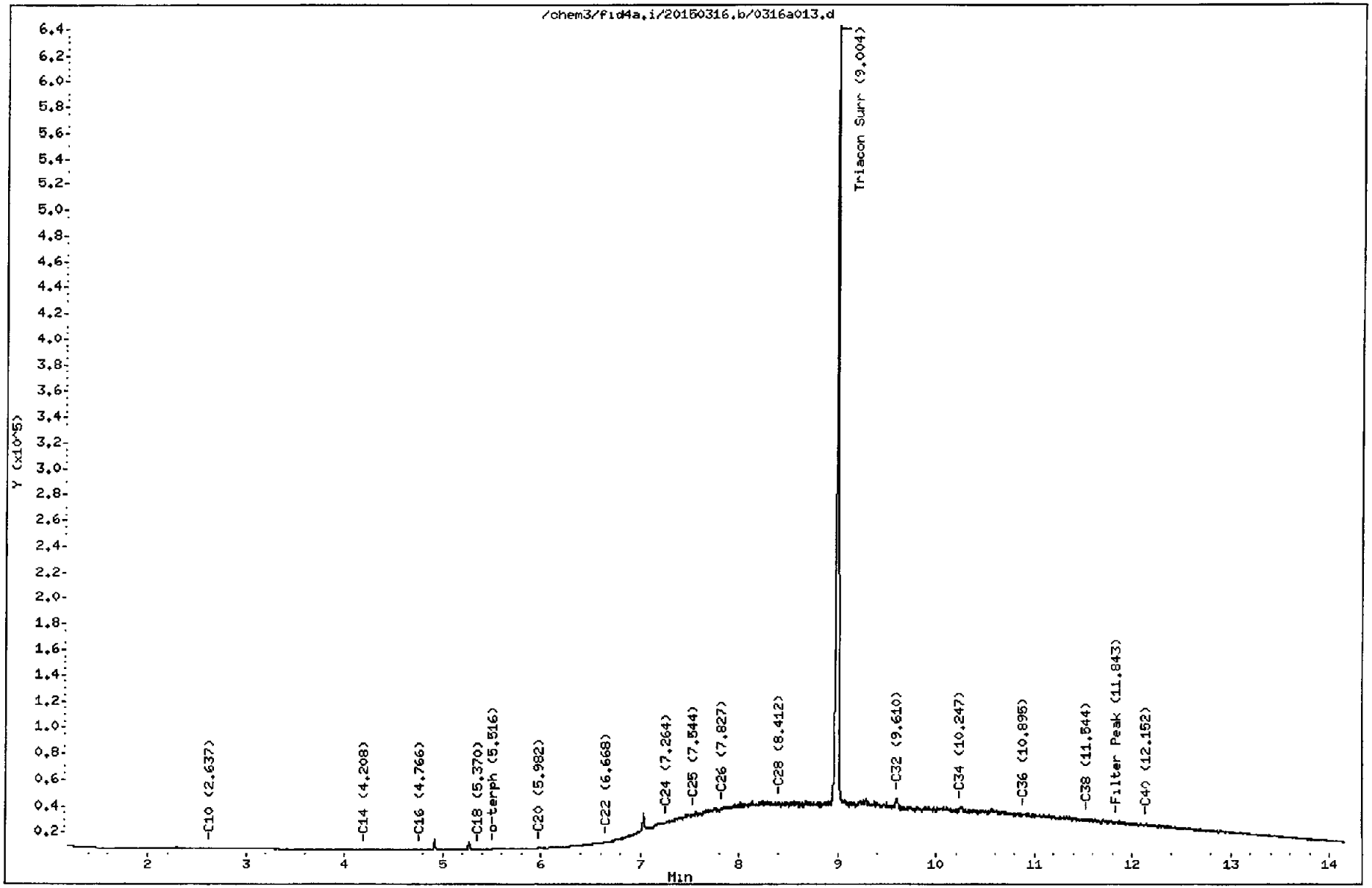
Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a013.d
Date : 16-MAR-2015 15:00
Client ID:
Sample Info: SDC0026-CAL9

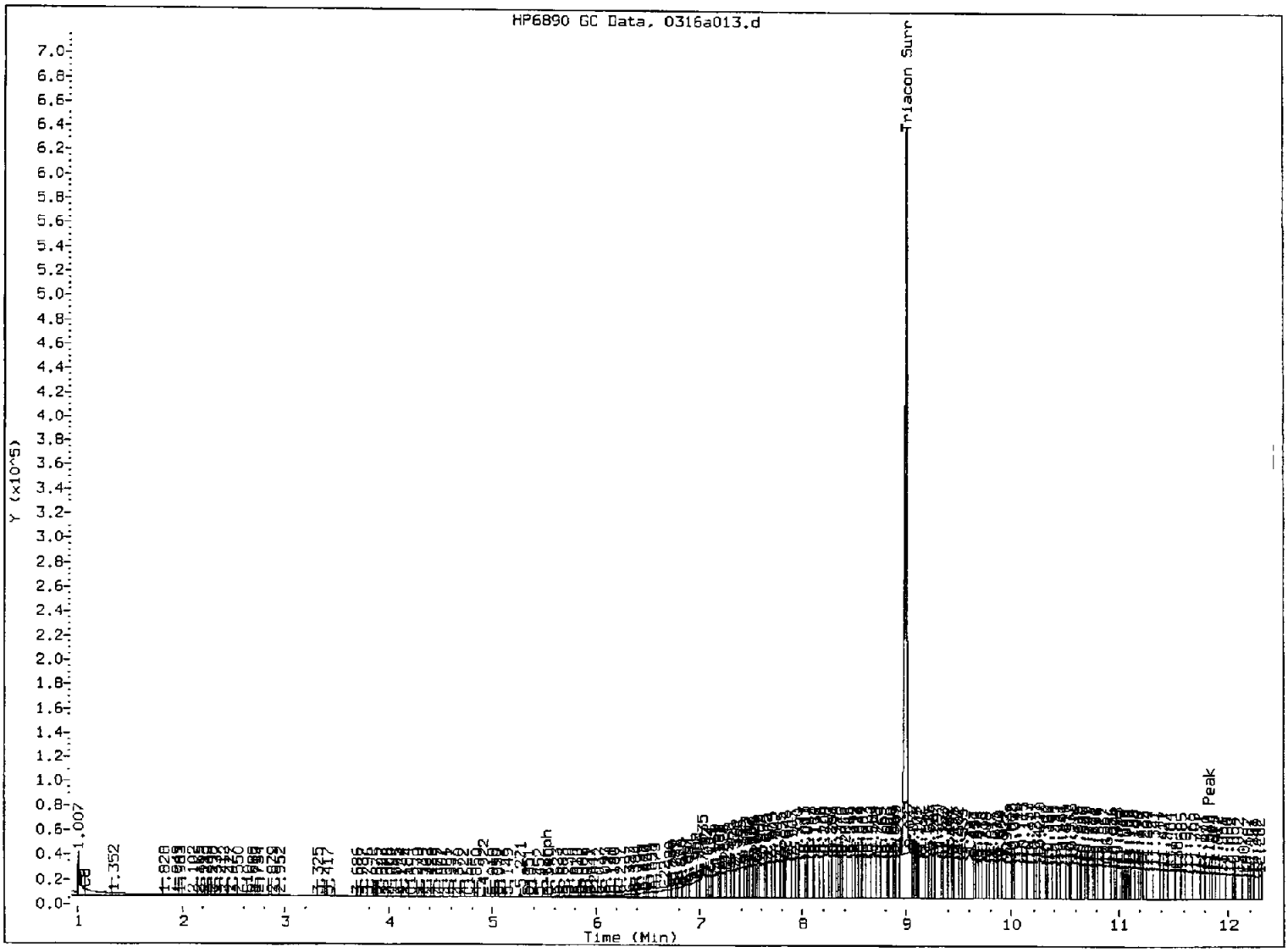
Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 SDC0026-CAL9 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JD Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a014.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALA
Client ID:
Injection: 16-MAR-2015 15:24

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	9173	32337	WATPHG	(Tol-C12)	201906	8.18
C8	1.007	-0.093	36329	49023	WATPHD	(C12-C24)	1420698	85.89
C10	2.655	0.007	1266	4524	WATPHM	(C24-C38)	15220922	999.93
C12	----				AK102	(C10-C25)	2054092	104.46
C14	4.208	0.009	124	280	AK103	(C25-C36)	12803700	1391.39
C16	4.786	-0.001	278	690				
C18	5.370	-0.001	815	1619				
C20	5.981	-0.016	4139	8678				
C22	6.660	0.029	12974	52100				
C24	7.261	0.014	42810	114120				
C25	7.555	0.009	56053	127534				
C26	7.817	-0.018	61392	57887				
C28	8.391	-0.005	71076	88590				
C32	9.619	0.005	75990	379521				
C34	10.237	-0.020	62999	265946				
Filter Peak	11.844	0.002	43108	93868				
C36	10.915	0.009	54804	106847				
C38	11.529	-0.013	46170	102524				
C40	12.164	0.002	39021	99082				
o-terph	5.517	-0.007	1311	5093				
Triacon Surr	9.021	0.024	1019275	1810555	NAS DIES	(C10-C24)	1461307	74.50

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	5093	0.2	0.5
Triacontane	1810555	90.3	200.8 M

JW 3/16/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a014.d

Date : 16-MAR-2015 15:24

Client ID:

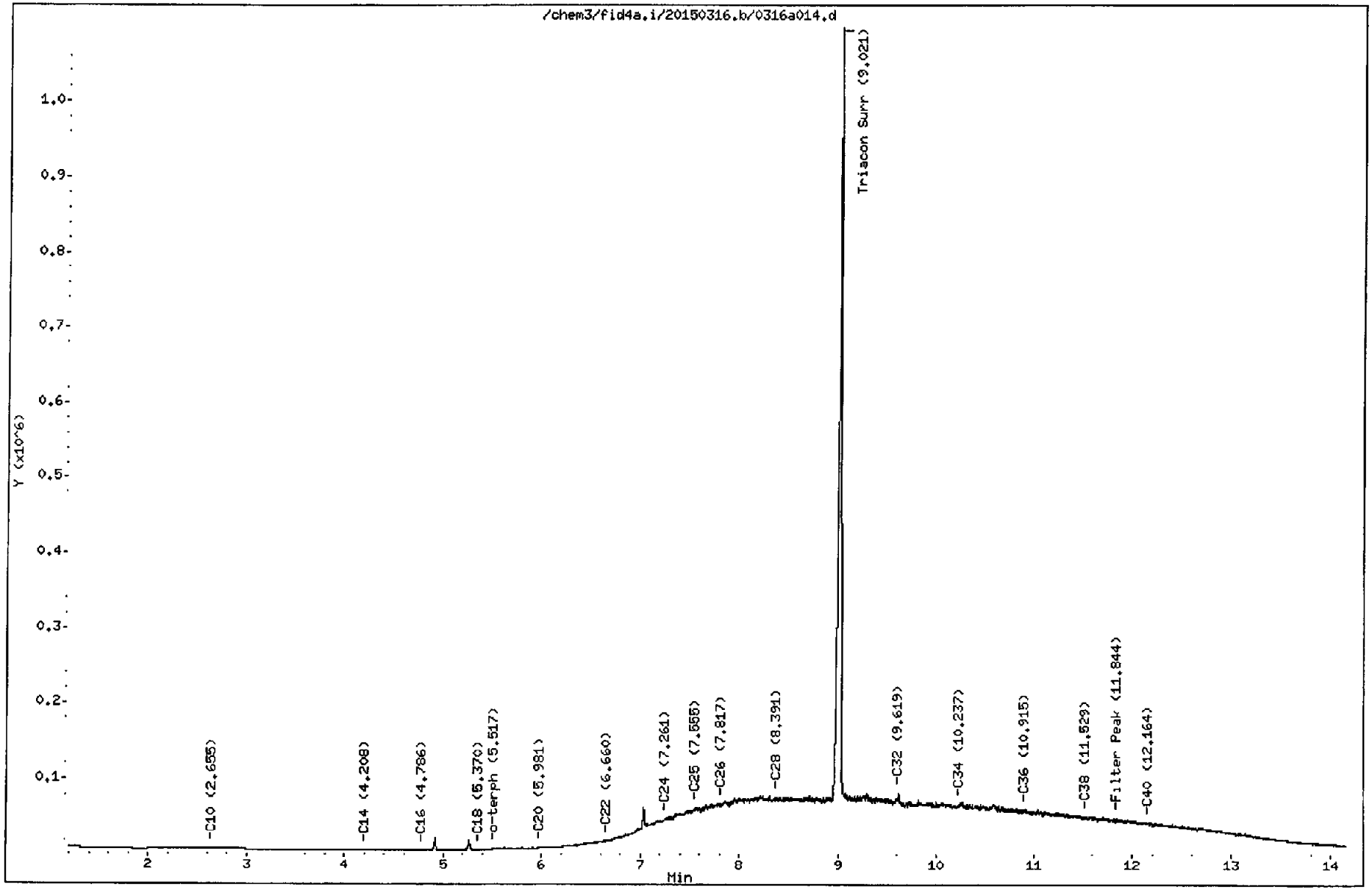
Sample Info: SDC0026-CALA

Column phase: RTX-1

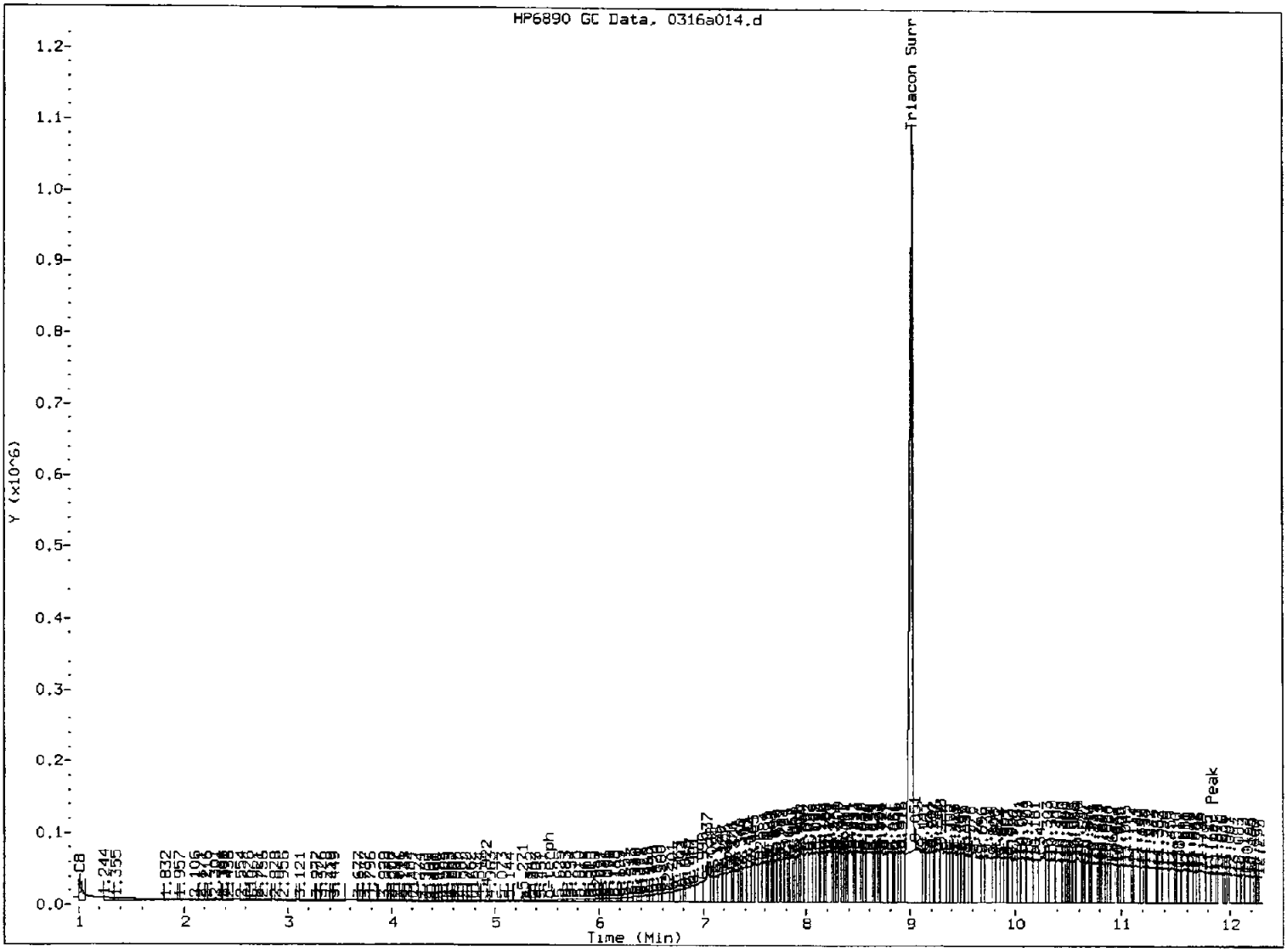
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CALA FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: JCJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a015.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALB
Client ID:
Injection: 16-MAR-2015 15:48

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.717	-0.100	8971	31721	WATPHG	(Tol-C12)	201022	8.14
C8	1.151	0.051	5062	33352	WATPHD	(C12-C24)	3522009	212.93
C10	2.648	0.000	1289	6013	WATPHM	(C24-C38)	36171166	2376.24
C12	3.520	-0.002	258	1584	AK102	(C10-C25)	4904311	249.41
C14	4.184	-0.016	333	763	AK103	(C25-C36)	30877194	3355.46
C16	4.757	-0.029	702	2938				
C18	5.370	-0.001	2017	8735				
C20	5.981	-0.016	9149	23537				
C22	6.646	0.016	30102	85638				
C24	7.238	-0.009	99644	119637				
C25	7.555	0.009	137853	361484				
C26	7.840	0.005	153016	209507				
C28	8.381	-0.015	170730	256636				
C32	9.600	-0.013	160377	374221				
C34	10.251	-0.006	146265	331351				
Filter Peak	11.826	-0.016	91875	116053				
C36	10.902	-0.003	129503	218387				
C38	11.548	0.006	108616	139890				
C40	12.130	-0.032	71337	216636				
o-terph	5.520	-0.005	3338	10152				
Triacon Surr	9.055	0.058	1745025	4424652	NAS DIES	(C10-C24)	3562875	181.65

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	10152	0.4	1.0
Triacontane	4424652	220.8	490.6 M

M Indicates the peak was manually integrated

JW 3/16/15

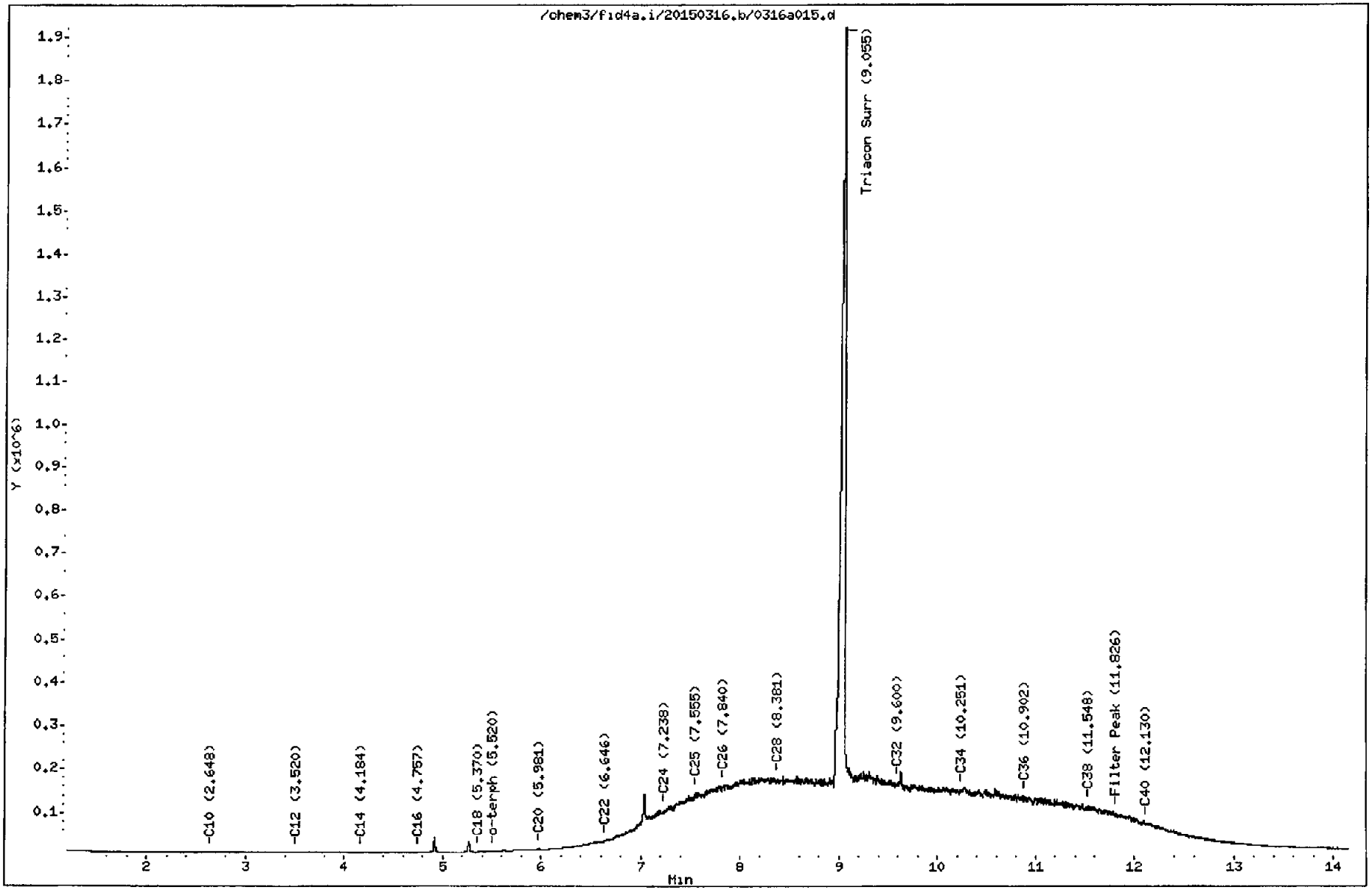
Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a015.d
Date : 16-MAR-2015 15:48
Client ID:
Sample Info: SDC0026-CALB

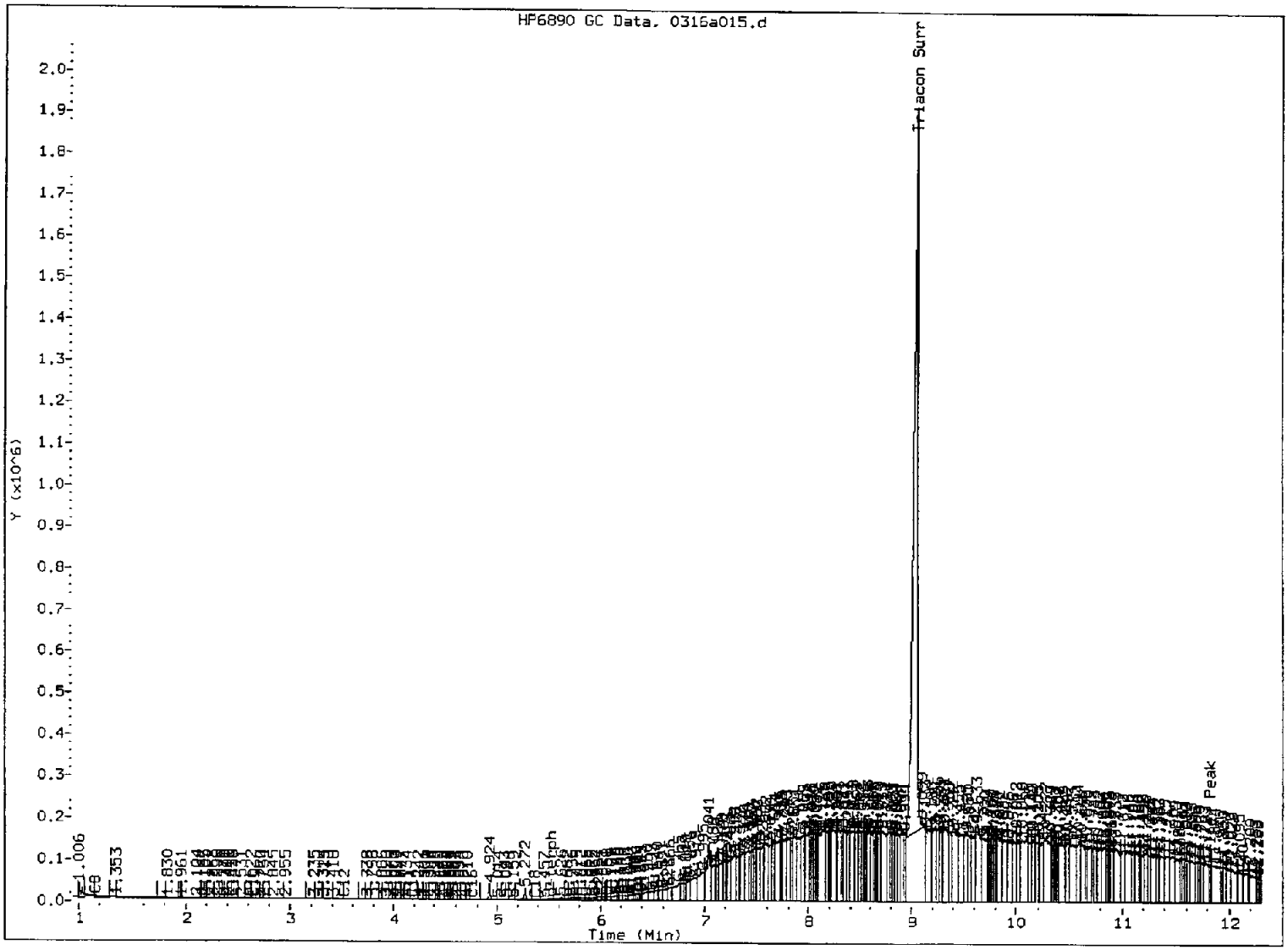
Instrument: fid4a.i

Operator: JR/VTS/JW
Column diameter: 0.25

Column phase: RTX-1



FID:4A-2C/RTX-1 SDC0026-CALB FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a016.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-CALC
Client ID:
Injection: 16-MAR-2015 16:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.718	-0.099	12115	42003	WATPHG	(Tol-C12)	336210	13.62
C8	1.030	-0.070	35402	126115	WATPHD	(C12-C24)	6889079	416.49
C10	2.645	-0.003	1366	4479	WATPHM	(C24-C38)	67908846	4461.23
C12	3.523	0.001	246	1215	AK102	(C10-C25)	9231142	469.44
C14	4.183	-0.017	565	1258	AK103	(C25-C36)	59168074	6429.86
C16	4.786	0.000	1421	2951				
C18	5.369	-0.002	4005	6298				
C20	5.983	-0.014	15546	40665				
C22	6.629	-0.002	52336	53925				
C24	7.224	-0.023	189085	223616				
C25	7.562	0.016	258942	542063				
C26	7.838	0.002	301059	351434				
C28	8.410	0.014	332999	525125				
C32	9.602	-0.012	310912	588333				
C34	10.259	0.002	280952	963982				
Filter Peak	11.837	-0.005	82642	148160				
C36	10.927	0.022	232651	910564				
C38	11.519	-0.023	129354	479628				
C40	12.160	-0.002	57168	248067				
o-terph	5.519	-0.005	6442	24643				
Triacon Surr	9.096	0.099	2549003	8667625	NAS DIES	(C10-C24)	6926803	353.16

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	24643	1.1	2.4
Triacontane	8667625	432.5	961.1 M

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a016.d

Date : 16-MAR-2015 16:12

Client ID:

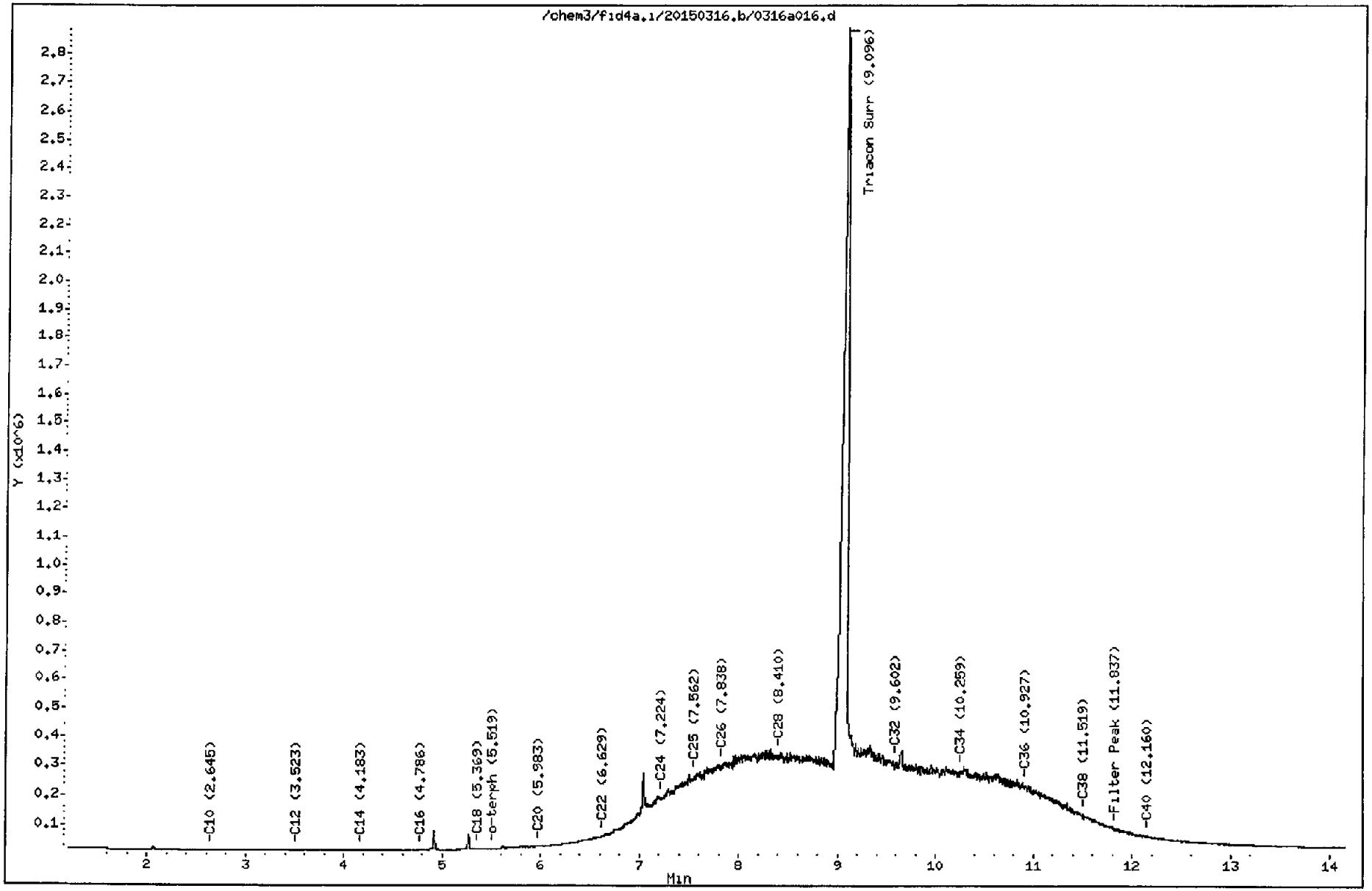
Sample Info: SDC0026-CALC

Column phase: RTX-1

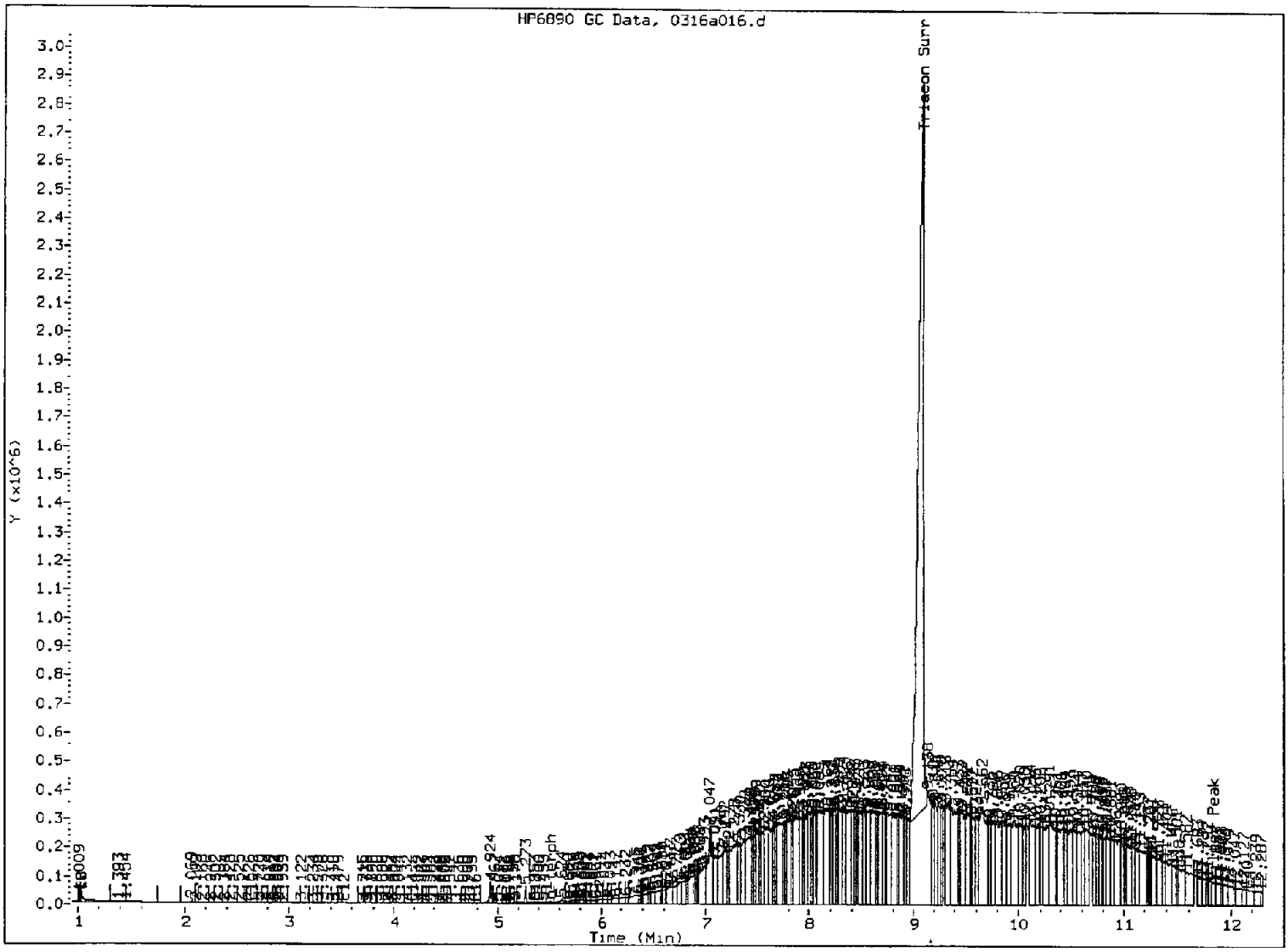
Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



FID:4A-2C/RTX-1 SDC0026-CALC FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: JJ Date: 3/16/15

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150316.b/0316a017.d
Method: /chem3/fid4a.i/20150316.b/ftphfid4a.m
Instrument: fid4a.i
Operator: JR/VTS/JW
Report Date: 03/16/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: SDC0026-SCV2
Client ID:
Injection: 16-MAR-2015 16:36

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.777	-0.040	6706	64223	WATPHG	(Tol-C12)	241207	9.77
C8	1.008	-0.092	36106	45124	WATPHD	(C12-C24)	755274	45.66
C10	2.653	0.005	1278	5454	WATPHM	(C24-C38)	7418717	487.37
C12	----				AK102	(C10-C25)	1059387	53.87
C14	4.209	0.009	136	442	AK103	(C25-C36)	6208817	674.72
C16	4.787	0.001	578	2257				
C18	5.381	0.010	769	3088				
C20	5.982	-0.015	1668	2625				
C22	6.627	-0.003	5654	10852				
C24	7.260	0.013	21209	38400				
C25	7.557	0.011	27359	24047				
C26	7.846	0.011	32233	42096				
C28	8.385	-0.011	34414	53867				
C32	9.612	-0.001	37607	123698				
C34	10.279	0.022	31549	88251				
Filter Peak	11.871	0.029	23186	33698				
C36	10.896	-0.010	29045	28058				
C38	11.536	-0.006	25008	78009				
C40	12.148	-0.014	21972	64374				
o-terph	5.519	-0.006	909	1708				
Triacon Surr	9.001	0.004	515476	745296	NAS DIES	(C10-C24)	792647	40.41

Range Times: NW Diesel(3.522 - 7.247) AK102(2.65 - 7.55) Jet A(2.65 - 5.37)
NW M.Oil(7.25 - 11.54) AK103(7.55 - 10.91) OR Diesel(2.65 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1708	0.1	0.2
Triacontane	745296	37.2	82.6 M

M Indicates the peak was manually integrated

JW 3/16/15

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
NAS Diesel	19614.0	16-MAR-2015

Data File: /chem3/fid4a.i/20150316.b/0316a017.d

Date : 16-MAR-2015 16:36

Client ID:

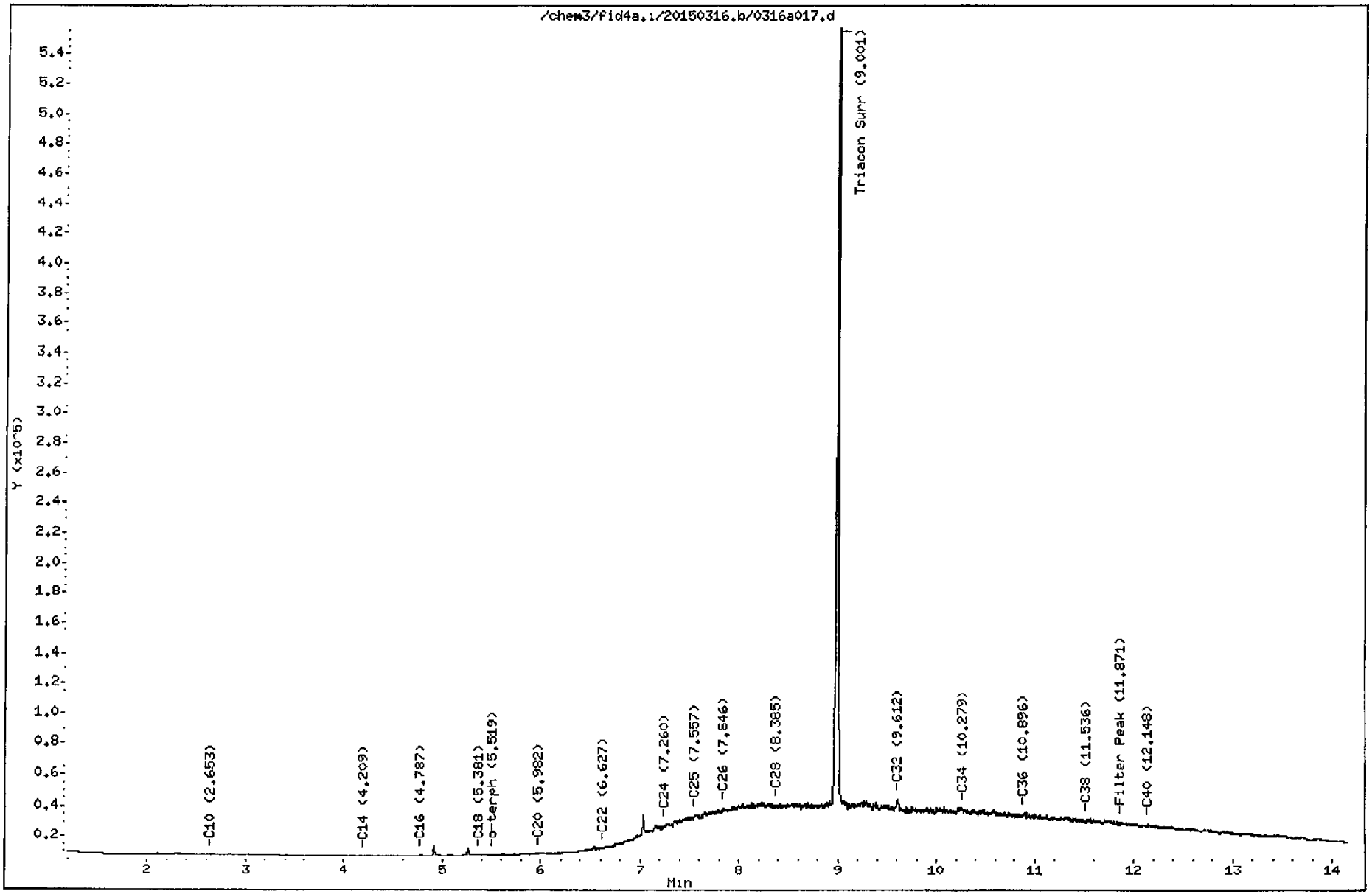
Sample Info: SDC0026-SCV2

Column phase: RTX-1

Instrument: fid4a.i

Operator: JR/VTS/JW

Column diameter: 0.25



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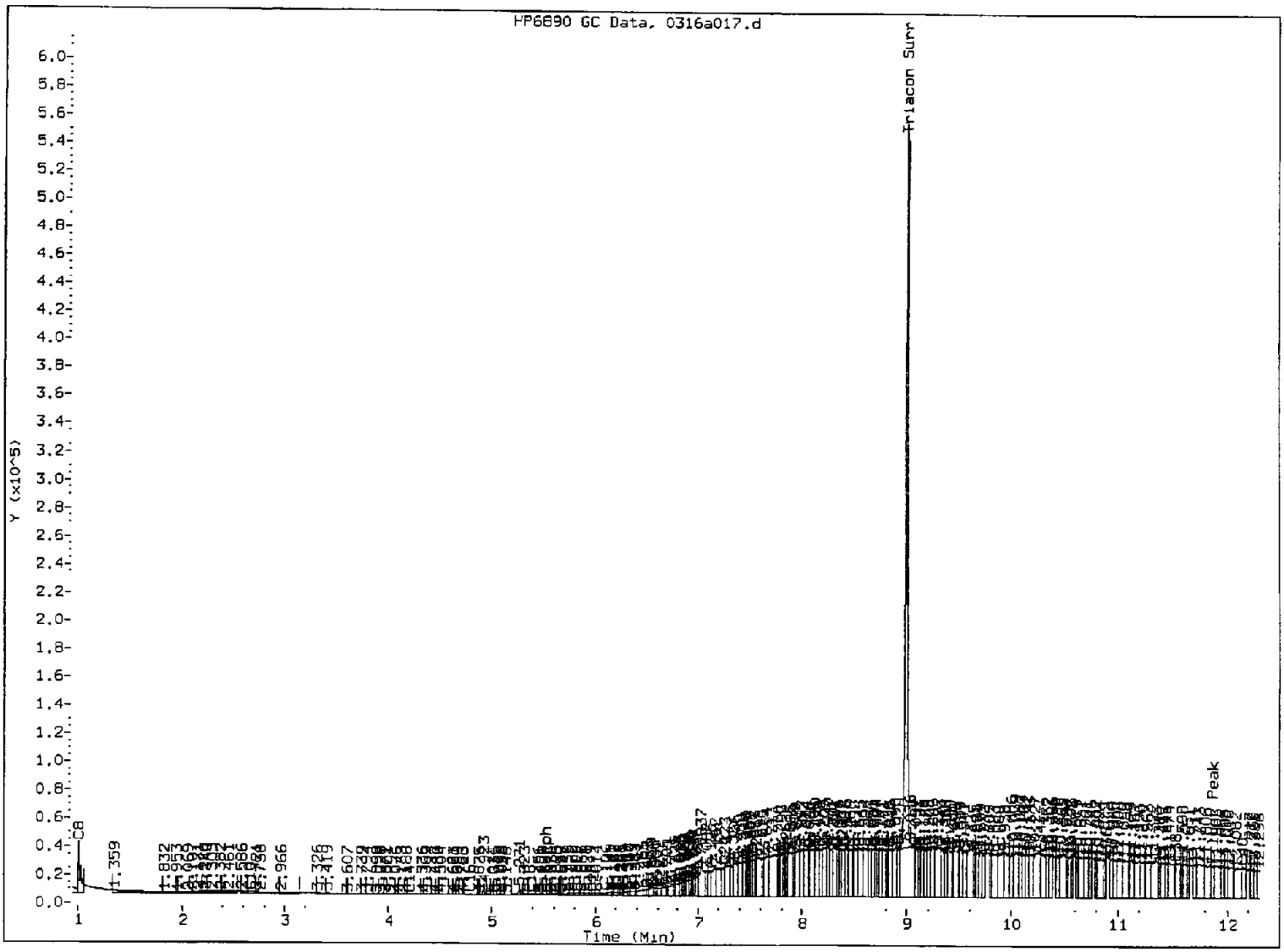


MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: JW Date: 3/16/15

Analysis	Matrix	Method
TPH (Extractables)	Solid	NWTPH-Dx
TPH Solids (Extractables) (Ac/Si)	Solid	NWTPH-Dx
TPH Solids 10mL FEV (Extractables)	Solid	NWTPH-Dx
TPH Solids 10mL FEV (Extractables) (Ac/Si)	Solid	NWTPH-Dx

Checklist: Initial Calibration Checklist-FID

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	MDL	05/21/2015
	Comments: *YE00027 - FID9 NWTPHD/Motor Oil Curve*			
2	ICal %RSD < 20%	YES	MDL	05/21/2015
3	Manual integrations include before/after pictures	YES	MDL	05/21/2015
4	All SCV within +/- 20% (DOD)	NO	MDL	05/21/2015
	Comments: *SCV2 Triacontane surrogate failing low at 71.3% rec.*			
5	All SCV within +/- 30%	YES	MDL	05/21/2015
6	NO Linear or Quadratic fits used	YES	MDL	05/21/2015
7	NO Calibration points dropped	YES	MDL	05/21/2015
8	Additonal Notes	YES	MDL	05/21/2015
	Comments: *CALC Triacontane surrogate outside 0.05min shift window due to saturation. Surrogate never spiked at this concentration No corrective action taken.*			
9	Reviewer Approval (Reviewer)	YES	BB	05/21/2015

* = Indicates Automated Response from Element DataSyst

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS SEQUENCE

SDE0049

Printed: 5/20/2015 4:22:41PM

Instrument: FID9
Calibration ID: UNASSIGNED
MS Energy:

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SDE0049-IBL1	Retention Time Std	QC		1	D000116		
SDE0049-IBL2	Instrument Blank	QC		2	D000115		
SDE0049-CAL1	Diesel 50	QC		3	D000830		
SDE0049-CAL2	Diesel 100	QC		4	D000831		
SDE0049-CAL3	Diesel 250	QC		5	D000832		
SDE0049-CAL4	Diesel 500	QC		6	D000833		
SDE0049-CAL5	Diesel 1000	QC		7	D000834		
SDE0049-CAL6	Diesel 2500	QC		8	D000821		
SDE0049-SCV1	Diesel SCV 250	QC		9	C003250		
SDE0049-CAL7	Moil 100	QC		10	D002164		
SDE0049-CAL8	Moil 250	QC		11	D002165		
SDE0049-CAL9	Moil 500	QC		12	D002166		
SDE0049-CALA	Moil 1000	QC		13	D002167		
SDE0049-CALB	Moil 2500	QC		14	D002168		
SDE0049-CALC	Moil 5000	QC		15	D001872		
SDE0049-SCV2	Moil SCV 500	QC		16	D000209		

MC 5/20/15
Samples Loaded By Date

5/21/15 MC
Data Processed By Date

6a
DIESEL INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150520

Instrument: FID9.I Project:

Calibration Date: 20-MAY-2015 SDG No.: 20150520

Diesel Range	RF1 50	RF2 100	RF3 250	RF4 500	RF5 1000	RF6 2500	Ave RF	%RSD
WA Diesel	18660	17772	16466	16978	17515	17079	17412	4.4
AK Diesel	20995	20425	18918	19828	20369	19865	20067	3.5
OR Diesel	21403	20596	19068	19965	20505	19985	20254	3.9
Cal Diesel	20881	20329	18840	19760	20309	19809	19988	3.5
o-Terph	19203	22044	22123	22324	22968	23064	21954	6.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Diesel RF calculation.

Quant Ranges : WA Diesel C12-C24 (3.970-7.460)
AK Diesel C10-C25 (2.984-7.712)
OR Diesel C10-C28 (2.984-8.406)
Cal Diesel C10-C24 (2.984-7.460)

Calibration Files	Analysis Time
15052009.d	20-MAY-2015 17:25
15052010.d	20-MAY-2015 17:46
15052011.d	20-MAY-2015 18:08
15052012.d	20-MAY-2015 18:29
15052013.d	20-MAY-2015 18:50
15052014.d	20-MAY-2015 19:12

6a

NW MOTOR OIL RANGE INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC. Client: 20150520

Instrument: FID9.I Project:

Calibration Date: 20-MAY-2015 SDG No.: 20150520

Product Range	RF1 100	RF2 250	RF3 500	RF4 1000	RF5 2500	RF6 5000	Ave RF	%RSD
WA M.Oil C24-C38	15206	14015	14211	14189	14255	13758	14273	3.5
Triac Surr	13043	14500	15844	17434	18319	18364	16251	13.4

<- Indicates %RSD outside limits
Surrogate areas are not included in Motor Oil RF calculation.

Calibration Files	Analysis Time
15052016.d	20-MAY-2015 19:54
15052017.d	20-MAY-2015 20:15
15052018.d	20-MAY-2015 20:36
15052019.d	20-MAY-2015 20:58
15052020.d	20-MAY-2015 21:19
15052021.d	20-MAY-2015 21:40

TPH ANALYTICAL SEQUENCE

Lab Name: ANALYTICAL RESOURCES INC Client:

SDG No.: 20150520 Project:

Instrument ID: FID9 GC Column: RTX-1

THE ANALYTICAL SEQUENCE OF BLANKS, SAMPLES, AND STANDARDS, IS GIVEN BELOW:

SURROGATE RT FROM DAILY STANDARD
TERPH: 5.97 TRIAC: 8.82

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TERPH RT #	TRIAC RT #
01		SDE0049-IBL1	05/20/15	1642	5.97	8.82
02		SDE0049-IBL2	05/20/15	1703	5.96	8.81
03		SDE0049-CAL1	05/20/15	1725	5.95	8.81
04		SDE0049-CAL2	05/20/15	1746	5.96	8.82
05		SDE0049-CAL3	05/20/15	1808	5.97	8.82
06		SDE0049-CAL4	05/20/15	1829	5.97	8.81
07		SDE0049-CAL5	05/20/15	1850	5.99	8.82
08		SDE0049-CAL6	05/20/15	1912	6.02	8.82
09		SDE0049-SCV1	05/20/15	1933	5.96	8.81
10		SDE0049-CAL7	05/20/15	1954	5.98	8.81
11		SDE0049-CAL8	05/20/15	2015	5.97	8.81
12		SDE0049-CAL9	05/20/15	2036	5.97	8.82
13		SDE0049-CALA	05/20/15	2058	5.96	8.83
14		SDE0049-CALB	05/20/15	2119	5.97	8.85
15		SDE0049-CALC	05/20/15	2140	5.96	8.89*
16		SDE0049-SCV2	05/20/15	2201	5.96	8.82

QC LIMITS

TERPH = o-terph (+/- 0.05 MINUTES)
TRIAC = Triacon Surr (+/- 0.05 MINUTES)

* Values outside of QC limits.

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid9.i/20150520curve.b

ARI Job No.: SDE0 Method: ftphfid9a.m Instrument: fid9.i Date: 20-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1642	15052007.d	SDE0049-IBL1		1	NO MANUAL INTEGRATION
1703	15052008.d	SDE0049-IBL2		1	NO MANUAL INTEGRATION
1725	15052009.d	SDE0049-CAL1		1	o-terph,
1746	15052010.d	SDE0049-CAL2		1	o-terph,
1808	15052011.d	SDE0049-CAL3		1	o-terph,
1829	15052012.d	SDE0049-CAL4		1	o-terph,
1850	15052013.d	SDE0049-CAL5		1	o-terph,
1912	15052014.d	SDE0049-CAL6		1	o-terph,
1933	15052015.d	SDE0049-SCV1		1	o-terph,
1954	15052016.d	SDE0049-CAL7		1	Triacon Surr,
2015	15052017.d	SDE0049-CAL8		1	Triacon Surr,
2036	15052018.d	SDE0049-CAL9		1	Triacon Surr,
2058	15052019.d	SDE0049-CALA		1	Triacon Surr,
2119	15052020.d	SDE0049-CALB		1	Triacon Surr,
2140	15052021.d	SDE0049-CALC		1	Triacon Surr,
2201	15052022.d	SDE0049-SCV2		1	Triacon Surr,

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
FILENAME:	15052007	15052008	15052009	15052010	15052011	15052012	15052013	15052014	15052015	15052016
INJ.DATE:	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015
INJ.TIME:	16:42	17:03	17:25	17:46	18:08	18:29	18:50	19:12	19:33	19:54

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
	1 Toluene	1.071	1.123	1.073	1.075	1.046	1.052	1.047	1.049	1.049	+++++
	37 JET-A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	2 C8	1.288	1.261	1.254	1.261	1.259	1.263	1.260	1.261	1.261	1.287
	3 C10	2.984	2.997	3.004	3.007	3.000	2.996	2.992	2.994	2.996	2.999
	4 C12	3 970	3.965	3.963	3.973	3.970	3.965	3.964	3.968	3.964	3.972
	5 C14	4.657	4.660	4.659	4.645	4.654	4.651	4.652	4.660	4.651	4.655
	6 C16	5.245	5.245	5.254	5.244	5.241	5.239	5.243	5.250	5.240	5.241
	7 C18	5.812	5.804	5.807	5.805	5.804	5.805	5.811	5.792	5.804	5.807
$	8 o-terph	5.968	5.962	5.952	5.956	5.966	5.973	5.989	6.015	5.964	5.955
	9 C20	6.378	6.374	6.375	6.377	6.379	6.373	6.374	6.381	6.384	6.374
	10 C22	6.933	6.926	6.928	6.933	6.930	6.932	6.928	6.929	6.927	6.932
	11 C24	7.460	7.459	7.457	7.448	7.450	7.452	7.445	7.458	7.451	7.455
	12 C25	7.712	7.708	7.705	7.705	7.696	7.702	7.710	7.714	7.712	7.707
	13 C26	7.953	7.943	7.953	7.953	7.951	7.951	7.951	7.941	7.943	7.949
	14 C28	8.406	8.386	8.398	8.400	8.402	8.395	8.406	8.401	8.401	8.400
$	15 Triacon Surr	8.823	8.813	8.813	8.818	8.817	8.813	8.817	8.823	8.812	8.807
	16 C32	9.185	9.178	9.180	9.181	9.181	9.183	9.184	9.184	9.183	9.181

Reviewer 1 _____ Date: 5/21/15

Reviewer 2 _____ Date: 5/21/15

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
17 C34	9.529	9.524	9.521	9.524	9.518	9.526	9.525	9.519	9.522	9.526
18 Filter Peak	9.658	9.654	9.655	9.655	9.657	9.657	9.657	9.652	9.651	9.656
19 C36	9.849	9.857	9.860	9.849	9.849	9.844	9.852	9.849	9.850	9.842
20 C38	10.150	10.132	10.143	10.147	10.144	10.145	10.147	10.143	10.147	10.145
21 C40	10.446	10.442	10.436	10.442	10.436	10.443	10.440	10.439	10.437	10.442
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 OR MOil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
38 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

ID:	RT11	RT12	RT13	RT14	RT15	RT16
FILENAME:	15052017	15052018	15052019	15052020	15052021	15052022
INJ.DATE:	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015	20-MAY-2015
INJ.TIME:	20:15	20:36	20:58	21:19	21:40	22:01

	Compound	RT11	RT12	RT13	RT14	RT15	RT16	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1	Toluene	+++++	+++++	1.107	+++++	1.109	+++++	1.071	0.971-1.171	1.073	0.028
37	JET-A	+++++	+++++	+++++	+++++	+++++	+++++	1.069	1.019-1.119	+++++	+++++
2	C8	1.249	1.244	1.292	1.295	1.294	1.283	1.288	1.188-1.388	1.269	0.017
3	C10	2.991	2.994	2.995	2.993	3.000	2.996	2.984	2.934-3.034	2.996	0.005
4	C12	3.968	3.963	3.964	3.968	3.967	3.967	3.970	3.920-4.020	3.967	0.003
5	C14	4.654	4.657	4.645	4.652	4.653	4.659	4.657	4.607-4.707	4.654	0.005
6	C16	5.240	5.240	5.244	5.241	5.247	5.245	5.245	5.195-5.295	5.244	0.004
7	C18	5.803	5.803	5.804	5.800	5.806	5.808	5.812	5.762-5.862	5.805	0.005
$ 8	o-terph	5.955	5.956	5.958	5.956	5.961	5.961	5.968	5.918-6.018	5.965	0.016
9	C20	6.373	6.371	6.369	6.377	6.370	6.370	6.378	6.328-6.428	6.375	0.004
10	C22	6.924	6.928	6.925	6.929	6.929	6.928	6.933	6.883-6.983	6.929	0.003
11	C24	7.455	7.454	7.453	7.458	7.454	7.452	7.460	7.410-7.510	7.454	0.004
12	C25	7.707	7.707	7.711	7.709	7.710	7.711	7.712	7.662-7.762	7.708	0.004
13	C26	7.943	7.943	7.945	7.952	7.945	7.942	7.953	7.903-8.003	7.948	0.004
14	C28	8.403	8.402	8.404	8.397	8.398	8.403	8.406	8.356-8.456	8.400	0.005
$ 15	Triacon Surr	8.810	8.819	8.833	8.854	8.888	8.816	8.823	8.773-8.873	8.824	0.020
16	C32	9.185	9.178	9.181	9.187	9.183	9.178	9.185	9.135-9.235	9.182	0.003
17	C34	9.523	9.523	9.522	9.526	9.526	9.523	9.529	9.479-9.579	9.524	0.003
18	Filter Peak	9.659	9.656	9.652	9.659	9.652	9.656	9.658	9.558-9.758	9.655	0.003
19	C36	9.847	9.845	9.843	9.849	9.846	9.844	9.849	9.799-9.899	9.848	0.005

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Batch File: /chem2/fid9.i/20150520curve.b
Inst ID: fid9.i

Compound	RT11	RT12	RT13	RT14	RT15	RT16	EXPEC RT	RT WINDOW	AVG RT	STD DEV
20 C38	10.144	10.146	10.143	10.148	10.143	10.152	10.150	10.100-10.200	10.145	0.004
21 C40	10.442	10.441	10.439	10.439	10.437	10.442	10.446	10.396-10.496	10.440	0.003
31 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	1.001	0.951-1.051	+++++	+++++
32 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	0.690	0.640-0.740	+++++	+++++
33 AK Dies 102	+++++	+++++	+++++	+++++	+++++	+++++	0.660	0.610-0.710	+++++	+++++
30 NW MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.004	0.954-1.054	+++++	+++++
34 OR MOil	+++++	+++++	+++++	+++++	+++++	+++++	1.003	0.953-1.053	+++++	+++++
35 AK MOil 103	+++++	+++++	+++++	+++++	+++++	+++++	1.002	0.952-1.052	+++++	+++++
38 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	0.705	0.655-0.755	+++++	+++++
39 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	0.550	0.500-0.600	+++++	+++++

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052007.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-IBL1
Client ID:
Injection: 20-MAY-2015 16:42
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.071	0.000	194761	127162	GAS (Tol-C12)	1688176	68.12
C8	1.288	0.000	174654	157576	DIESEL (C12-C24)	2726471	156.59
C10	2.984	0.000	292	152	M.OIL (C24-C38)	2842290	199.18
C12	3.970	0.000	208126	198600	AK-102 (C10-C25)	3502524	174.54
C14	4.657	0.000	199965	218348	AK-103 (C25-C36)	2407743	154.34
C16	5.245	0.000	267432	371700	OR.DIES (C10-C28)	4639216	229.05
C18	5.812	0.000	432838	295563			
C20	6.378	0.000	263184	220697			
C22	6.933	0.000	263261	301632			
C24	7.460	0.000	340588	349316			
C25	7.712	0.000	366367	343173			
C26	7.953	0.000	279299	368483			
C28	8.406	0.000	314783	359152	IT.DIES (C10-C24)	3474779	173.84
C32	9.185	0.000	371051	357938			
C34	9.529	0.000	427329	371515			
Filter Peak	9.658	0.000	2047	3603			
C36	9.849	0.000	454386	391040			
C38	10.150	0.000	438443	369494			
C40	10.446	0.000	278872	376641			
o-terph	5.968	0.000	1072472	943866	JET-A (C10-C18)	2106662	128.08
Triacon Surr	8.823	0.000	894002	809023			

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	943866	43.0	95.5
Triacontane	809023	49.8	110.6

ML
5/21/15

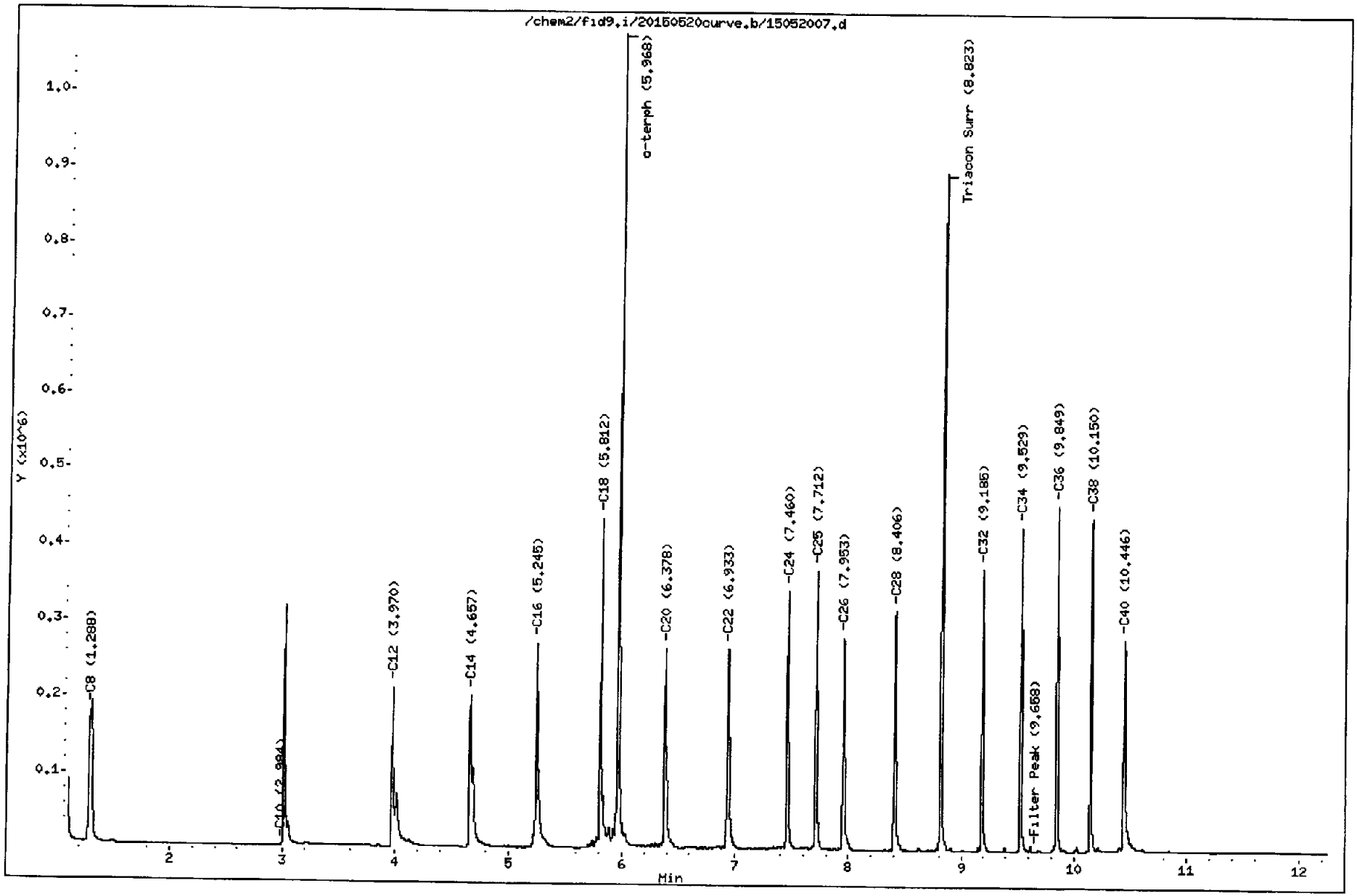
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150520curve.b/15052007.d
Date : 20-MAY-2015 16:42
Client ID:
Sample Info: SDE0049-IBL1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052008.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-IBL2
Client ID:
Injection: 20-MAY-2015 17:03
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.123	0.052	1999	7758	GAS (Tol-C12)	37887	1.53
C8	1.261	-0.026	1033	1380	DIESEL (C12-C24)	150755	8.66
C10	2.997	0.013	182	161	M.OIL (C24-C38)	224361	15.72
C12	3.965	-0.005	101	77	AK-102 (C10-C25)	161319	8.04
C14	4.660	0.003	73	27	AK-103 (C25-C36)	190449	12.21
C16	5.245	0.000	41	8	OR.DIES (C10-C28)	173769	8.58
C18	5.804	-0.007	160	98			
C20	6.374	-0.004	903	282			
C22	6.926	-0.007	141	100			
C24	7.459	-0.002	60	26			
C25	7.708	-0.005	86	44			
C26	7.943	-0.010	155	130			
C28	8.386	-0.020	306	137	IT.DIES (C10-C24)	159731	7.99
C32	9.178	-0.006	1567	1130			
C34	9.524	-0.006	1106	723			
Filter Peak	9.654	-0.003	1183	443			
C36	9.857	0.008	1309	260			
C38	10.132	-0.018	1890	4615			
C40	10.442	-0.004	2318	1469			
o-terph	5.962	-0.006	1111336	967013	JET-A (C10-C18)	23069	1.40
Triacon Surr	8.813	-0.010	734566	730596			

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	967013	44.0	97.9
Triacontane	730596	45.0	99.9

mc
5/21/15

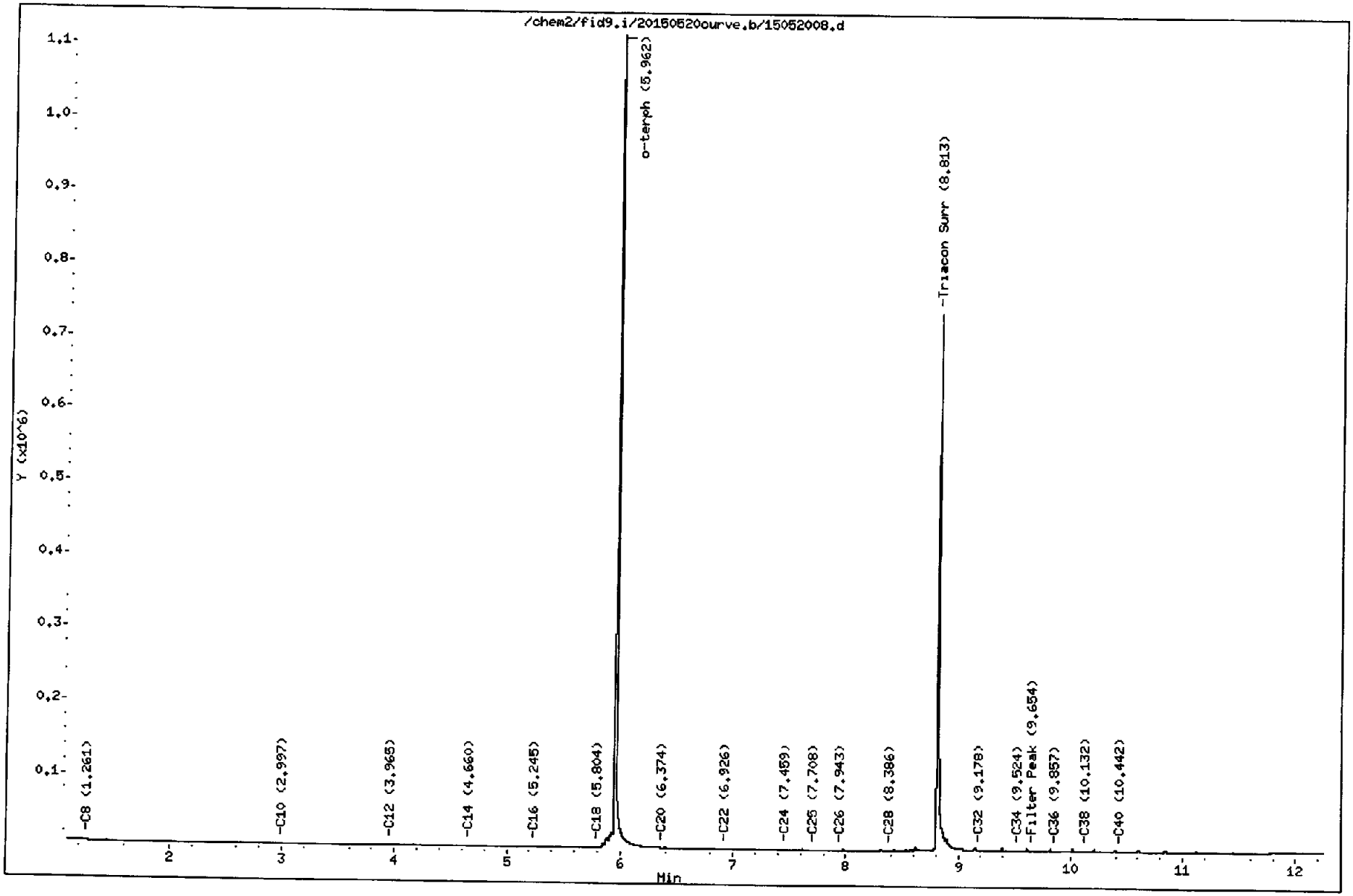
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150520curve.b/15052008.d
Date : 20-MAY-2015 17:03
Client ID:
Sample Info: SDE0049-IBL2

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052009.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL1
Client ID:
Injection: 20-MAY-2015 17:25
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.073	0.002	2852	4711	GAS (Tol-C12)	174943	7.06
C8	1.254	-0.034	1413	3465	DIESEL (C12-C24)	933009	53.58
C10	3.004	0.021	740	918	M.OIL (C24-C38)	145802	10.22
C12	3.963	-0.006	2791	1547	AK-102 (C10-C25)	1049774	52.31 M
C14	4.659	0.002	5649	2740	AK-103 (C25-C36)	111866	7.17
C16	5.254	0.009	8267	13292	OR.DIES (C10-C28)	1070135	52.84 M
C18	5.807	-0.004	8517	14024			
C20	6.375	-0.004	3559	2156			
C22	6.928	-0.005	1777	1050			
C24	7.457	-0.003	777	640			
C25	7.705	-0.007	522	465			
C26	7.953	-0.001	366	199			
C28	8.398	-0.008	157	128	IT.DIES (C10-C24)	1044028	52.23 M
C32	9.180	-0.005	338	272			
C34	9.521	-0.008	509	187			
Filter Peak	9.655	-0.003	642	315			
C36	9.860	0.011	875	450			
C38	10.143	-0.007	1303	721			
C40	10.436	-0.010	1914	2335			
o-terph	5.952	-0.016	168239	172831	JET-A (C10-C18)	731302	44.46
Triacon Surr	8.813	-0.010	187	96			

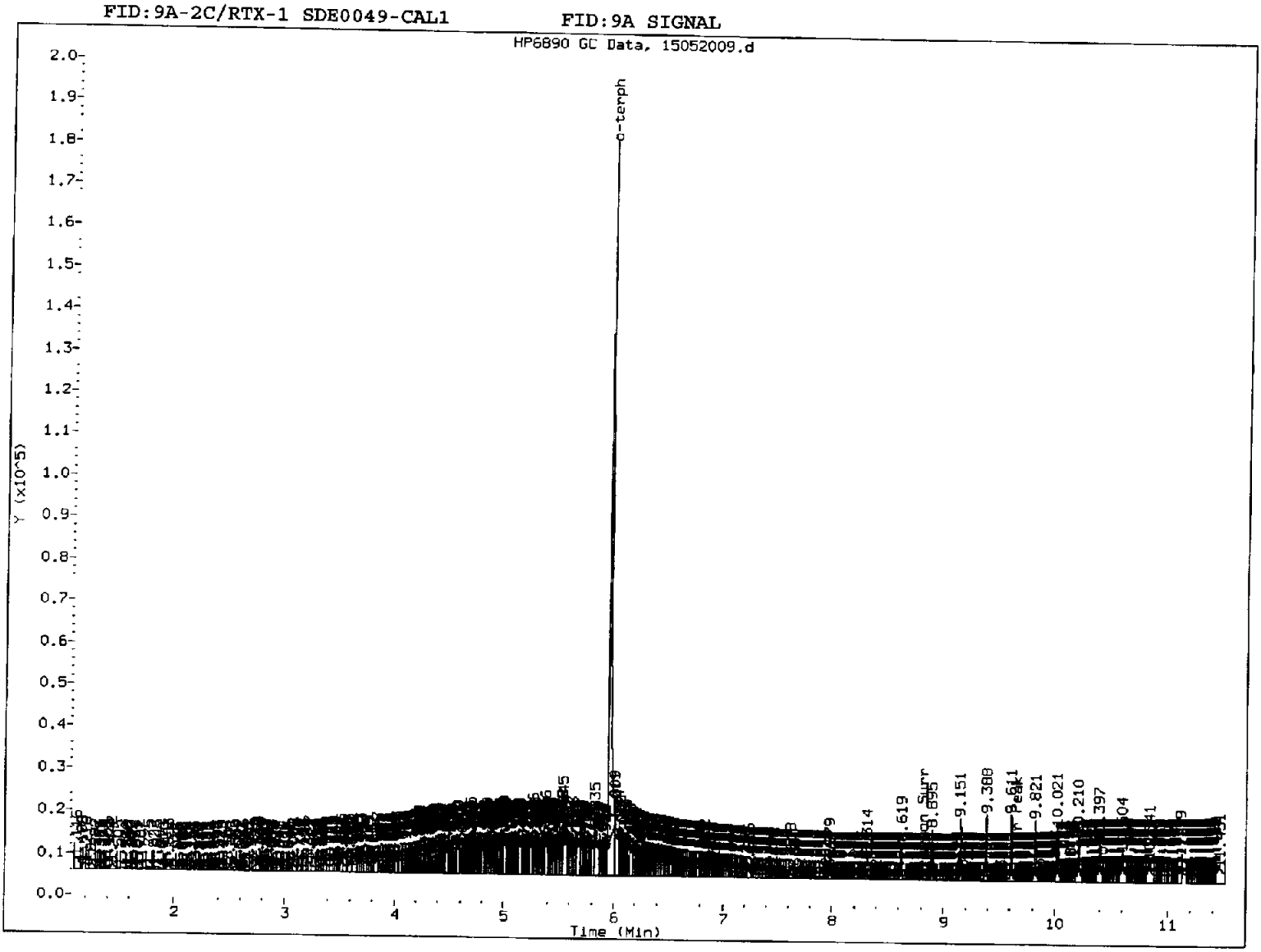
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	172831	7.9	17.5
Triacontane	96	0.0	0.0

ML 5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

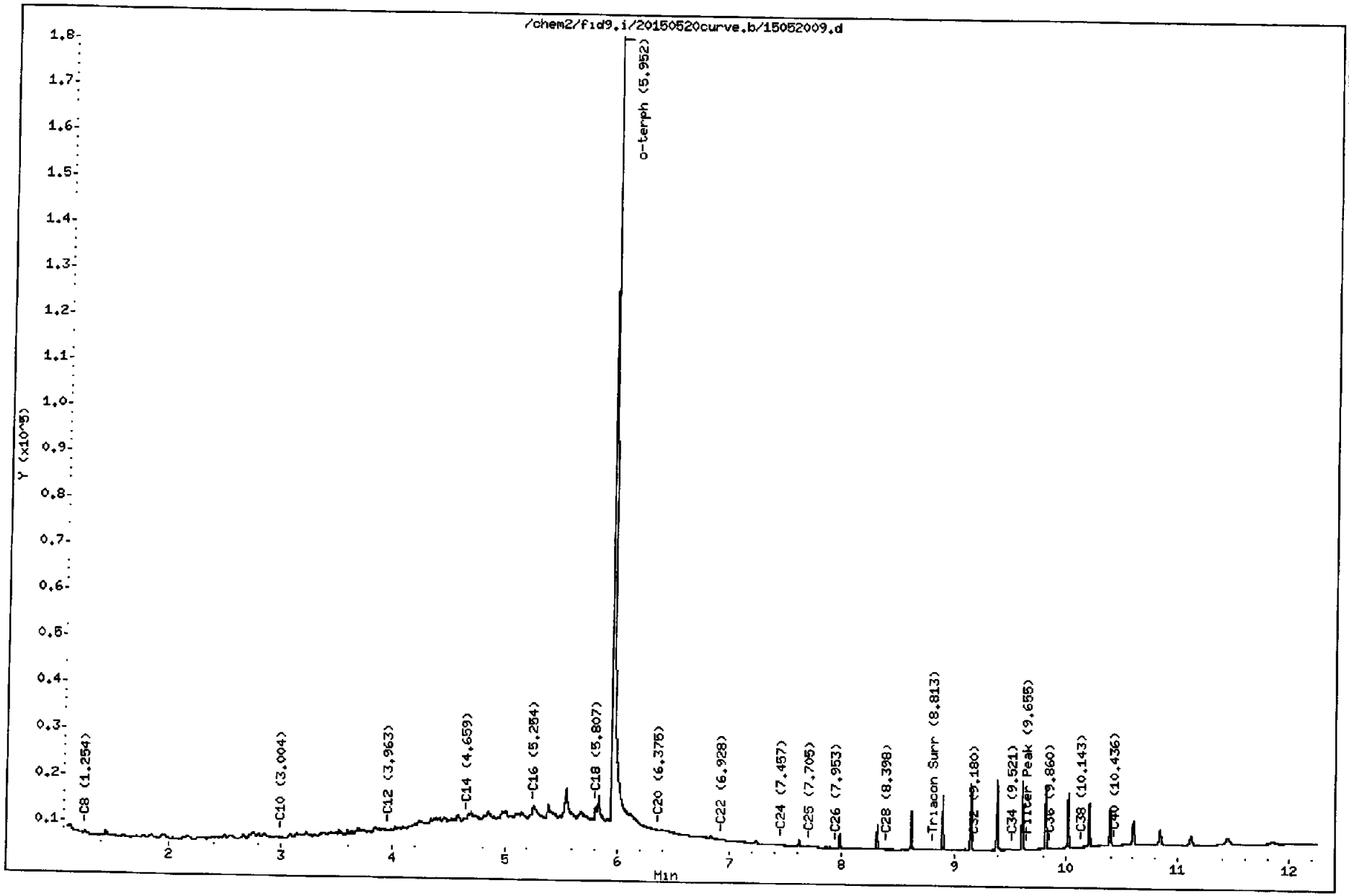
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052009.d
Date : 20-MAY-2015 17:25
Client ID:
Sample Info: SDE0049-CAL1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052010.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL2
Client ID:
Injection: 20-MAY-2015 17:46
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.075	0.004	7971	15416	GAS (Tol-C12)	478645	19.31	
C8	1.261	-0.027	4638	15022	DIESEL (C12-C24)	1777224	102.07	✓
C10	3.007	0.023	2198	2926	M.OIL (C24-C38)	68264	4.78	
C12	3.973	0.003	6695	14071	AK-102 (C10-C25)	2042473	101.78	M
C14	4.645	-0.013	11047	6582	AK-103 (C25-C36)	41857	2.68	
C16	5.244	0.000	20294	13181	OR.DIES (C10-C28)	2059611	101.69	M
C18	5.805	-0.007	26699	38091				
C20	6.377	-0.001	6715	3402				
C22	6.933	0.000	2962	585				
C24	7.448	-0.012	1306	1060				
C25	7.705	-0.008	793	513				
C26	7.953	0.000	464	447				
C28	8.400	-0.005	140	25	IT.DIES (C10-C24)	2032938	101.71	M
C32	9.181	-0.004	107	59				
C34	9.524	-0.005	268	109				
Filter Peak	9.655	-0.003	393	100				
C36	9.849	0.000	623	392				
C38	10.147	-0.003	1065	357				
C40	10.442	-0.003	1589	314				
o-terph	5.956	-0.012	487003	396783	JET-A (C10-C18)	1498305	91.09	
Triacon Surr	8.818	-0.005	35	18				

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

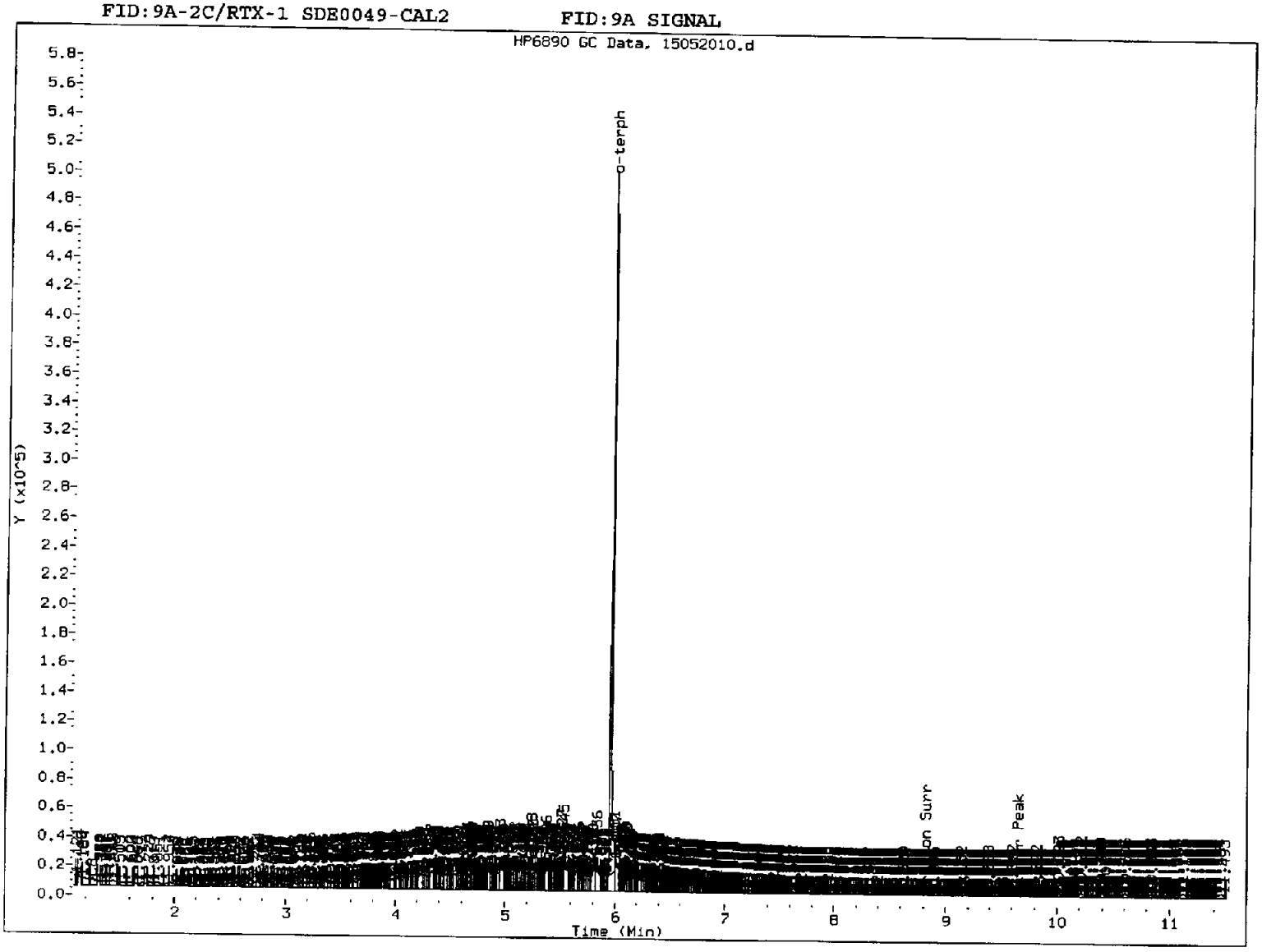
Surrogate	Area	Amount	%Rec
o-Terphenyl	396783	18.1	40.2
Triacontane	18	0.0	0.0

ML 5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

ACC 21877

FID:9A-2C/RTX-1 SDE0049-CAL2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

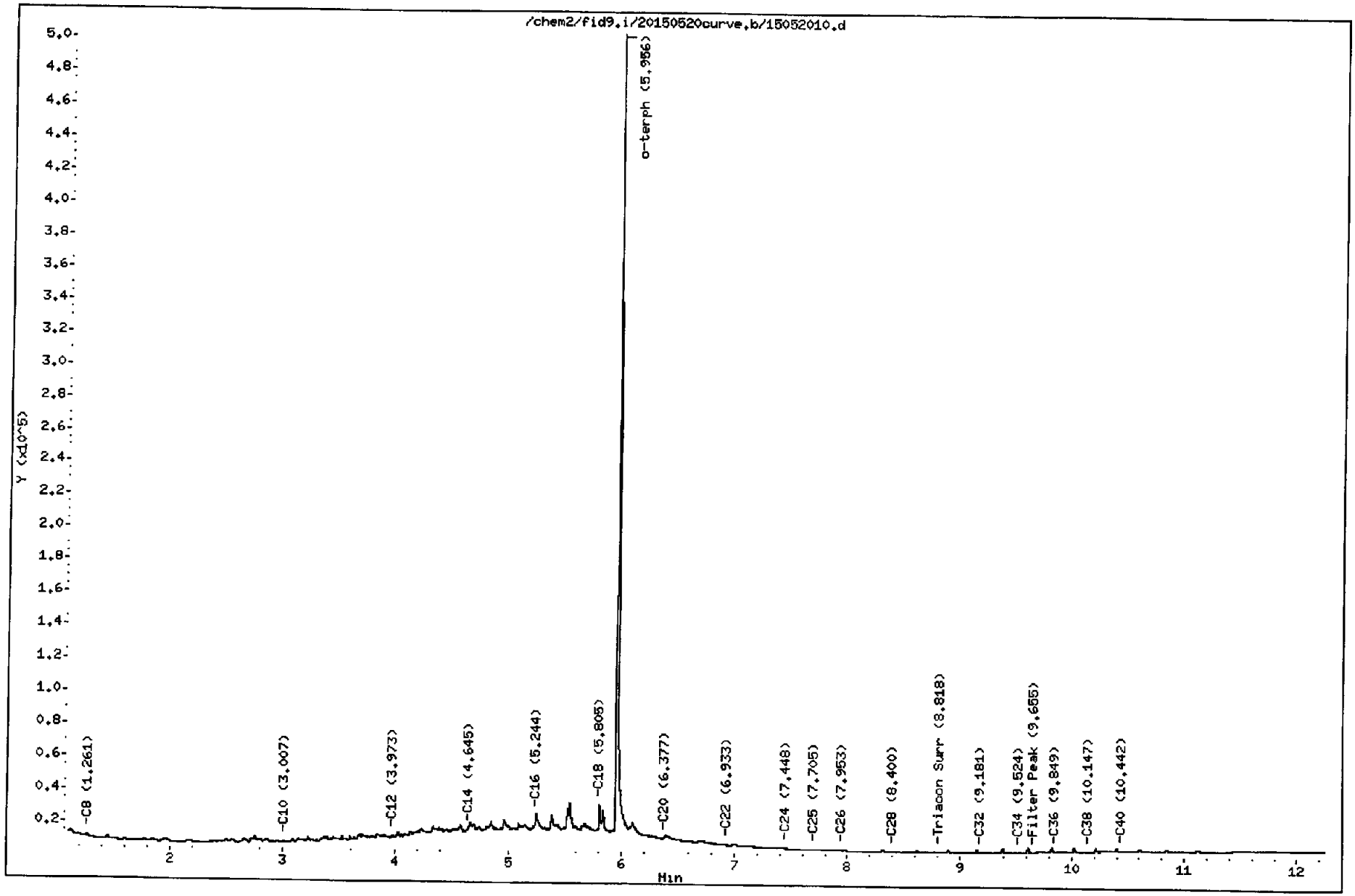
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052010.d
Date : 20-MAY-2015 17:46
Client ID:
Sample Info: SDE0049-CAL2

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052011.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL3
Client ID:
Injection: 20-MAY-2015 18:08
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.046	-0.025	5888	10045	GAS (Tol-C12)	891273	35.96	
C8	1.259	-0.028	4619	7725	DIESEL (C12-C24)	4116382	236.41	
C10	3.000	0.016	5892	9432	M.OIL (C24-C38)	92656	6.49	
C12	3.970	0.000	19930	35472	AK-102 (C10-C25)	4729550	235.69	M
C14	4.654	-0.003	42419	52224	AK-103 (C25-C36)	58375	3.74	
C16	5.241	-0.003	70851	115679	OR.DIES (C10-C28)	4767041	235.36	M
C18	5.804	-0.008	88321	104663				
C20	6.379	0.001	29684	71055				
C22	6.930	-0.003	6504	2546				
C24	7.450	-0.010	2617	1178				
C25	7.696	-0.017	1680	2287				
C26	7.951	-0.002	960	833				
C28	8.402	-0.003	306	197	IT.DIES (C10-C24)	4709890	235.64	M
C32	9.181	-0.004	95	35				
C34	9.518	-0.011	184	122				
Filter Peak	9.657	0.000	317	172				
C36	9.849	0.000	508	100				
C38	10.144	-0.006	934	620				
C40	10.436	-0.009	1463	405				
o-terph	5.966	-0.002	1234896	995554	JET-A (C10-C18)	3546413	215.61	
Triacon Surr	8.817	-0.006	40	12				

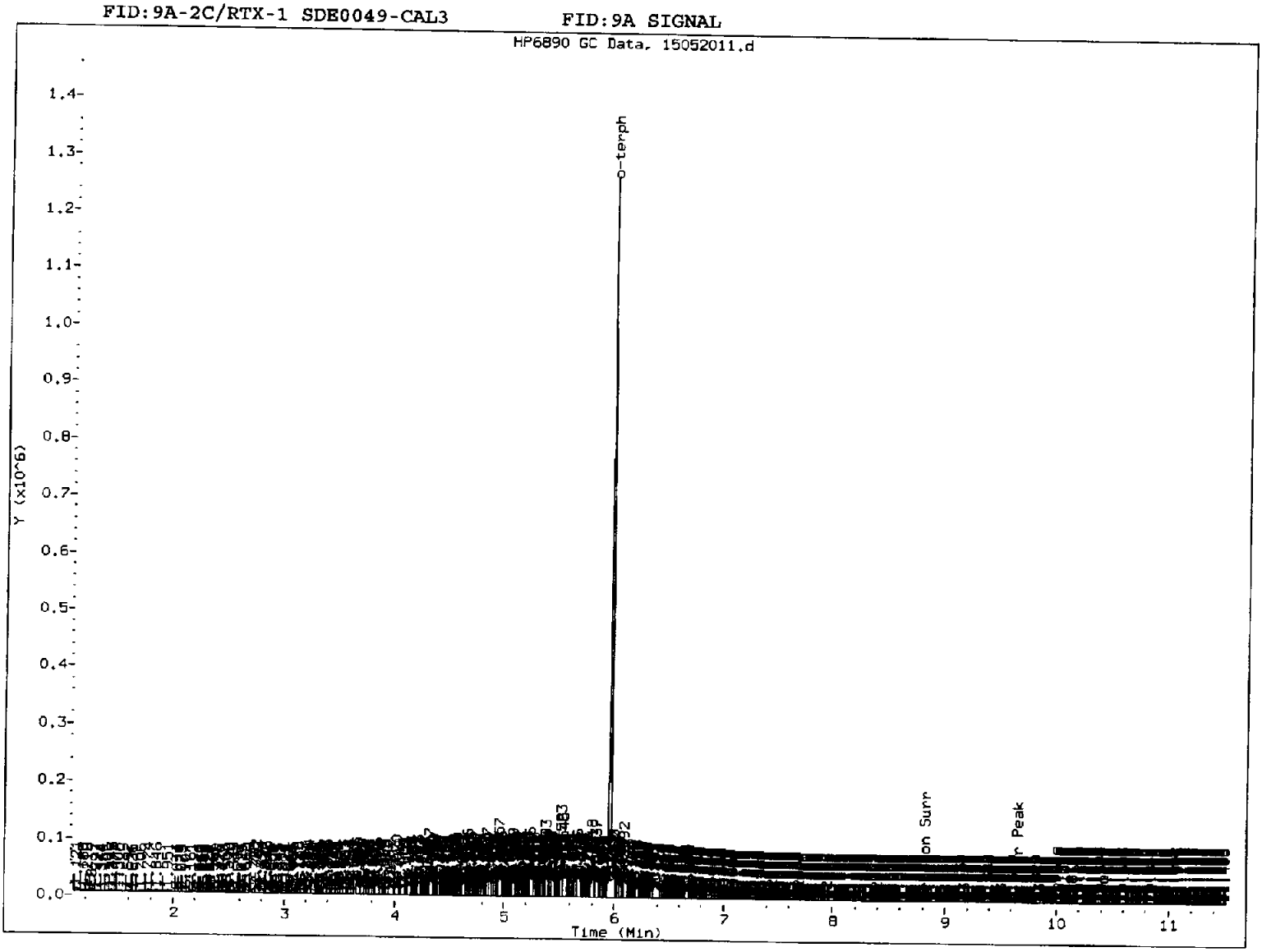
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	995554	45.3	100.8
Triacontane	12	0.0	0.0

ML 5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL3 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

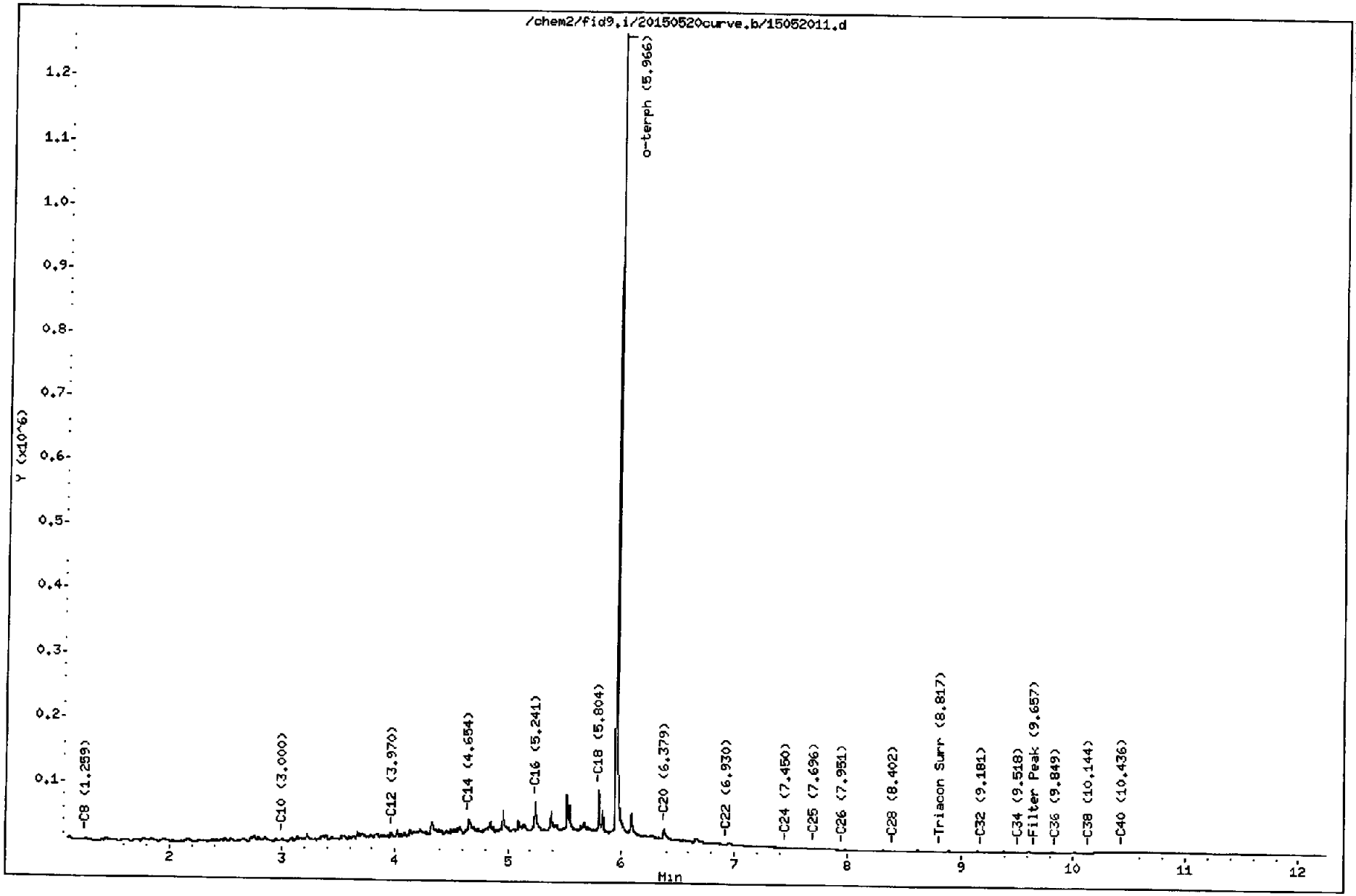
Analyst: _____ Date: _____

Data File: /chem2/fid9.i/20150520curve.b/15052011.d
Date : 20-MAY-2015 18:08
Client ID:
Sample Info: SDE0049-CAL3

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052012.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL4
Client ID:
Injection: 20-MAY-2015 18:29
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.052	-0.019	13367	24628	GAS (Tol-C12)	2175177	87.77
C8	1.263	-0.025	10489	21711	DIESEL (C12-C24)	8489118	487.54
C10	2.996	0.012	17430	41128	M.OIL (C24-C38)	135071	9.47
C12	3.965	-0.005	54944	78905	AK-102 (C10-C25)	9914056	494.05 M
C14	4.651	-0.006	115080	177081	AK-103 (C25-C36)	88254	5.66
C16	5.239	-0.005	177892	186149	OR.DIES (C10-C28)	9982488	492.87 M
C18	5.805	-0.007	204432	234043			
C20	6.373	-0.005	82787	142456			
C22	6.932	-0.001	24340	60821			
C24	7.452	-0.009	4766	2055			
C25	7.702	-0.010	2958	1809			
C26	7.951	-0.002	1800	1343			
C28	8.395	-0.011	558	462	IT.DIES (C10-C24)	9880216	494.31 M
C32	9.183	-0.001	58	34			
C34	9.526	-0.003	122	85			
Filter Peak	9.657	0.000	214	101			
C36	9.844	-0.005	404	211			
C38	10.145	-0.005	810	287			
C40	10.443	-0.003	1293	1274			
o-terph	5.973	0.005	1843497	2009161	JET-A (C10-C18)	7517917	457.07
Triacon Surr	8.813	-0.010	105	45			

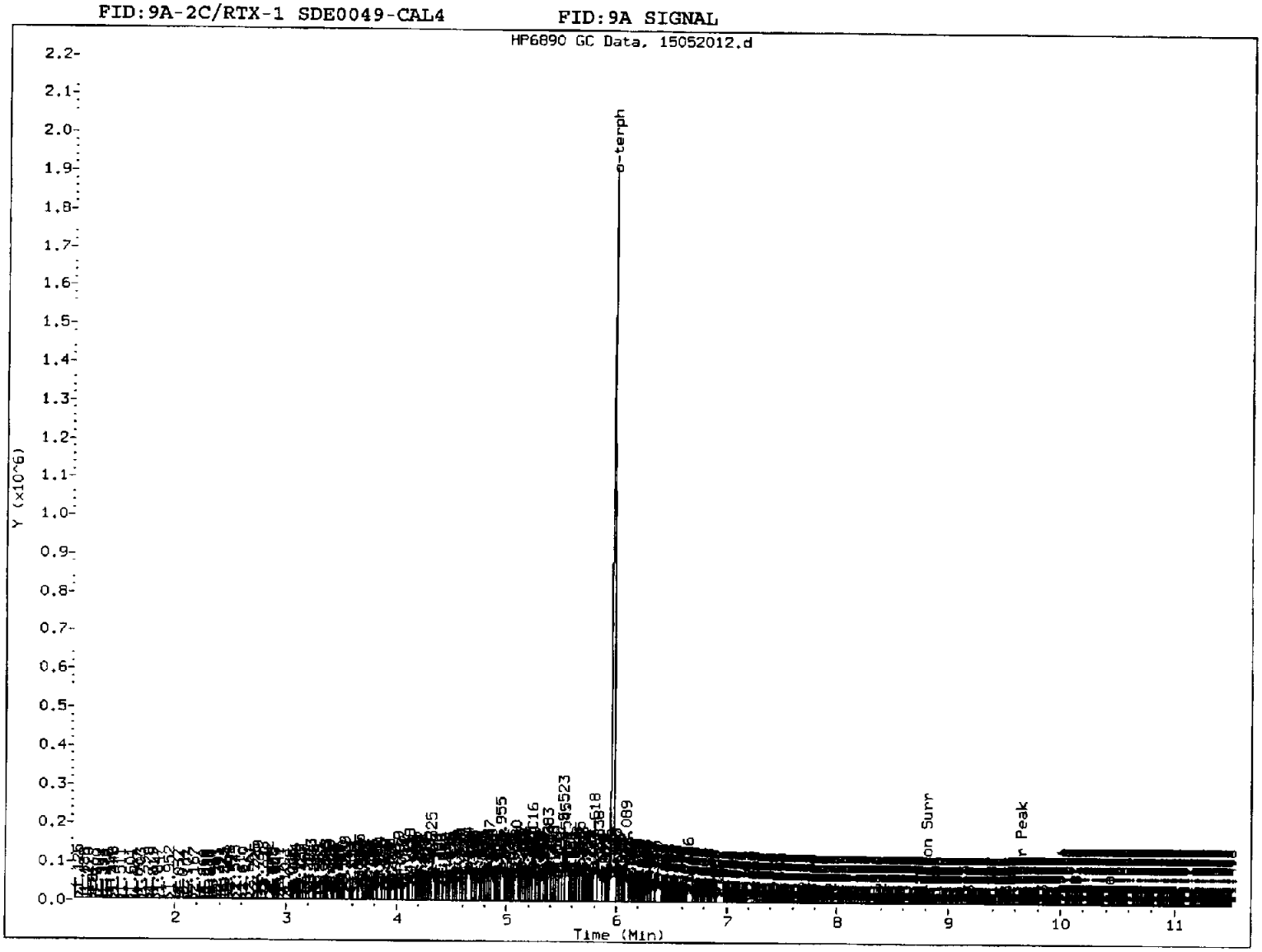
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2009161	91.5	203.4
Triacontane	45	0.0	0.0

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL4 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

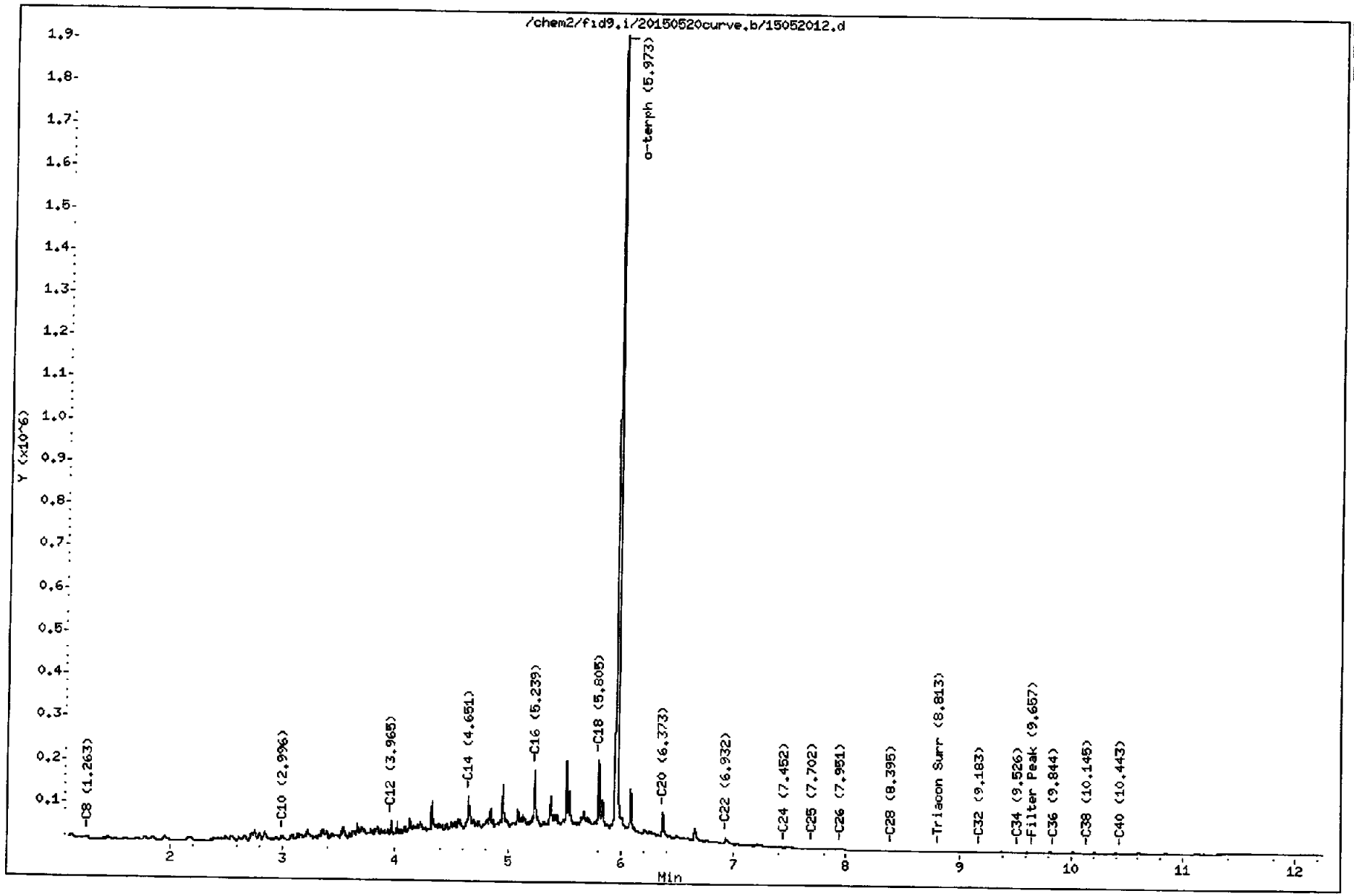
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052012.d
Date : 20-MAY-2015 18:29
Client ID:
Sample Info: SDE0049-CAL4

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052013.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL5
Client ID:
Injection: 20-MAY-2015 18:50
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.047	-0.024	14126	19199	GAS (Tol-C12)	4010341	161.82	
C8	1.260	-0.028	17516	23932	DIESEL (C12-C24)	17514821	1005.91	✓
C10	2.992	0.008	44059	97668	M.OIL (C24-C38)	249055	17.45	
C12	3.964	-0.005	130376	167920	AK-102 (C10-C25)	20368990	1015.05	M
C14	4.652	-0.005	263037	305709	AK-103 (C25-C36)	175145	11.23	
C16	5.243	-0.001	415175	388605	OR.DIES (C10-C28)	20504578	1012.37	M
C18	5.811	0.000	398159	471841				
C20	6.374	-0.004	207081	279006				
C22	6.928	-0.005	69246	118346				
C24	7.445	-0.015	9383	3874				
C25	7.710	-0.002	5677	2961				
C26	7.951	-0.002	3190	1935				
C28	8.406	0.000	1025	1146	IT.DIES (C10-C24)	20308655	1016.04	M
C32	9.184	-0.001	76	30				
C34	9.525	-0.004	58	11				
Filter Peak	9.657	0.000	158	51				
C36	9.852	0.003	329	162				
C38	10.147	-0.004	674	315				
C40	10.440	-0.006	1164	850				
o-terph	5.989	0.021	2860351	4134206	JET-A (C10-C18)	15620949	949.72	
Triacon Surr	8.817	-0.006	257	74				

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

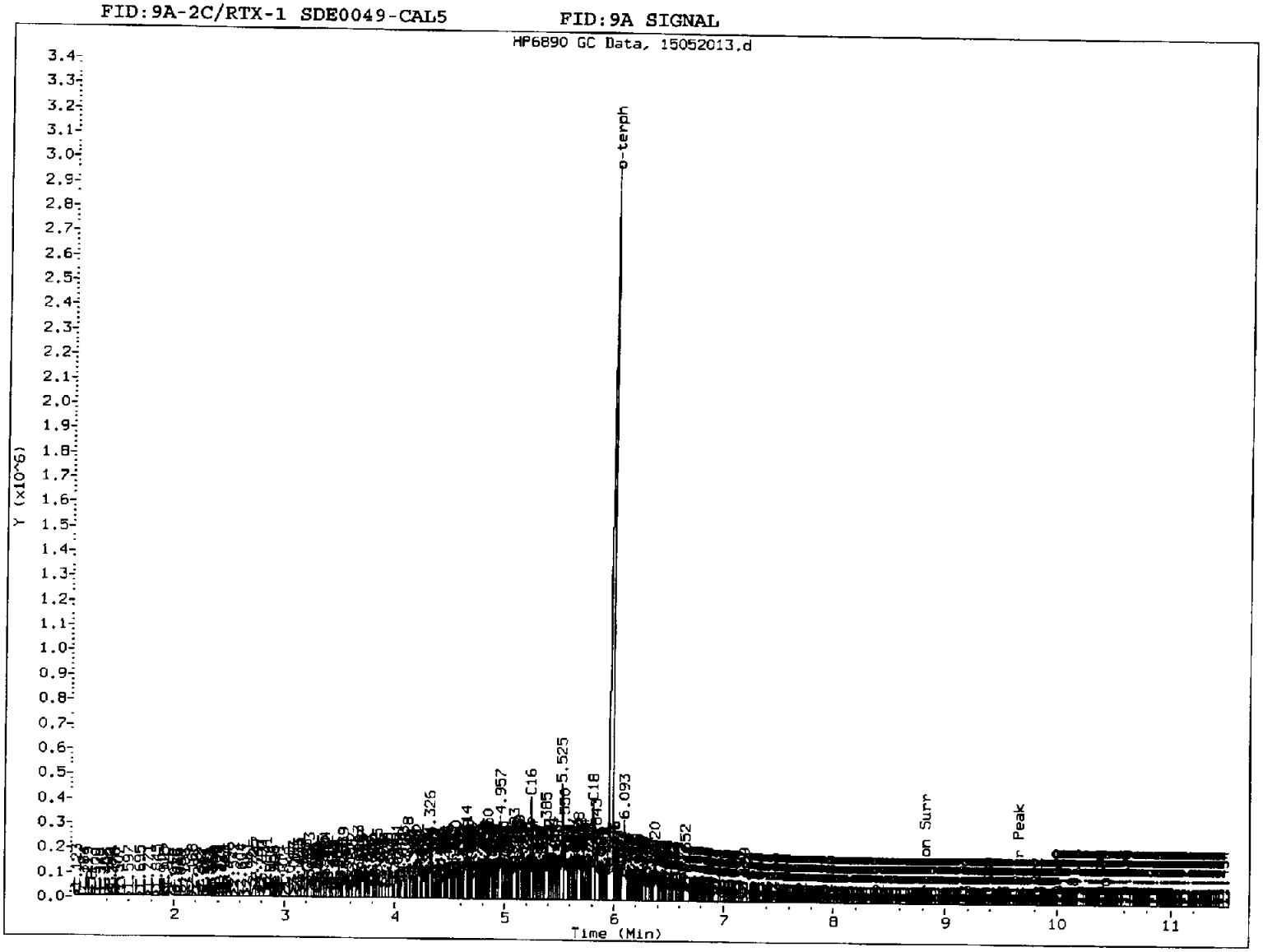
mc
5/21/15

Surrogate	Area	Amount	%Rec	
o-Terphenyl	4134206	188.3	418.5	✓
Triacontane	74	0.0	0.0	

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

ACS : 81865

FID:9A-2C/RTX-1 SDE0049-CAL5 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

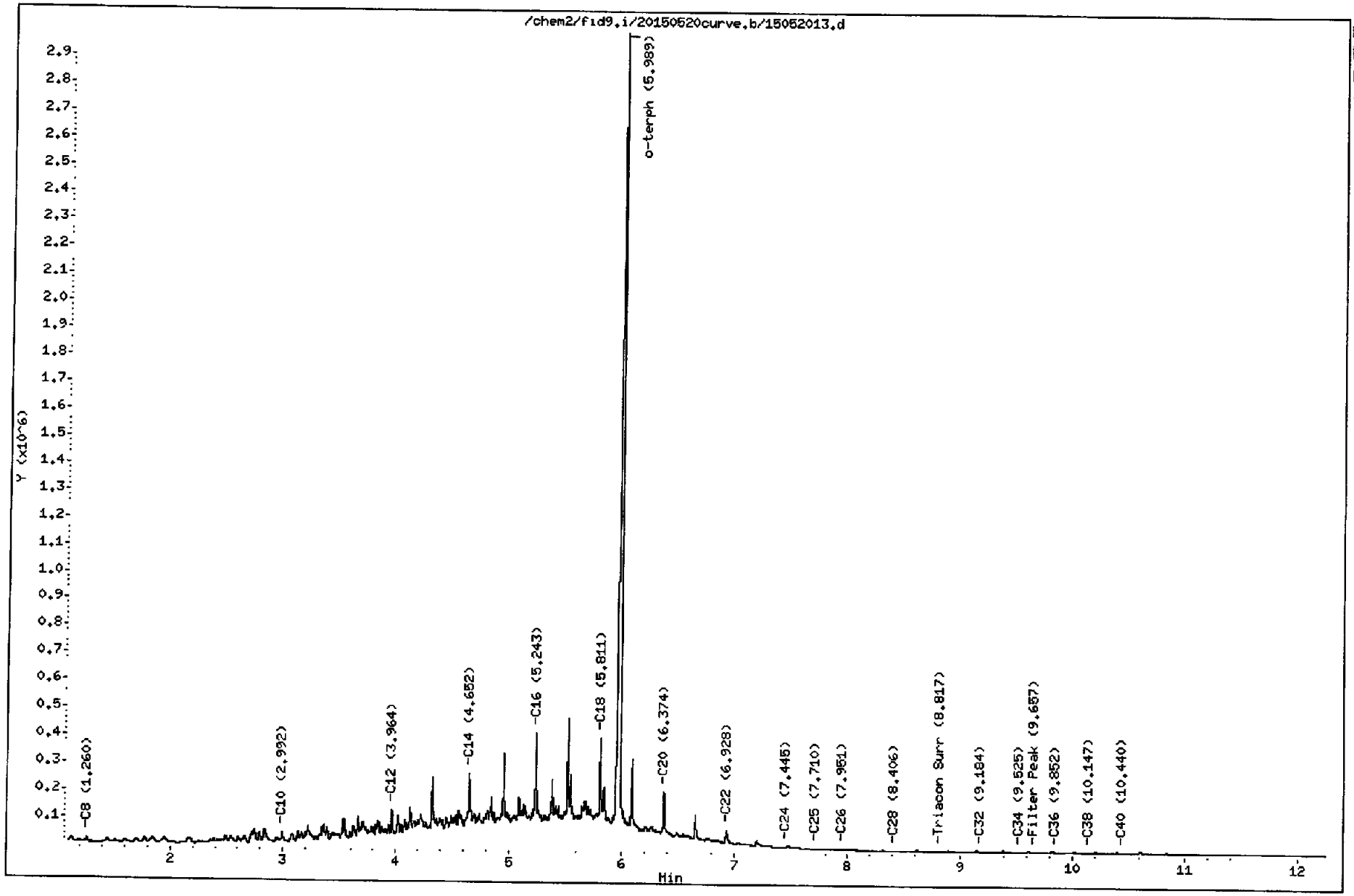
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052013.d
Date : 20-MAY-2015 18:50
Client ID:
Sample Info: SDE0049-CAL5

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052014.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL6
Client ID:
Injection: 20-MAY-2015 19:12
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.049	-0.022	28094	35216	GAS (Tol-C12)	9849625	397.44
C8	1.261	-0.026	36948	54803	DIESEL (C12-C24)	42698301	2452.23
C10	2.994	0.010	128984	234973	M.OIL (C24-C38)	489315	34.29
C12	3.968	-0.002	331632	437505	AK-102 (C10-C25)	49661261	2474.77 M
C14	4.660	0.002	618881	810329	AK-103 (C25-C36)	341847	21.91
C16	5.250	0.005	984411	972988	OR.DIES (C10-C28)	49962821	2466.81 M
C18	5.792	-0.019	312196	294527			
C20	6.381	0.003	525093	591484			
C22	6.929	-0.004	220606	262696			
C24	7.458	-0.003	53532	87416			
C25	7.714	0.001	21595	52057			
C26	7.941	-0.012	6995	1377			
C28	8.401	-0.005	2253	1404	IT.DIES (C10-C24)	49521618	2477.57 M
C32	9.184	-0.001	183	143			
C34	9.519	-0.010	41	18			
Filter Peak	9.652	-0.006	88	47			
C36	9.849	0.000	194	164			
C38	10.143	-0.007	492	86			
C40	10.439	-0.007	913	743			
o-terph	6.015	0.047	4684553	10378899	JET-A (C10-C18)	38179793	2321.24
Triacon Surr	8.823	0.000	623	418			

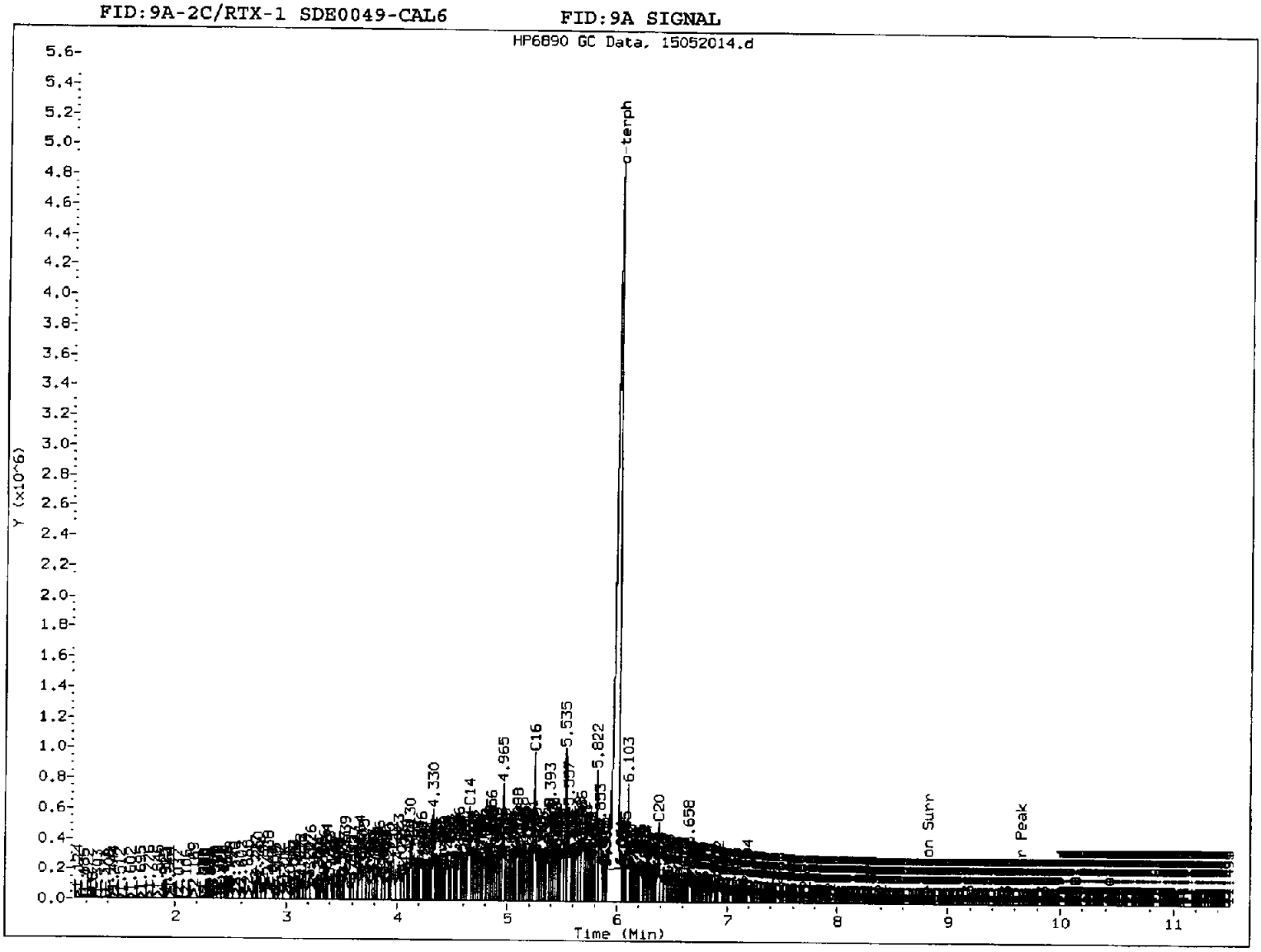
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	10378899	472.7	1050.6
Triacontane	418	0.0	0.1

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL6 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

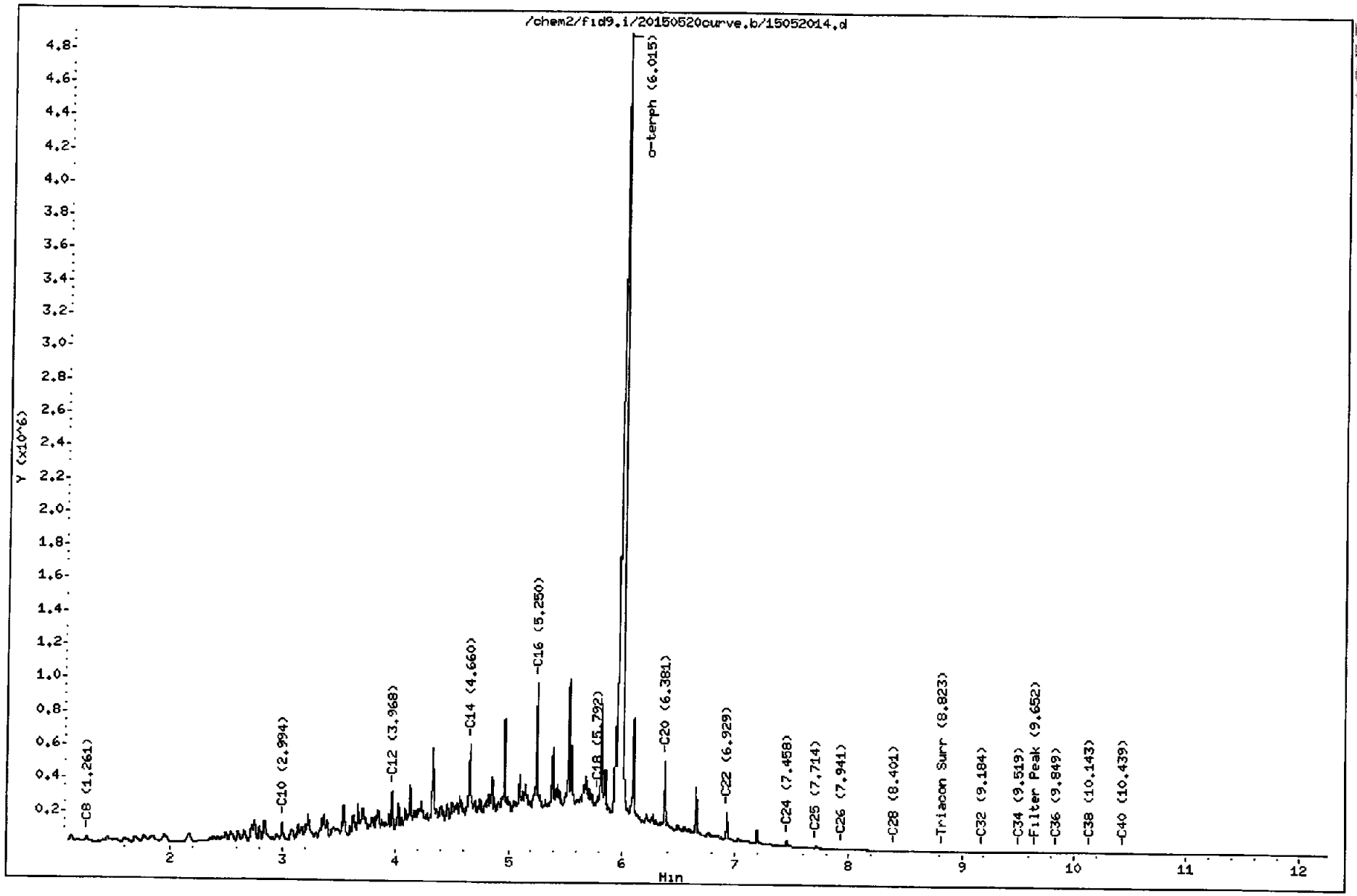
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052014.d
Date : 20-MAY-2015 19:12
Client ID:
Sample Info: SDE0049-CAL6

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052015.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-SCV1
Client ID:
Injection: 20-MAY-2015 19:33
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.049	-0.022	12691	21145	GAS (Tol-C12)	1273662	51.39	
C8	1.261	-0.027	13298	24776	DIESEL (C12-C24)	3970818	228.05	
C10	2.996	0.012	18041	32707	M.OIL (C24-C38)	105345	7.38	
C12	3.964	-0.006	48481	66839	AK-102 (C10-C25)	4859194	242.15	M
C14	4.651	-0.007	65130	120718	AK-103 (C25-C36)	72106	4.62	
C16	5.240	-0.005	62216	115265	OR.DIES (C10-C28)	4880509	240.97	M
C18	5.804	-0.008	58930	72525				
C20	6.384	0.005	17853	35741				
C22	6.927	-0.006	4456	3311				
C24	7.451	-0.010	1462	578				
C25	7.712	-0.001	854	522				
C26	7.943	-0.010	537	595				
C28	8.401	-0.005	113	59	IT.DIES (C10-C24)	4847419	242.52	M
C32	9.183	-0.002	93	59				
C34	9.522	-0.008	199	92				
Filter Peak	9.651	-0.007	296	196				
C36	9.850	0.001	472	415				
C38	10.147	-0.004	883	623				
C40	10.437	-0.009	1448	1304				
o-terph	5.964	-0.004	1190952	940892	JET-A (C10-C18)	3904207	237.37	
Triacon Surr	8.812	-0.011	80	30				

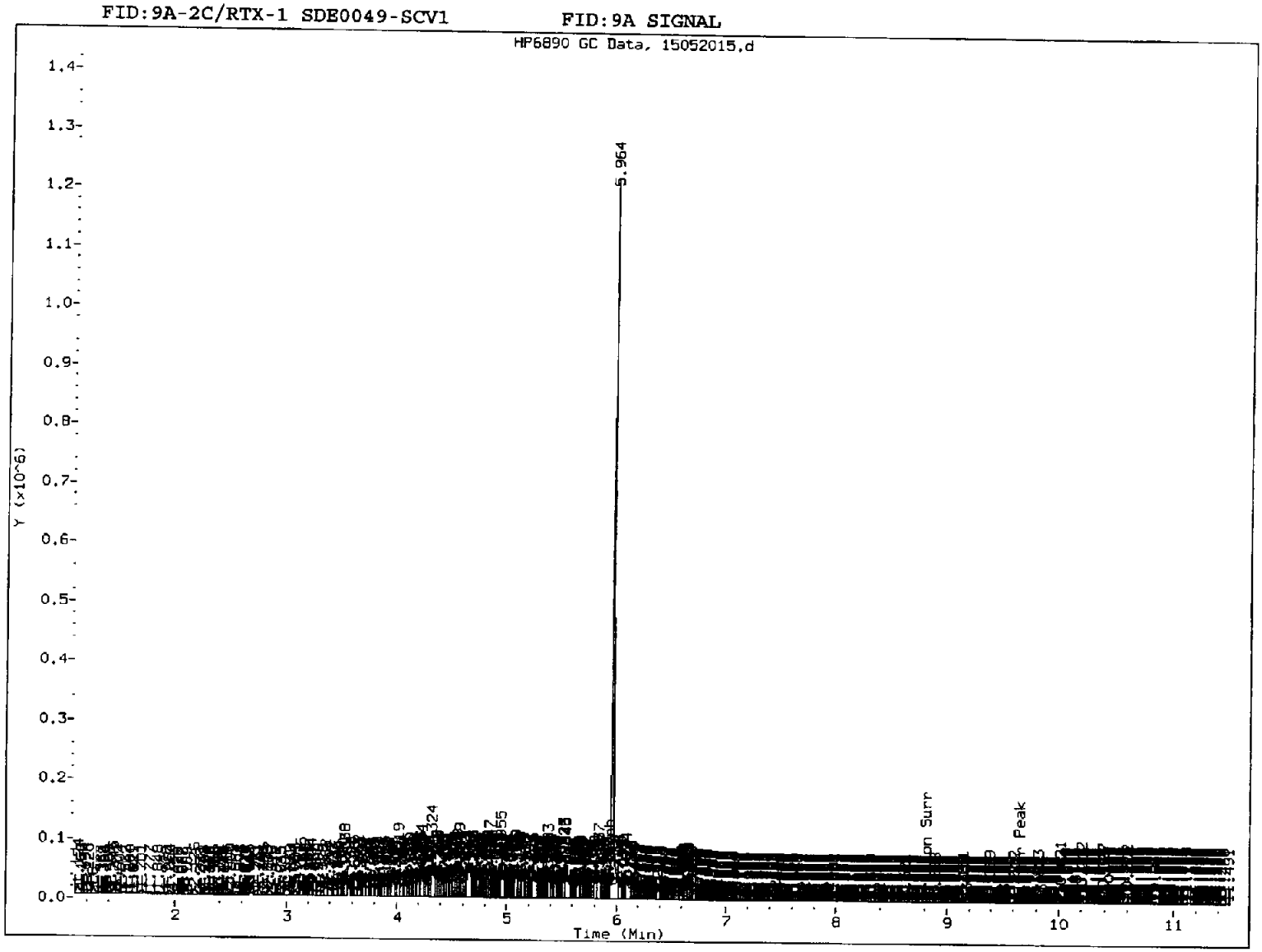
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	940892	42.9	95.2
Triacontane	30	0.0	0.0

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-SCV1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: MC Date: 5/21/15

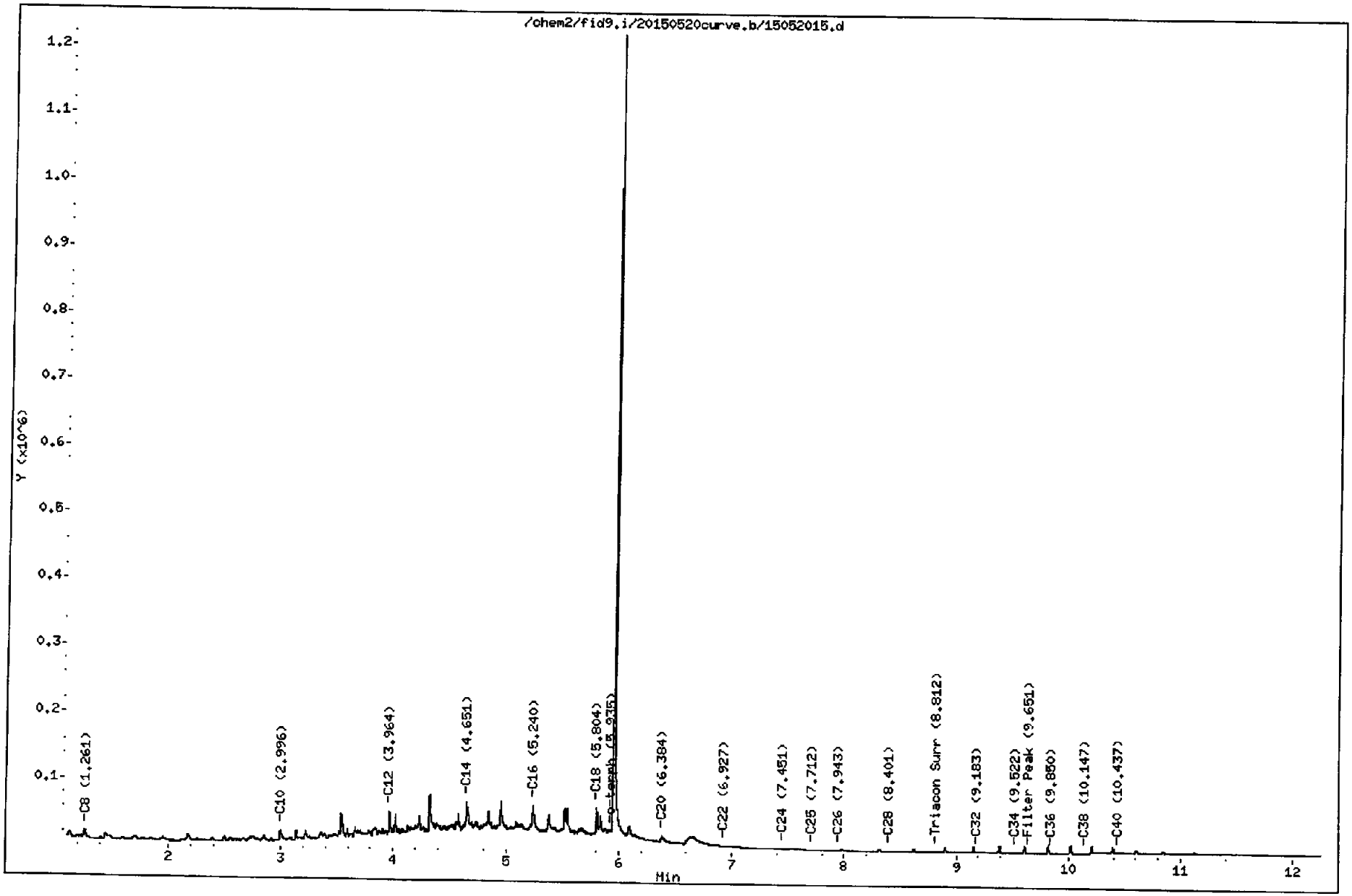
AECOM 61869

Data File: /chem2/fid9.i/20150520curve.b/15052015.d
Date : 20-MAY-2015 19:33
Client ID:
Sample Info: SDE0049-SCV1

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052016.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL7
Client ID:
Injection: 20-MAY-2015 19:54
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	43633	2
C8	1.287	-0.001	1295	1017	DIESEL (C12-C24)	144802	8.32
C10	2.999	0.015	167	152	M.OIL (C24-C38)	1510523	105.85
C12	3.972	0.002	54	23	AK-102 (C10-C25)	207678	10.35
C14	4.655	-0.002	66	22	AK-103 (C25-C36)	1267817	81.27 M
C16	5.241	-0.004	64	39	OR.DIES (C10-C28)	560672	27.68
C18	5.807	-0.004	124	45			
C20	6.374	-0.004	292	167			
C22	6.932	-0.001	1261	415			
C24	7.455	-0.006	5003	1473			
C25	7.707	-0.006	6518	2446			
C26	7.949	-0.005	7532	3813			
C28	8.400	-0.006	8773	3962	IT.DIES (C10-C24)	152142	7.61
C32	9.181	-0.004	11724	8036			
C34	9.526	-0.003	11189	2887			
Filter Peak	9.656	-0.002	10882	5391			
C36	9.842	-0.007	10551	7404			
C38	10.145	-0.005	10443	5925			
C40	10.442	-0.003	8542	7239			
o-terph	5.955	-0.013	320	290	JET-A (C10-C18)	15844	0.96
Triacon Surr	8.807	-0.016	117096	127492			

M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

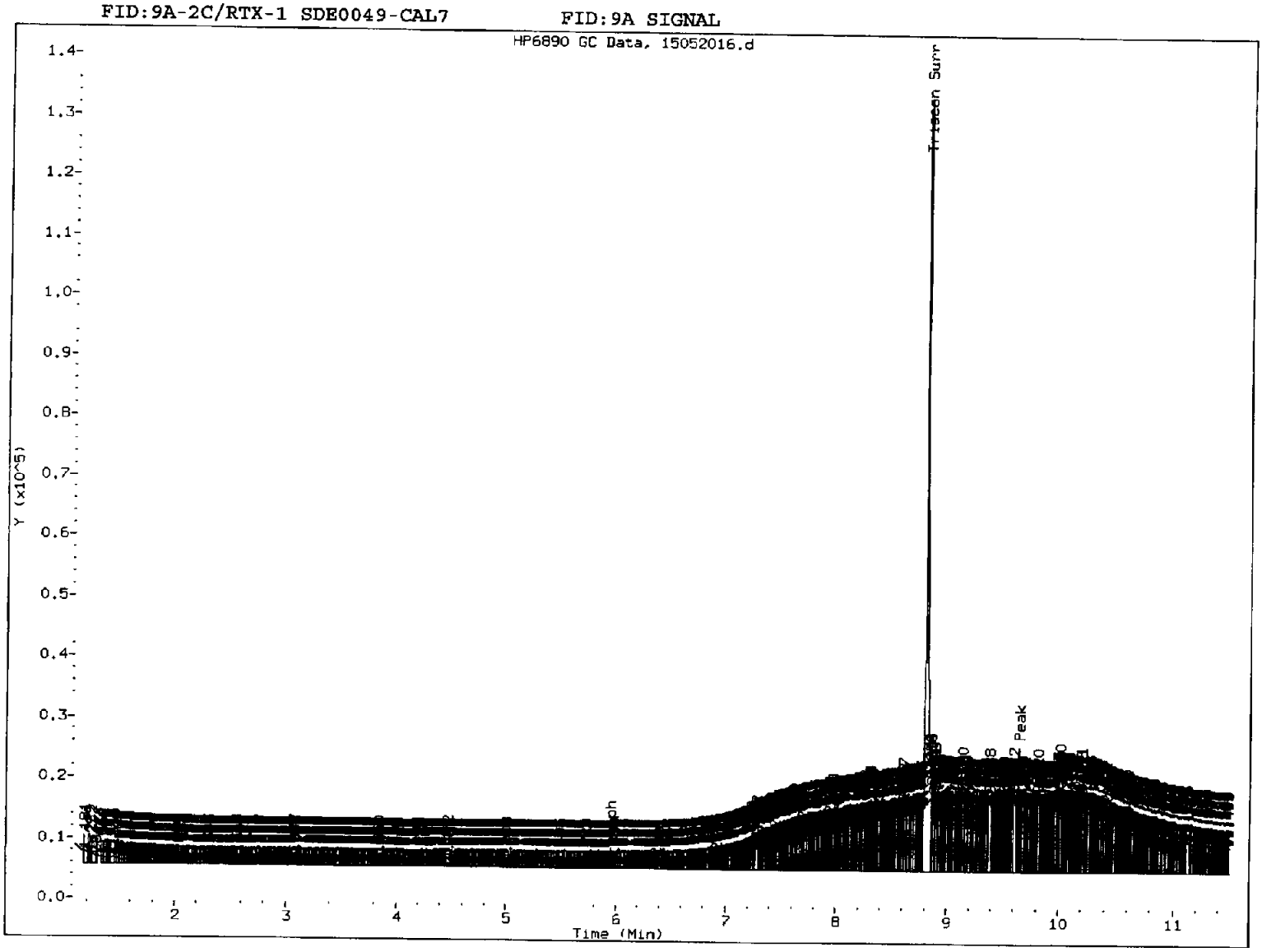
Surrogate	Area	Amount	%Rec
o-Terphenyl	290	0.0	0.0
Triacontane	127492	7.8	17.4

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

ADCS 21205

FID:9A-2C/RTX-1 SDE0049-CAL7 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

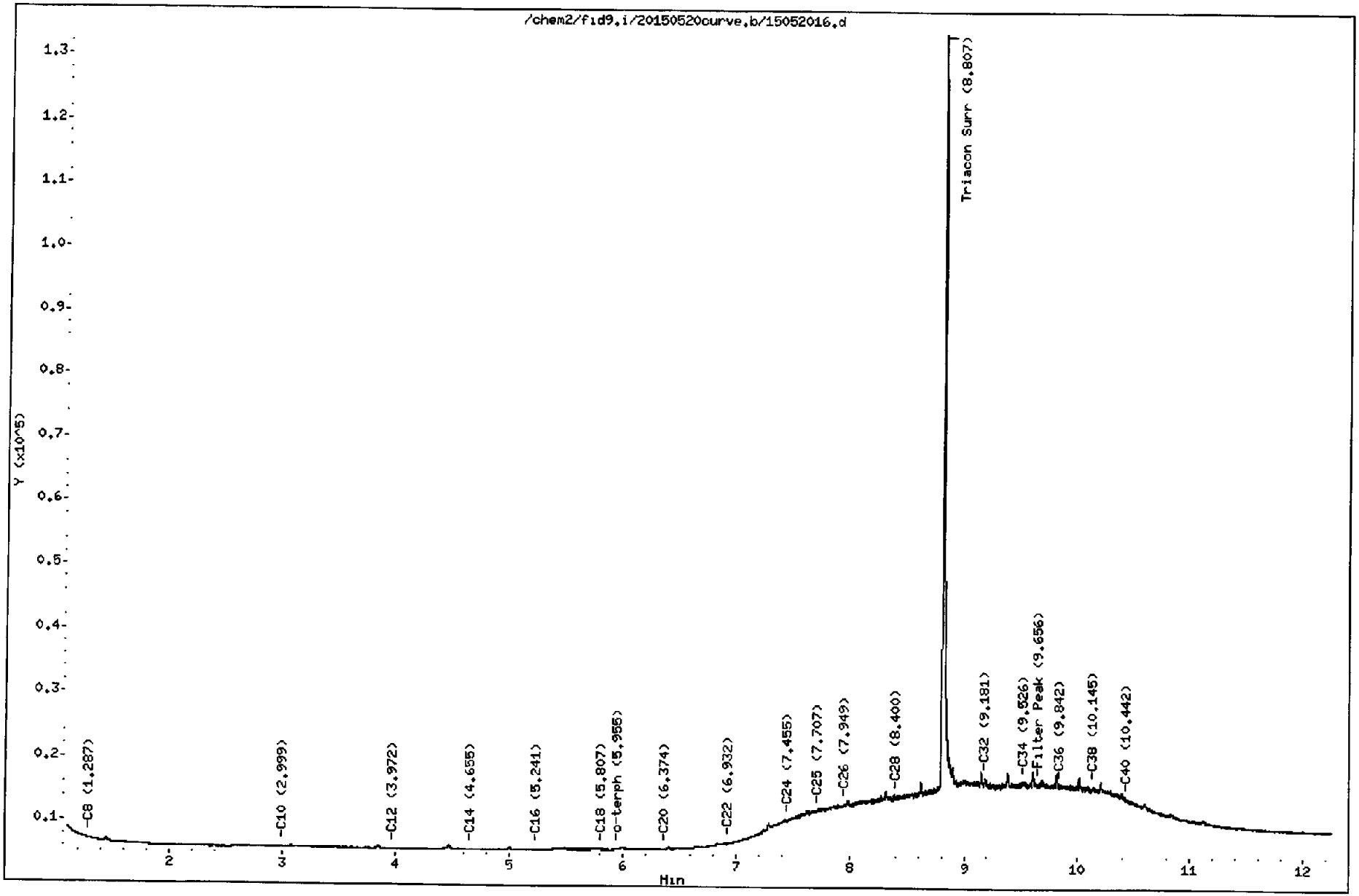
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052016.d
Date : 20-MAY-2015 19:54
Client ID:
Sample Info: SDE0049-CAL7

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052017.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL8
Client ID:
Injection: 20-MAY-2015 20:15
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	31691	1
C8	1.249	-0.038	1221	3281	DIESEL (C12-C24)	359945	20.67
C10	2.991	0.008	150	97	M.OIL (C24-C38)	3494908	244.91
C12	3.968	-0.002	45	9	AK-102 (C10-C25)	491811	24.51
C14	4.654	-0.003	45	26	AK-103 (C25-C36)	2977636	190.87 M
C16	5.240	-0.004	74	17	OR.DIES (C10-C28)	1361450	67.22
C18	5.803	-0.009	192	65			
C20	6.373	-0.005	823	641			
C22	6.924	-0.009	3344	658			
C24	7.455	-0.005	12474	6164			
C25	7.707	-0.005	16255	9832			
C26	7.943	-0.010	18020	7757			
C28	8.403	-0.002	20342	4396	IT.DIES (C10-C24)	365916	18.31
C32	9.185	0.001	27906	21191			
C34	9.523	-0.006	27127	6814			
Filter Peak	9.659	0.002	24928	11476			
C36	9.847	-0.002	24541	7729			
C38	10.144	-0.006	23569	10203			
C40	10.442	-0.003	19028	10208			
o-terph	5.955	-0.013	479	455	JET-A (C10-C18)	15494	0.94
Triacon Surr	8.810	-0.013	426166	335109			

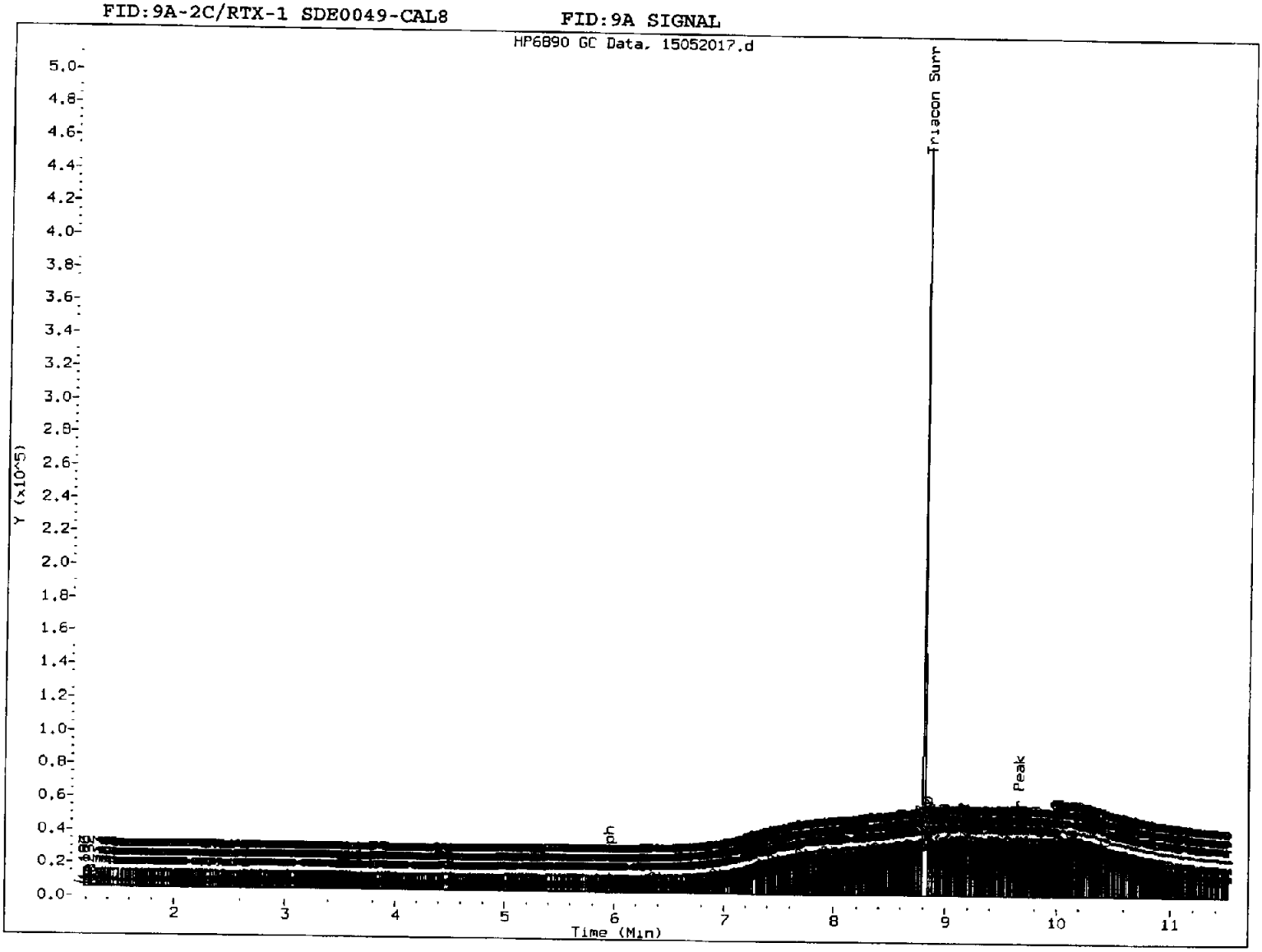
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	455	0.0	0.0
Triacontane	335109	20.6	45.8

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL8 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

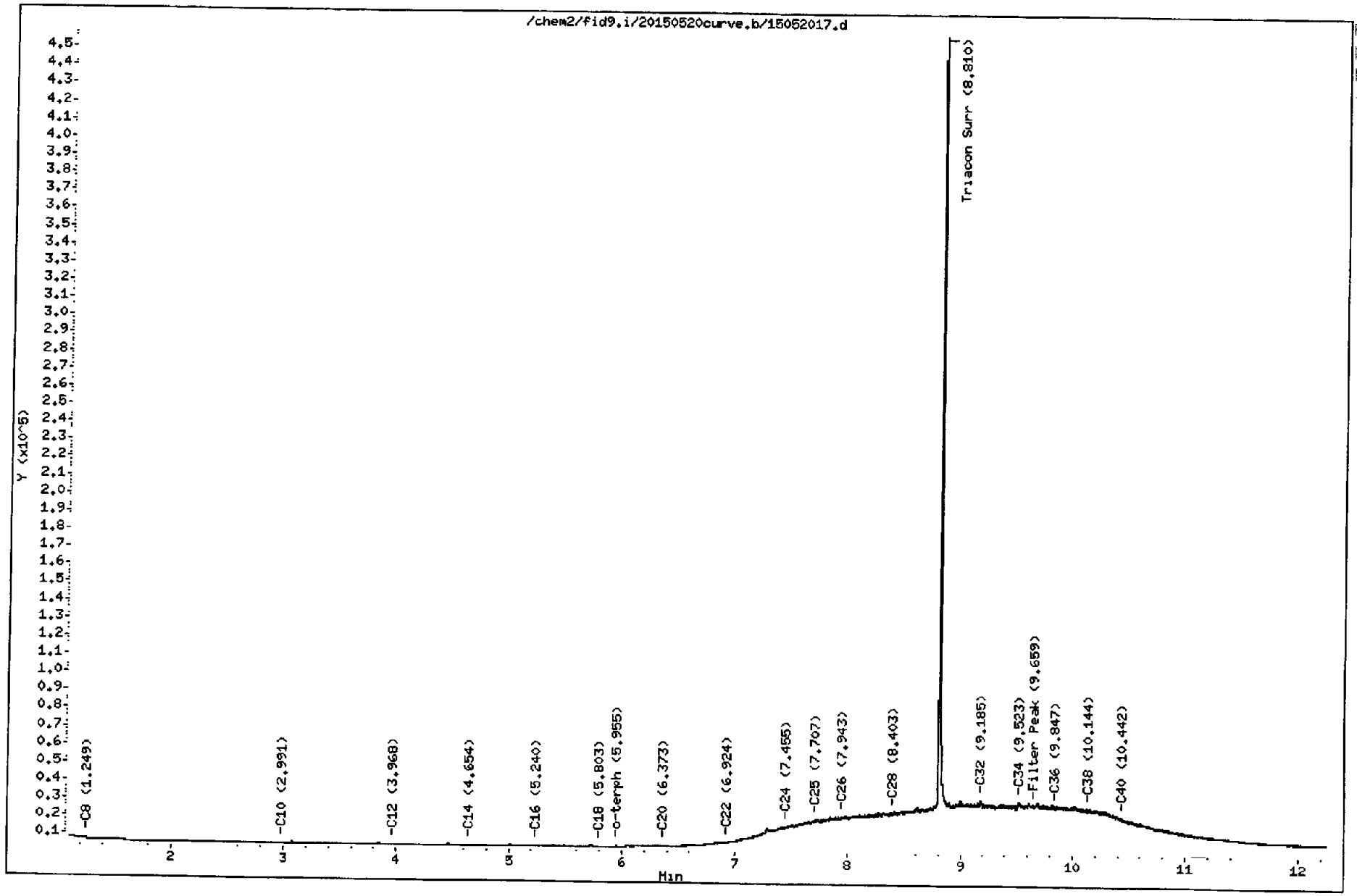
Analyst: Mc Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052017.d
Date : 20-MAY-2015 20:15
Client ID:
Sample Info: SDE0049-CAL8

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052018.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CAL9
Client ID:
Injection: 20-MAY-2015 20:36
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	89265	4
C8	1.244	-0.044	3400	10141	DIESEL (C12-C24)	727049	41.76
C10	2.994	0.010	301	113	M.OIL (C24-C38)	7101011	497.62
C12	3.963	-0.006	68	57	AK-102 (C10-C25)	997003	49.68
C14	4.657	-0.001	69	13	AK-103 (C25-C36)	6020814	385.95 M
C16	5.240	-0.004	71	47	OR.DIES (C10-C28)	2714845	134.04
C18	5.803	-0.008	326	111			
C20	6.371	-0.007	1925	2622			
C22	6.928	-0.006	7060	2234			
C24	7.454	-0.007	24705	8261			
C25	7.707	-0.005	32354	17088			
C26	7.943	-0.010	34985	11109			
C28	8.402	-0.003	41409	12311	IT.DIES (C10-C24)	738426	36.94
C32	9.178	-0.006	58860	43592			
C34	9.523	-0.006	55765	44707			
Filter Peak	9.656	-0.002	51370	10201			
C36	9.845	-0.004	52656	33613			
C38	10.146	-0.005	47157	13912			
C40	10.441	-0.005	37342	19515			
o-terph	5.956	-0.012	606	775	JET-A (C10-C18)	25987	1.58
Triacon Surr	8.819	-0.004	840384	717661			

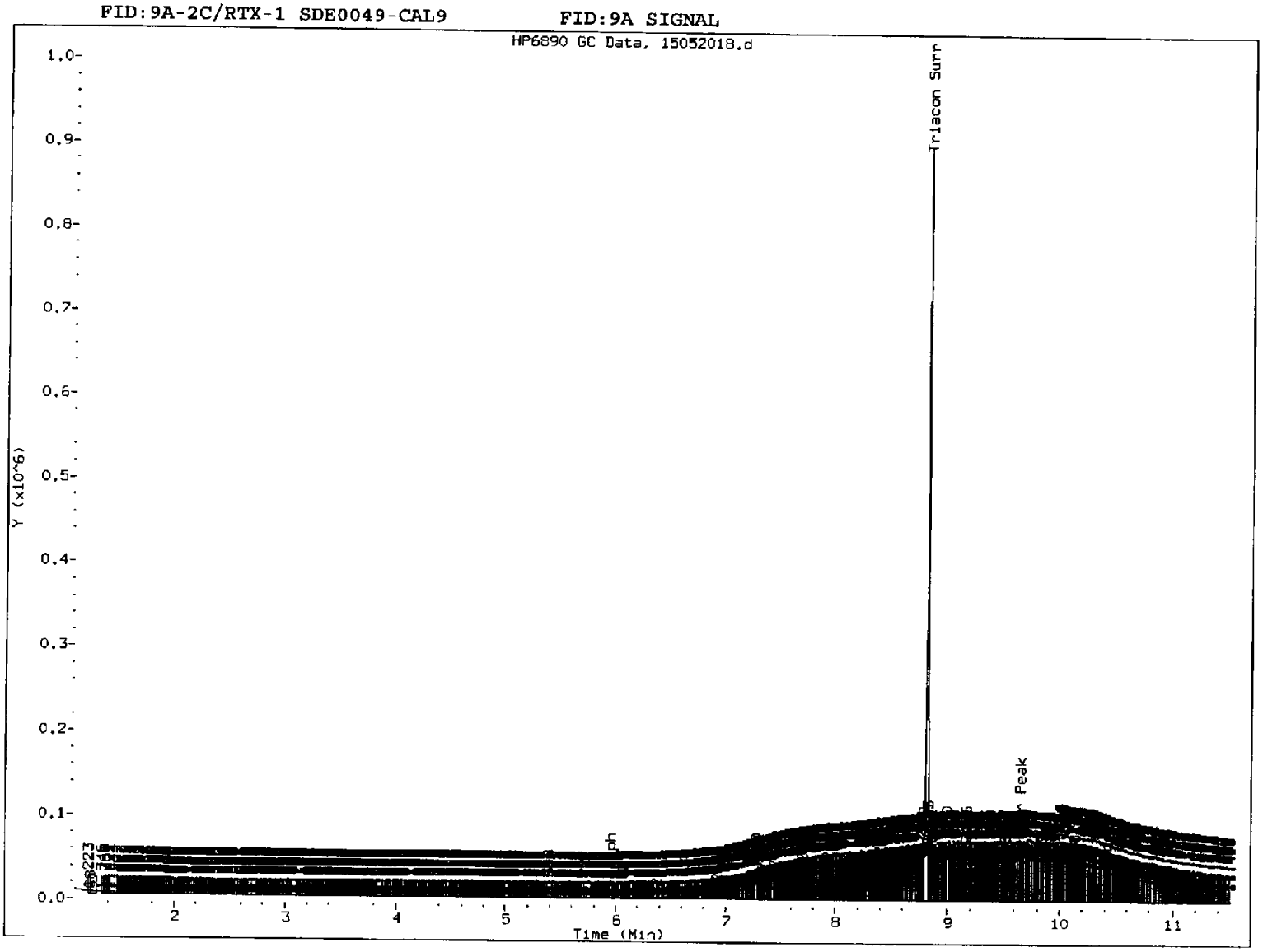
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	775	0.0	0.1
Triacontane	717661	44.2	98.1

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CAL9 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

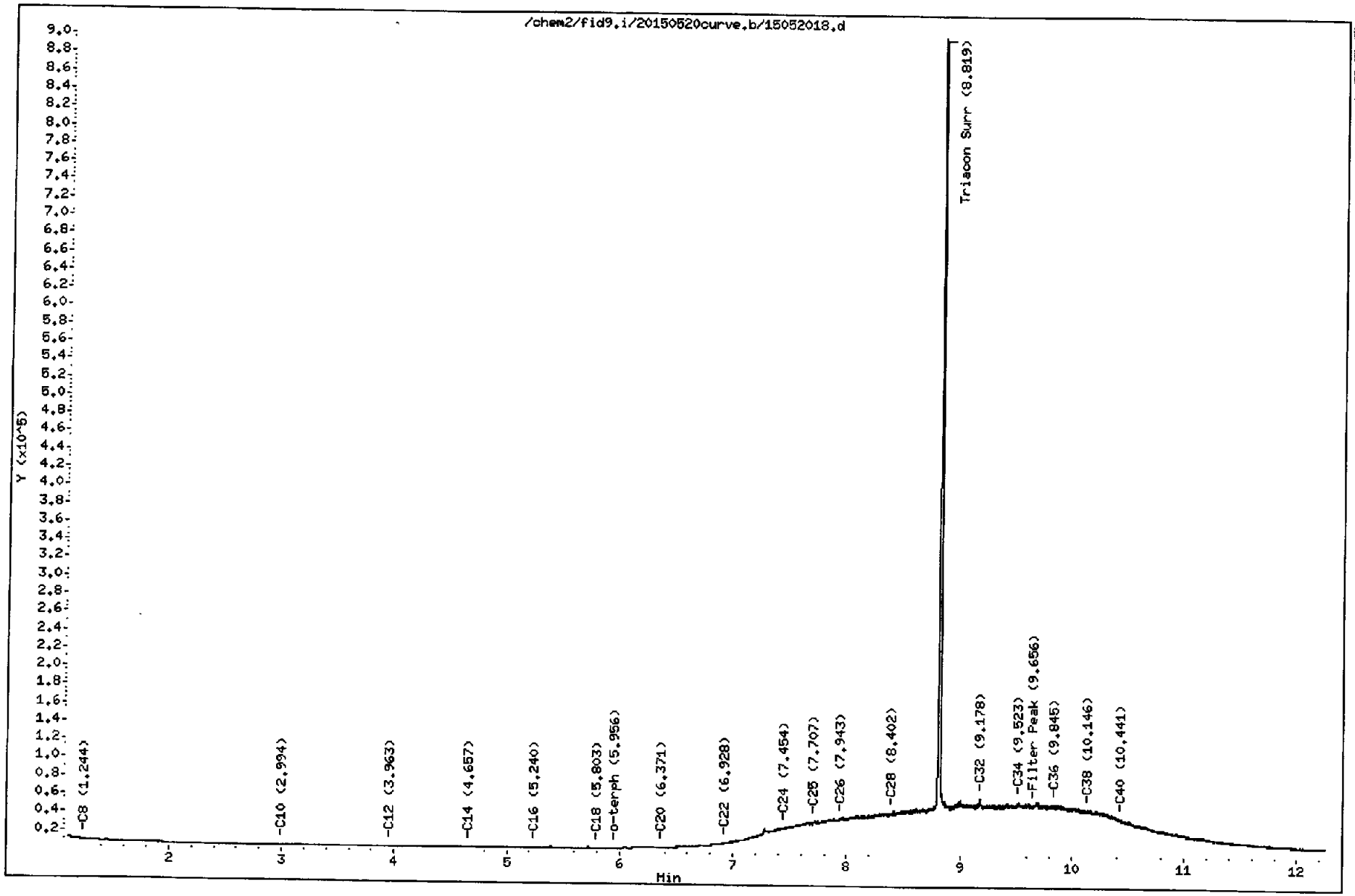
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052018.d
Date : 20-MAY-2015 20:36
Client ID:
Sample Info: SDE0049-CAL9

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052019.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALA
Client ID:
Injection: 20-MAY-2015 20:58
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.107	0.036	2446	8856	GAS (Tol-C12)	45055	1.82	
C8	1.292	0.004	1027	729	DIESEL (C12-C24)	1482627	85.15	
C10	2.995	0.011	146	18	M.OIL (C24-C38)	14179121	993.63	
C12	3.964	-0.006	58	18	AK-102 (C10-C25)	1992744	99.30	
C14	4.645	-0.012	177	203	AK-103 (C25-C36)	11902736	763.00	M
C16	5.244	-0.001	240	68	OR.DIES (C10-C28)	5306995	262.02	
C18	5.804	-0.007	808	382				
C20	6.369	-0.009	4379	6995				
C22	6.925	-0.008	15032	2968				
C24	7.453	-0.008	49309	12539				
C25	7.711	-0.001	62221	33770				
C26	7.945	-0.008	70707	59183				
C28	8.404	-0.002	85270	58306	IT.DIES (C10-C24)	1489587	74.52	
C32	9.181	-0.004	127420	139271				
C34	9.522	-0.007	116552	91399				
Filter Peak	9.652	-0.006	108111	91739				
C36	9.843	-0.006	105234	60217				
C38	10.143	-0.008	94126	16841				
C40	10.439	-0.007	76488	51578				
o-terph	5.958	-0.010	1460	2909	JET-A (C10-C18)	44080	2.68	
Triacon Surr	8.833	0.010	1445472	1579391				

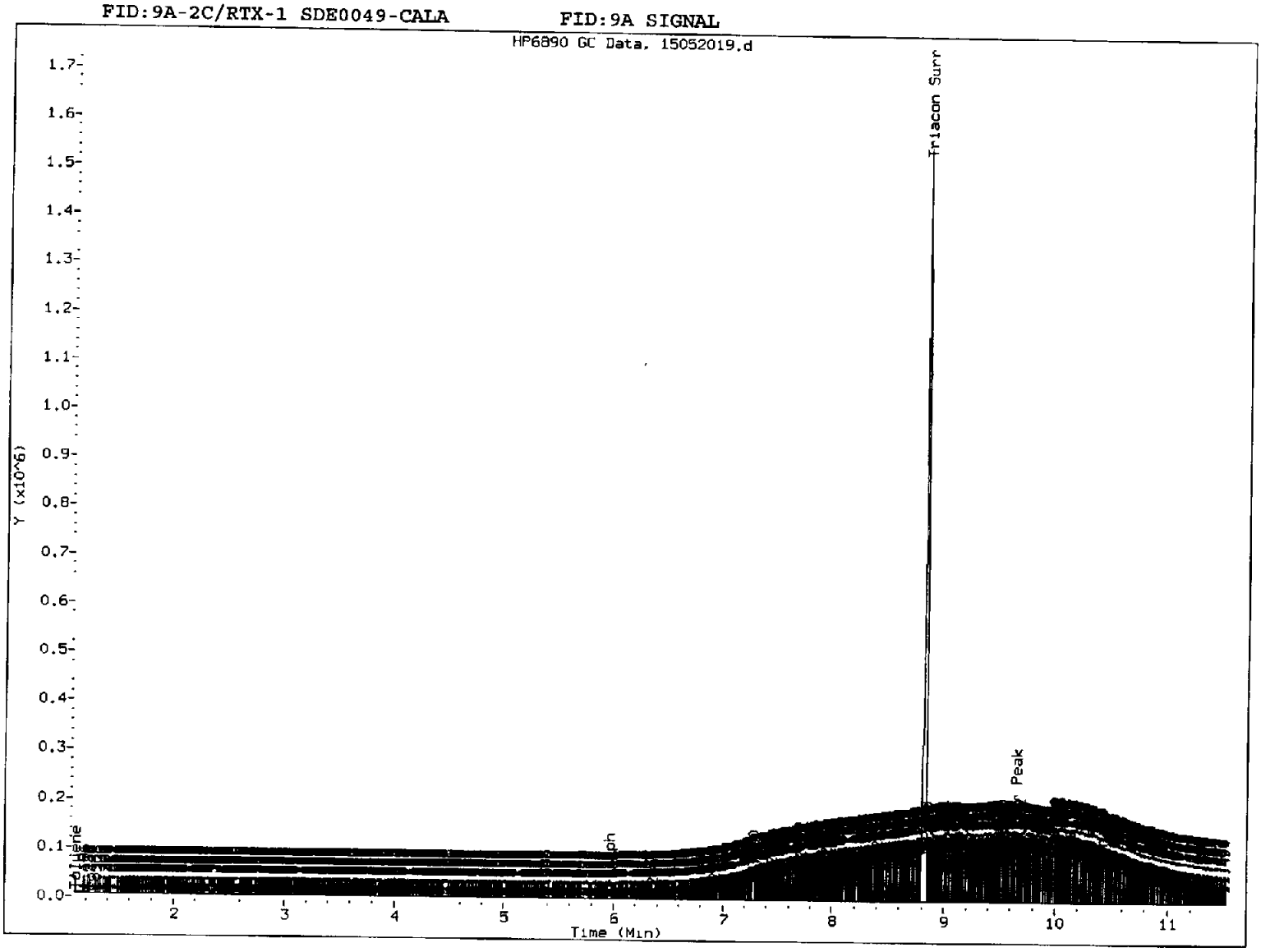
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2909	0.1	0.3
Triacontane	1579391	97.2	216.0

ML
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALA FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

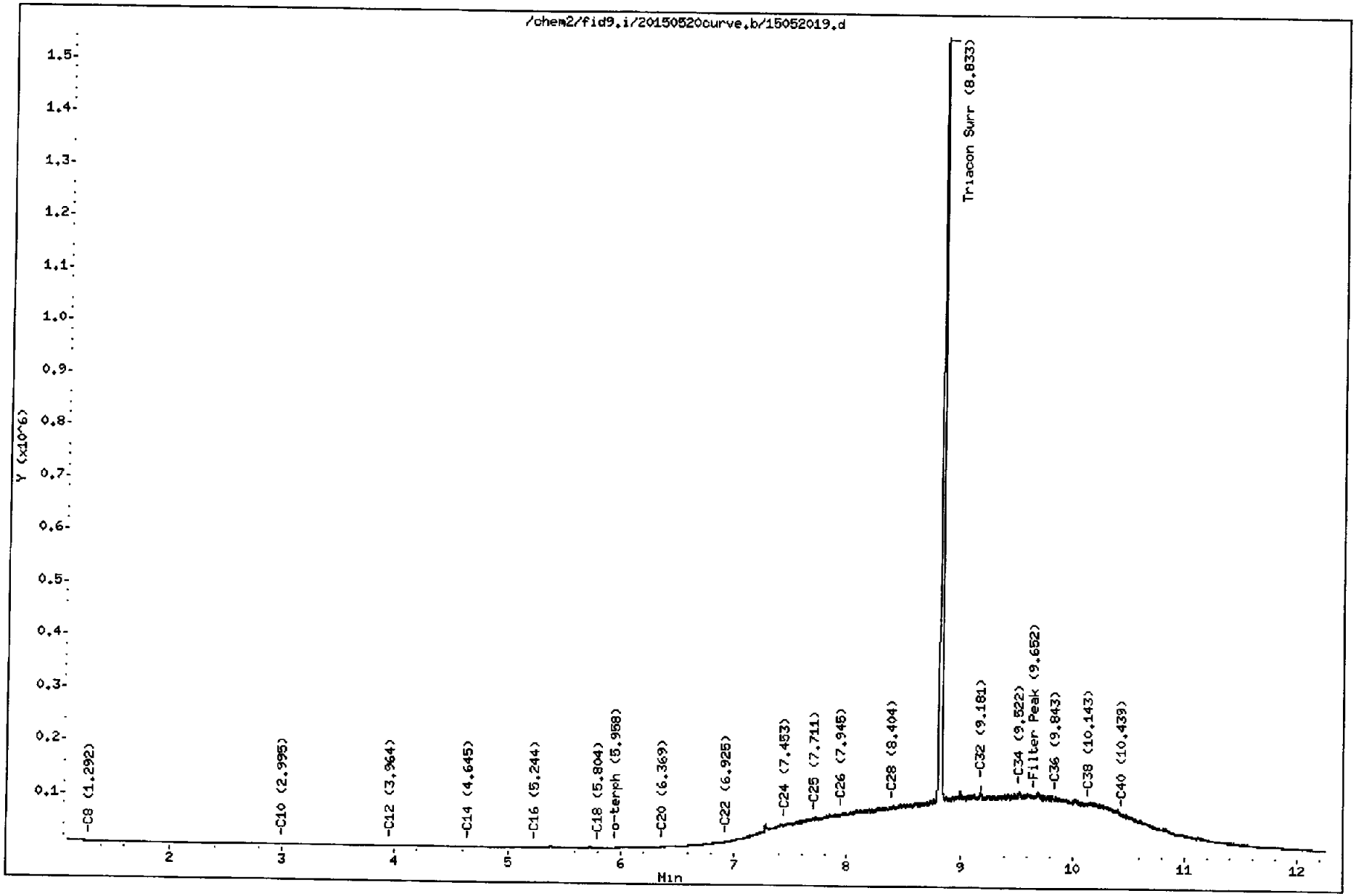
Analyst: MC Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052019.d
Date : 20-MAY-2015 20:58
Client ID:
Sample Info: SDE0049-CALA

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052020.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALB
Client ID:
Injection: 20-MAY-2015 21:19
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	----				GAS (Tol-C12)	67596	3	
C8	1.295	0.007	2365	3010	DIESEL (C12-C24)	3552271	204.01	
C10	2.993	0.009	215	142	M.OIL (C24-C38)	35716727	2502.92	
C12	3.968	-0.002	32	4	AK-102 (C10-C25)	4718921	235.16	
C14	4.652	-0.006	254	146	AK-103 (C25-C36)	30396383	1948.49	M
C16	5.241	-0.004	537	115	OR.DIES (C10-C28)	13121010	647.82	
C18	5.800	-0.012	1922	598				
C20	6.377	-0.002	9572	5663				
C22	6.929	-0.005	36742	15725				
C24	7.458	-0.002	115018	70169				
C25	7.709	-0.004	149427	66924				
C26	7.952	-0.001	175869	95998				
C28	8.397	-0.009	205980	36388	IT.DIES (C10-C24)	3559997	178.11	
C32	9.187	0.002	332103	335065				
C34	9.526	-0.004	285052	199051				
Filter Peak	9.659	0.001	273604	321344				
C36	9.849	0.000	266042	156891				
C38	10.148	-0.003	236966	79853				
C40	10.439	-0.006	175920	175954				
o-terph	5.956	-0.013	3451	4867	JET-A (C10-C18)	88055	5.35	
Triacon Surr	8.854	0.031	2507849	4115878				

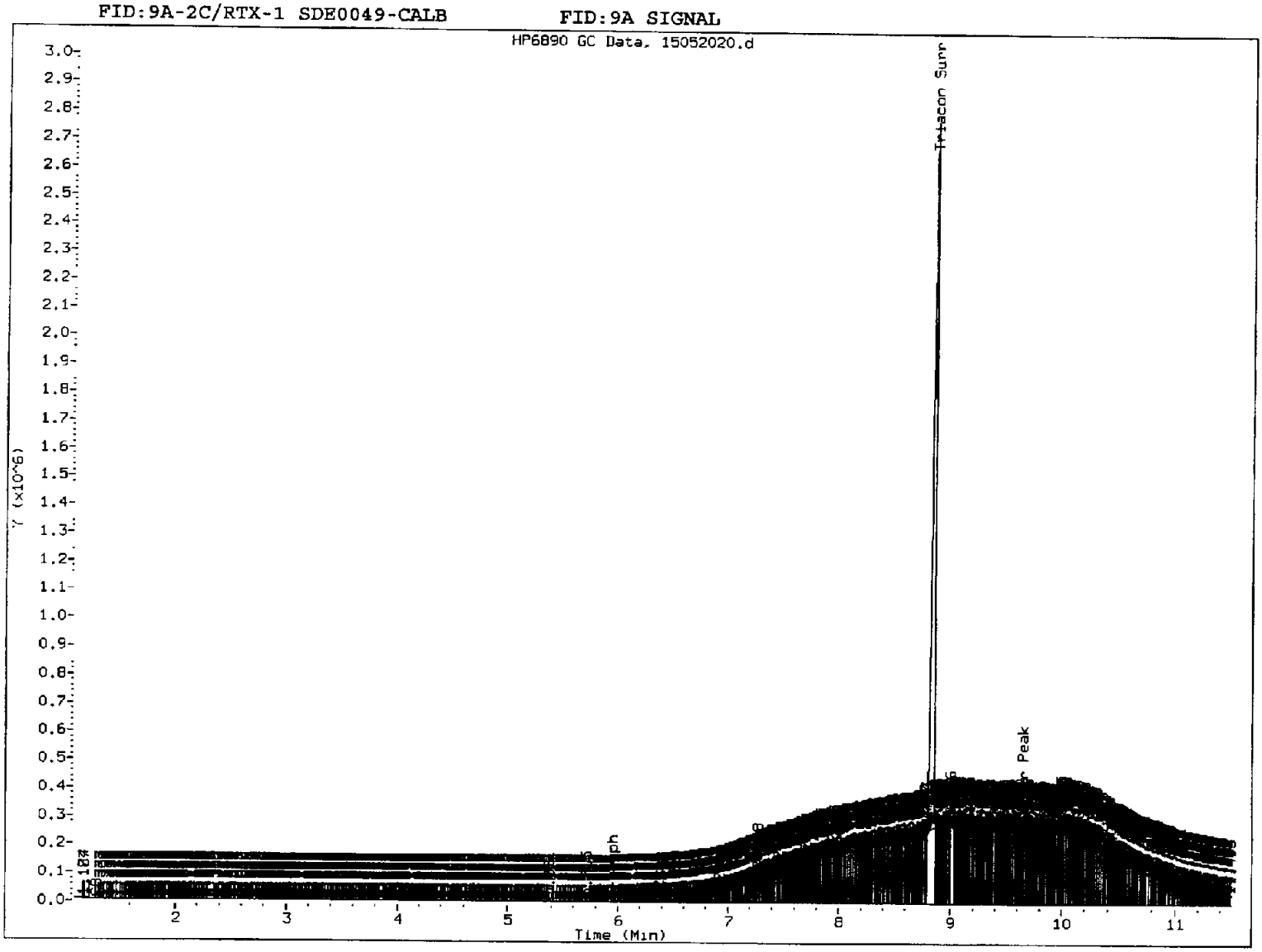
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4867	0.2	0.5
Triacontane	4115878	253.3	562.8

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALB FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

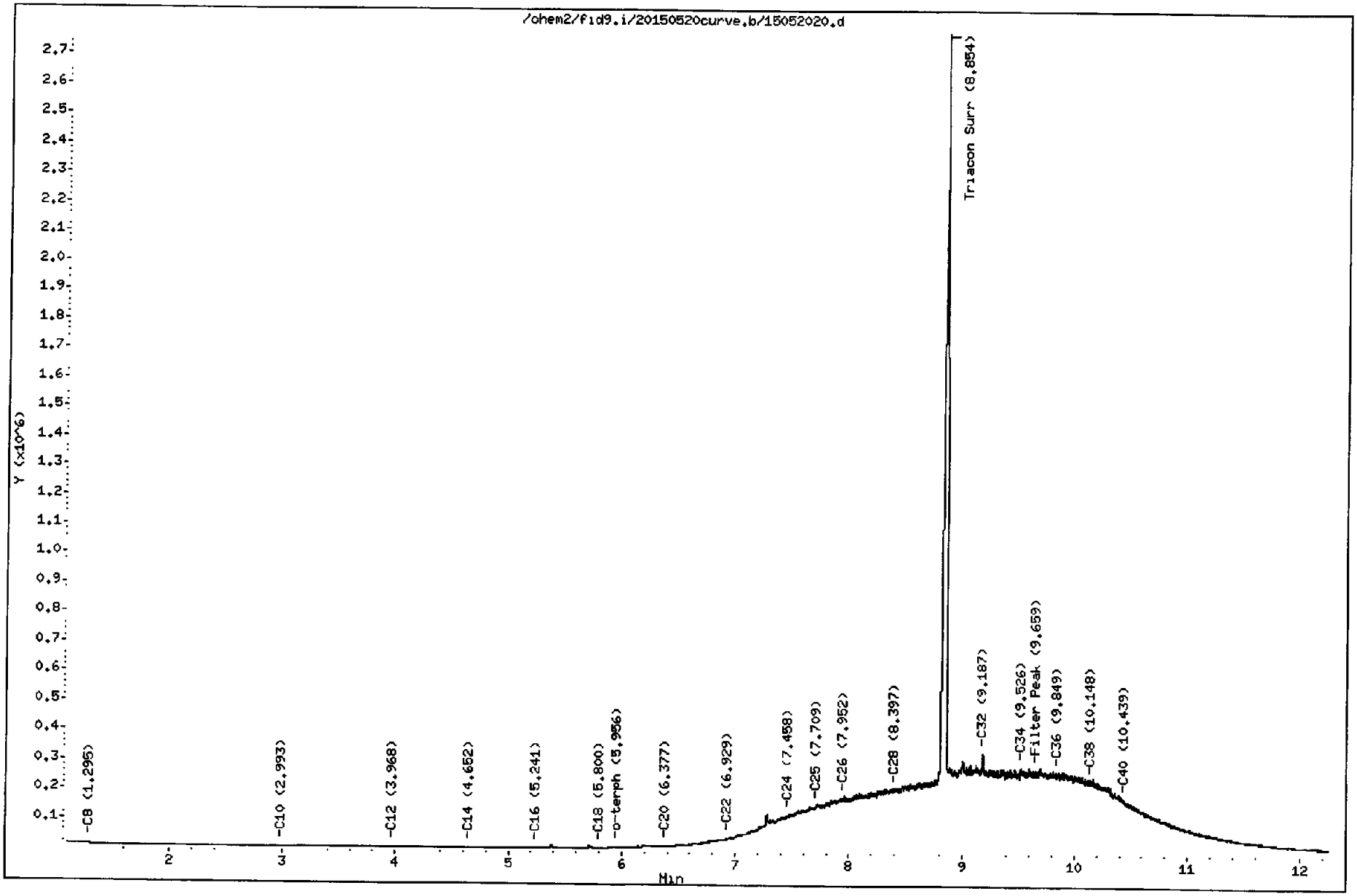
Analyst: ML Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052020.d
Date : 20-MAY-2015 21:19
Client ID:
Sample Info: SDE0049-CALB

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052021.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-CALC
Client ID:
Injection: 20-MAY-2015 21:40
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.109	0.038	3021	5527	GAS (Tol-C12)	59266	2.39	
C8	1.294	0.007	1353	482	DIESEL (C12-C24)	6658004	382.38	
C10	3.000	0.016	256	406	M.OIL (C24-C38)	69330181	4858.46	
C12	3.967	-0.003	91	44	AK-102 (C10-C25)	8934274	445.22	
C14	4.653	-0.004	603	221	AK-103 (C25-C36)	58835711	3771.52	M
C16	5.247	0.002	1141	488	OR.DIES (C10-C28)	25093477	1238.94	
C18	5.806	-0.006	4110	4212				
C20	6.370	-0.008	18937	10808				
C22	6.929	-0.004	66287	42957				
C24	7.454	-0.006	213604	83484				
C25	7.710	-0.003	274816	86876				
C26	7.945	-0.008	336765	195931				
C28	8.398	-0.007	417552	284006	IT.DIES (C10-C24)	6667412	333.57	
C32	9.183	-0.002	512567	191674				
C34	9.526	-0.004	553927	252083				
Filter Peak	9.652	-0.005	543160	370491				
C36	9.846	-0.003	502010	118452				
C38	10.143	-0.007	454955	314485				
C40	10.437	-0.009	316167	199324				
o-terph	5.961	-0.007	6866	5311	JET-A (C10-C18)	175691	10.68	
Triacon Surr	8.888	0.065	3606957	8090371				

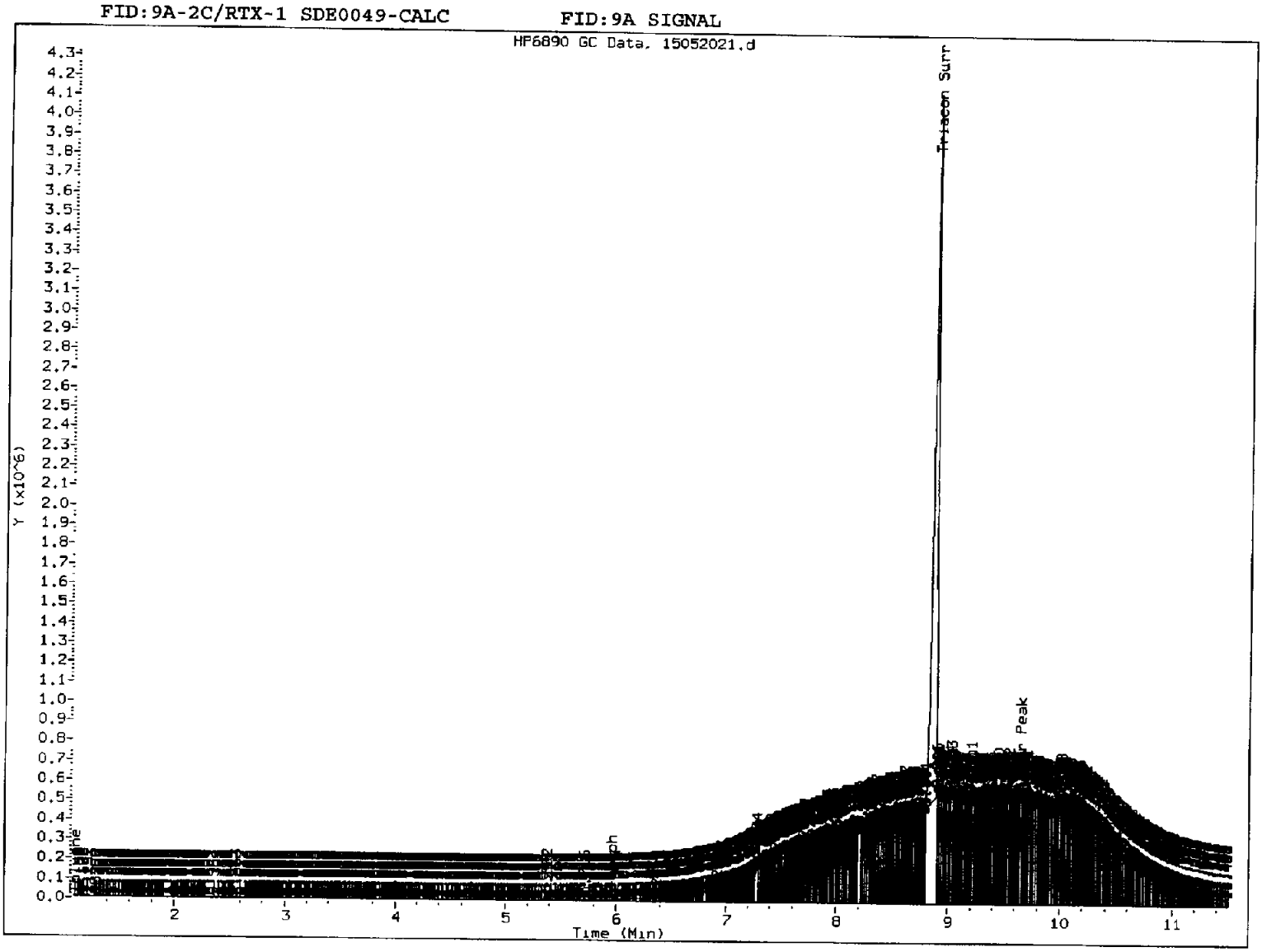
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	5311	0.2	0.5
Triacontane	8090371	497.8	1106.3

ML 5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-CALC FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

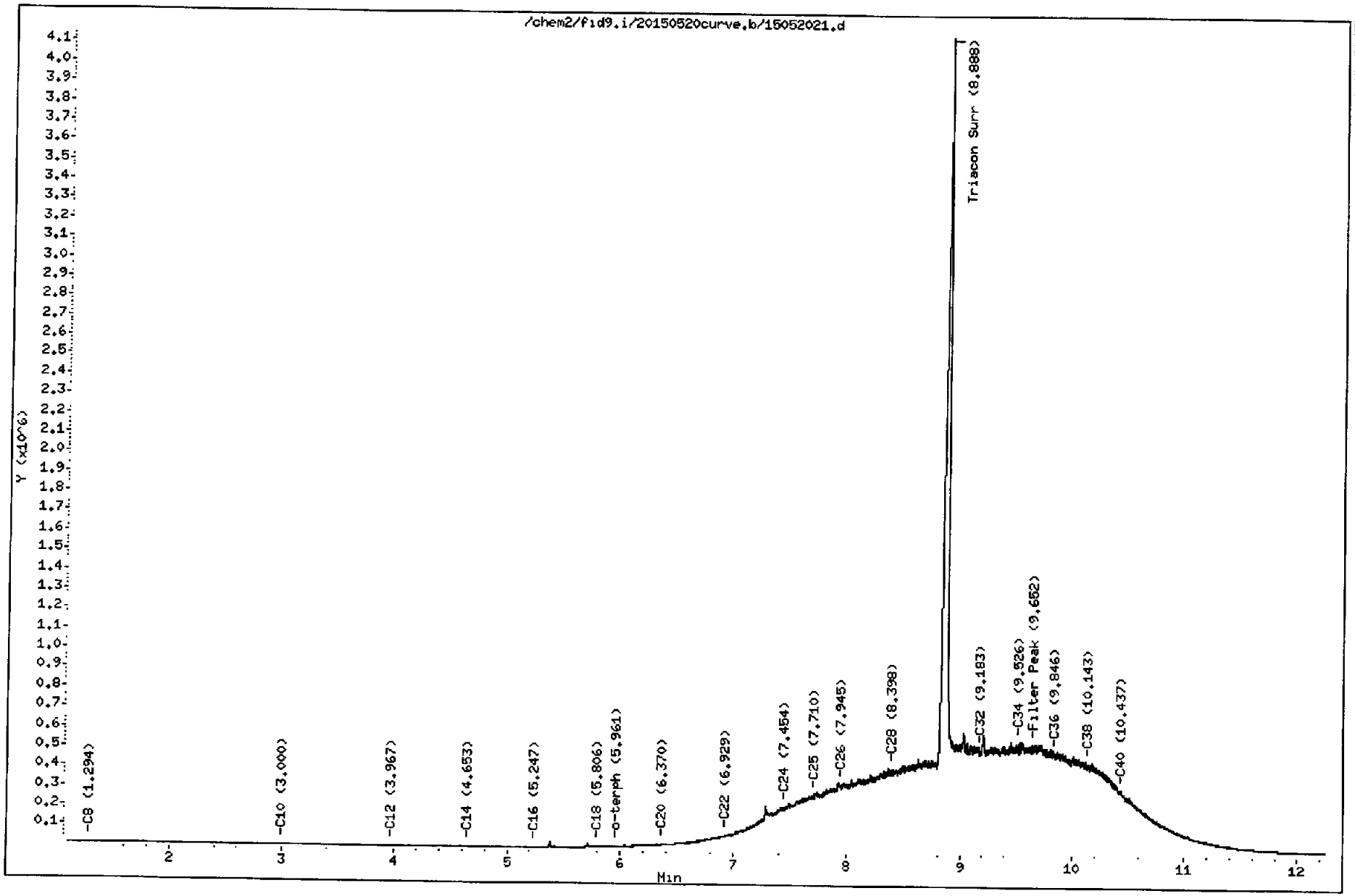
Analyst: Me Date: 5/21/15

Data File: /chem2/fid9.i/20150520curve.b/15052021.d
Date : 20-MAY-2015 21:40
Client ID:
Sample Info: SDE0049-CALC

Column phase: RTX-1

Instrument: fid9.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150520curve.b/15052022.d
Method: /chem2/fid9.i/20150520curve.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/21/2015

ARI ID: SDE0049-SCV2
Client ID:
Injection: 20-MAY-2015 22:01
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	33438	1
C8	1.283	-0.005	1102	757	DIESEL (C12-C24)	874295	50.21
C10	2.996	0.012	150	43	M.OIL (C24-C38)	7657691	536.63
C12	3.967	-0.003	87	33	AK-102 (C10-C25)	1154370	57.53
C14	4.659	0.001	148	56	AK-103 (C25-C36)	6454022	413.72 M
C16	5.245	0.000	336	119	OR.DIES (C10-C28)	2956775	145.98
C18	5.808	-0.004	890	210			
C20	6.370	-0.008	2159	1145			
C22	6.928	-0.006	7880	2789			
C24	7.452	-0.009	25901	6710			
C25	7.711	-0.002	34464	19694			
C26	7.942	-0.011	38656	6061			
C28	8.403	-0.003	45076	12438	IT.DIES (C10-C24)	881105	44.08
C32	9.178	-0.007	63636	81892			
C34	9.523	-0.007	62674	10943			
Filter Peak	9.656	-0.002	60495	21951			
C36	9.844	-0.005	58599	33241			
C38	10.152	0.001	52967	21819			
C40	10.442	-0.004	40442	10397			
o-terph	5.961	-0.007	1301	1470	JET-A (C10-C18)	54938	3.34
Triacon Surr	8.816	-0.008	654546	521425			

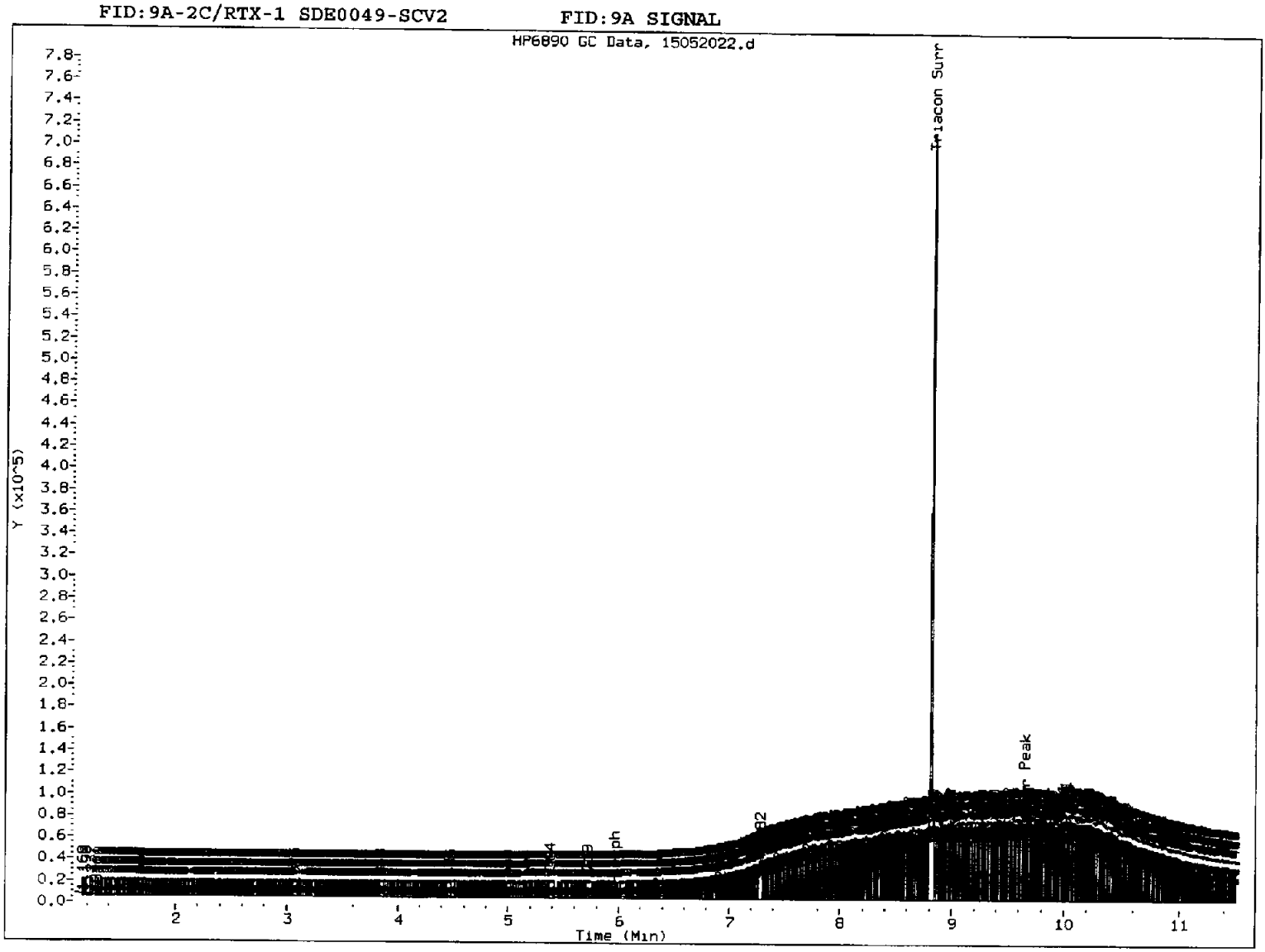
M Indicates manual integration within range.
Range Times: NW Diesel(3.970 - 7.460) AK102(2.98 - 7.71) Jet A(2.98 - 5.81)
NW M.Oil(7.46 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.98 - 8.41)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1470	0.1	0.1
Triacontane	521425	32.1	71.3

mc
5/21/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

FID:9A-2C/RTX-1 SDE0049-SCV2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

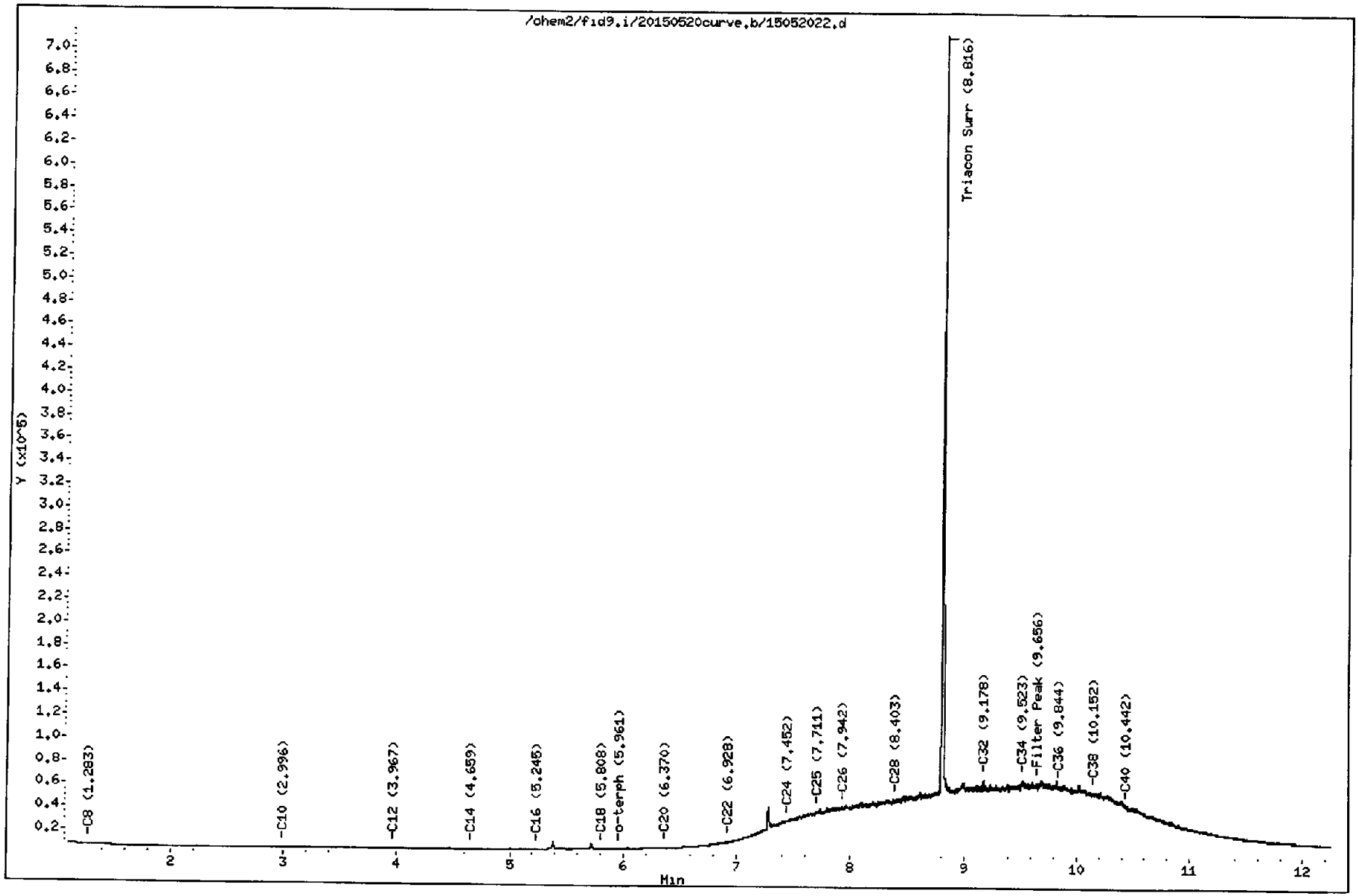
Analyst: Me Date: 5/21/15

Data File: /chem2/fid9.i/20150520ourve.b/15052022.d
Date : 20-MAY-2015 22:01
Client ID:
Sample Info: SDE0049-SCV2

Instrument: fid9.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



TPHD Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGC9

Analytical Resources, Incorporated
Analytical Chemists and Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AGA8/AGC9 ~~AGA8/9~~ Client: Kennedy Jenics

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B (FID-4A) FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: 4C000022 Analysis Start Date: 5/26/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	(NA) / Y / N / ✓	Method Blank in Control?	(Y) / N / ✓
Retention times within Windows?	(Y) / N / ✓	BS/BSD Recovery in Control?	(Y) / N / ✓
ICV/CCV met %D Criteria?	(Y) / N / ✓	~~BS/BSD RPD~~ ≤30%?	NA / BS Only
Surrogate Recovery in Control?	(Y) / N / ✓	MS / MSD Recovery in Control?	(Y) / N / ✓
Internal STD. within 50-200%?	(NA) / Y / N / ✓	MS / MSD RPD ≤30%?	NA / <15%
Manual Integrations?	(Y) / N / ✓	Samples Diluted?	(Y) / N / ✓
Integration Summary?	(Y) / N / ✓	Special Analysis Request?	(Y) / N / ✓

Detail problems, corrective actions and/or other pertinent information below

- Samples batched together.
- MS(D) ran on AGA8F and AGC9H.
- AGA8F, MS+ MSD were diluted (5x)
- AGC9C was brought to 5FEV due to high viscosity, diluted a further 10x. Surrogates marked D due to dilution.
- samples contain DRO, diesel, RRO and motor oil.
- samples dual logged and reported in LIMS as well as Element.

(Review 1) Analyst: MC **Date:** 5/27/15

(Review 2) Reviewer: [signature] **Date:** 5/28/15

Analytical Resources Inc.: Organics Instrument Log

FID-4A Serial No.: US00003247

Date: 5/26/15 Analysis: NWTPHD Analyst: MC

Column 1 Serial No.: B000117 Column Type: RTX-1

Column 2 Serial No.: — Column Type: —

GC Method: TPH ICal Date: 4C00022 Injection Volume: 1 µL

IS	Ical/Ccal	ICV
	D000115	
	D000116	
	D000821	
	D000 1872	

GC LOG SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	26-MAY-2015 11:02	15052601.d	1	RT0526	
2	26-MAY-2015 11:25	15052602.d	1	IB0526	
3	26-MAY-2015 11:49	15052603.d	1	DIESEL#1	
4	26-MAY-2015 12:12	15052604.d	1	MOIL#1	
5	26-MAY-2015 12:54	15052605.d	1	AGE1MBW1	AGE1MBW1
6	26-MAY-2015 13:18	15052606.d	1	AGE1LCSW1	AGE1LCSW1
7	26-MAY-2015 13:42	15052607.d	1	AGE1LCSDW1	AGE1LCSDW1
8	26-MAY-2015 14:06	15052608.d	1	AGE1QLS	
9	26-MAY-2015 14:30	15052609.d	1	AGE1A	Ershigs-1D-0515
10	26-MAY-2015 14:54	15052610.d	1	AGE1B	Ershigs-1S-0515
11	26-MAY-2015 15:18	15052611.d	1	AGE1C	MW-24D-0515
12	26-MAY-2015 15:42	15052612.d	1	AGE1D	MW-240D-0515
13	26-MAY-2015 16:06	15052613.d	1	AGE1E	MW-33D-0515
14	26-MAY-2015 16:30	15052614.d	1	AGE1F	MW-100D-0515
15	26-MAY-2015 16:53	15052615.d	1	DIESEL#2	
16	26-MAY-2015 17:17	15052616.d	1	MOIL#2	
17	26-MAY-2015 17:41	15052617.d	1	AGE1G	MW-100S-0515
18	26-MAY-2015 18:05	15052618.d	1	AGE1H	MW-50-0515
19	26-MAY-2015 18:29	15052619.d	1	AGE1I	MW-2D-0515
20	26-MAY-2015 18:52	15052620.d	1	AGE1IMS	MW-2D-0515 MS
21	26-MAY-2015 19:16	15052621.d	1	AGE1IMSD	MW-2D-0515 MSD
22	26-MAY-2015 19:39	15052622.d	1	AGE1J	MW-35D-0515
23	26-MAY-2015 20:03	15052623.d	1	AGE1K	MW-3D-0515
24	26-MAY-2015 20:26	15052624.d	1	AGA8MBS1	AGA8MBS1
25	26-MAY-2015 20:50	15052625.d	1	AGA8LCSS1	AGA8LCSS1
26	26-MAY-2015 21:13	15052626.d	1	AGA8B	SDP-10(15.5-16.5)
27	26-MAY-2015 21:37	15052627.d	1	AGA8E	SDP-08(12.0-13.5)
28	26-MAY-2015 22:00	15052628.d	5	AGA8F	SDP-07(1.5-3.0)
29	26-MAY-2015 22:23	15052629.d	5	AGA8FMS	SDP-07(1.5-3.0) MS
30	26-MAY-2015 22:47	15052630.d	5	AGA8FMSD	SDP-07(1.5-3.0) MSD
31	26-MAY-2015 23:10	15052631.d	1	AGA8H	SDP-06(12.5-13.5)
32	26-MAY-2015 23:33	15052632.d	1	DIESEL#3	
33	26-MAY-2015 23:56	15052633.d	1	MOIL#3	
34	27-MAY-2015 00:20	15052634.d	1	AGA8I	SDP-06(10.0-11.0)
35	27-MAY-2015 00:43	15052635.d	10	AGC9C	SDP-02(16.0-17.5)
36	27-MAY-2015 01:07	15052636.d	1	AGC9D	SDP-02(18.5-19.5)
37	27-MAY-2015 01:30	15052637.d	1	AGC9E	SDP-02(22.0-23.5)
38	27-MAY-2015 01:54	15052638.d	1	AGC9H	SDP-04(1.5-3.0)
39	27-MAY-2015 02:17	15052639.d	1	AGC9HMS	SDP-04(1.5-3.0) MS
40	27-MAY-2015 02:40	15052640.d	1	AGC9HMSD	SDP-04(1.5-3.0) MSD
41	27-MAY-2015 03:04	15052641.d	1	AGC9I	SDP-04(10.5-12.0)
42	27-MAY-2015 03:27	15052642.d	1	DIESEL#4	
43	27-MAY-2015 03:51	15052643.d	1	MOIL#4	
44	27-MAY-2015 04:14	15052644.d	1	AGM9MBS1	AGM9MBS1
45	27-MAY-2015 04:38	15052645.d	1	AGM9LCSS1	AGM9LCSS1
46	27-MAY-2015 05:01	15052646.d	1	AGM9LCSDS1	AGM9LCSDS1
47	27-MAY-2015 05:24	15052647.d	1	AGM9A	B-1A
48	27-MAY-2015 05:48	15052648.d	1	AGM9B	B-1B
49	27-MAY-2015 06:11	15052649.d	1	AGM9C	B-2A
50	27-MAY-2015 06:35	15052650.d	1	AGM9D	B-2B

	Inject Date/Time	Filename	DF	LabID	ClientID
51	27-MAY-2015 06:58	15052651.d	1	AGM9E	B-3A
52	27-MAY-2015 07:22	15052652.d	1	AGM9F	B-3B
53	27-MAY-2015 07:46	15052653.d	1	AGM9G	B-3C
54	27-MAY-2015 08:09	15052654.d	1	AGM9H	B-4A
55	27-MAY-2015 08:33	15052655.d	1	AGM9I	B-4B
56	27-MAY-2015 08:58	15052656.d	1	AGM9J	B-4C
57	27-MAY-2015 09:21	15052657.d	1	DIESEL#5	
58	27-MAY-2015 09:45	15052658.d	1	MOIL#5	

entries legible.

ance Tasks In StarLIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

ARI Job No.: RT05 Method: ftphfid4a.m Instrument: fid4a.i Date: 26-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1102	15052601.d	RT0526		1	NO MANUAL INTEGRATION
1125	15052602.d	IB0526		1	NO MANUAL INTEGRATION
1149	15052603.d	DIESEL#1	POS Silver	1	o-terph,
1212	15052604.d	MOIL#1	POS Silver	1	Triacon Surr,
1653	15052615.d	DIESEL#2	POS Silver	1	o-terph,
1717	15052616.d	MOIL#2	POS Silver	1	Triacon Surr,
2026	15052624.d	AGA8MBS1	AGA8MBS1	1	NO MANUAL INTEGRATION
2050	15052625.d	AGA8LCSS1	AGA8LCSS1	1	o-terph,
2113	15052626.d	AGA8B	SDP-10(15.	1	o-terph, Triacon Surr,
2137	15052627.d	AGA8E	SDP-08(12.	1	NO MANUAL INTEGRATION
2200	15052628.d	AGA8F	SDP-07(1.5	5	o-terph, Triacon Surr,
2223	15052629.d	AGA8FMS	SDP-07(1.5	5	o-terph, Triacon Surr,
2247	15052630.d	AGA8FMSD	SDP-07(1.5	5	o-terph, Triacon Surr,
2310	15052631.d	AGA8H	SDP-06(12.	1	o-terph, Triacon Surr,
2333	15052632.d	DIESEL#3	POS Silver	1	o-terph,
2356	15052633.d	MOIL#3	POS Silver	1	Triacon Surr,
0020	15052634.d	AGA8I	SDP-06(10.	1	Triacon Surr,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem3/fid4a.i/20150526.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0043	15052635.d	AGC9C	SDP-02(16.	10	NO MANUAL INTEGRATION
0107	15052636.d	AGC9D	SDP-02(18.	1	o-terph, Triacon Surr,
0130	15052637.d	AGC9E	SDP-02(22.	1	o-terph, Triacon Surr,
0154	15052638.d	AGC9H	SDP-04(1.5	1	o-terph, Triacon Surr,
0217	15052639.d	AGC9HMS	SDP-04(1.5	1	o-terph, Triacon Surr,
0240	15052640.d	AGC9HMSD	SDP-04(1.5	1	o-terph, Triacon Surr,
0304	15052641.d	AGC9I	SDP-04(10.	1	o-terph,
0327	15052642.d	DIESEL#4	POS Silver	1	o-terph,
0351	15052643.d	MOIL#4	POS Silver	1	Triacon Surr,

Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052601.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: RT0526
Client ID:
Injection: 26-MAY-2015 11:02

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.728	0.000	545278	2111191	WATPHG	(Tol-C12)	4115590	166.73
C8	0.989	0.000	357143	778664	WATPHD	(C12-C24)	2528238	152.85
C10	2.571	0.000	410597	356457	WATPHM	(C24-C38)	2992624	196.60
C12	3.450	0.000	394722	400945	AK102	(C10-C25)	3368606	171.31
C14	4.125	0.000	495416	399226	AK103	(C25-C36)	2575154	279.84
C16	4.710	0.000	400865	405486				
C18	5.283	0.000	326321	398275				
C20	5.898	0.000	276150	391131	JET-A	(C10-C18)	2050229	111.63
C22	6.529	0.000	267325	391450				
C24	7.147	0.000	251756	365496				
C25	7.444	0.000	223495	379068				
C26	7.738	0.000	236474	326334				
C28	8.295	0.000	239490	353116				
C32	9.506	0.000	184643	393844				
C34	10.148	0.000	153399	396309				
Filter Peak	10.467	0.000	947	3888				
C36	10.800	0.000	131528	419475				
C38	11.449	0.000	107350	379335				
C40	12.073	0.000	122121	409857				
o-terph	5.433	0.000	807651	1015843				
Triacon Surr	8.898	0.000	381305	857755				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1015843	44.1	98.0
Triacontane	857755	42.8	95.1

ML
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

Data File: /chem3/fid4a.i/20150526.b/15052601.d

Date : 26-MAY-2015 11:02

Client ID:

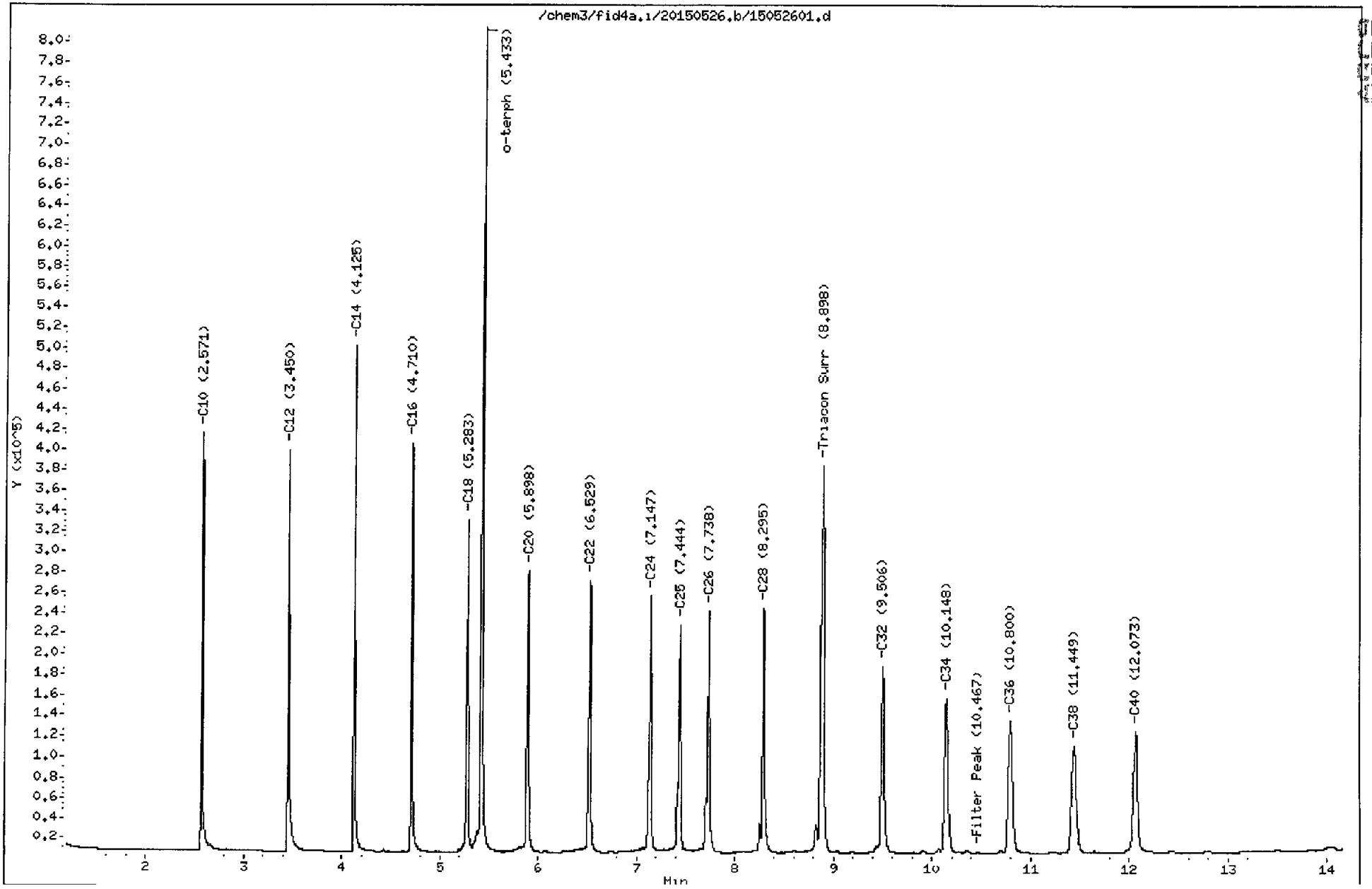
Sample Info: RT0526

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052602.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: IB0526
Client ID:
Injection: 26-MAY-2015 11:25

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	357944	14.50
C8	0.995	0.006	92234	323847	WATPHD	(C12-C24)	19636	1.19
C10	2.549	-0.022	658	3471	WATPHM	(C24-C38)	147431	9.69
C12	3.439	-0.011	194	492	AK102	(C10-C25)	36571	1.86
C14	4.142	0.017	94	194	AK103	(C25-C36)	118433	12.87
C16	4.723	0.013	96	402				
C18	5.281	-0.001	236	269				
C20	5.885	-0.013	361	819	JET-A	(C10-C18)	25517	1.39
C22	6.548	0.019	115	420				
C24	7.124	-0.023	26	25				
C25	7.426	-0.019	30	34				
C26	7.756	0.018	161	299				
C28	8.316	0.021	656	2368				
C32	9.529	0.023	1711	11888				
C34	10.133	-0.015	414	1045				
Filter Peak	10.479	0.012	470	942				
C36	10.796	-0.004	2269	15915				
C38	11.477	0.028	891	7578				
C40	12.041	-0.032	2508	20732				
o-terph	5.431	-0.001	888610	1071323				
Triacon Surr	8.893	-0.004	457308	925090				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1071323	46.5	103.3
Triacontane	925090	46.2	102.6

ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

Data File: /chem3/fid4a.i/20150526.b/15052602.d

Date : 26-MAY-2015 11:25

Client ID:

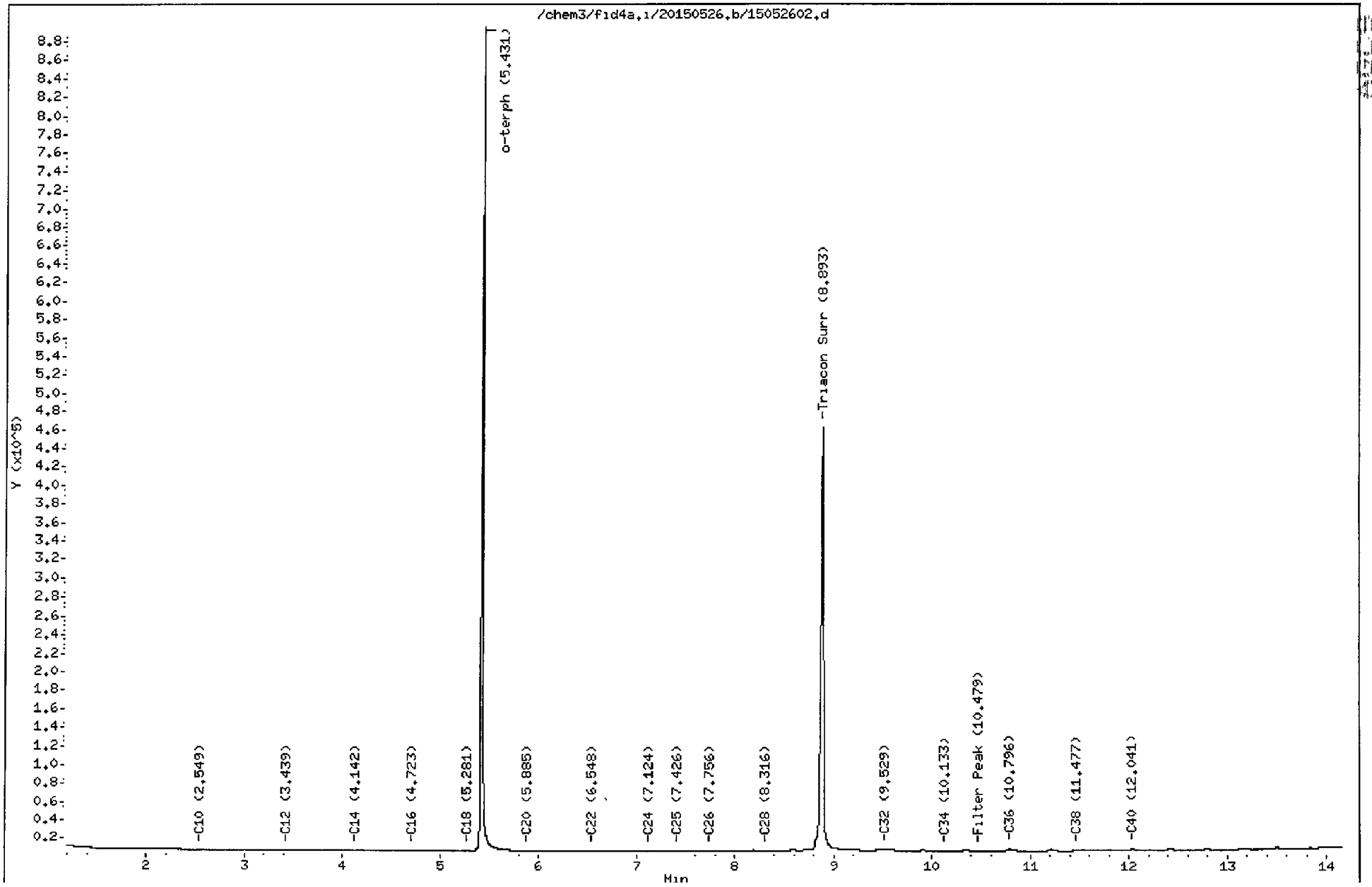
Sample Info: IB0526

Instrument: fid4a.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052603.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#1
Client ID:
Injection: 26-MAY-2015 11:49

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	2111635	85.55
C8	0.993	0.004	78252	203096	WATPHD	(C12-C24)	4006487	242.22
C10	2.601	0.030	4864	4166	WATPHM	(C24-C38)	77658	5.10
C12	3.450	0.000	34959	40632	AK102	(C10-C25)	4720175	240.04
C14	4.125	0.000	54971	129361	AK103	(C25-C36)	52770	5.73
C16	4.711	0.001	78712	208741				
C18	5.281	-0.001	73856	112935				
C20	5.899	0.002	33034	118386	JET-A	(C10-C18)	3666632	199.64
C22	6.536	0.007	10672	51403				
C24	7.161	0.014	2912	22357				
C25	7.433	-0.011	1321	2015				
C26	7.690	-0.047	803	2334				
C28	8.293	-0.002	192	384				
C32	9.468	-0.038	597	1454				
C34	10.132	-0.016	112	246				
Filter Peak	10.460	-0.006	180	390				
C36	10.783	-0.017	918	3972				
C38	11.418	-0.031	466	2556				
C40	12.043	-0.030	1411	10026				
o-terph	5.432	-0.001	825869	1020814				
Triacon Surr	8.879	-0.018	32	60				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

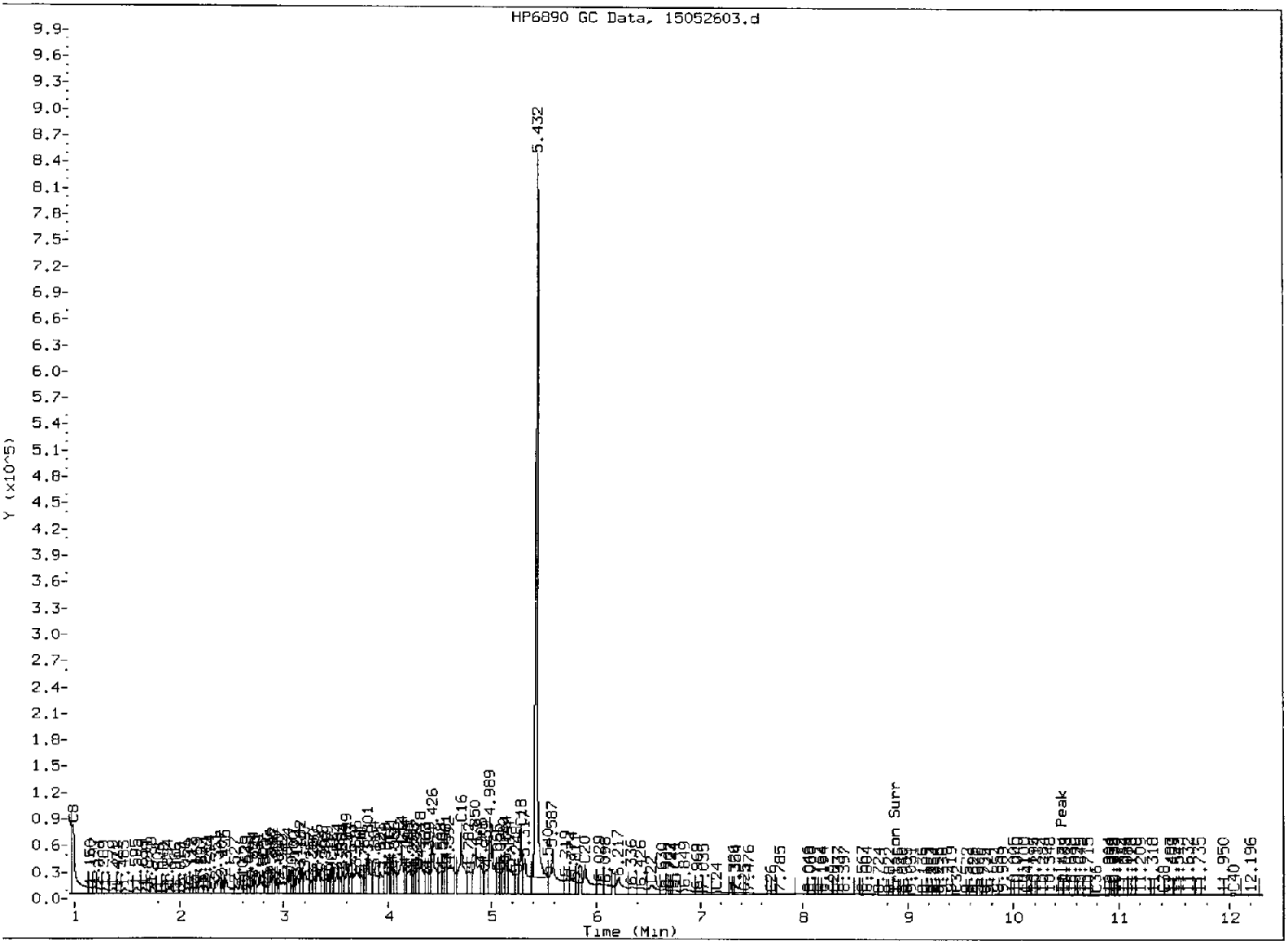
Surrogate	Area	Amount	%Rec
o-Terphenyl	1020814	44.3	98.4 M
Triacontane	60	0.0	0.0

ML
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 DIESEL#1 FID:4A SIGNAL



MANUAL INTEGRATION

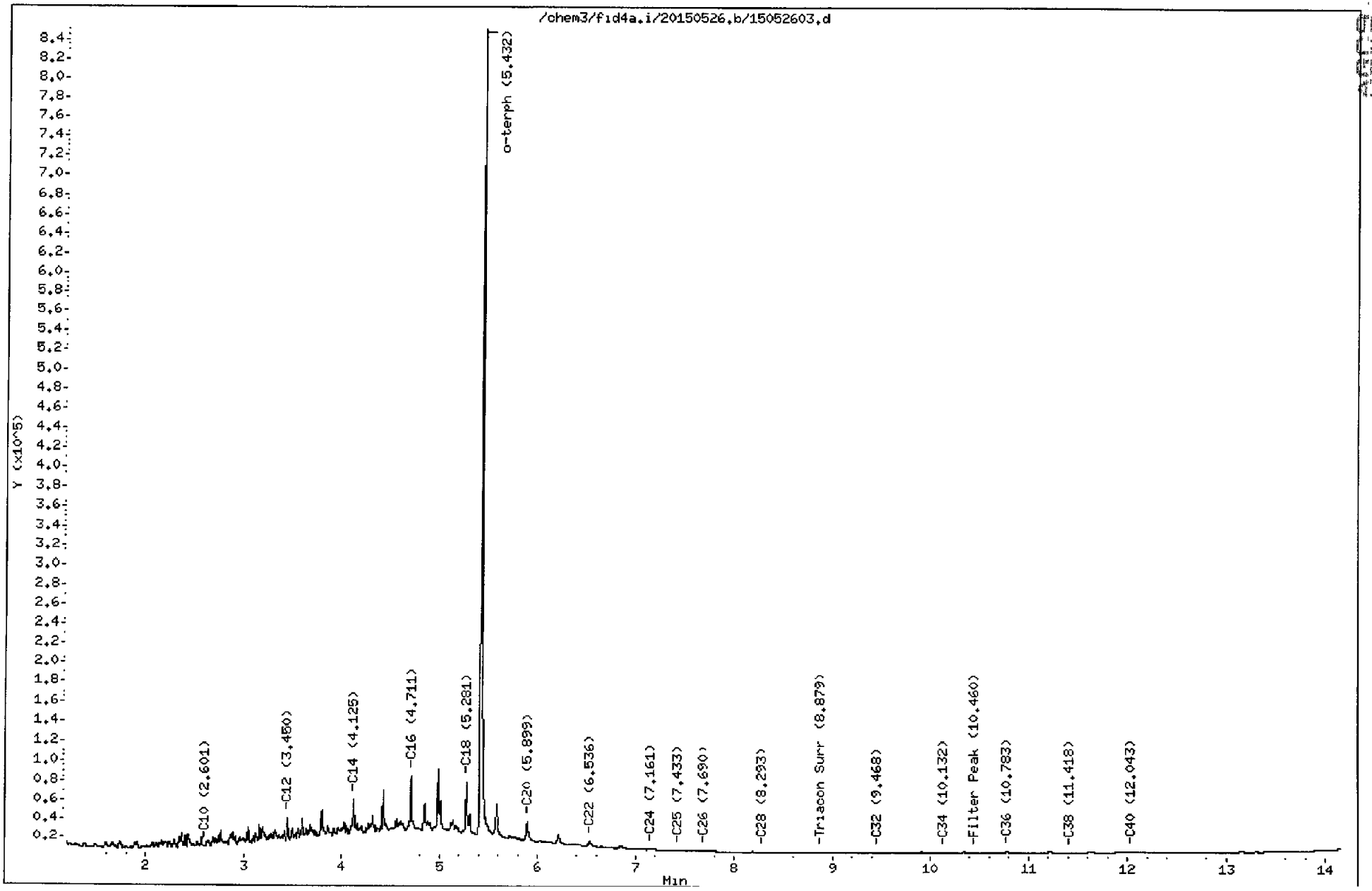
1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: ML Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052603.d
Date : 26-MAY-2015 11:49
Client ID:
Sample Info: DIESEL#1

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052604.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#1
Client ID:
Injection: 26-MAY-2015 12:12

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	290387	11.76
C8	0.994	0.005	56883	238930	WATPHD	(C12-C24)	643067	38.88
C10	2.550	-0.021	570	1567	WATPHM	(C24-C38)	7084867	465.44
C12	3.495	0.045	112	236	AK102	(C10-C25)	867140	44.10
C14	4.111	-0.014	30	73	AK103	(C25-C36)	5995754	651.57
C16	4.724	0.014	228	771				
C18	5.297	0.015	357	765				
C20	5.886	-0.012	1588	3536	JET-A	(C10-C18)	38239	2.08
C22	6.496	-0.033	4761	5377				
C24	7.148	0.001	19328	50086				
C25	7.460	0.016	25240	128518				
C26	7.754	0.016	29081	95026				
C28	8.299	0.004	31951	81106				
C32	9.508	0.002	31413	107481				
C34	10.156	0.008	27885	80158				
Filter Peak	10.466	-0.001	27232	138922				
C36	10.808	0.008	24818	77767				
C38	11.440	-0.010	22026	71170				
C40	12.068	-0.005	19468	33495				
o-terph	5.438	0.005	848	2887				
Triacon Surr	8.892	-0.005	330429	810530				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2887	0.1	0.3
Triacontane	810530	40.4	89.9 M

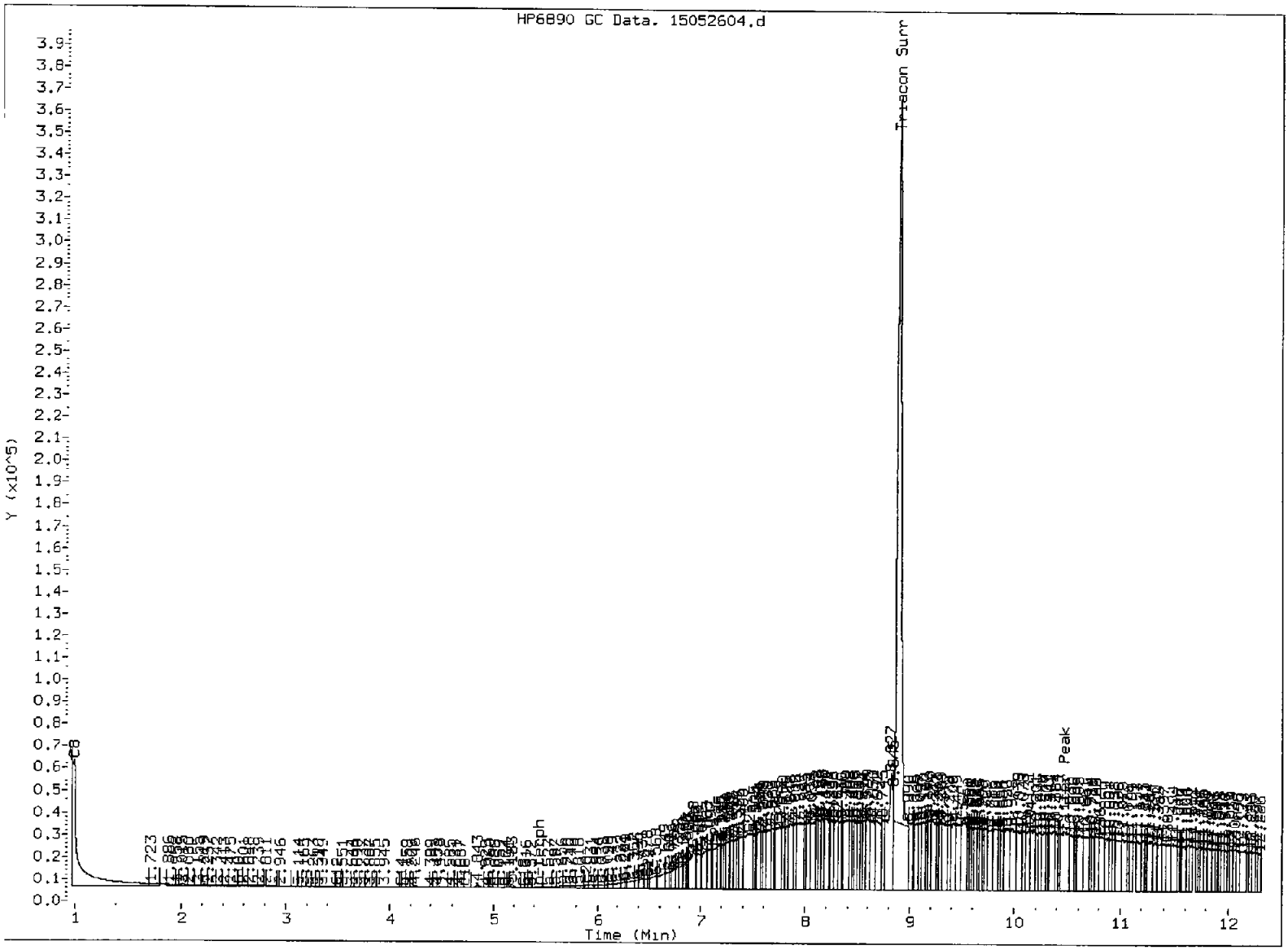
MC
5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 MOIL#1

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5.) Skimmed surrogate

Analyst: MC Date: 5/27/15

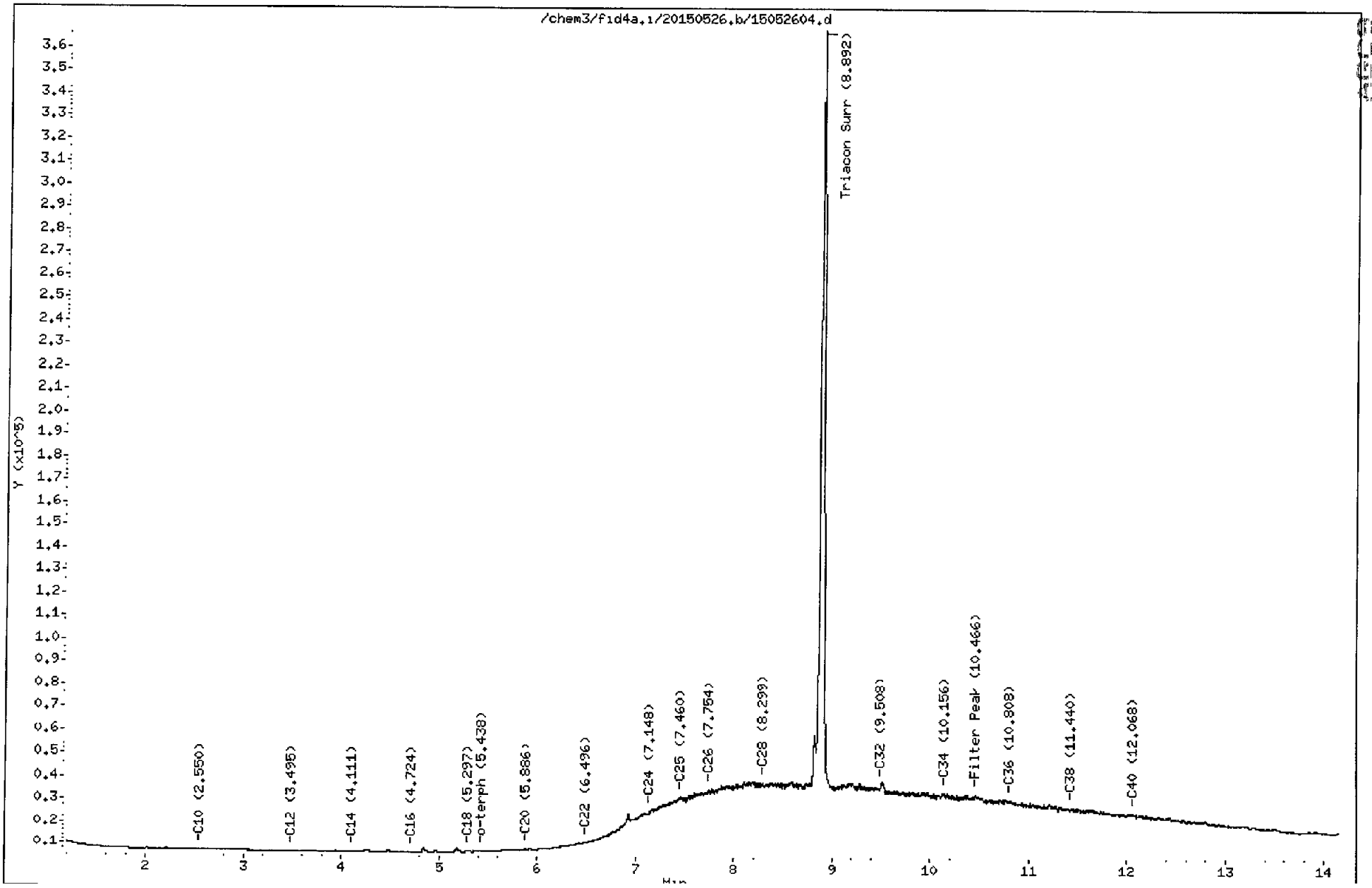
AGC 0129

Data File: /chem3/fid4a.i/20150526.b/15052604.d
Date : 26-MAY-2015 12:12
Client ID:
Sample Info: MOIL#1

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052615.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#2
Client ID:
Injection: 26-MAY-2015 16:53

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	2005434	81.24
C8	0.994	0.005	83051	220446	WATPHD	(C12-C24)	4168075	251.98
C10	2.572	0.001	12954	19113	WATPHM	(C24-C38)	84686	5.56
C12	3.450	0.000	34152	40641	AK102	(C10-C25)	4896793	249.02
C14	4.125	0.000	54337	129861	AK103	(C25-C36)	61144	6.64
C16	4.712	0.002	79204	216372				
C18	5.283	0.000	75327	118696				
C20	5.900	0.003	30757	122367	JET-A	(C10-C18)	3773027	205.43
C22	6.534	0.005	10221	53638				
C24	7.166	0.020	2998	27452				
C25	7.474	0.030	1597	13758				
C26	7.780	0.043	1540	6681				
C28	8.320	0.025	223	1415				
C32	9.459	-0.047	1229	2348				
C34	10.169	0.020	91	97				
Filter Peak	10.453	-0.014	127	224				
C36	10.794	-0.006	1342	5416				
C38	11.401	-0.048	427	941				
C40	12.034	-0.039	1935	9308				
o-terph	5.435	0.002	903173	1025118				
Triacon Surr	8.885	-0.013	52	98				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1025118	44.5	98.9 M
Triacontane	98	0.0	0.0

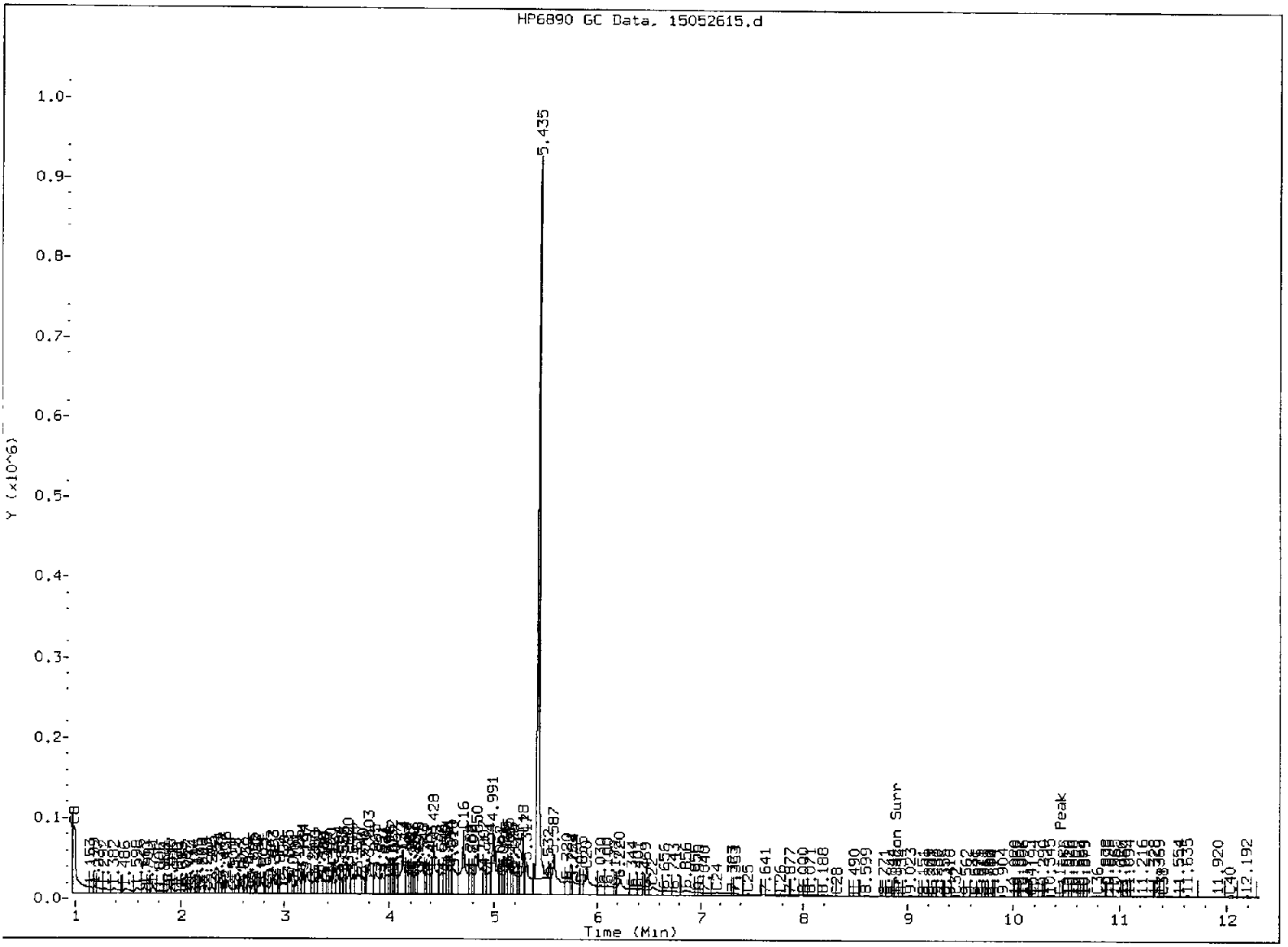
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

ML 5/27/15

FID:4A-2C/RTX-1 DIESEL#2

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: MW Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052615.d

Date : 26-MAY-2015 16:53

Client ID:

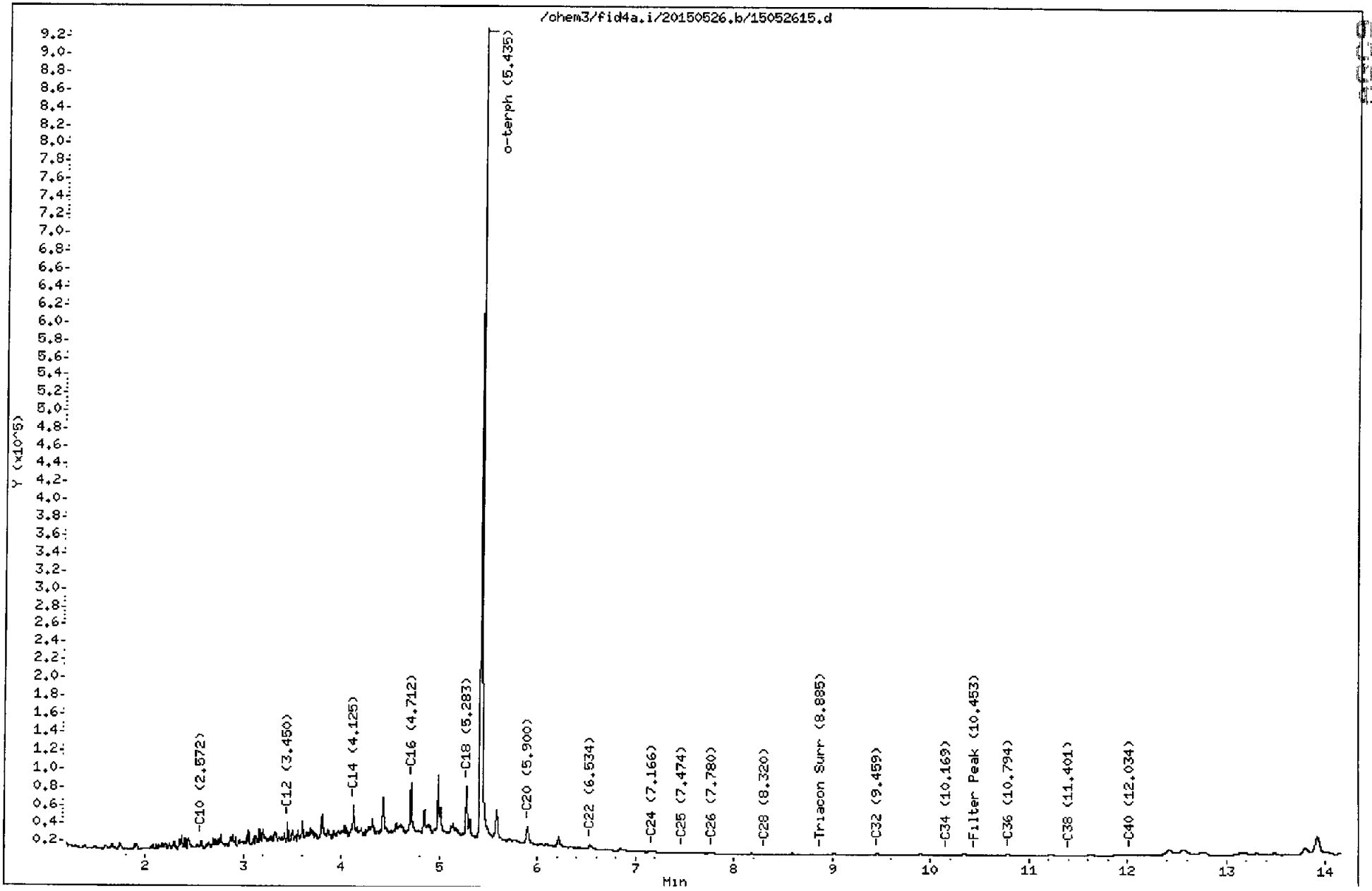
Sample Info: DIESEL#2

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052616.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#2
Client ID:
Injection: 26-MAY-2015 17:17

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	345541	14.00
C8	0.994	0.005	82468	281831	WATPHD	(C12-C24)	635713	38.43
C10	2.537	-0.034	703	2626	WATPHM	(C24-C38)	6594975	433.25
C12	3.448	-0.002	163	565	AK102	(C10-C25)	916504	46.61
C14	4.141	0.016	38	66	AK103	(C25-C36)	5460684	593.42
C16	4.725	0.015	164	632				
C18	5.259	-0.024	243	279				
C20	5.885	-0.013	1847	3623	JET-A	(C10-C18)	37822	2.06
C22	6.505	-0.025	4800	5860				
C24	7.146	0.000	19269	16133				
C25	7.461	0.017	25788	84994				
C26	7.748	0.010	29399	119649				
C28	8.302	0.007	32611	53657				
C32	9.495	-0.010	33021	132378				
C34	10.160	0.011	28879	56185				
Filter Peak	10.485	0.018	27209	61519				
C36	10.816	0.016	25061	75181				
C38	11.461	0.012	21331	29577				
C40	12.060	-0.013	18968	66446				
o-terph	5.441	0.009	682	2083				
Triacon Surr	8.895	-0.003	365595	800381				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2083	0.1	0.2
Triacontane	800381	39.9	88.8 M

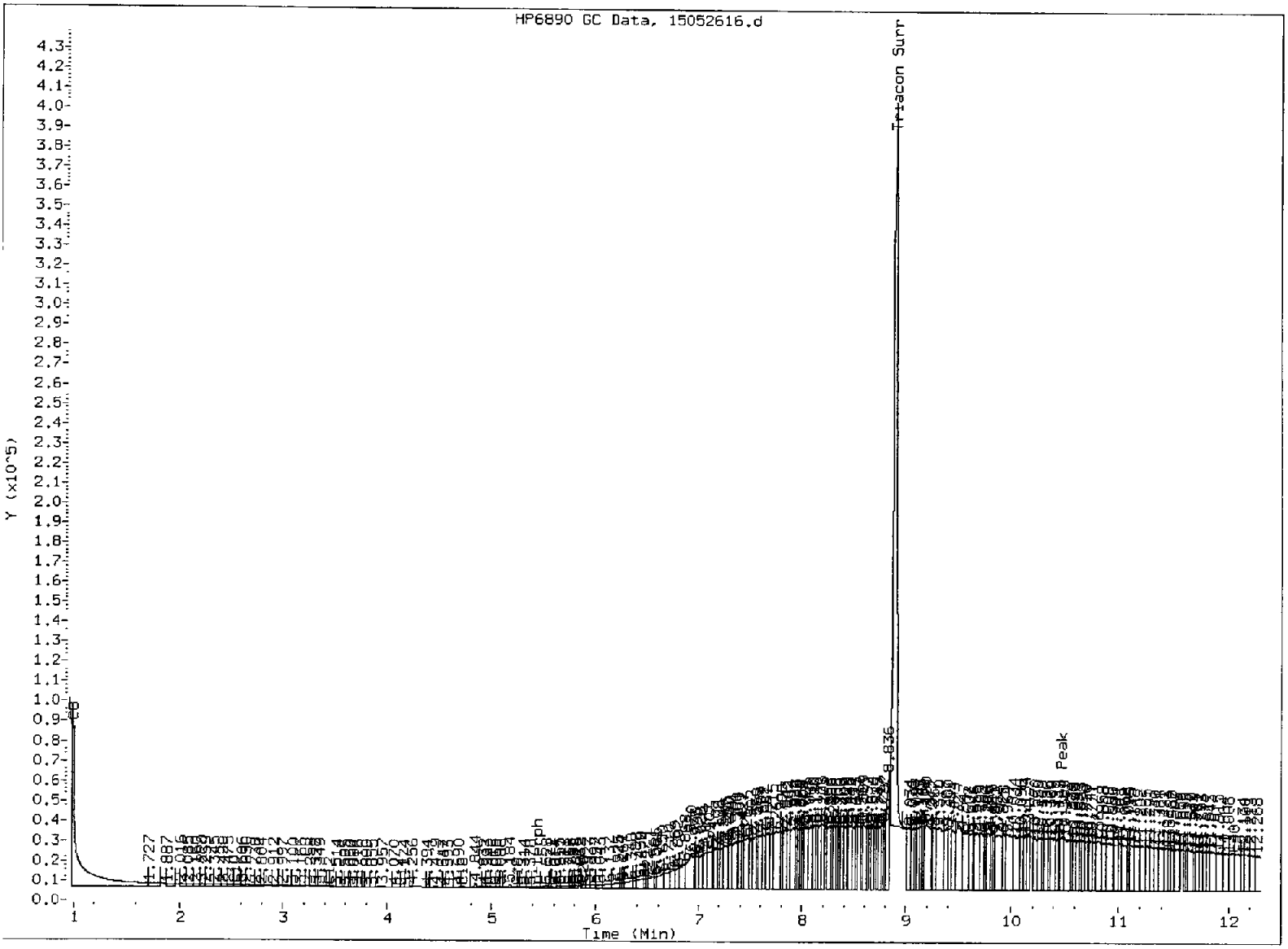
ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 MOIL#2

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: mc Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052616.d

Date : 26-MAY-2015 17:17

Client ID:

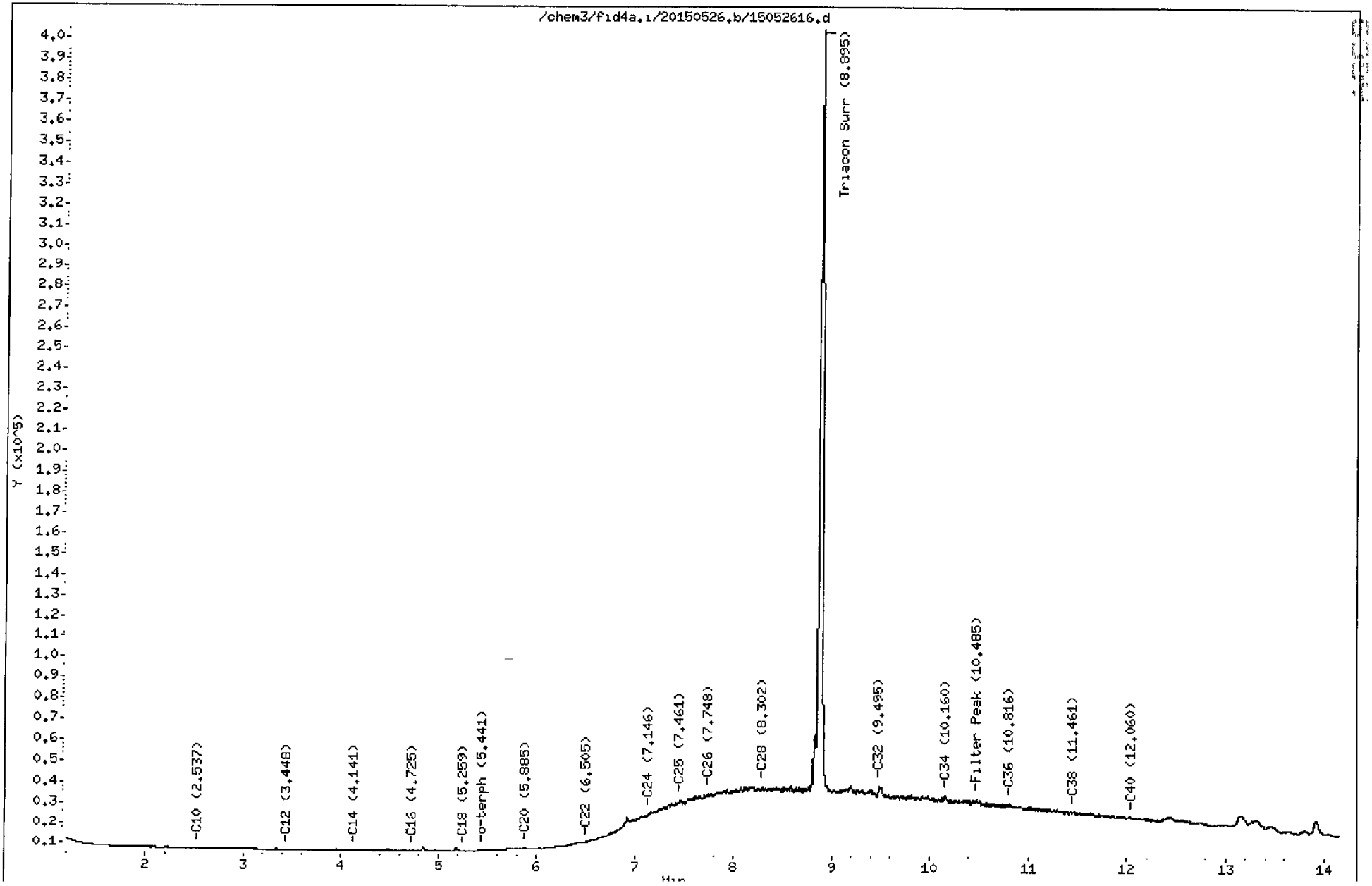
Sample Info: MOIL#2

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052632.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#3
Client ID:
Injection: 26-MAY-2015 23:33

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.776	0.048	76583	167421	WATPHG	(Tol-C12)	1829452	74.11
C8	0.982	-0.008	55845	168313	WATPHD	(C12-C24)	4008260	242.32
C10	2.569	-0.002	14045	17132	WATPHM	(C24-C38)	364232	23.93
C12	3.450	0.000	38333	41751	AK102	(C10-C25)	4687715	238.39
C14	4.126	0.001	57869	128739	AK103	(C25-C36)	213380	23.19
C16	4.711	0.001	89658	210798				
C18	5.282	-0.001	81941	103691				
C20	5.897	0.000	37889	113327	JET-A	(C10-C18)	3645184	198.47
C22	6.529	0.000	13726	46054				
C24	7.144	-0.003	4156	14383				
C25	7.443	-0.001	1918	6396				
C26	7.737	0.000	827	1879				
C28	8.287	-0.009	253	794				
C32	----							
C34	10.138	-0.010	1482	3121				
Filter Peak	10.471	0.004	2136	7223				
C36	10.766	-0.034	5643	20504				
C38	11.437	-0.012	4254	17395				
C40	----							
o-terph	5.435	0.002	994154	1016971				
Triacon Surr	8.888	-0.009	781	1659				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	1016971	44.1	98.1 M
Triacontane	1659	0.1	0.2

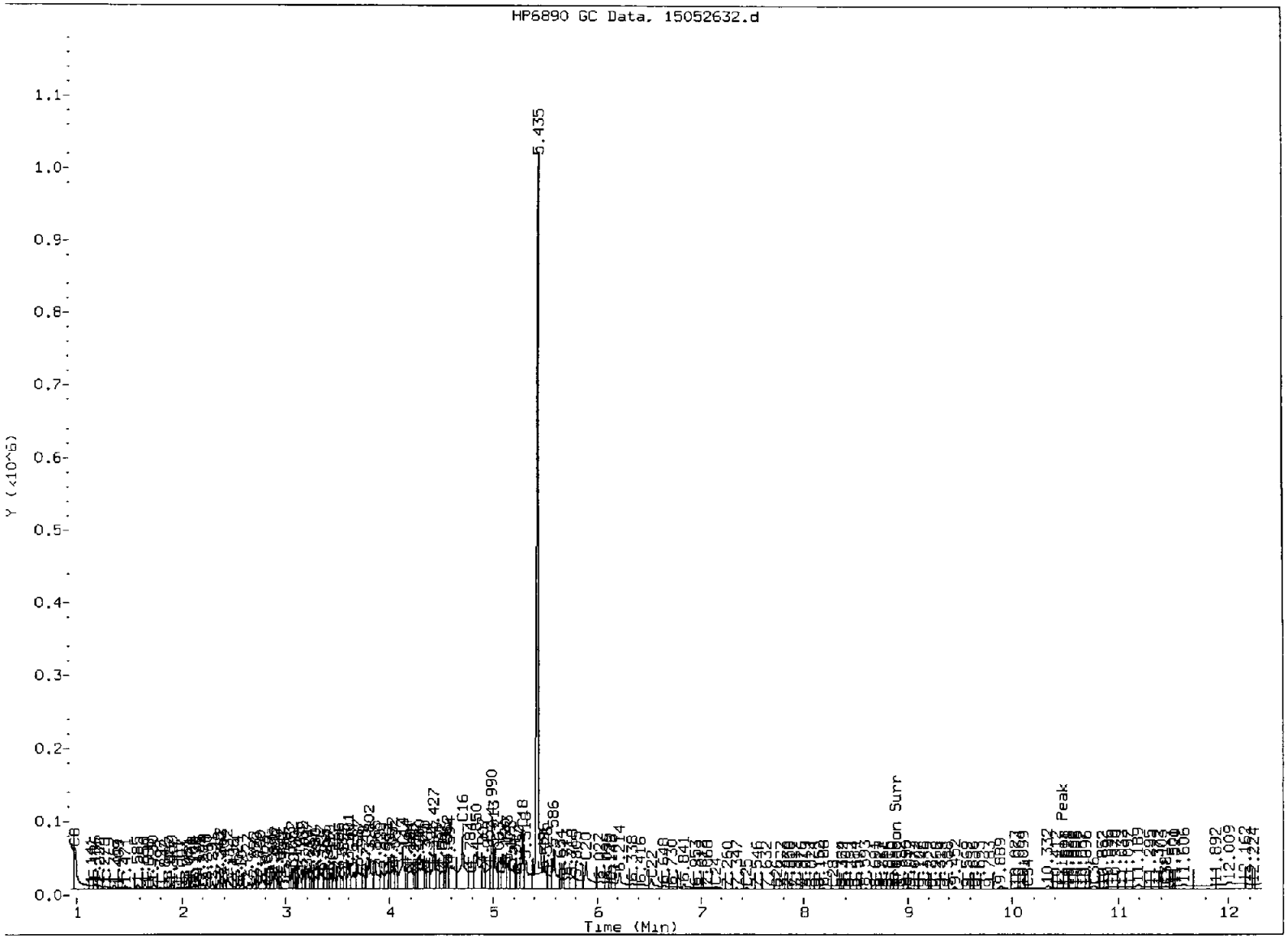
MC 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

ARCO 02137

FID:4A-2C/RTX-1 DIESEL#3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

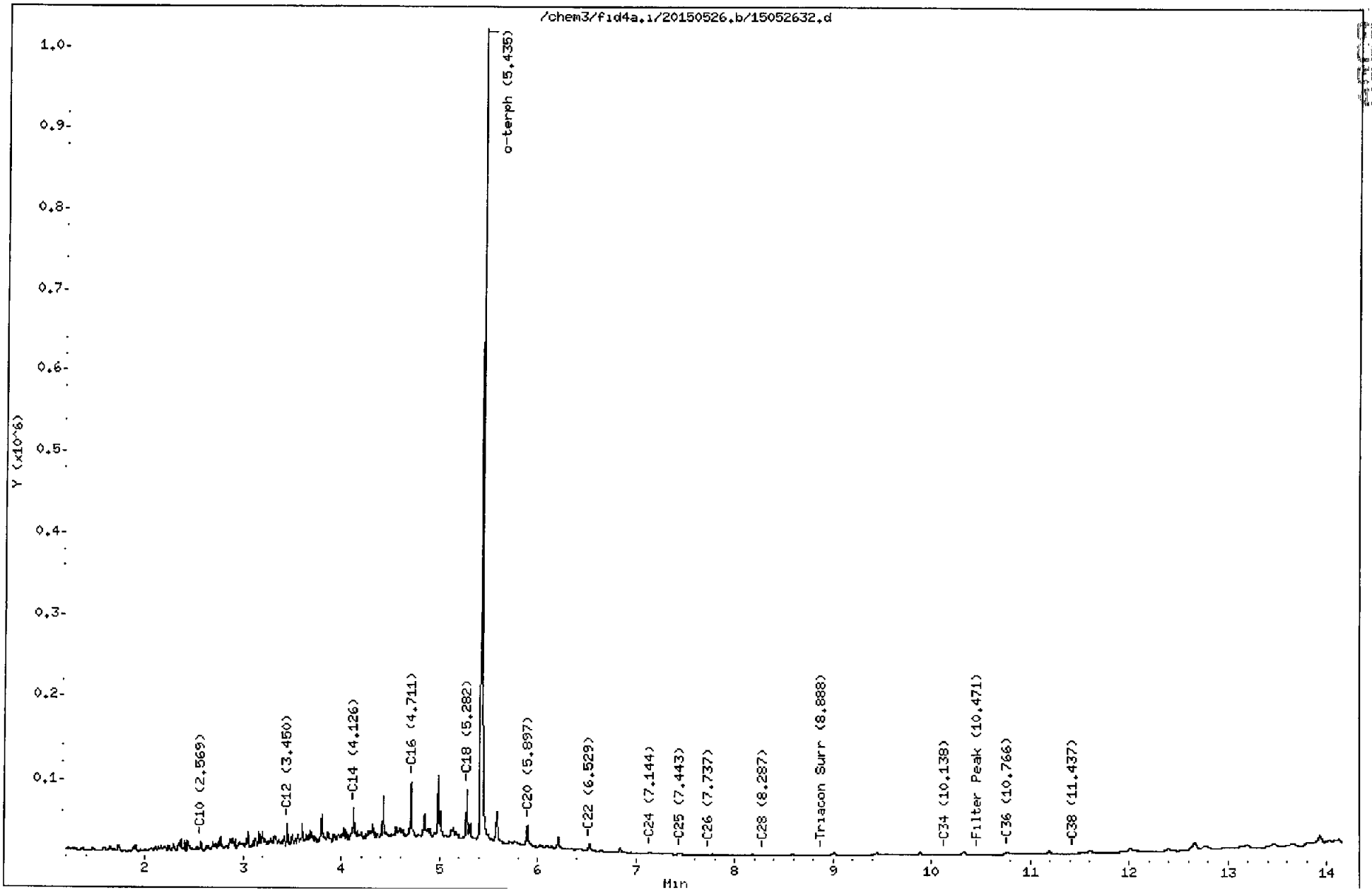
Analyst: MC Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052632.d
Date : 26-MAY-2015 23:33
Client ID:
Sample Info: DIESEL#3

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052633.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#3
Client ID:
Injection: 26-MAY-2015 23:56

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	285586	11.57
C8	0.993	0.004	53594	173658	WATPHD	(C12-C24)	657561	39.75
C10	2.570	-0.001	558	2150	WATPHM	(C24-C38)	7450659	489.47 ✓
C12	----				AK102	(C10-C25)	934059	47.50
C14	4.111	-0.014	37	75	AK103	(C25-C36)	6322318	687.05
C16	4.689	-0.021	203	781				
C18	5.293	0.011	382	1566				
C20	5.885	-0.013	1741	4205	JET-A	(C10-C18)	35027	1.91
C22	6.510	-0.019	5281	10961				
C24	7.144	-0.003	19715	23306				
C25	7.448	0.004	26206	60936				
C26	7.739	0.002	29273	31950				
C28	8.304	0.009	34488	93014				
C32	9.492	-0.013	36130	190437				
C34	10.132	-0.017	31303	103658				
Filter Peak	10.460	-0.007	29806	104695				
C36	10.776	-0.024	30868	149002				
C38	11.457	0.008	24284	85714				
C40	12.087	0.015	23851	54392				
o-terph	5.440	0.007	744	2970				
Triacon Surr	8.887	-0.010	467989	867580				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	2970	0.1	0.3
Triacontane	867580	43.3	96.2 M ✓

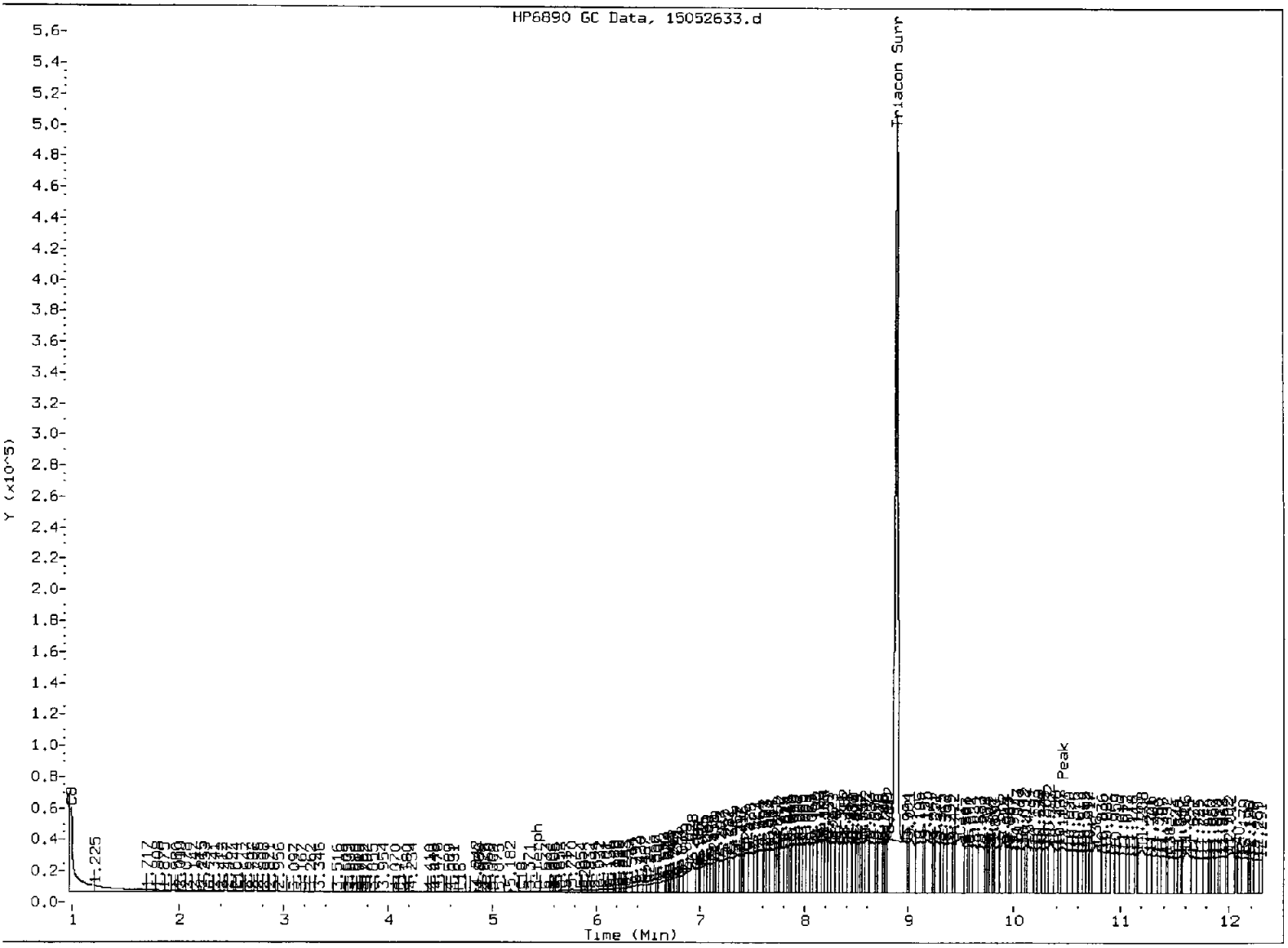
ML
5/20/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGS: 2112

FID:4A-2C/RTX-1 MOIL#3 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

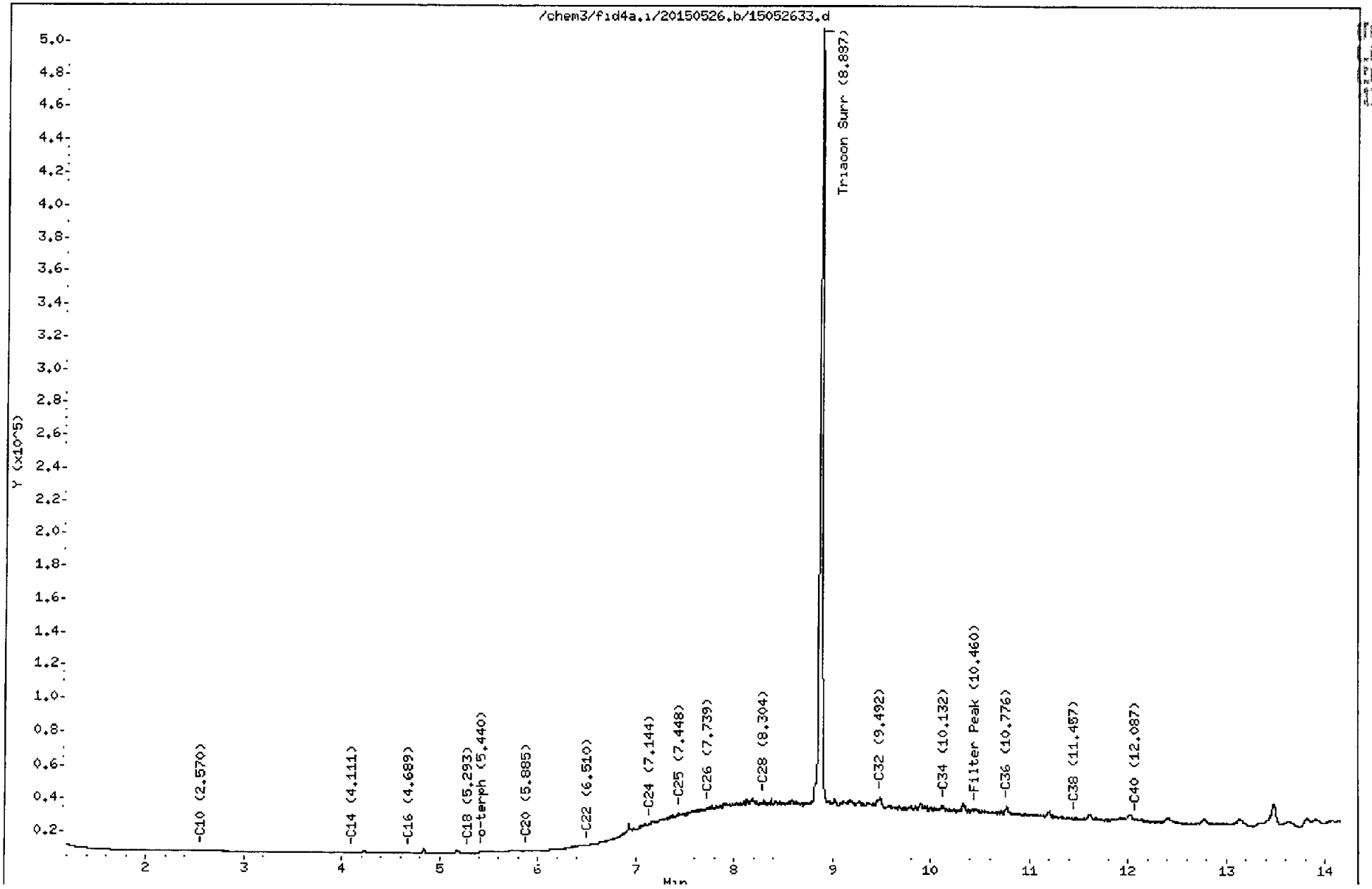
Analyst: MC Date: 5/20/15

Data File: /chem3/fid4a.i/20150526.b/15052633.d
Date : 26-MAY-2015 23:56
Client ID:
Sample Info: MOIL#3

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052635.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9C
Client ID: SDP-02(16.0-17.5)
Injection: 27-MAY-2015 00:43

Dilution Factor: 10

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	310428	12.58
C8	0.993	0.004	74508	279779	WATPHD	(C12-C24)	755556	45.68
C10	2.578	0.007	381	571	WATPHM	(C24-C38)	6247671	410.44
C12	3.446	-0.005	140	117	AK102	(C10-C25)	911761	46.37
C14	4.132	0.007	1111	2885	AK103	(C25-C36)	4970812	540.18
C16	4.714	0.004	1967	7094				
C18	5.281	-0.001	2081	3294				
C20	5.906	0.009	3433	5542	JET-A	(C10-C18)	139314	7.59
C22	6.529	0.000	6336	15166				
C24	7.160	0.013	11512	13048				
C25	7.466	0.022	14811	35295				
C26	7.730	-0.008	17607	19149				
C28	8.297	0.002	26553	31401				
C32	9.482	-0.024	26044	136827				
C34	10.161	0.013	25134	51379				
Filter Peak	10.449	-0.018	27570	119821				
C36	10.801	0.001	28987	52255				
C38	11.451	0.002	32512	60352				
C40	12.095	0.022	36497	93105				
o-terph	----							
Triacon Surr	----							

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

mc 5/27/15

Surrogate	Area	Amount	%Rec	
o-Terphenyl	0	0.0	0.0	D
Triacontane	0	0.0	0.0	

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9 9145

Data File: /chem3/fid4a.i/20150526.b/15052635.d

Date : 27-MAY-2015 00:43

Client ID: SDP-02(16.0-17.5)

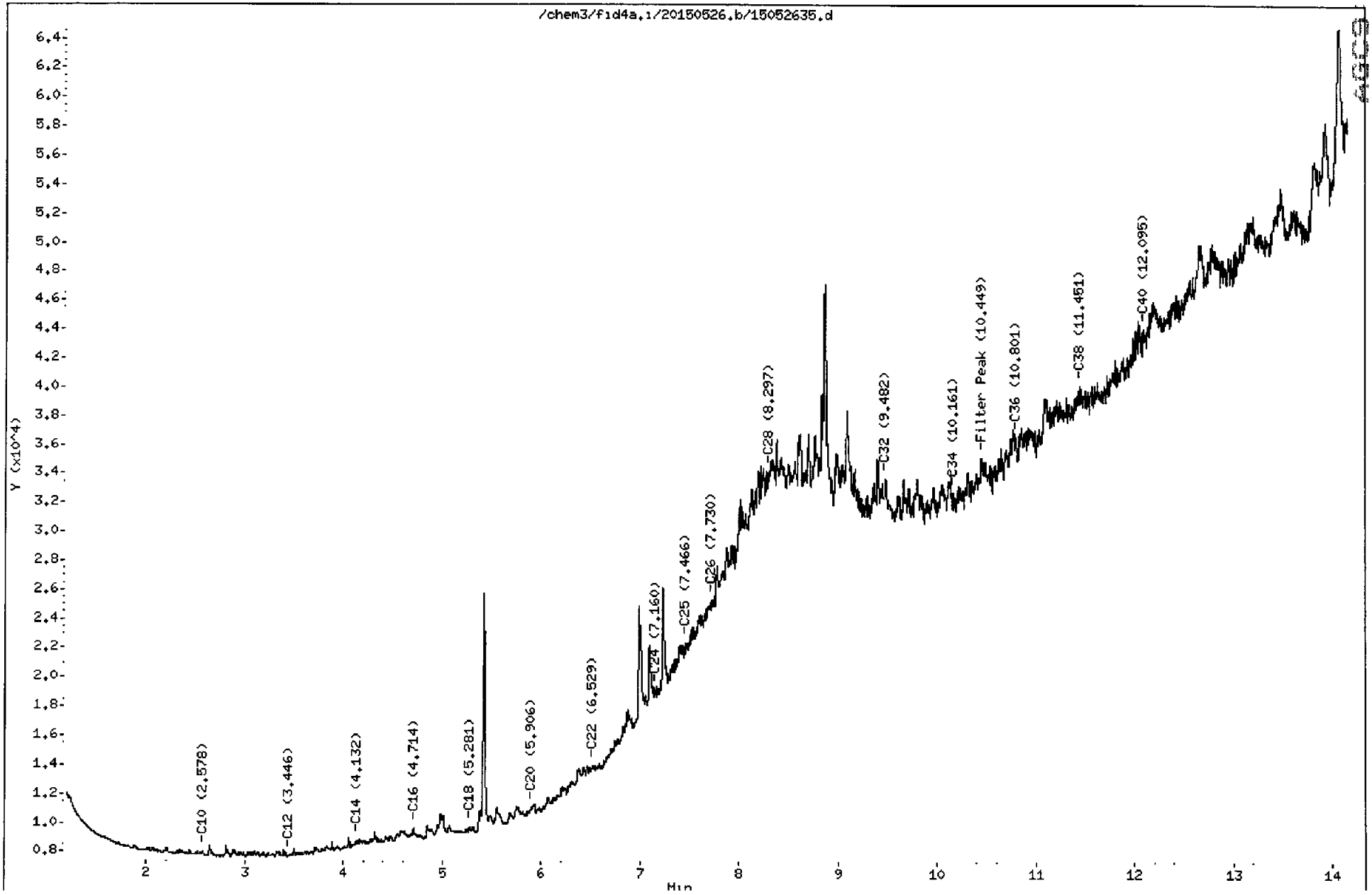
Sample Info: AGC9C,10

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052636.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9D
Client ID: SDP-02(18.5-19.5)
Injection: 27-MAY-2015 01:07

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	1078401	43.69
C8	----				WATPHD	(C12-C24)	6347035	383.72
C10	2.573	0.002	6005	8536	WATPHM	(C24-C38)	12824278	842.48
C12	3.448	-0.002	16087	15252	AK102	(C10-C25)	6988007	355.37
C14	4.108	-0.018	24530	104104	AK103	(C25-C36)	11276287	1225.41
C16	4.712	0.002	30210	55056				
C18	5.283	0.001	38743	108206				
C20	5.907	0.009	52750	86514	JET-A	(C10-C18)	2816568	153.36
C22	6.532	0.002	42604	152287				
C24	7.143	-0.003	60083	102771				
C25	7.444	0.000	92352	168135				
C26	7.730	-0.008	62356	159568				
C28	8.289	-0.006	78409	161597				
C32	9.498	-0.008	61958	174012				
C34	10.181	0.032	46134	45264				
Filter Peak	10.482	0.015	40337	134010				
C36	10.814	0.014	36662	109906				
C38	11.463	0.014	30217	94675				
C40	----							
o-terph	5.438	0.005	734015	778712				
Triacon Surr	8.891	-0.007	361617	720650				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	778712	33.8	75.1 M
Triacontane	720650	36.0	79.9 M

ML
5/27/15

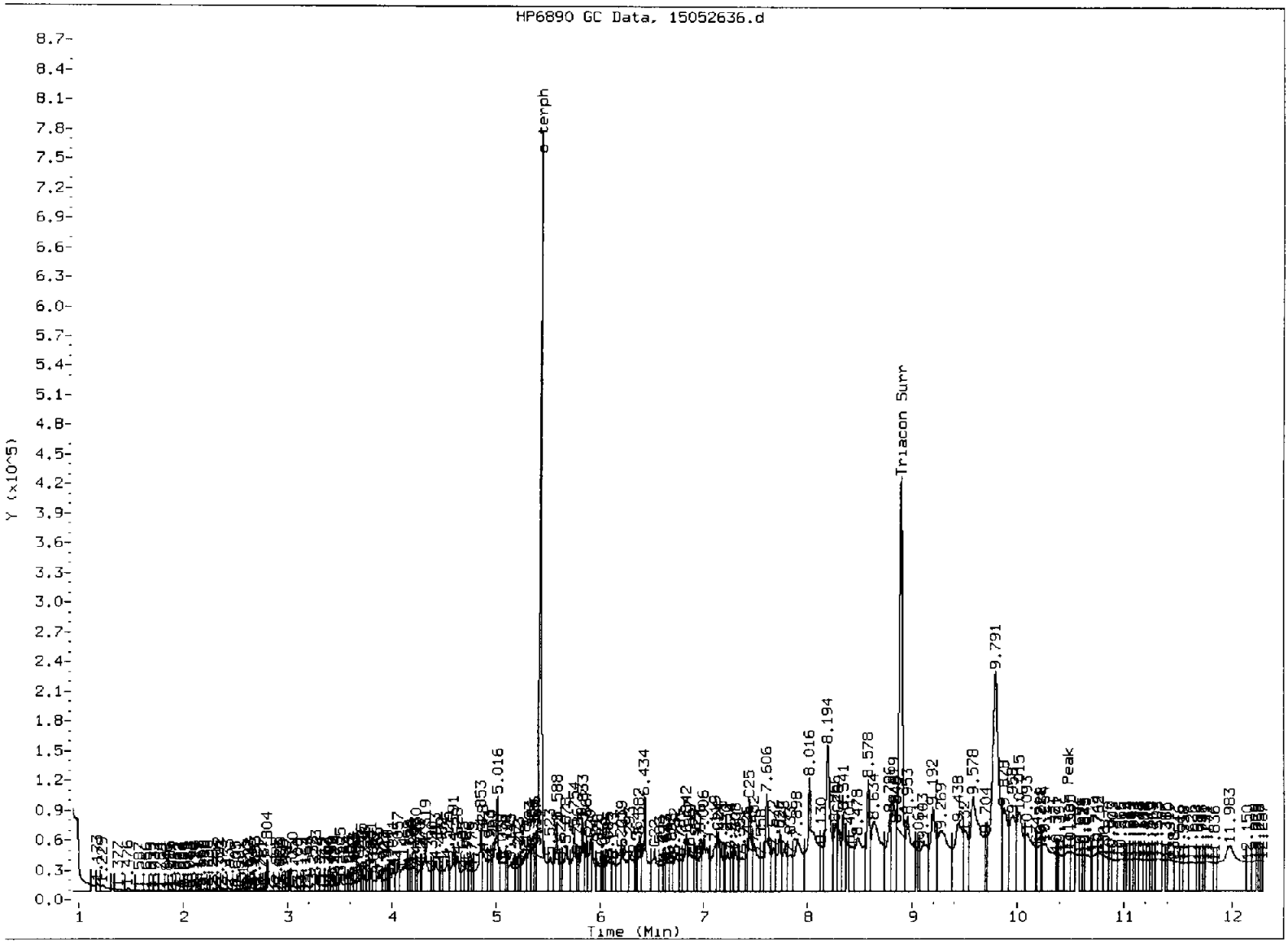
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9 8145

FID:4A-2C/RTX-1 AGC9D

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MC Date: 5/27/15

AGC9-9119

Data File: /chem3/fid4a.i/20150526.b/15052636.d

Date : 27-MAY-2015 01:07

Client ID: SDP-02(18.5-19.5)

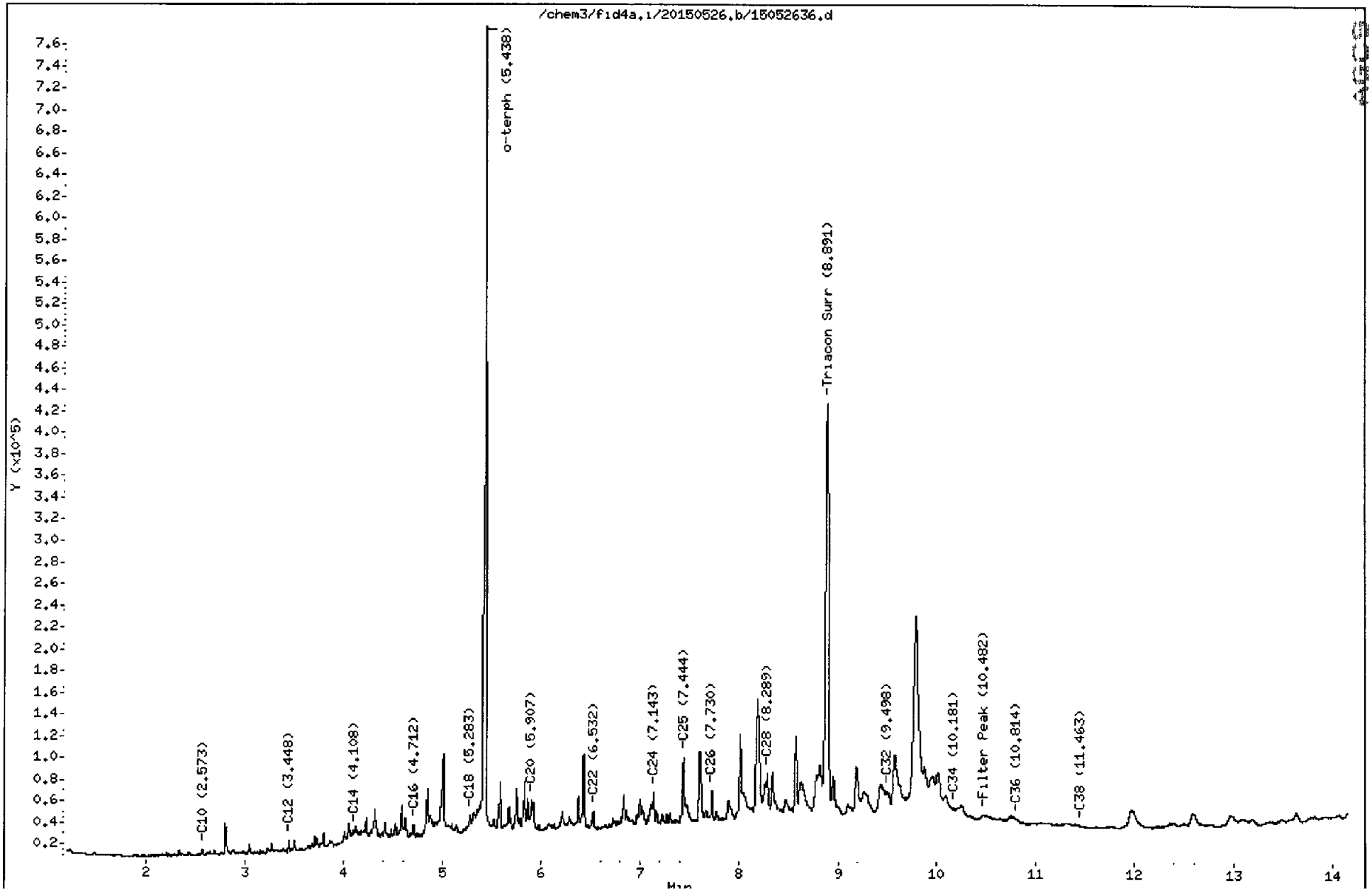
Sample Info: AGC9D

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052637.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9E
Client ID: SDP-02(22.0-23.5)
Injection: 27-MAY-2015 01:30
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	732671	29.68
C8	0.893	-0.096	86706	641003	WATPHD	(C12-C24)	1106347	66.89
C10	2.571	0.000	402	757	WATPHM	(C24-C38)	4988615	327.72
C12	3.449	-0.001	1762	1529	AK102	(C10-C25)	1229277	62.51
C14	4.124	-0.001	3234	5004	AK103	(C25-C36)	4288579	466.04
C16	4.711	0.001	2665	5856				
C18	5.283	0.000	4714	5882				
C20	5.904	0.007	6720	28904	JET-A	(C10-C18)	300896	16.38
C22	6.527	-0.002	7611	25597				
C24	7.140	-0.006	11903	20857				
C25	7.440	-0.004	25298	145278				
C26	7.729	-0.008	14565	25647				
C28	8.281	-0.014	22509	61503				
C32	9.484	-0.021	24046	101179				
C34	10.131	-0.017	17404	46833				
Filter Peak	10.441	-0.026	15889	82797				
C36	10.767	-0.033	15948	67120				
C38	----							
C40	----							
o-terph	5.436	0.004	770826	791978				
Triacon Surr	8.882	-0.016	430480	697657				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	791978	34.4	76.4 M
Triacontane	697657	34.8	77.4 M

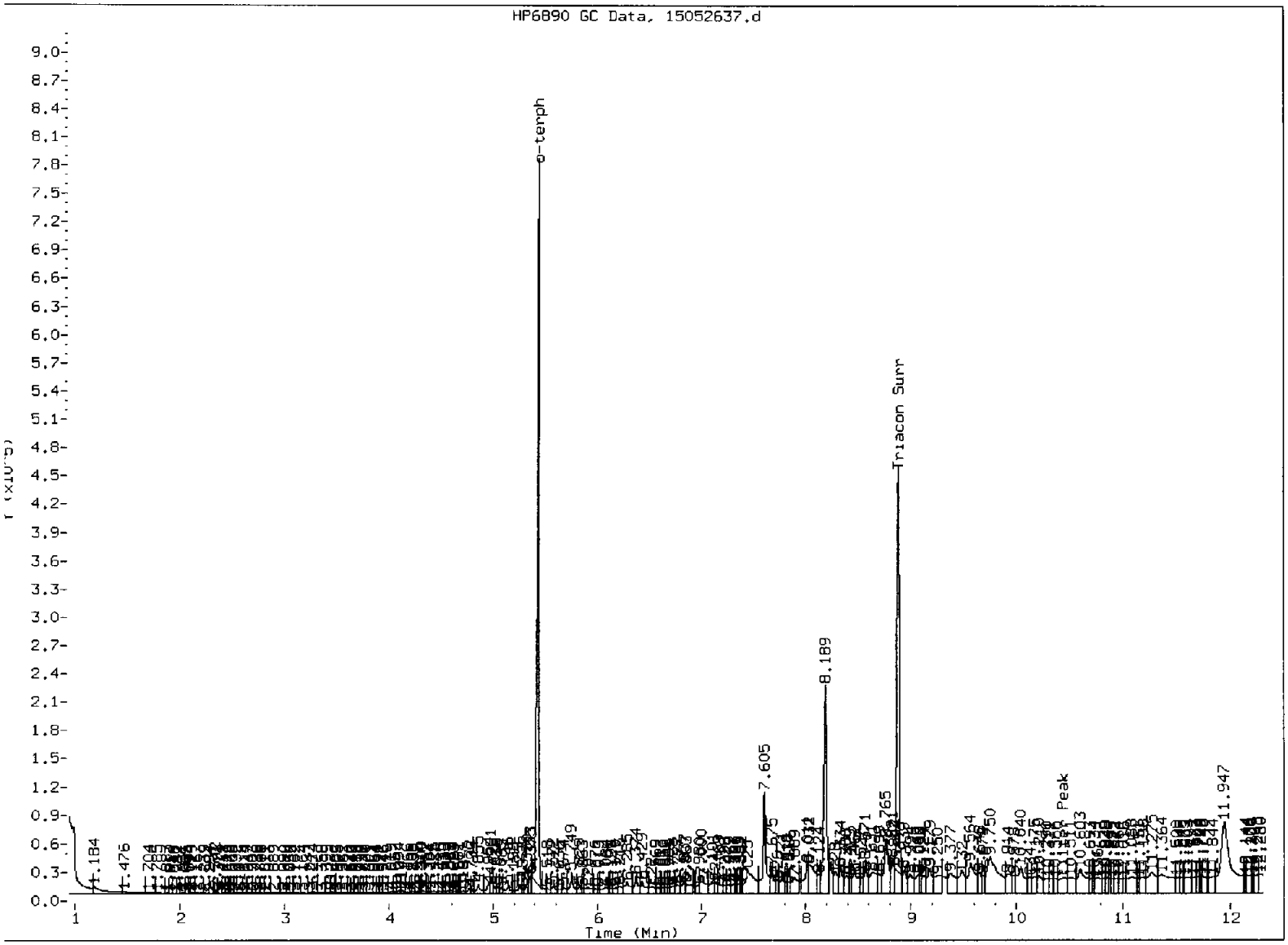
M 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9:0116

FID:4A-2C/RTX-1 AGC9E FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

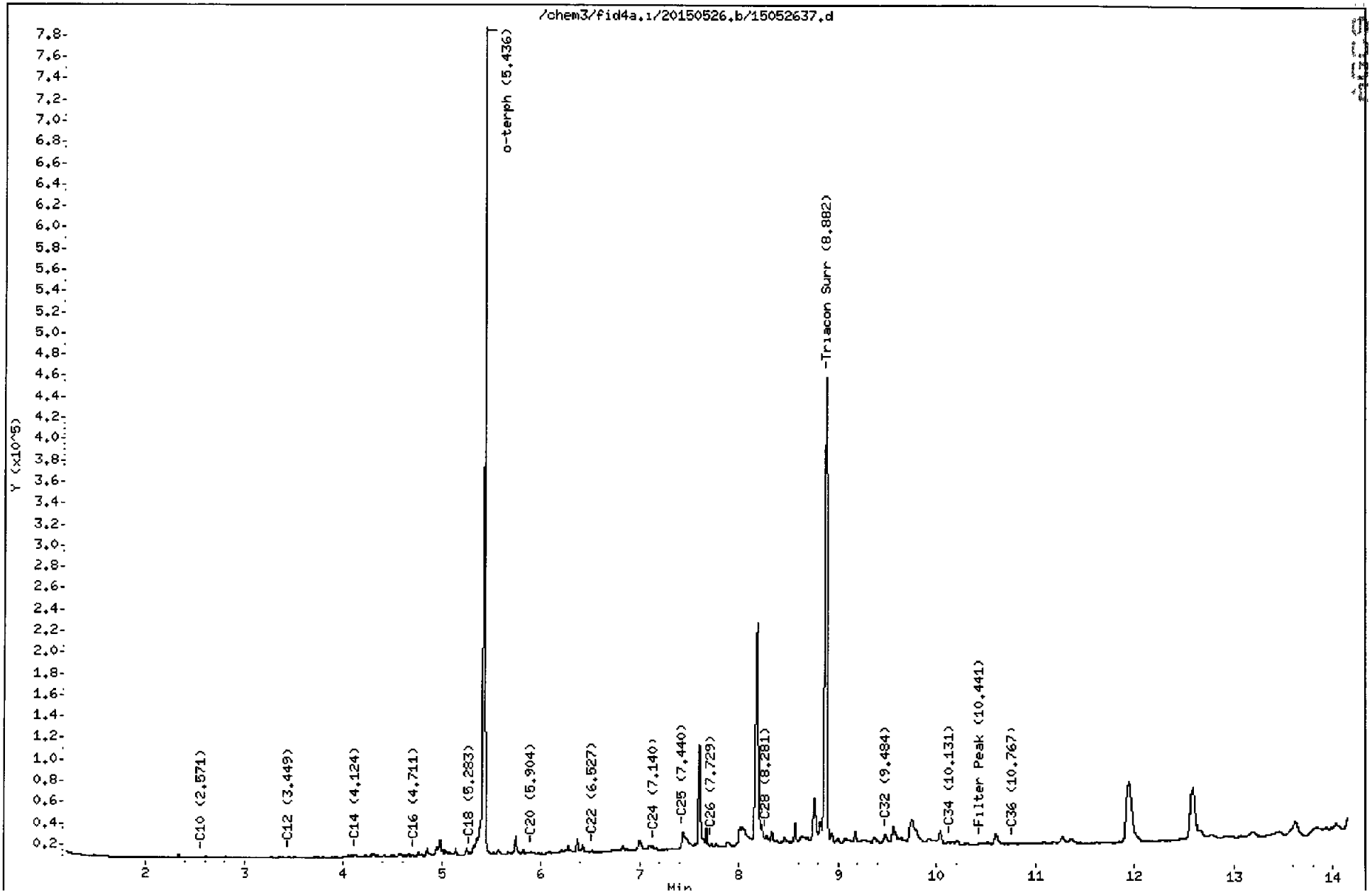
Analyst: ML Date: 5/27/15

AGC9-9119

Data File: /chem3/fid4a.i/20150526.b/15052637.d
Date : 27-MAY-2015 01:30
Client ID: SDP-02(22.0-23.5)
Sample Info: AGC9E

Instrument: fid4a.i
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052638.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9H
Client ID: SDP-04(1.5-3.0)
Injection: 27-MAY-2015 01:54

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	326445	13.22
C8	0.970	-0.019	70357	235325	WATPHD	(C12-C24)	6031436	364.64
C10	2.572	0.001	658	906	WATPHM	(C24-C38)	15828046	1039.81
C12	3.451	0.001	1080	1294	AK102	(C10-C25)	6775936	344.59
C14	4.125	0.000	11369	29846	AK103	(C25-C36)	13516621	1468.87
C16	4.712	0.002	27539	59769				
C18	5.284	0.002	45440	119648				
C20	5.899	0.002	55314	167605	JET-A	(C10-C18)	1014650	55.25
C22	6.529	0.000	61966	275779				
C24	7.145	-0.002	76174	247478				
C25	7.444	0.000	85664	326504				
C26	7.735	-0.003	88193	208847				
C28	8.299	0.004	95077	230521				
C32	9.465	-0.041	91356	469727				
C34	10.147	-0.002	50031	208921				
Filter Peak	10.472	0.005	45444	166347				
C36	10.788	-0.012	87253	495168				
C38	11.449	0.000	41931	74173				
C40	12.037	-0.035	85198	588219				
o-terph	5.435	0.002	631333	712487				
Triacon Surr	8.899	0.002	335487	709221				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

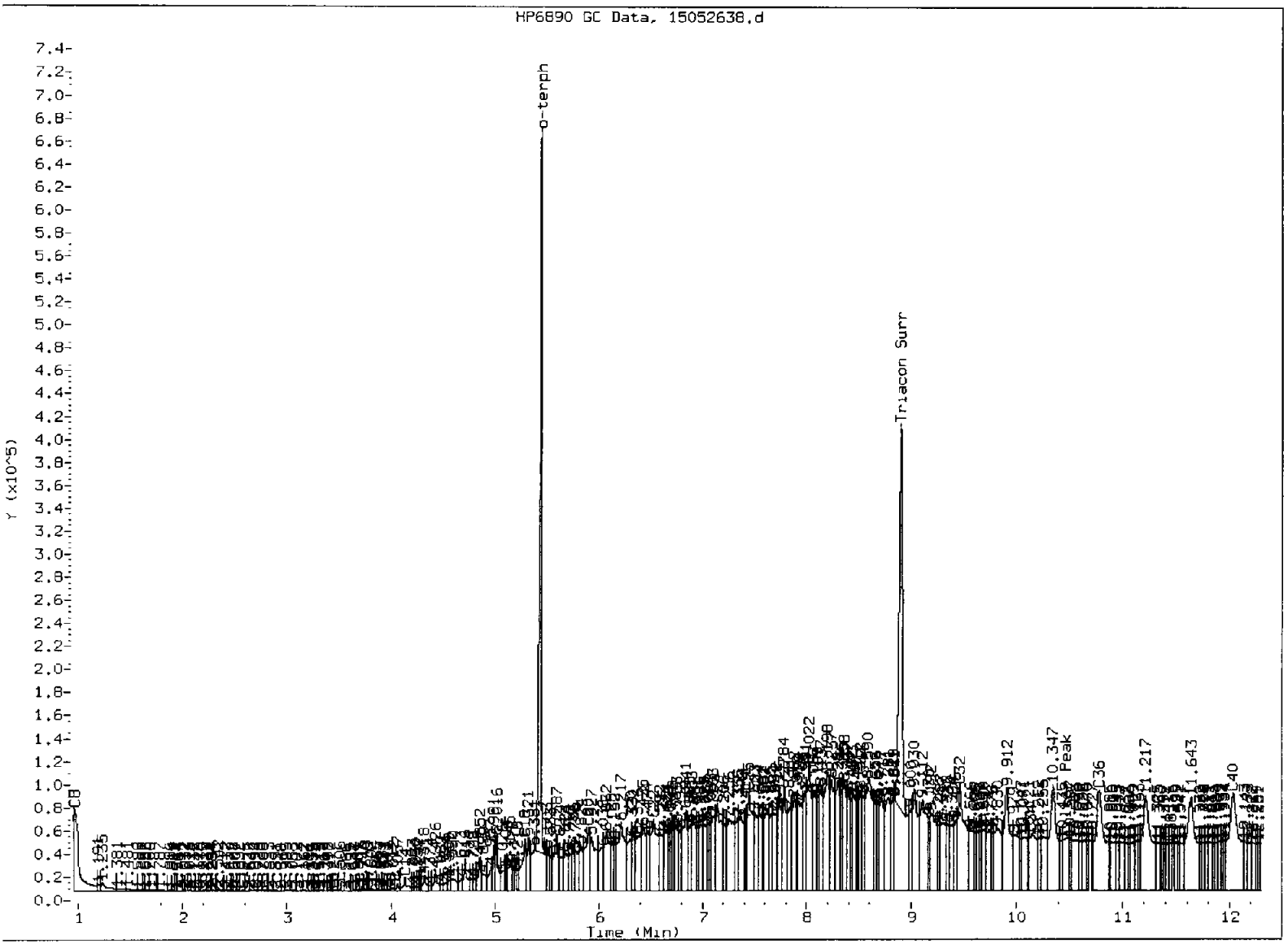
Surrogate	Area	Amount	%Rec
o-Terphenyl	712487	30.9	68.7 M
Triacontane	709221	35.4	78.6 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

MC 5/27/15

FID:4A-2C/RTX-1 AGC9H FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: mc Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052638.d

Date : 27-MAY-2015 01:54

Client ID: SDP-04(1.5-3.0)

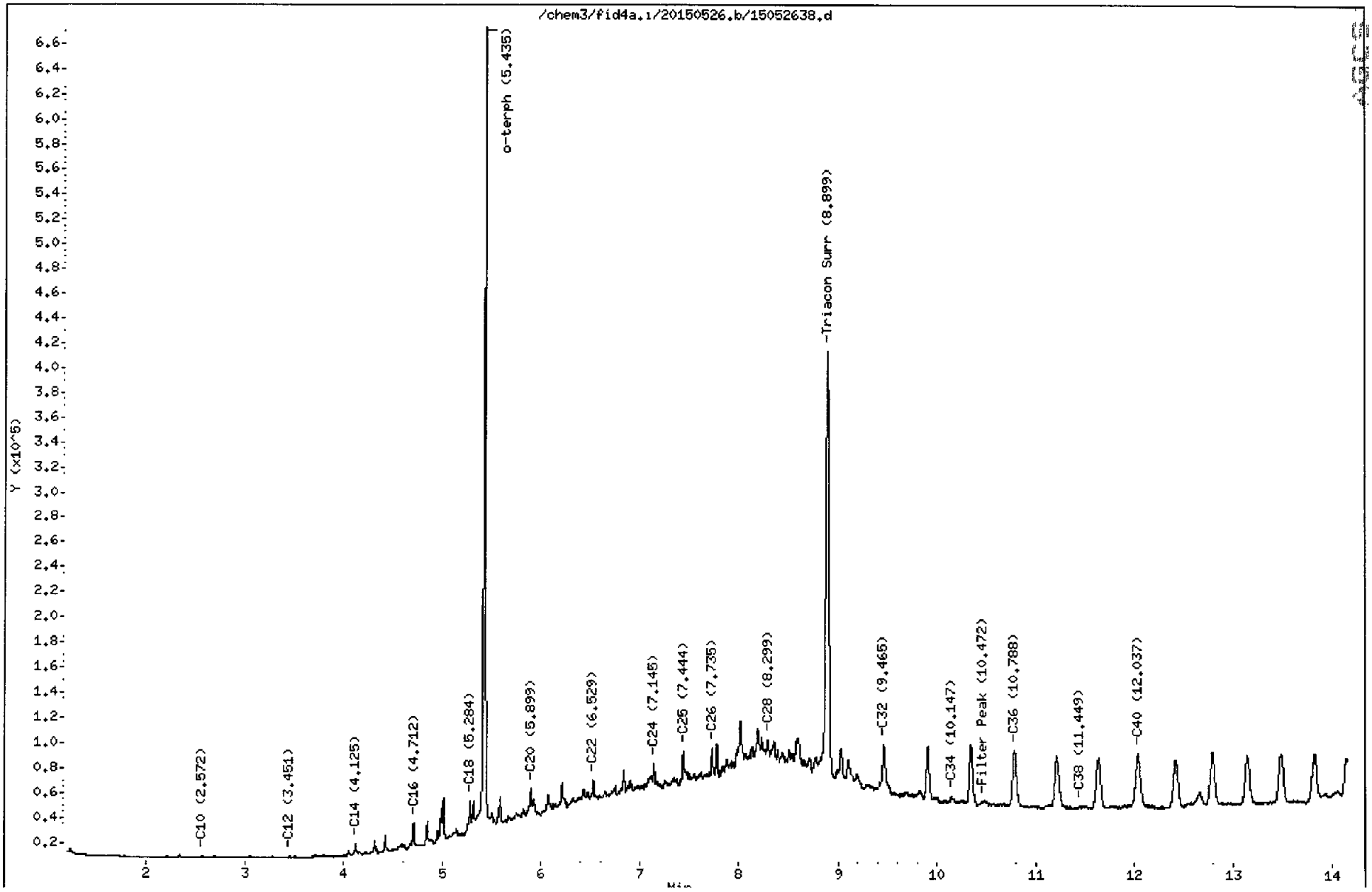
Sample Info: AGC9H

Instrument: fid4a.i

Operator: ML

Column phase: RTX-1

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052639.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9HMS
Client ID: SDP-04(1.5-3.0) MS
Injection: 27-MAY-2015 02:17

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.737	0.009	100351	300718	WATPHG	(Tol-C12)	5742991	232.66
C8	0.980	-0.009	84234	208041	WATPHD	(C12-C24)	24954724	1508.66
C10	2.574	0.003	87354	94216	WATPHM	(C24-C38)	14504132	952.84
C12	3.452	0.002	189820	202265	AK102	(C10-C25)	28844625	1466.87
C14	4.129	0.004	271004	655907	AK103	(C25-C36)	12078718	1312.61
C16	4.717	0.007	362905	1056706				
C18	5.291	0.009	361387	842070				
C20	5.904	0.007	217849	945159	JET-A	(C10-C18)	18422593	1003.07
C22	6.533	0.004	132405	539108				
C24	7.147	0.000	99007	318234				
C25	7.444	-0.001	93453	296840				
C26	7.735	-0.002	90654	294630				
C28	8.293	-0.002	93496	229556				
C32	9.500	-0.006	60089	199046				
C34	10.132	-0.016	48521	191495				
Filter Peak	10.445	-0.021	46317	139108				
C36	10.782	-0.018	46554	240176				
C38	11.439	-0.011	44799	94563				
C40	12.044	-0.029	55625	277032				
o-terph	5.439	0.006	657830	772830				
Triacon Surr	8.893	-0.005	385869	733089				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	772830	33.5	74.5 M
Triacontane	733089	36.6	81.3 M

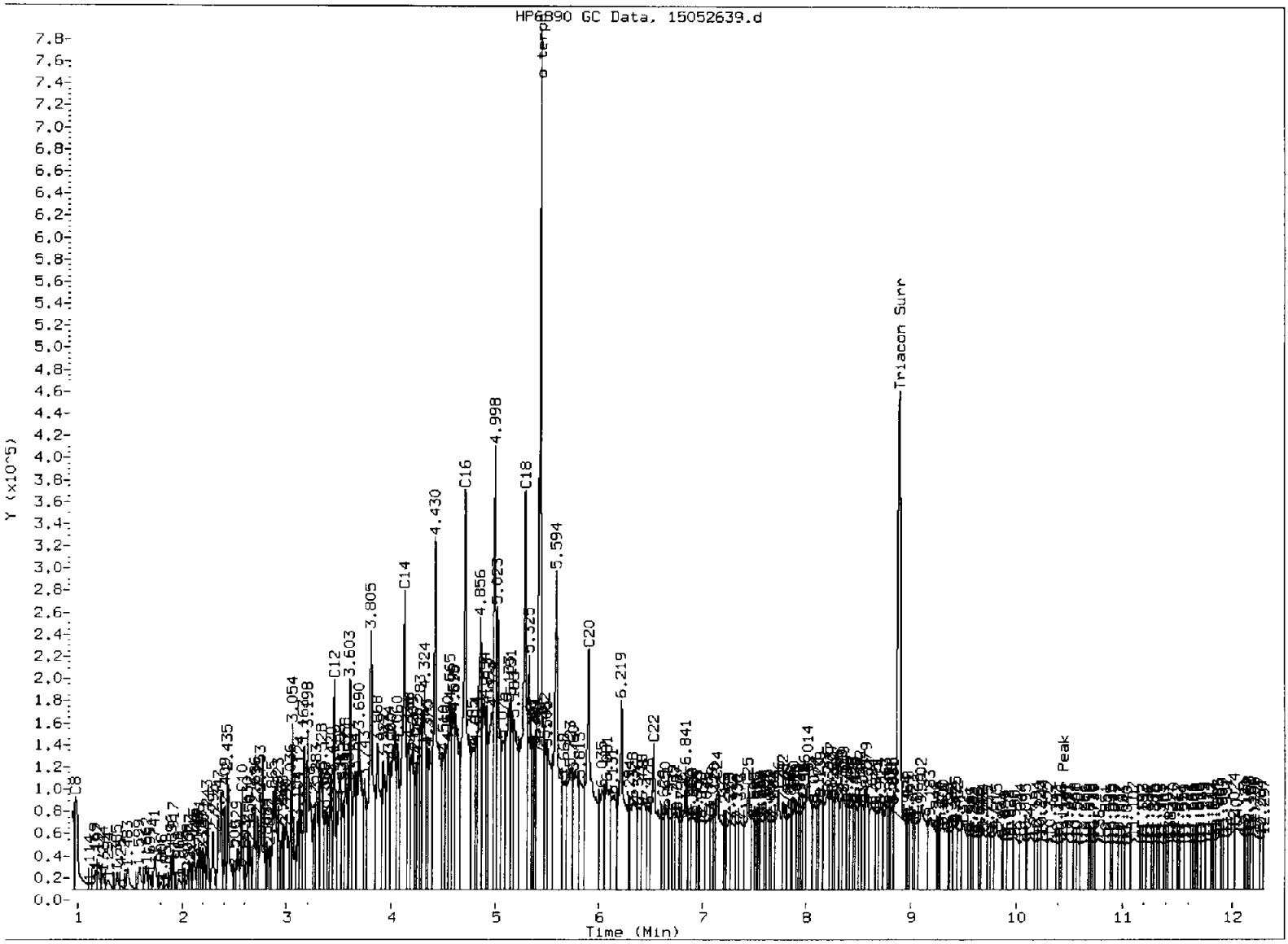
MC 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9 0154

FID:4A-2C/RTX-1 AGC9HMS FID:4A SIGNAL



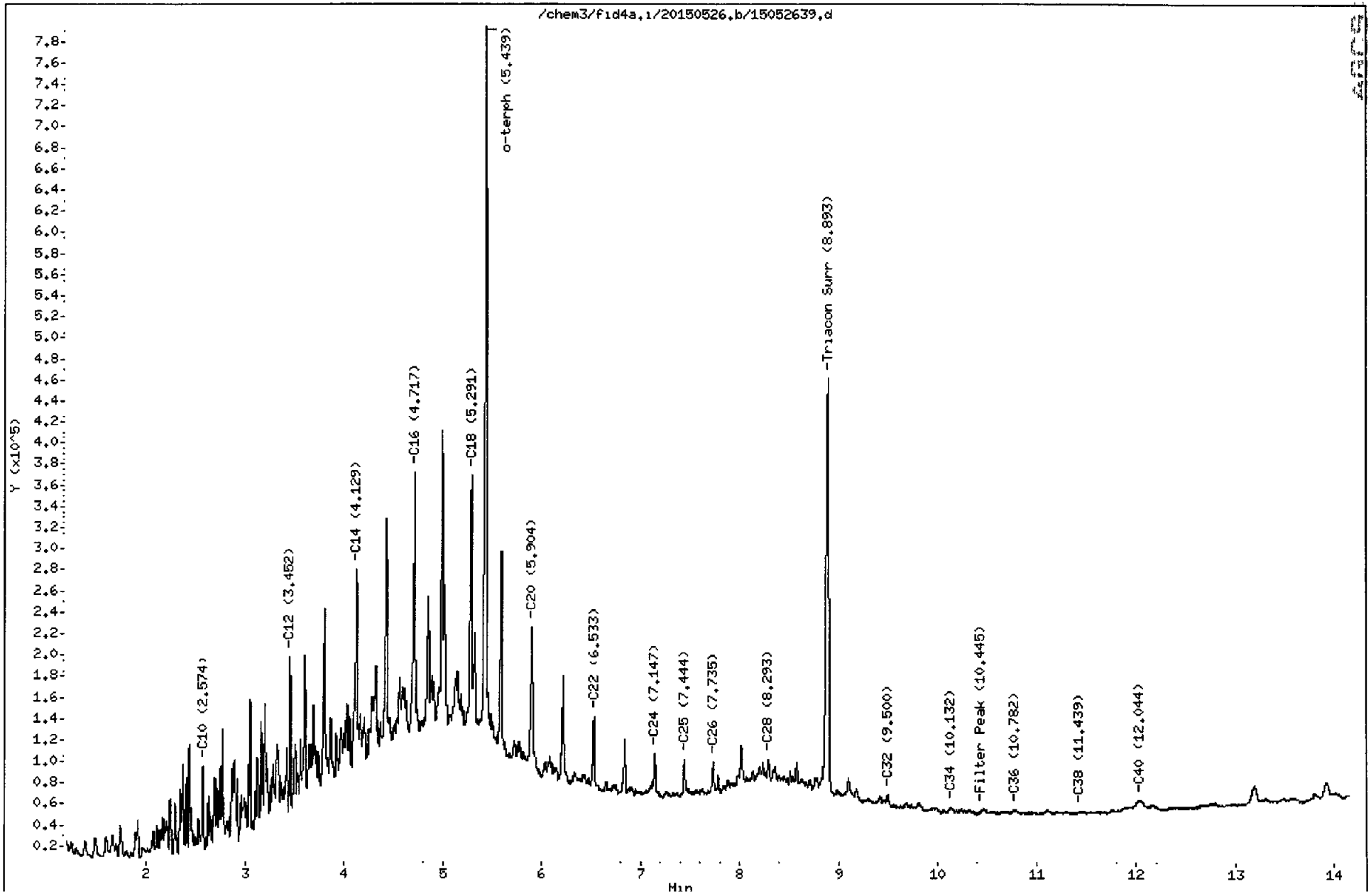
MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: ML Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052639.d
Date : 27-MAY-2015 02:17
Client ID: SDP-04(1.5-3.0) MS
Sample Info: AGC9HMS

Instrument: fid4a.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052640.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9HMSD
Client ID: SDP-04(1.5-3.0) MSD
Injection: 27-MAY-2015 02:40

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.747	0.019	115028	559894	WATPHG	(Tol-C12)	5871583	237.87
C8	0.988	-0.001	93862	218868	WATPHD	(C12-C24)	25300395	1529.56
C10	2.573	0.002	86608	91565	WATPHM	(C24-C38)	13579605	892.10
C12	3.452	0.002	188890	205023	AK102	(C10-C25)	29029100	1476.26
C14	4.129	0.004	274696	649313	AK103	(C25-C36)	11497350	1249.43
C16	4.718	0.008	361090	1077001				
C18	5.291	0.009	375361	787642				
C20	5.905	0.008	236624	813921	JET-A	(C10-C18)	18422795	1003.08
C22	6.532	0.003	136362	550569				
C24	7.147	0.000	106043	335036				
C25	7.445	0.001	99713	355955				
C26	7.734	-0.004	97374	230985				
C28	8.290	-0.005	95301	218727				
C32	9.494	-0.012	58027	194976				
C34	10.129	-0.020	47062	130525				
Filter Peak	10.444	-0.023	43620	79523				
C36	10.820	0.020	39220	60744				
C38	11.450	0.001	40007	29850				
C40	12.074	0.001	43022	73909				
o-terph	5.440	0.007	603477	724127				
Triacon Surr	8.890	-0.008	437355	708043				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	724127	31.4	69.8 M
Triacontane	708043	35.3	78.5 M

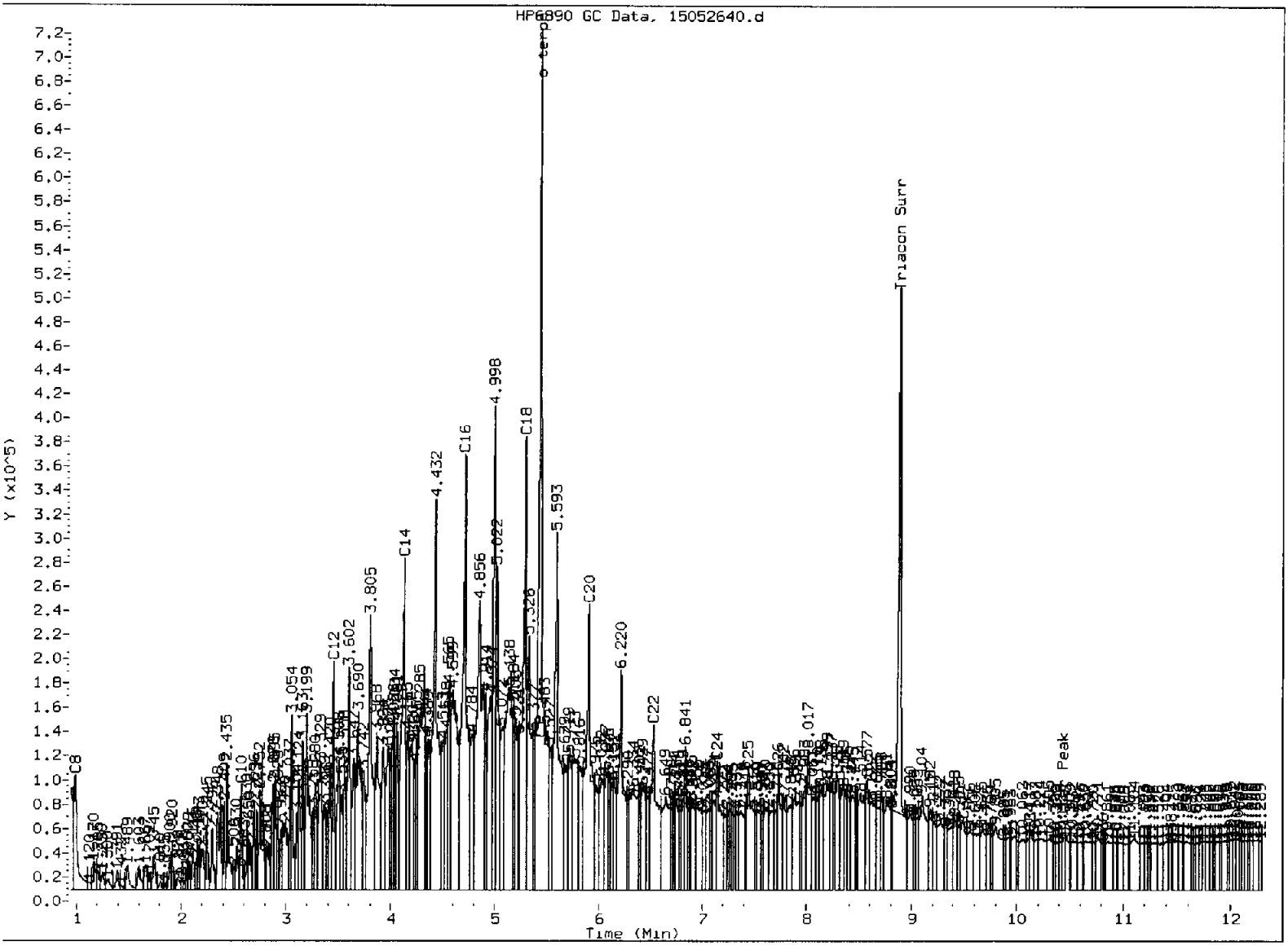
ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9 - 61157

FID:4A-2C/RTX-1 AGC9HMSD FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
(5) Skimmed surrogate

Analyst: MC Date: 5/27/15

AGC9-9155

Data File: /chem3/fid4a.i/20150526.b/15052640.d

Date : 27-MAY-2015 02:40

Client ID: SDP-04(1.5-3.0) MSD

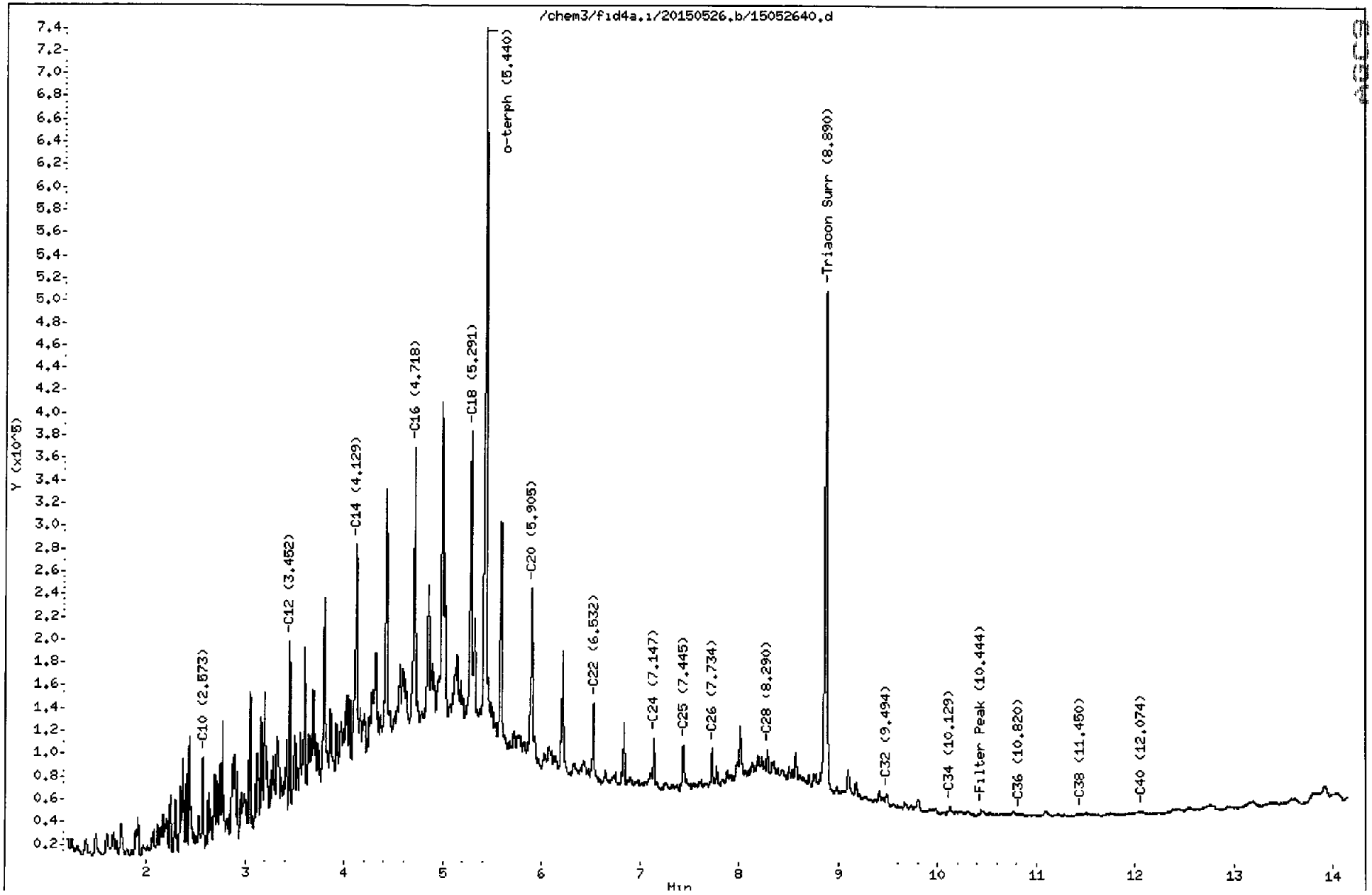
Sample Info: AGC9HMSD

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052641.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: AGC9I
Client ID: SDP-04(10.5-12.0)
Injection: 27-MAY-2015 03:04
Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.732	0.004	106430	1243256	WATPHG	(Tol-C12)	1880708	76.19
C8	0.978	-0.011	67916	183215	WATPHD	(C12-C24)	24446640	1477.94
C10	2.571	0.000	33947	33496	WATPHM	(C24-C38)	57996679	3810.06
C12	3.451	0.001	8257	9942	AK102	(C10-C25)	29452042	1497.76
C14	4.112	-0.013	9635	34911	AK103	(C25-C36)	50074417	5441.64
C16	4.713	0.003	21606	69009				
C18	5.288	0.006	67645	280814				
C20	5.907	0.010	154687	592631	JET-A	(C10-C18)	2042884	111.23
C22	6.522	-0.007	248832	353438				
C24	7.127	-0.019	390745	431930				
C25	7.400	-0.044	434326	1458129				
C26	7.708	-0.029	466121	1425437				
C28	8.296	0.001	439703	1455500				
C32	9.492	-0.014	169579	461792				
C34	10.157	0.008	112721	364909				
Filter Peak	10.472	0.006	97293	251518				
C36	10.788	-0.012	89380	304165				
C38	11.459	0.010	80311	90840				
C40	12.071	-0.002	75821	112013				
o-terph	5.437	0.004	593900	652420				
Triacon Surr	8.908	0.011	287196	394786				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	652420	28.3	62.9 M
Triacontane	394786	~~19.7~~	~~43.8~~ NR

MC 5/27/15

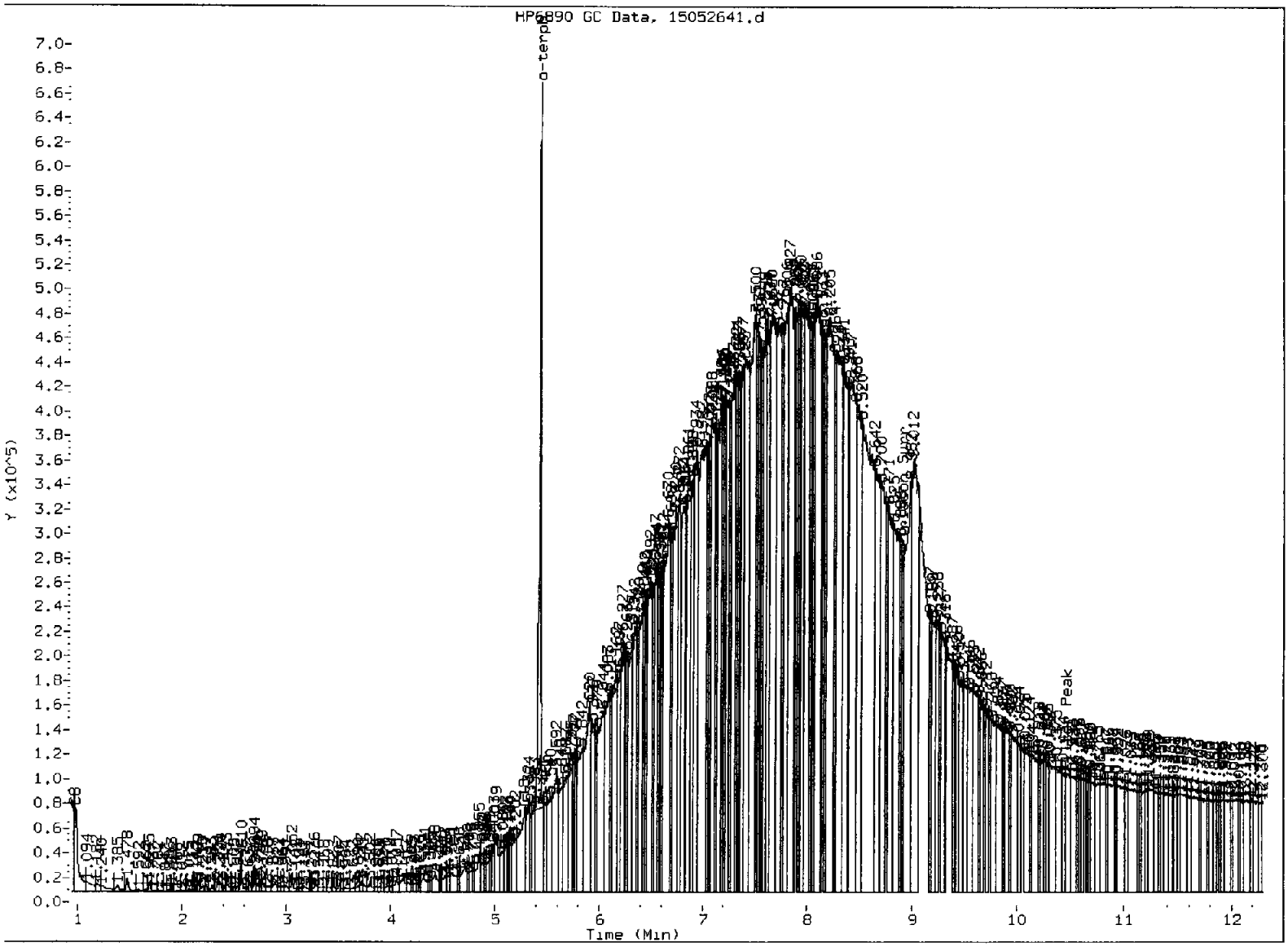
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

AGC9 21150

FID:4A-2C/RTX-1 AGC9I

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

Analyst: MW Date: 5/27/15

AGC9:0151

Data File: /chem3/fid4a.i/20150526.b/15052641.d

Date : 27-MAY-2015 03:04

Client ID: SDP-04(10.5-12.0)

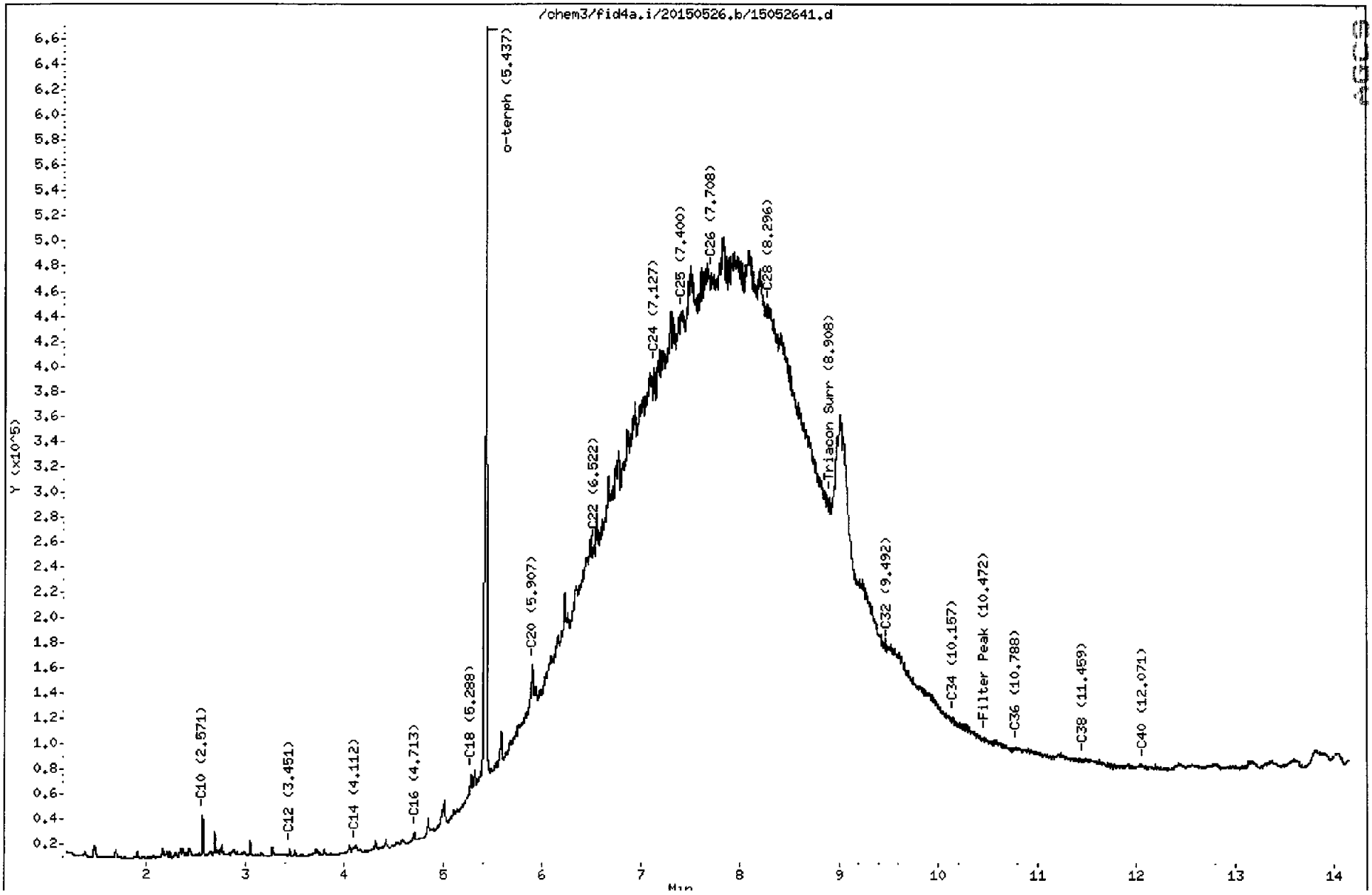
Sample Info: AGC9I

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052642.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: DIESEL#4
Client ID:
Injection: 27-MAY-2015 03:27

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	0.783	0.056	99958	204022	WATPHG	(Tol-C12)	2146440	86.96
C8	0.993	0.003	74827	200793	WATPHD	(C12-C24)	4034577	243.91
C10	2.571	0.000	14570	16719	WATPHM	(C24-C38)	1109559	72.89
C12	3.451	0.001	38381	40698	AK102	(C10-C25)	4707321	239.39
C14	4.126	0.001	57589	130908	AK103	(C25-C36)	671483	72.97
C16	4.713	0.003	82366	205572				
C18	5.286	0.003	80667	147090				
C20	5.902	0.004	36662	115414	JET-A	(C10-C18)	3537090	192.59
C22	6.533	0.004	14418	47997				
C24	7.148	0.001	4865	18363				
C25	7.444	0.000	2788	11543				
C26	7.731	-0.007	1755	4749				
C28	8.288	-0.007	1628	7006				
C32	9.525	0.019	3508	9110				
C34	10.172	0.023	5614	21916				
Filter Peak	10.486	0.019	6621	16279				
C36	10.820	0.020	8688	11174				
C38	11.413	-0.037	12725	11406				
C40	12.062	-0.011	19049	37751				
o-terph	5.438	0.006	951154	1002308				
Triacon Surr	8.861	-0.037	2355	15074				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

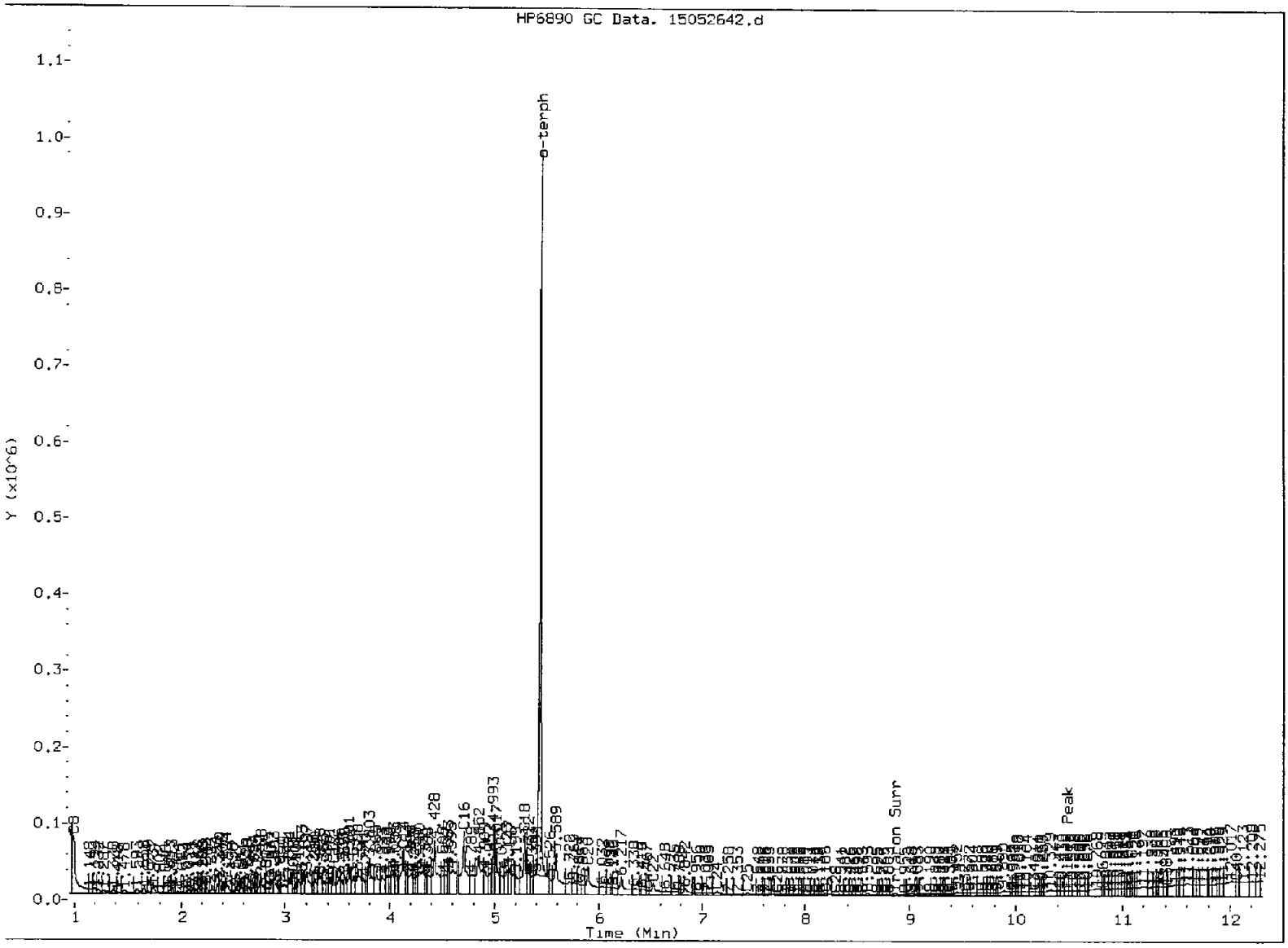
Surrogate	Area	Amount	%Rec
o-Terphenyl	1002308	43.5	96.7 M
Triacontane	15074	0.8	1.7

mc 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 DIESEL#4 FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
Ⓔ Skimmed surrogate

Analyst: MM Date: 5/27/15

Data File: /chem3/fid4a.i/20150526.b/15052642.d

Date : 27-MAY-2015 03:27

Client ID:

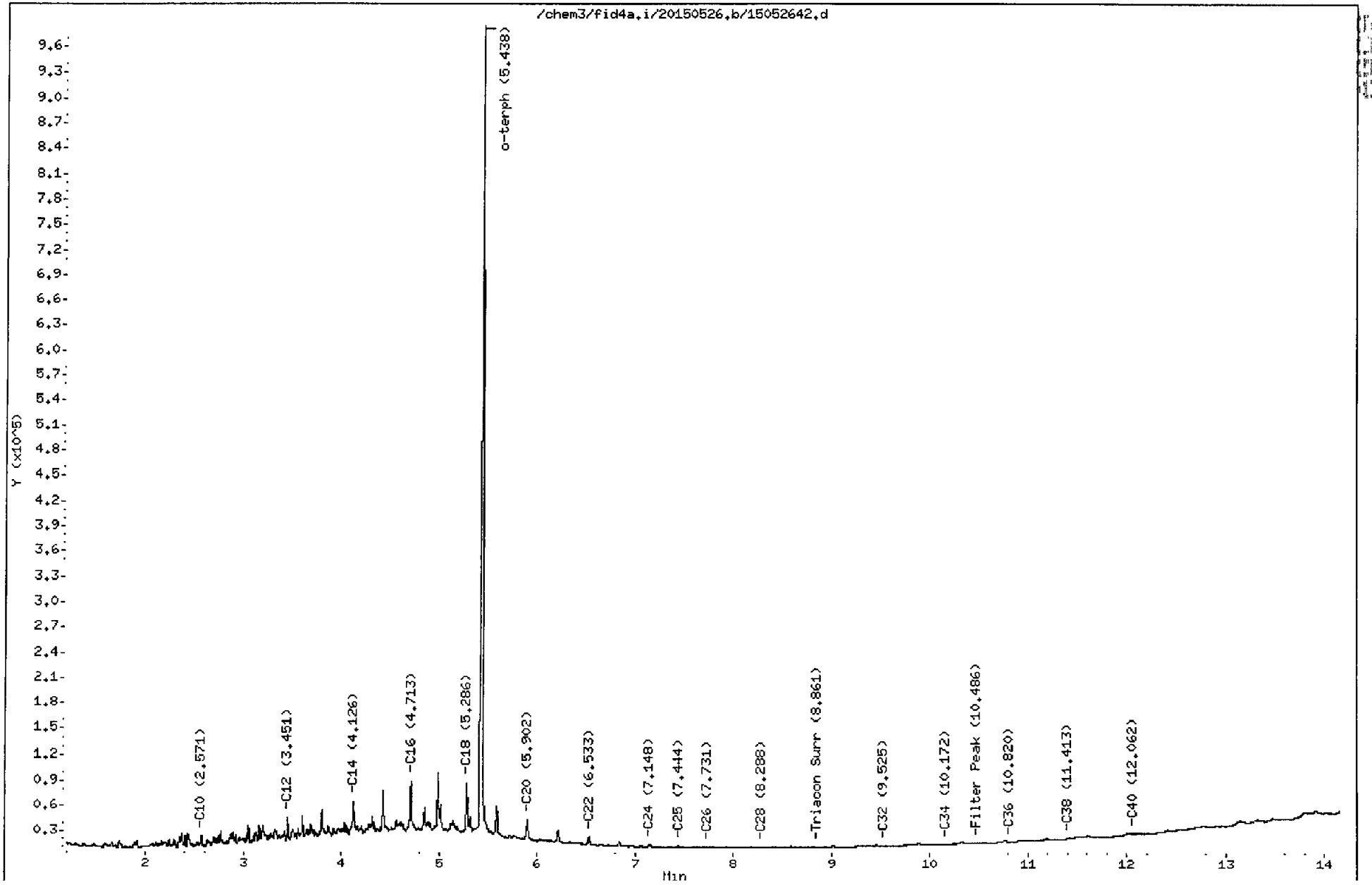
Sample Info: DIESEL#4

Column phase: RTX-1

Instrument: fid4a.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: /chem3/fid4a.i/20150526.b/15052643.d
Method: /chem3/fid4a.i/20150526.b/ftphfid4a.m
Instrument: fid4a.i
Operator: ML
Report Date: 05/27/2015
Macro: 16-MAR-2015
Calibration Dates: Gas:25-FEB-2015 Diesel:16-MAR-2015 M.Oil:16-MAR-2015

ARI ID: MOIL#4
Client ID:
Injection: 27-MAY-2015 03:51

Dilution Factor: 1

FID:4A RESULTS

Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc
Toluene	----				WATPHG	(Tol-C12)	263563	10.68
C8	0.994	0.005	63140	209697	WATPHD	(C12-C24)	646716	39.10
C10	2.603	0.032	525	1404	WATPHM	(C24-C38)	7937306	521.44
C12	3.495	0.045	78	255	AK102	(C10-C25)	923990	46.99
C14	4.113	-0.012	39	41	AK103	(C25-C36)	6528208	709.43
C16	4.723	0.013	249	1141				
C18	5.291	0.008	418	946				
C20	5.888	-0.009	1446	3604	JET-A	(C10-C18)	39368	2.14
C22	6.517	-0.012	5217	8526				
C24	7.146	0.000	19650	25076				
C25	7.438	-0.006	26253	30530				
C26	7.731	-0.006	30151	67158				
C28	8.285	-0.010	33662	69765				
C32	9.471	-0.035	36479	216445				
C34	10.141	-0.008	32622	101840				
Filter Peak	10.464	-0.003	31683	54215				
C36	10.779	-0.021	33881	116676				
C38	11.463	0.014	29651	93648				
C40	12.039	-0.034	34092	223828				
o-terph	5.430	-0.003	1688	4288				
Triacon Surr	8.895	-0.003	390254	861670				

Range Times: NW Diesel(3.450 - 7.147) AK102(2.57 - 7.44) Jet A(2.57 - 5.28)
NW M.Oil(7.15 - 11.45) AK103(7.44 - 10.80) OR Diesel(2.57 - 8.30)

Surrogate	Area	Amount	%Rec
o-Terphenyl	4288	0.2	0.4
Triacontane	861670	43.0	95.5 M

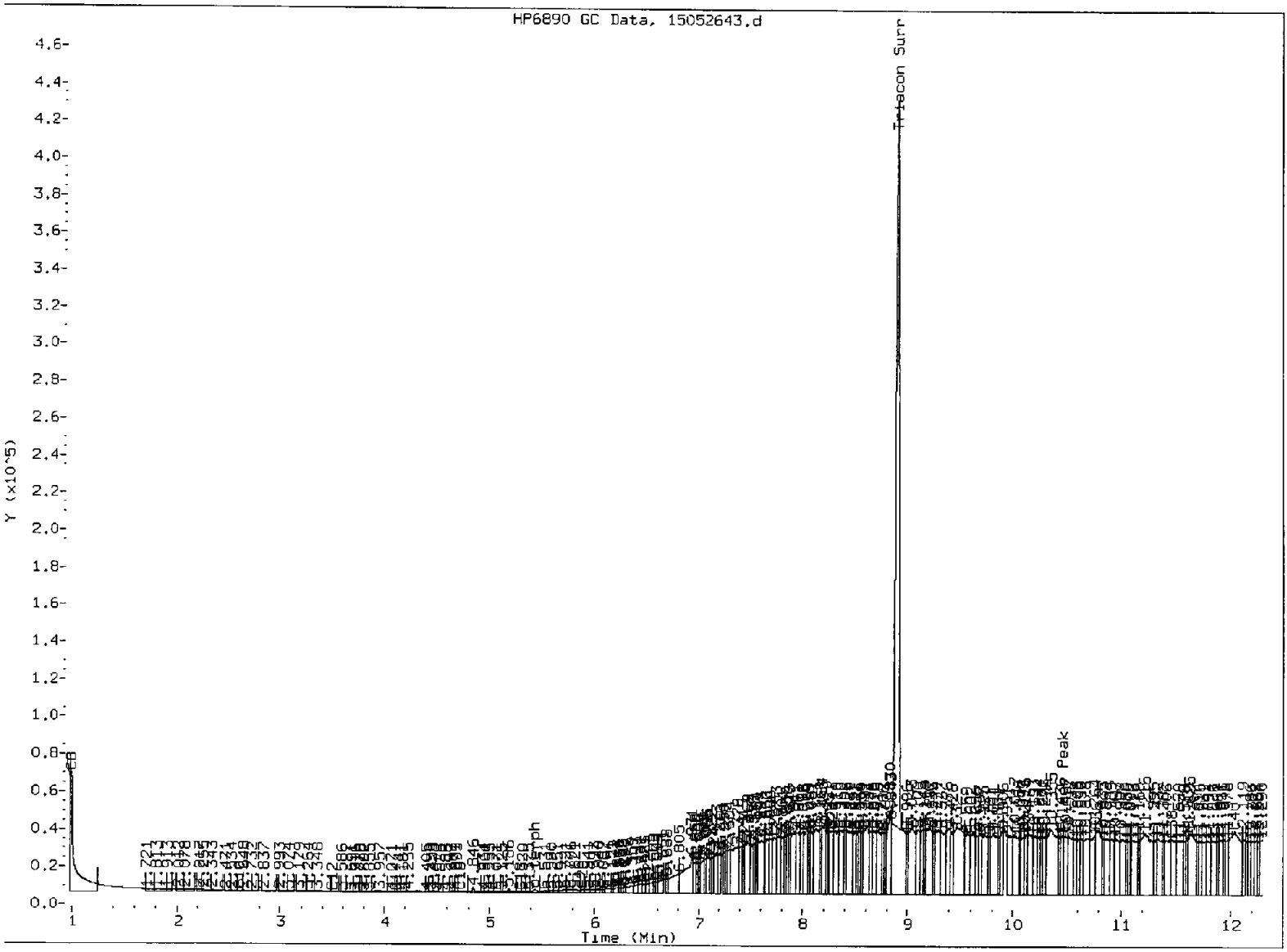
ML 5/27/15

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	23042.5	16-MAR-2015
Triacon Surr	20040.4	16-MAR-2015
Gas	24684.0	25-FEB-2015
Diesel	16541.0	16-MAR-2015
Motor Oil	15222.0	16-MAR-2015
AK102	19664.0	16-MAR-2015
AK103	9202.1	25-SEP-2012
JetA	18366.2	28-APR-2015

FID:4A-2C/RTX-1 MOIL#4

FID:4A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
3. Peak not found
5. Skimmed surrogate

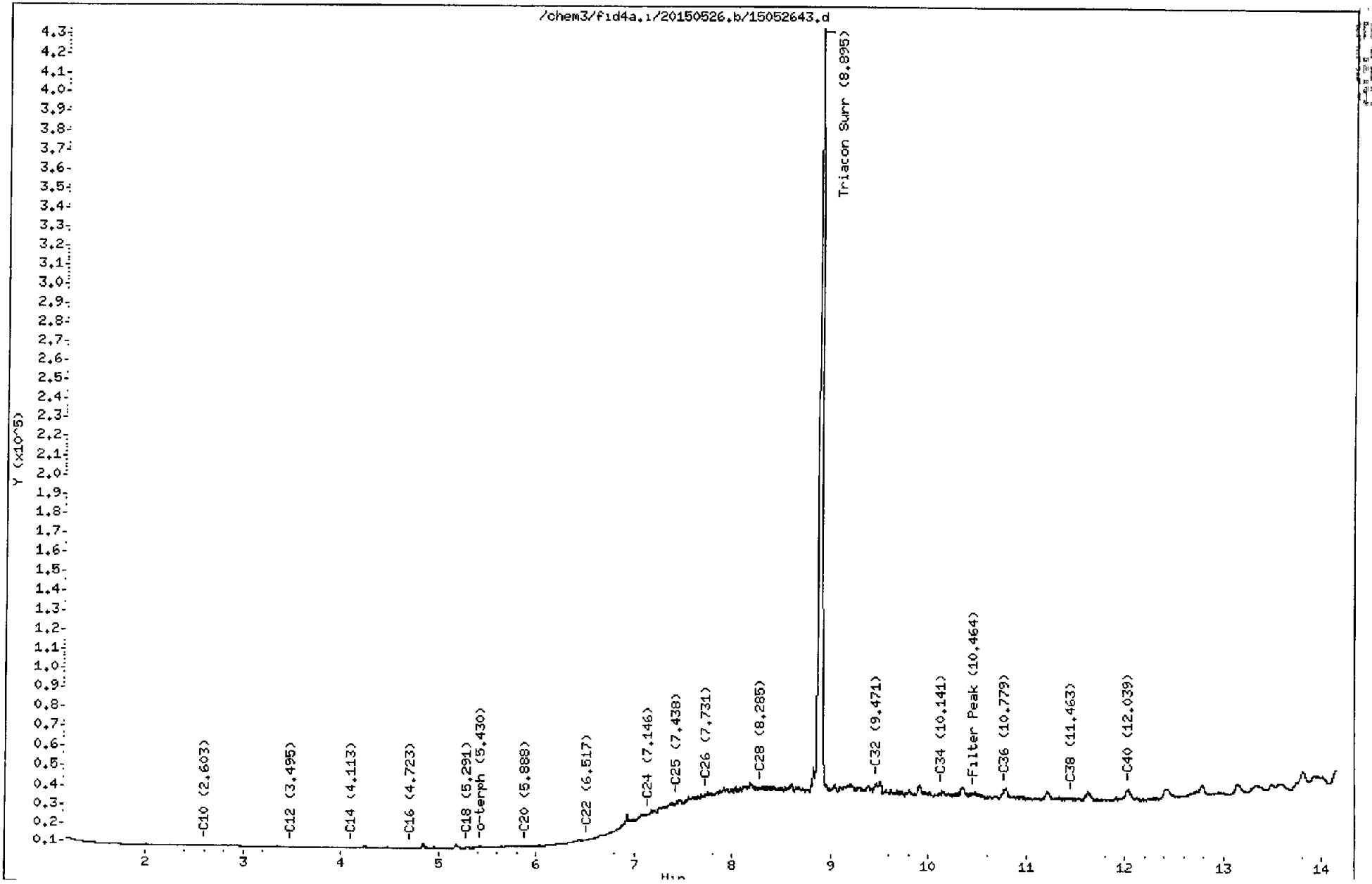
Analyst: _____ Date: _____

Data File: /chem3/fid4a.i/20150526.b/15052643.d
Date : 27-MAY-2015 03:51
Client ID:
Sample Info: MOIL#4

Instrument: fid4a.i

Operator: ML
Column diameter: 0.25

Column phase: RTX-1



Analytical Resources, Incorporated
Analytical Chemists and
Consultants

GC Analyst Notes / Data Review Checklist

ELEMENT/NWA: AG48/AGC9 Client: Kennedy Jenks

METHOD: **8082A**(PCB) **8151A**(Herb) **NW-TPH**(TPH-D) **NW-TPH**(HCID) **8041A**(PCP)
8081B(PEST) **8015B**(Dir Inj) **NW-EPH**(EPH) **8082A**(PBDE) **Other**

Instrument: FID-3A FID-3B FID-4A FID-4B FID-5 FID-7 FID-8
FID-9 ECD-1 ECD-5 ECD-6 ECD-7 ECD-8

Calibration Code: YE00027 Analysis Start Date: 5/21/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
Endrin/DDT B.D. ≤15%?	NA / Y / N / ____	Method Blank in Control?	Y / N / ✓
Retention times within Windows?	Y / N / ✓	BS/BSD Recovery in Control?	Y / N / ✓
ICV/CCV met %D Criteria?	Y / N / ✓	BS/BSD RPD ≤30%?	NA / ____
Surrogate Recovery in Control?	Y / N / ✓	~~MS / MSD Recovery in Control?~~	~~Y / N / ____~~
Internal STD. within 50-200%?	NA / Y / N / ____	~~MS / MSD RPD ≤30%?~~	~~NA / ____~~
Manual Integrations?	Y / N / ✓	Samples Diluted?	Y / N / ____
Integration Summary?	Y / N / ✓	Special Analysis Request?	Y / N / ____

Detail problems, corrective actions and/or other pertinent information below

- samples extracted and batched and reported together.
- samples reported in LIMs and element.
- both samples below RL for diesel/motor oil

(Review 1) Analyst: MC **Date:** 5/22/15

(Review 2) Reviewer: MW **Date:** 5/22

Analytical Resources Inc.: Organics Instrument Log
FID-9 Agilent 6850 - Serial No.: US10404004

Date: 5/21/15 Analysis: TPHD Analyst: SW for ML

Column 1 Serial No.: B000117 Column Type: RTX-1

GC Method: TPH ICal Code: YE000027 Injection Volume: 1uL

IS	Ical/Ccal	ICV
	D000115	
	D000116	
	D000203	
	D000521	

Document All Maintenance Tasks In Element LIMS

	Inject Date/Time	Filename	DF	LabID	ClientID
1	21-MAY-2015 13:59	15052101.d	1	RT	
2	21-MAY-2015 14:21	15052102.d	1	IB	
3	21-MAY-2015 14:42	15052103.d	1	DIESEL#1	
4	21-MAY-2015 15:04	15052104.d	1	MOIL#1	
5	21-MAY-2015 15:25	15052105.d	1	D002204	
6	21-MAY-2015 15:46	15052106.d	1	AGA9MBW1	AGA9MBW1
7	21-MAY-2015 16:08	15052107.d	1	AGA9LCSW1	AGA9LCSW1
8	21-MAY-2015 16:29	15052108.d	1	AGA9LCSDW1	AGA9LCSDW1
9	21-MAY-2015 16:50	15052109.d	1	AGA9QLS	
10	21-MAY-2015 17:12	15052110.d	1	AGA9A	
11	21-MAY-2015 17:33	15052111.d	1	AGA9C	NGW620-051315
12	21-MAY-2015 17:54	15052112.d	1	AGA9D	NGW621-051315
13	21-MAY-2015 18:15	15052113.d	1	AGA9E	NGW623-051315
14	21-MAY-2015 18:36	15052114.d	1	AGA9F	NGW624-051315
15	21-MAY-2015 18:58	15052115.d	1	AGC1A	SDD06A051315GRAB
16	21-MAY-2015 19:19	15052116.d	1	AGA8MBW1	AGA8MBW1
17	21-MAY-2015 19:40	15052117.d	1	AGA8LCSW1	AGA8LCSW1
18	21-MAY-2015 20:01	15052118.d	1	AGA8LCSDW1	AGA8LCSDW1
19	21-MAY-2015 20:22	15052119.d	1	AGA8J	RB-051315
20	21-MAY-2015 20:43	15052120.d	1	AGC9L	RB-051415
21	21-MAY-2015 21:04	15052121.d	1	DIESEL#2	
22	21-MAY-2015 21:26	15052122.d	1	MOIL#2	
23	21-MAY-2015 21:47	15052123.d	1	AGB8MBS1	AGB8MBS1
24	21-MAY-2015 22:08	15052124.d	1	AGB8LCSS1	AGB8LCSS1
25	21-MAY-2015 22:29	15052125.d	1	AGB8QLS	
26	21-MAY-2015 22:49	15052126.d	10	AGB8A	CB263-051415
27	21-MAY-2015 23:10	15052127.d	10	AGB8B	CB108-051415
28	21-MAY-2015 23:31	15052128.d	1	DIESEL#3	
29	21-MAY-2015 23:52	15052129.d	1	MOIL#3	

SD 5/22/15

Every line must contain information or be lined out. Make all entries legible.

Start a new page for each QC period. Document All Maintenance Tasks In Element LIMS

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem2/fid9.i/20150521.b

ARI Job No.: RT Method: ftphfid9a.m Instrument: fid9.i Date: 21-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1359	15052101.d	RT		1	NO MANUAL INTEGRATION
1421	15052102.d	IB	IB	1	NO MANUAL INTEGRATION
1442	15052103.d	DIESEL#1	NBF RI Pha	1	o-terph,
1504	15052104.d	MOIL#1	NBF RI Pha	1	Triacon Surr,
1919	15052116.d	AGA8MBW1	AGA8MBW1	1	NO MANUAL INTEGRATION
1940	15052117.d	AGA8LCSW1	AGA8LCSW1	1	o-terph,
2001	15052118.d	AGA8LCSDW1	AGA8LCSDW1	1	o-terph,
2022	15052119.d	AGA8J	RB-051315	1	NO MANUAL INTEGRATION
2043	15052120.d	AGC9L	RB-051415	1	NO MANUAL INTEGRATION
2104	15052121.d	DIESEL#2	Bills Mobi	1	o-terph,
2126	15052122.d	MOIL#2	Bills Mobi	1	Triacon Surr,

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052101.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: RT
Client ID:
Injection: 21-MAY-2015 13:59
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	1.075	0.000	153933	164958	GAS (Tol-C12)	1683160	67.92
C8	1.265	0.000	221886	427747	DIESEL (C12-C24)	2531291	145.38
C10	2.973	0.000	242	65	M.OIL (C24-C38)	3017985	211.49
C12	3.967	0.000	194733	199979	AK-102 (C10-C25)	3297633	164.33
C14	4.653	0.000	199819	215779	AK-103 (C25-C36)	2531117	162.25
C16	5.242	0.000	265940	296655	OR.DIES (C10-C28)	4453267	219.87
C18	5.807	0.000	425725	304352			
C20	6.374	0.000	279543	298172			
C22	6.928	0.000	254895	289238			
C24	7.454	0.000	374562	358633			
C25	7.706	0.000	359997	353483			
C26	7.947	0.000	296095	360658			
C28	8.399	0.000	308848	371076	IT.DIES (C10-C24)	3269418	163.57
C32	9.181	0.000	387283	382911			
C34	9.526	0.000	427805	407950			
Filter Peak	9.652	0.000	1790	2578			
C36	9.848	0.000	509686	447022			
C38	10.149	0.000	482636	420838			
C40	10.442	0.000	327198	396544			
o-terph	5.962	0.000	1103190	964062	JET-A (C10-C18)	2008685	122.12
Triacon Surr	8.816	0.000	925141	851792			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	964062	43.9	97.6
Triacontane	851792	52.4	116.5

JW 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9,1/20150521,b/15052101.d

Date : 21-MAY-2015 13:59

Client ID:

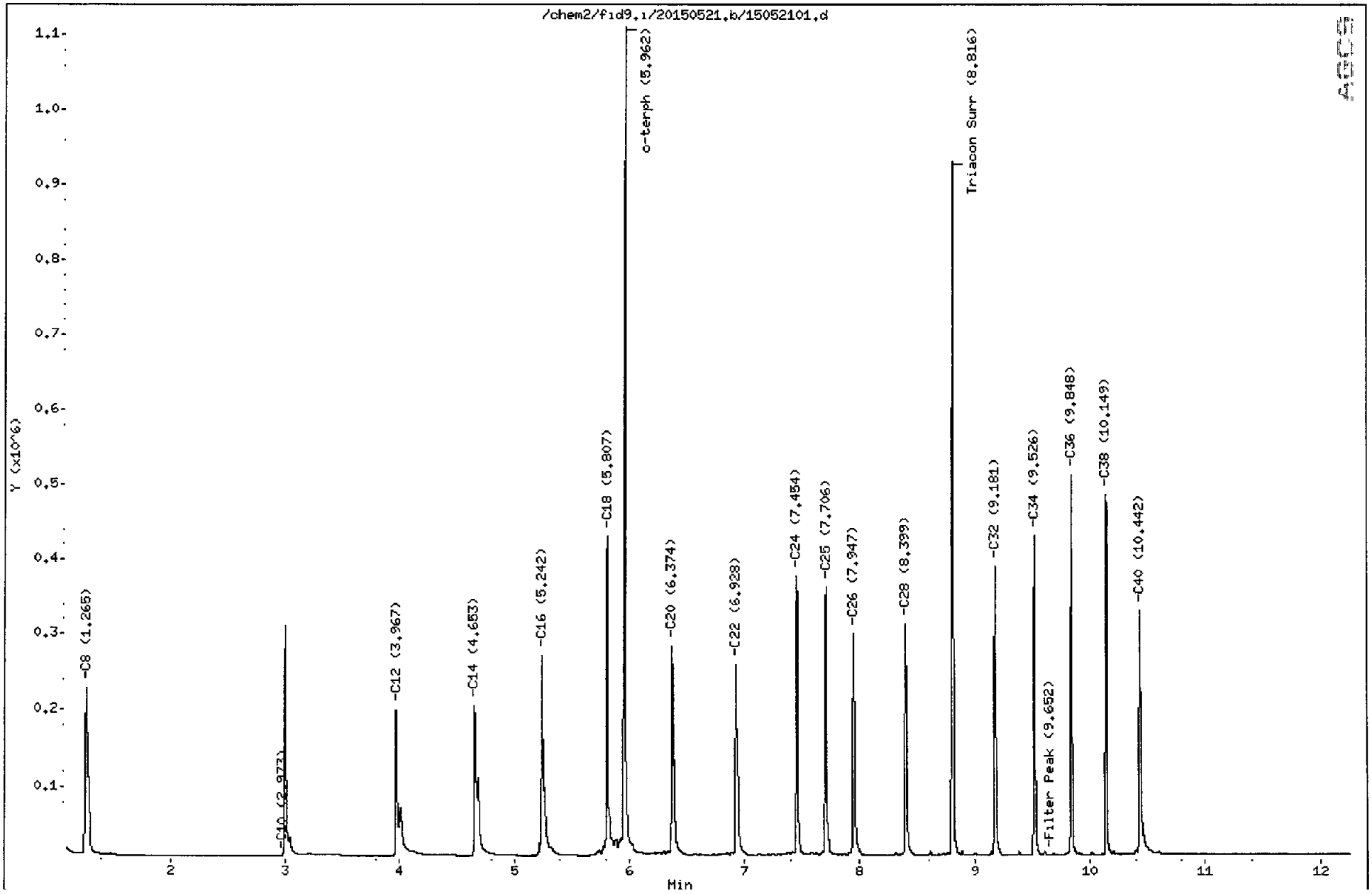
Sample Info: RT

Column phase: RTX-1

Instrument: fid9,1

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052102.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: IB
Client ID:
Injection: 21-MAY-2015 14:21
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	30197	1
C8	1.246	-0.018	1276	983	DIESEL (C12-C24)	115123	6.61
C10	2.968	-0.004	168	90	M.OIL (C24-C38)	207792	14.56
C12	3.970	0.004	58	28	AK-102 (C10-C25)	123062	6.13
C14	4.656	0.004	28	8	AK-103 (C25-C36)	176984	11.35
C16	5.245	0.004	43	8	OR.DIES (C10-C28)	131113	6.47
C18	5.805	-0.002	122	94			
C20	6.375	0.002	953	793			
C22	6.929	0.002	156	70			
C24	7.455	0.001	57	8			
C25	7.704	-0.002	80	67			
C26	7.947	0.000	123	74			
C28	8.393	-0.006	255	120	IT.DIES (C10-C24)	122131	6.11
C32	9.188	0.008	1560	1592			
C34	9.520	-0.005	1116	898			
Filter Peak	9.655	0.004	1125	709			
C36	9.863	0.015	1312	698			
C38	10.144	-0.004	1770	918			
C40	10.438	-0.004	2307	1374			
o-terph	5.963	0.001	1146597	984184	JET-A (C10-C18)	13503	0.82
Triacon Surr	8.818	0.002	740217	748141			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	984184	44.8	99.6
Triacontane	748141	46.0	102.3

BV
5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052102.d

Date : 21-MAY-2015 14:21

Client ID:

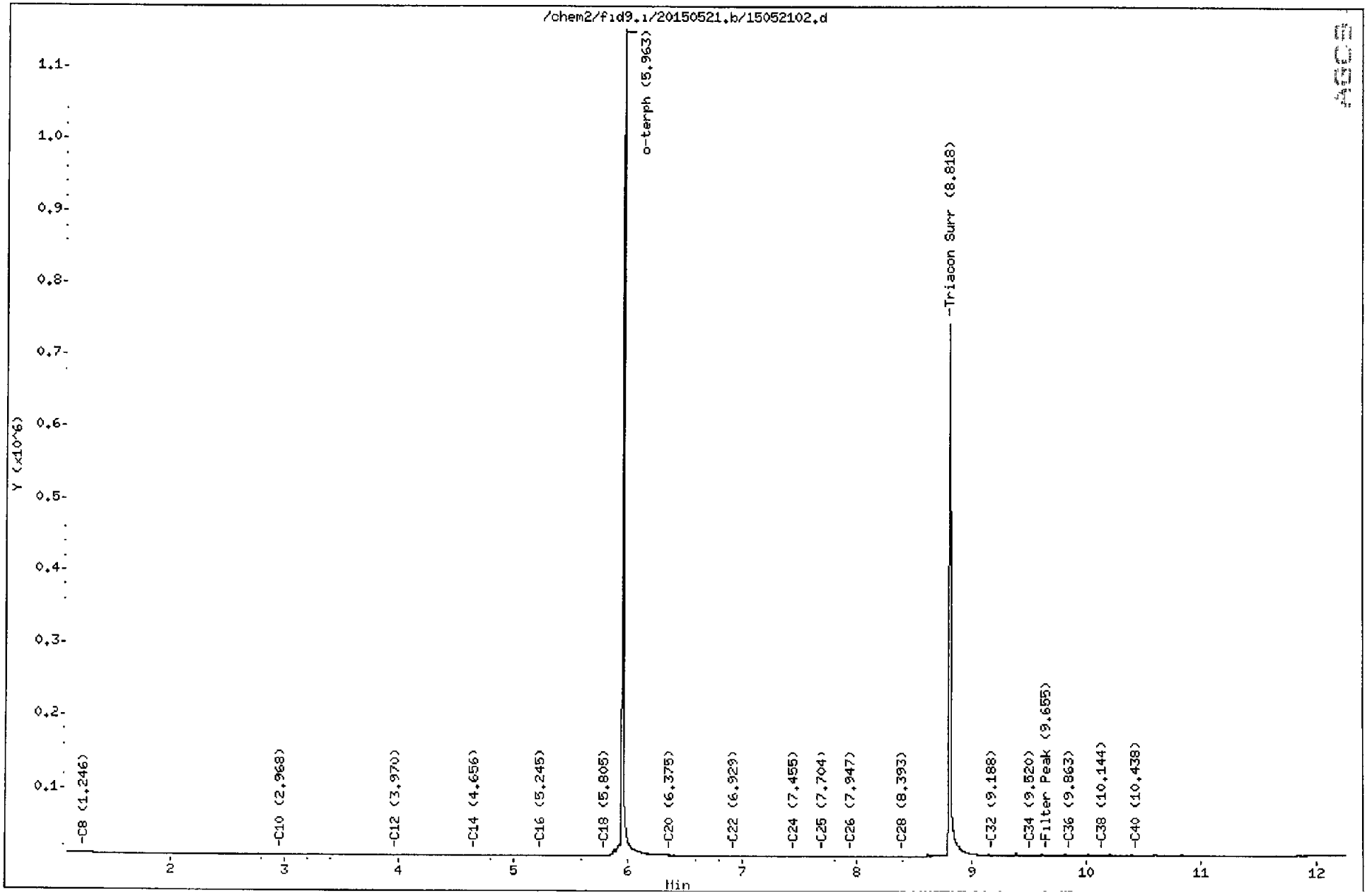
Sample Info: IB

Column phase: RTX-1

Instrument: fid9.i

Operator: ML

Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052103.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: DIESEL#1
Client ID:
Injection: 21-MAY-2015 14:42
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.086	0.011	4014	6975	GAS (Tol-C12)	900581	36.34	
C8	1.261	-0.003	4070	6684	DIESEL (C12-C24)	4190600	240.67	
C10	2.981	0.008	3871	1311	M.OIL (C24-C38)	154780	10.85	
C12	3.969	0.002	21304	36304	AK-102 (C10-C25)	4840525	241.22	M
C14	4.653	0.000	44169	85379	AK-103 (C25-C36)	109927	7.05	
C16	5.240	-0.001	71296	87982	OR.DIES (C10-C28)	4880201	240.95	M
C18	5.803	-0.005	90487	109646				
C20	6.375	0.002	28599	40269				
C22	6.923	-0.004	6361	2006				
C24	7.451	-0.003	2620	1275				
C25	7.705	0.000	1595	1402				
C26	7.950	0.003	977	705				
C28	8.394	-0.005	240	154	IT.DIES (C10-C24)	4820061	241.15	M
C32	9.184	0.004	98	42				
C34	9.527	0.001	218	103				
Filter Peak	9.657	0.005	342	170				
C36	9.857	0.009	564	198				
C38	10.151	0.003	1001	573				
C40	10.442	0.000	1504	1074				
o-terph	5.963	0.000	1186809	956256	JET-A (C10-C18)	3636354	221.08	
Triacon Surr	8.802	-0.013	37	16				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

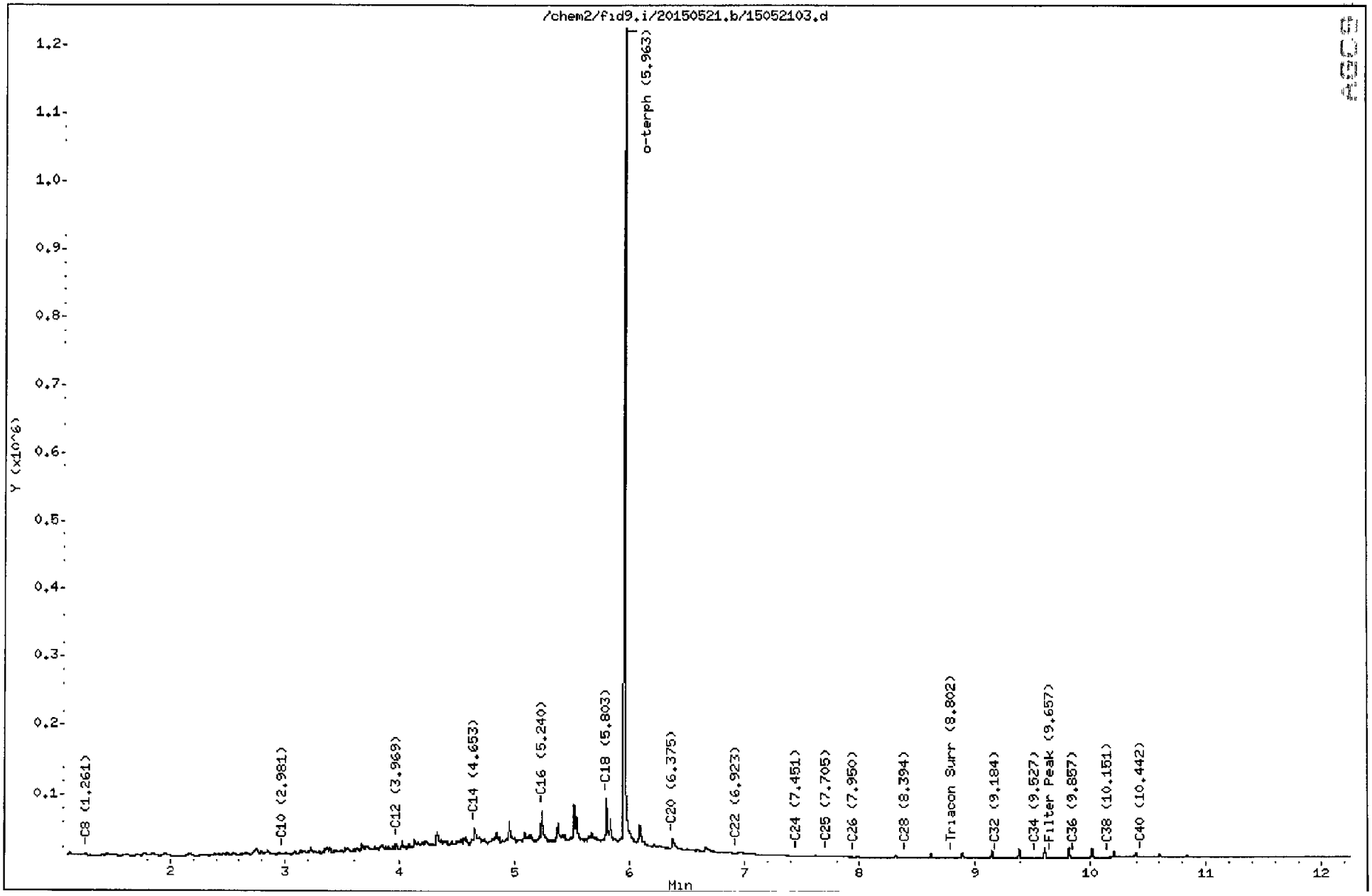
Surrogate	Area	Amount	%Rec
o-Terphenyl	956256	43.6	96.8
Triacontane	16	0.0	0.0

BJ 5/22/15

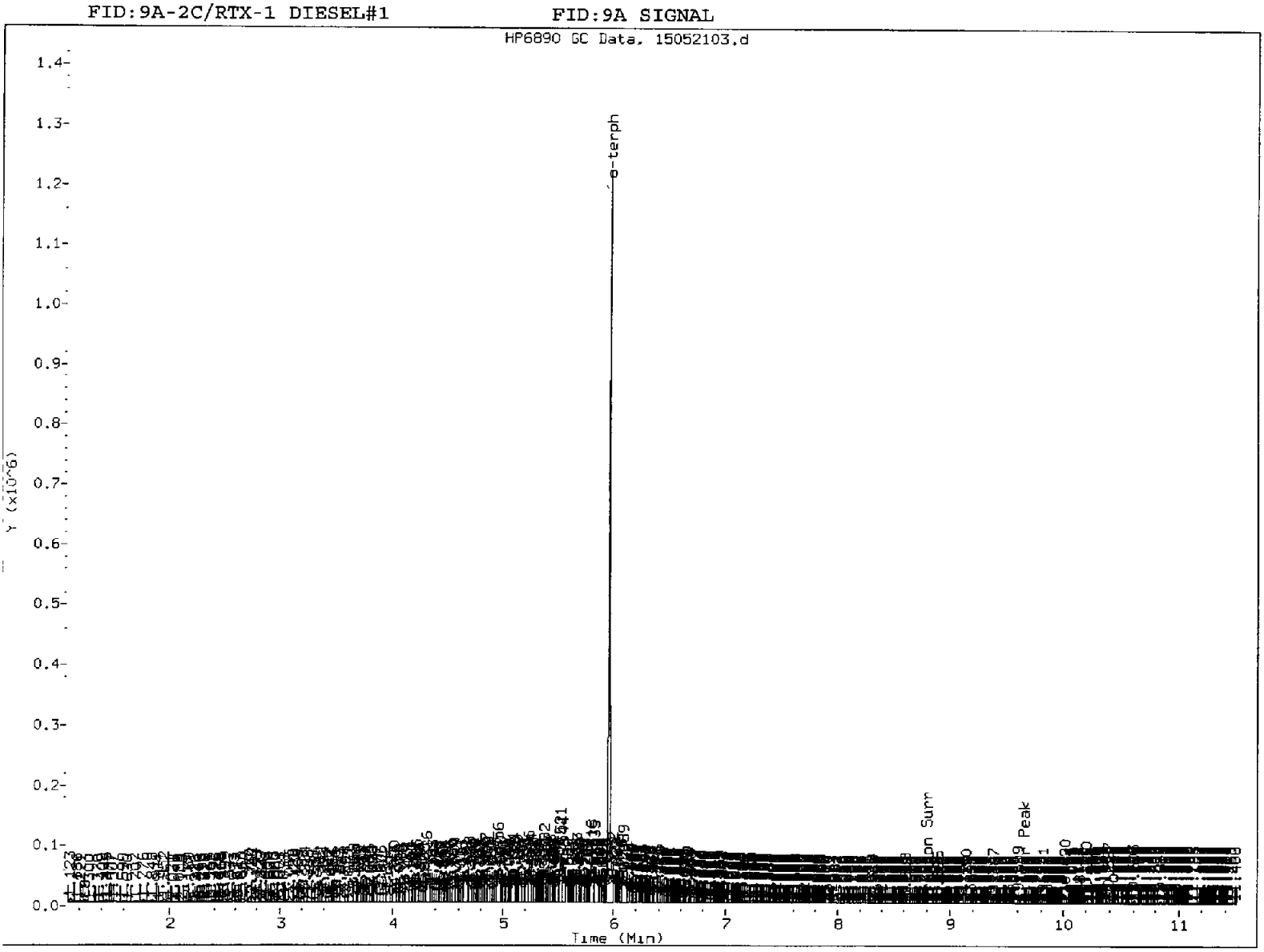
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052103.d
Date : 21-MAY-2015 14:42
Client ID:
Sample Info: DIESEL#1

Instrument: fid9.i
Operator: ML
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 DIESEL#1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: BD Date: 5/22/15

ACCUTEST

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052104.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: MOIL#1
Client ID:
Injection: 21-MAY-2015 15:04
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.157	0.083	1684	1427	GAS (Tol-C12)	30901	1.25	
C8	1.246	-0.018	1169	2032	DIESEL (C12-C24)	717853	41.23	
C10	2.971	-0.001	122	75	M.OIL (C24-C38)	7186887	503.64	
C12	3.964	-0.003	36	14	AK-102 (C10-C25)	962551	47.97	
C14	4.650	-0.003	123	82	AK-103 (C25-C36)	6081700	389.85	M
C16	5.235	-0.007	239	256	OR.DIES (C10-C28)	2651565	130.92	
C18	5.804	-0.003	477	287				
C20	6.370	-0.004	1732	1274				
C22	6.927	0.000	6945	2989				
C24	7.449	-0.004	24575	27855				
C25	7.712	0.006	31725	8733				
C26	7.950	0.003	35428	18545				
C28	8.396	-0.003	42586	20226	IT.DIES (C10-C24)	723282	36.19	
C32	9.176	-0.005	62111	58199				
C34	9.531	0.005	56781	16638				
Filter Peak	9.652	0.001	56801	19755				
C36	9.848	0.000	53826	57011				
C38	10.151	0.003	47320	13845				
C40	10.441	0.000	35070	9626				
o-terph	5.965	0.003	721	597	JET-A (C10-C18)	30290	1.84	
Triacon Surr	8.820	0.004	872755	764127				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	597	0.0	0.1
Triacontane	764127	47.0	104.5

RW 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

ADCS-8175

Data File: /chem2/fid9.i/20150521.b/15052104.d

Date : 21-MAY-2015 15:04

Client ID:

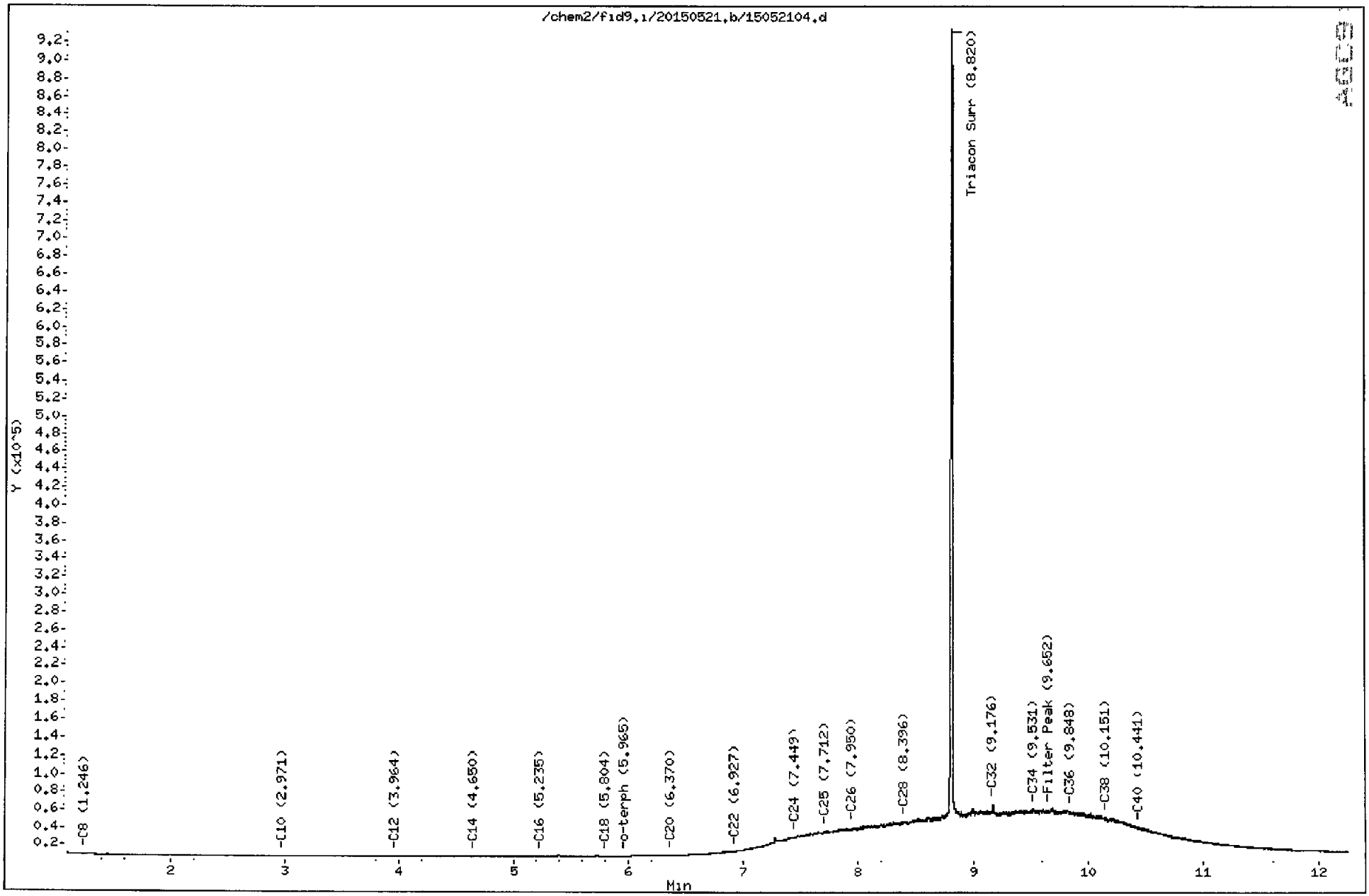
Sample Info: MOIL#1

Column phase: RTX-1

Instrument: fid9.i

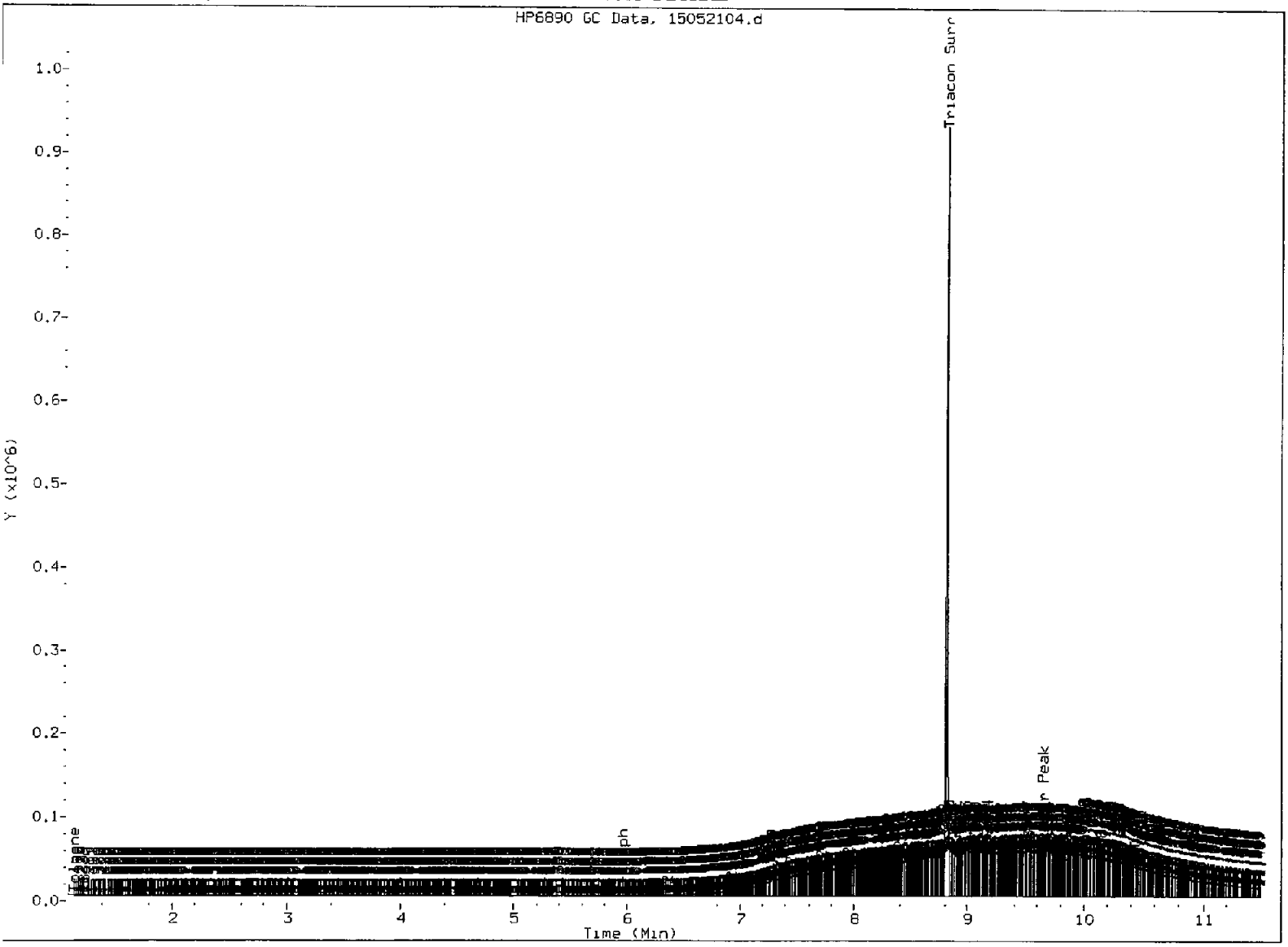
Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 MOIL#1

FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JW Date: 5/12/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052116.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8MBW1
Client ID: AGA8MBW1
Injection: 21-MAY-2015 19:19
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc
Toluene	----				GAS (Tol-C12)	40357	2
C8	1.270	0.005	1212	866	DIESEL (C12-C24)	120689	6.93
C10	2.985	0.012	281	438	M.OIL (C24-C38)	210188	14.73
C12	3.966	0.000	41	15	AK-102 (C10-C25)	129365	6.45
C14	4.654	0.001	25	2	AK-103 (C25-C36)	175275	11.24
C16	5.244	0.002	62	14	OR.DIES (C10-C28)	144289	7.12
C18	5.818	0.011	146	50			
C20	6.370	-0.004	877	1017			
C22	6.931	0.003	223	132			
C24	7.454	0.000	181	72			
C25	7.705	-0.001	183	59			
C26	7.945	-0.002	240	164			
C28	8.393	-0.007	475	216	IT.DIES (C10-C24)	127698	6.39
C32	9.182	0.001	1495	884			
C34	9.520	-0.006	1269	707			
Filter Peak	9.653	0.001	1362	324			
C36	9.849	0.001	1608	700			
C38	10.148	-0.001	2120	590			
C40	10.441	-0.001	2684	910			
o-terph	5.961	-0.002	1043879	860712	JET-A (C10-C18)	13277	0.81
Triacon Surr	8.814	-0.002	664755	650493			

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	860712	39.2	87.1
Triacontane	650493	40.0	89.0

JC 5/22/15

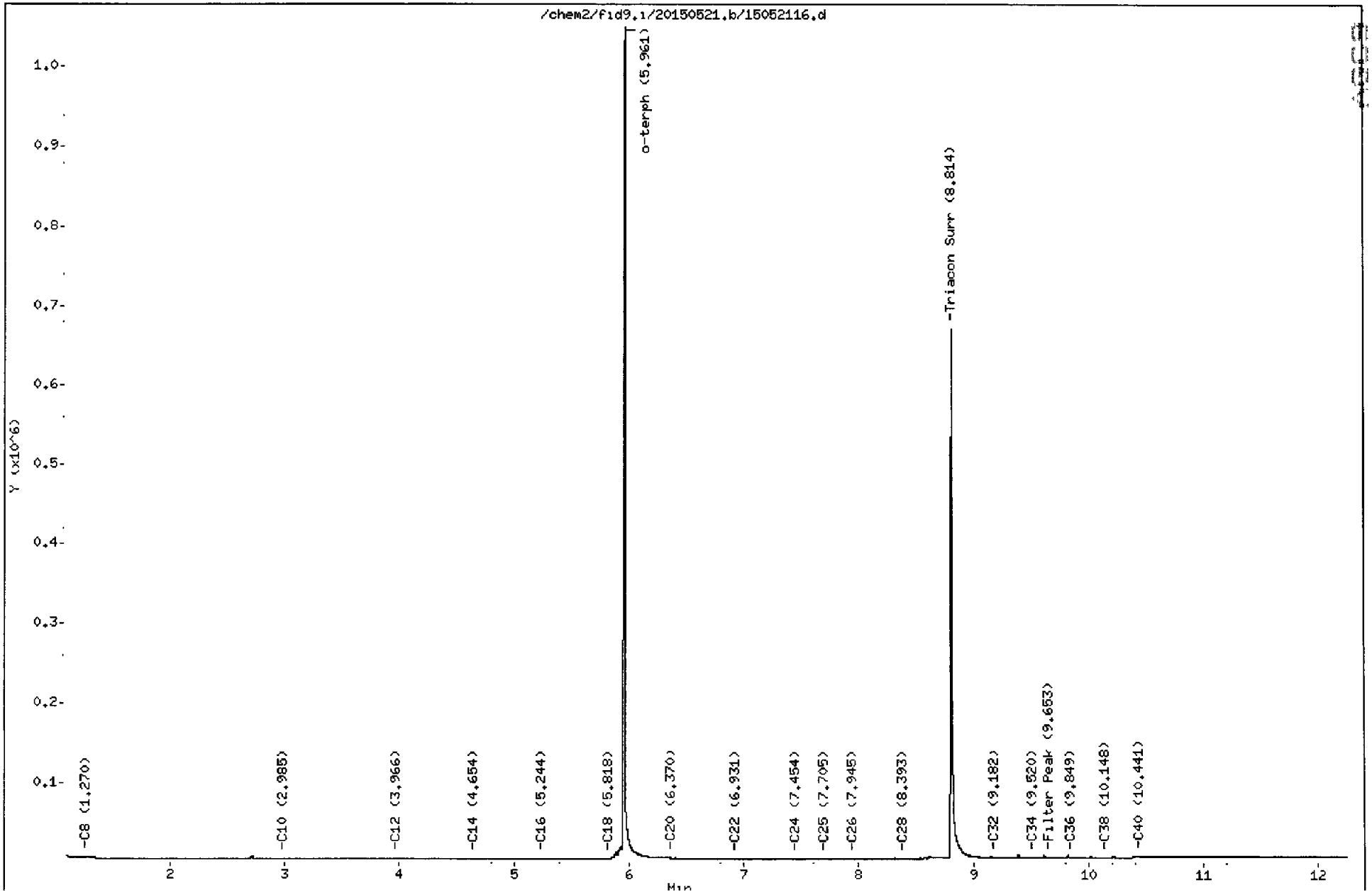
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGS-0182

Data File: /chem2/fid9.i/20150521.b/15052116.d
Date : 21-MAY-2015 19:19
Client ID: AGA8MBW1
Sample Info: AGA8MBW1

Instrument: fid9.i

Operator: ML
Column phase: RTX-1
Column diameter: 0.25



Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052117.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8LCSW1
Client ID: AGA8LCSW1
Injection: 21-MAY-2015 19:40
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.081	0.006	6199	11022	GAS (Tol-C12)	4018028	162.13	
C8	1.268	0.003	6920	14455	DIESEL (C12-C24)	24008637	1378.86	
C10	2.974	0.001	13783	3018	M.OIL (C24-C38)	423784	29.70	
C12	3.964	-0.003	161563	201725	AK-102 (C10-C25)	27137986	1352.37	M
C14	4.653	0.000	352556	434943	AK-103 (C25-C36)	315083	20.20	
C16	5.244	0.002	572649	672548	OR.DIES (C10-C28)	27314666	1348.61	M
C18	5.811	0.003	569515	654335				
C20	6.375	0.001	312514	372982				
C22	6.926	-0.001	114654	171405				
C24	7.456	0.002	29299	45462				
C25	7.714	0.009	12590	26773				
C26	7.943	-0.004	3774	1690				
C28	8.412	0.013	2398	3780	IT.DIES (C10-C24)	27048636	1353.24	M
C32	9.180	-0.001	278	142				
C34	9.526	0.000	18	3				
Filter Peak	9.646	-0.006	106	63				
C36	9.851	0.002	257	152				
C38	10.150	0.001	715	267				
C40	10.444	0.002	1240	880				
o-terph	5.966	0.004	1059109	839263	JET-A (C10-C18)	20393950	1239.90	
Triacon Surr	8.816	0.000	707885	683637				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	839263	38.2	85.0
Triacontane	683637	42.1	93.5

JLV 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGC9 . 0116

Data File: /chem2/fid9.i/20150521.b/15052117.d

Date : 21-MAY-2015 19:40

Client ID: AGA8LCSW1

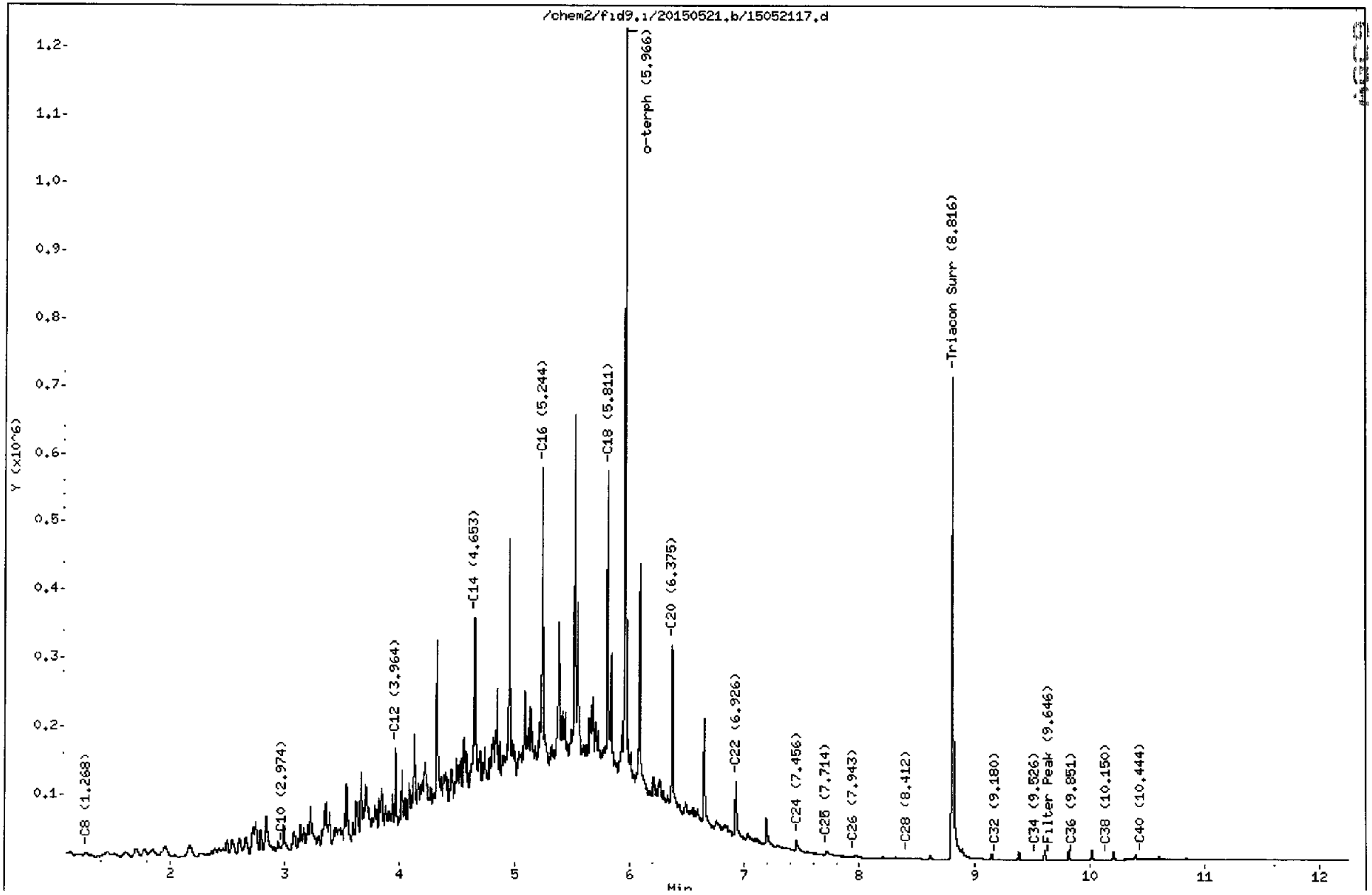
Sample Info: AGA8LCSW1

Column phase: RTX-1

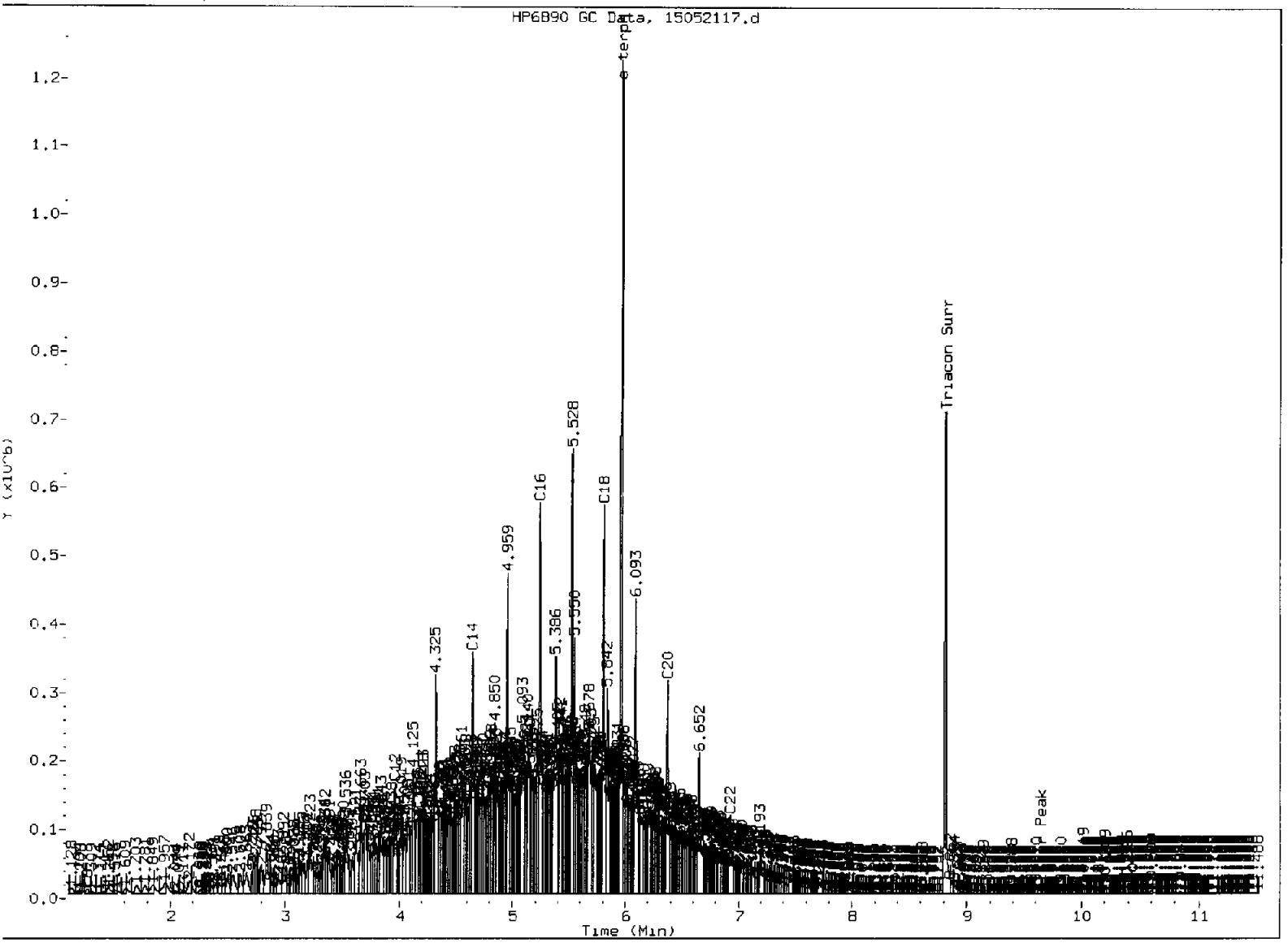
Instrument: fid9.i

Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 AGA8LCSW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: _____ Date: 5/22/15

AECS 9128

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052118.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: AGA8LCSDW1
Client ID: AGA8LCSDW1
Injection: 21-MAY-2015 20:01
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.073	-0.002	6860	10876	GAS (Tol-C12)	4112693	165.95	
C8	1.268	0.004	6554	14985	DIESEL (C12-C24)	23588791	1354.74	-
C10	2.995	0.023	48259	70946	M.OIL (C24-C38)	350761	24.58	-
C12	3.965	-0.001	162165	198091	AK-102 (C10-C25)	26696126	1330.35	M
C14	4.653	0.000	350731	461041	AK-103 (C25-C36)	269246	17.26	
C16	5.245	0.003	567409	502292	OR.DIES (C10-C28)	26870309	1326.67	M
C18	5.811	0.004	574628	641893				
C20	6.375	0.002	298100	376623				
C22	6.927	0.000	115200	176027				
C24	7.458	0.005	27921	66372				
C25	7.698	-0.007	7476	2470				
C26	7.927	-0.020	3964	4592				
C28	8.398	-0.001	1187	436	IT.DIES (C10-C24)	26624854	1332.04	M
C32	9.186	0.006	247	181				
C34	9.529	0.004	37	10				
Filter Peak	9.650	-0.001	88	24				
C36	9.845	-0.003	285	59				
C38	10.149	0.001	756	367				
C40	10.439	-0.003	1198	522				
o-terph	5.968	0.006	1077747	828598	JET-A (C10-C18)	19892167	1209.40	
Triacon Surr	8.815	-0.001	700053	656381				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	828598	37.7	83.9
Triacontane	656381	40.4	89.8

SV 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

AGA8 - 81157

Data File: /chem2/fid9.i/20150521.b/15052118.d

Date : 21-MAY-2015 20:01

Client ID: AGA8LCSDW1

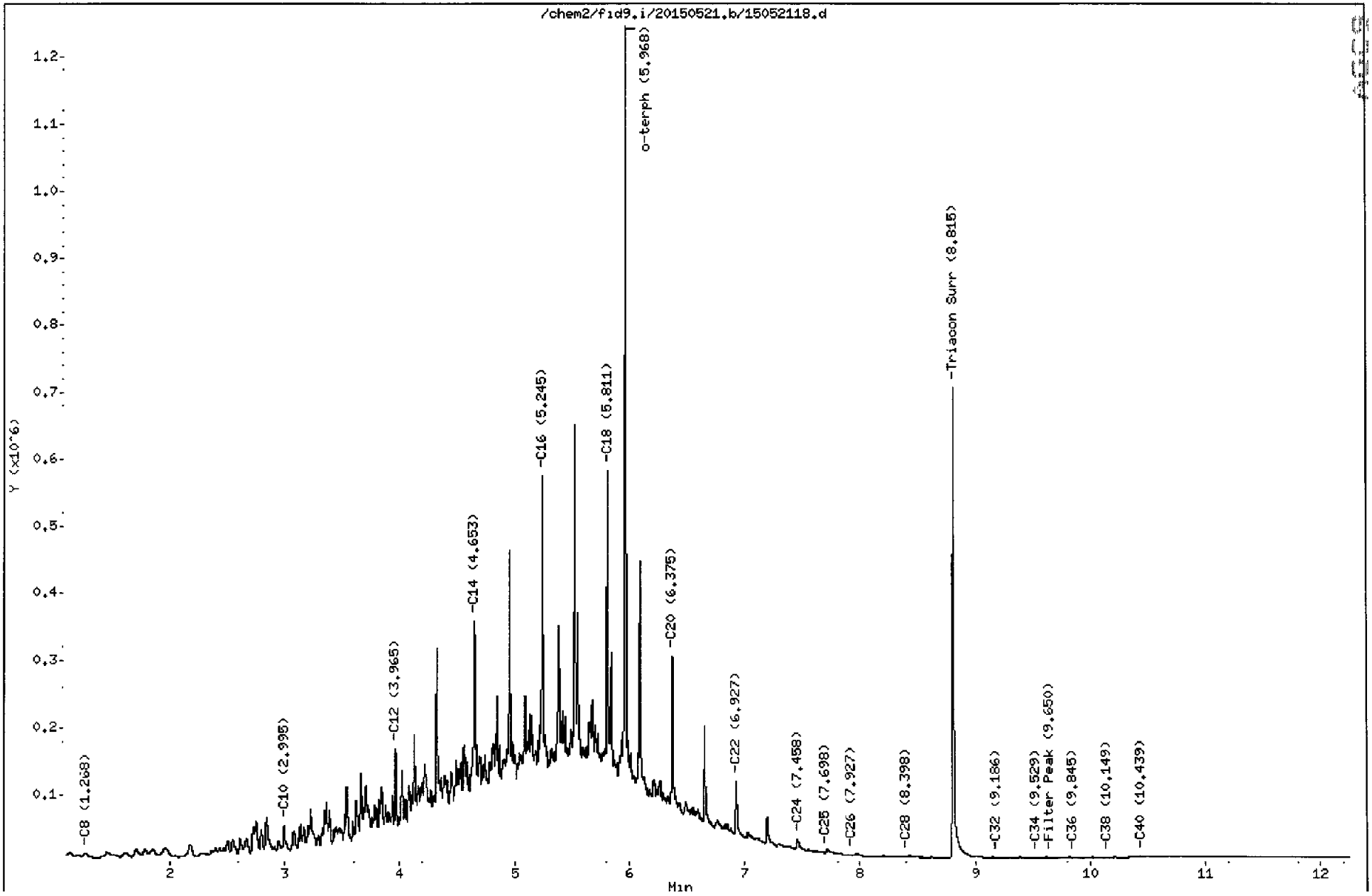
Sample Info: AGA8LCSDW1

Column phase: RTX-1

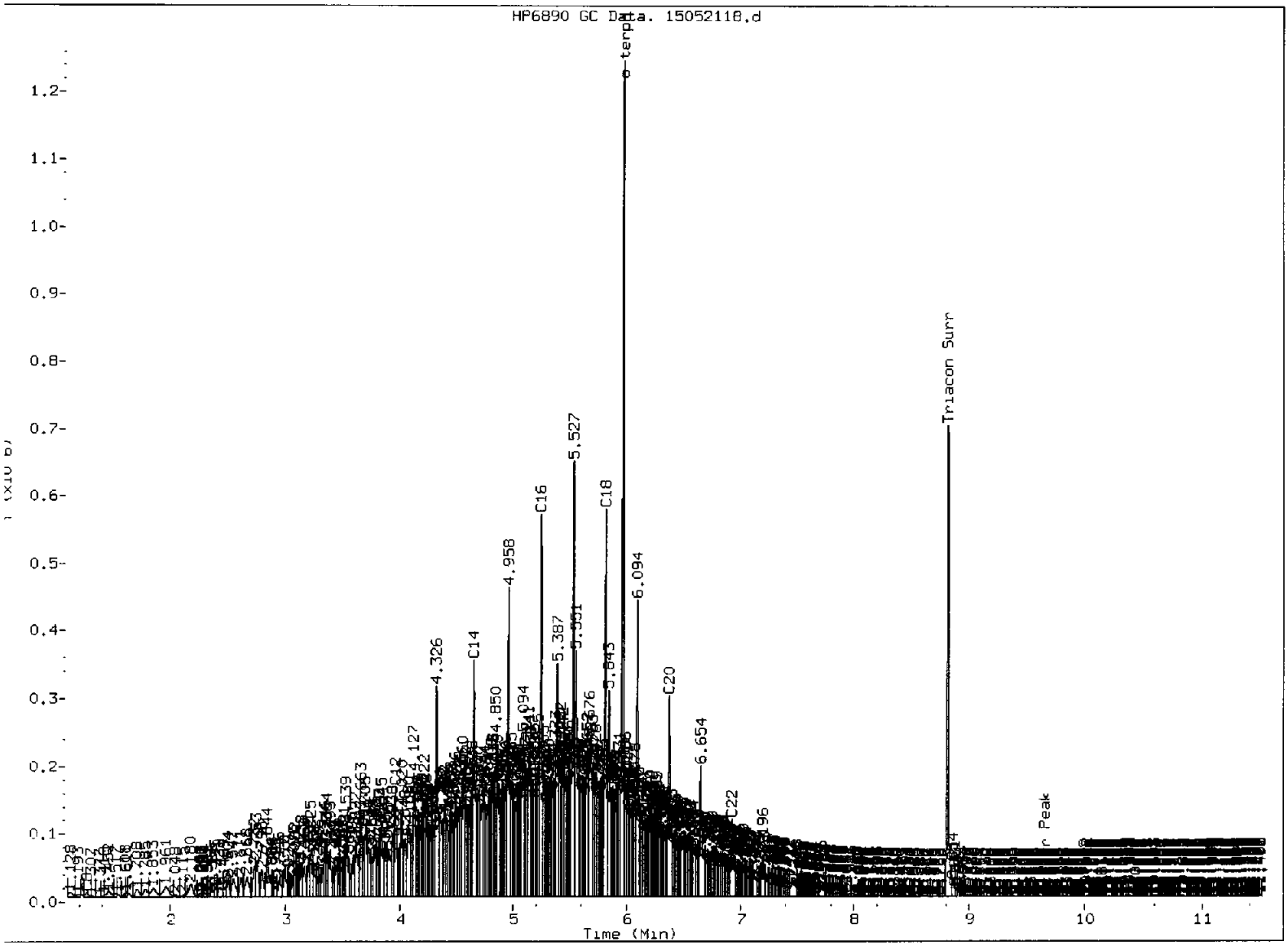
Instrument: fid9.i

Operator: ML

Column diameter: 0.25



FID:9A-2C/RTX-1 AGA8LCSDW1 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: SW Date: 5/22/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052121.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: DIESEL#2
Client ID:
Injection: 21-MAY-2015 21:04
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	1.088	0.013	4002	6893	GAS (Tol-C12)	897378	36.21	
C8	1.265	0.000	4090	6696	DIESEL (C12-C24)	4275054	245.52	
C10	2.965	-0.007	4023	2610	M.OIL (C24-C38)	103766	7.27	
C12	3.968	0.001	21842	37675	AK-102 (C10-C25)	4919195	245.14	M
C14	4.652	-0.001	45987	80896	AK-103 (C25-C36)	60951	3.91	
C16	5.240	-0.001	72691	115846	OR.DIES (C10-C28)	4956471	244.72	M
C18	5.805	-0.003	91750	107244				
C20	6.378	0.004	30756	63727				
C22	6.923	-0.005	6458	1410				
C24	7.448	-0.006	2694	2527				
C25	7.702	-0.004	1629	927				
C26	7.953	0.006	916	744				
C28	8.398	-0.001	263	178	IT.DIES (C10-C24)	4899587	245.13	M
C32	9.180	0.000	106	85				
C34	9.522	-0.003	269	191				
Filter Peak	9.651	-0.001	368	218				
C36	9.846	-0.003	590	127				
C38	10.146	-0.003	1082	945				
C40	10.450	0.008	1658	527				
o-terph	5.964	0.002	1203116	954270	JET-A (C10-C18)	3639682	221.28	
Triacon Surr	8.816	0.001	30	3				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	954270	43.5	96.6
Triacontane	3	0.0	0.0

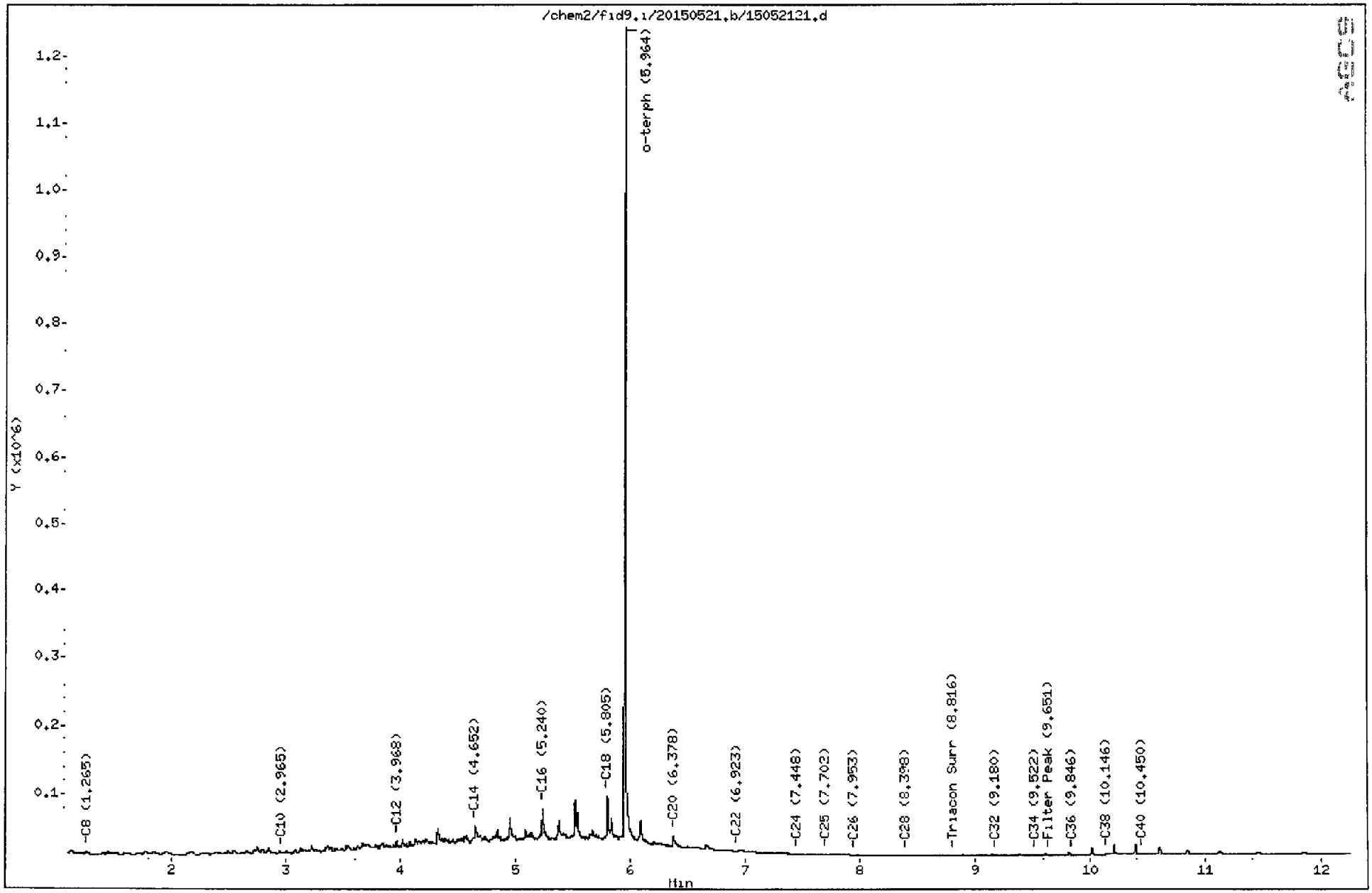
JD 5/22/15

Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

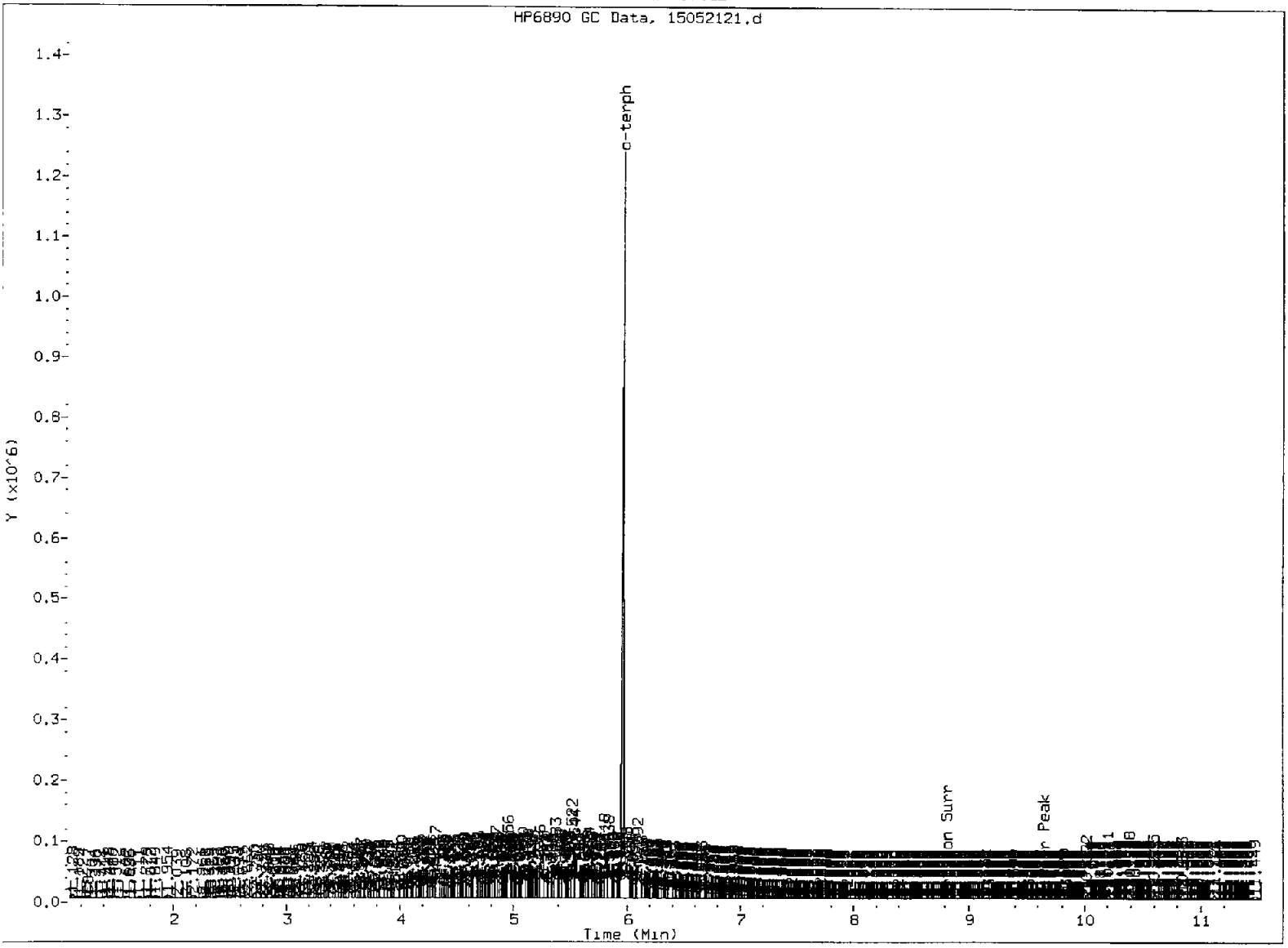
Data File: /chem2/fid9.i/20150521.b/15052121.d
Date : 21-MAY-2015 21:04
Client ID:
Sample Info: DIESEL#2

Instrument: fid9.i

Operator: ML
Column phase: RTX-1
Column diameter: 0.25



FID:9A-2C/RTX-1 DIESEL#2 FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JN Date: 5/22/15

Analytical Resources Inc.
NWTPH Quantitation Report

Data file: /chem2/fid9.i/20150521.b/15052122.d
Method: /chem2/fid9.i/20150521.b/ftphfid9a.m
Instrument: fid9.i
Operator: ML
Report Date: 05/22/2015

ARI ID: MOIL#2
Client ID:
Injection: 21-MAY-2015 21:26
Dilution Factor: 1
Macro: 20-MAY-2015

FID:9 RESULTS

Compound	RT	Shift	Height	Area	Range	Total Area	Conc	
Toluene	----				GAS (Tol-C12)	32881	1	
C8	1.276	0.011	1140	1149	DIESEL (C12-C24)	700259	40.22	
C10	2.970	-0.002	130	56	M.OIL (C24-C38)	6764973	474.07	
C12	3.967	0.000	56	18	AK-102 (C10-C25)	950685	47.38	
C14	4.655	0.002	143	106	AK-103 (C25-C36)	5727137	367.12	M
C16	5.247	0.005	240	116	OR.DIES (C10-C28)	2583334	127.55	
C18	5.807	0.000	522	203				
C20	6.374	0.000	1978	1651				
C22	6.925	-0.002	6832	2422				
C24	7.458	0.004	23777	6568				
C25	7.704	-0.001	30504	29543				
C26	7.948	0.001	33776	11249				
C28	8.397	-0.002	41310	25915	IT.DIES (C10-C24)	705870	35.31	
C32	9.176	-0.004	58025	54636				
C34	9.527	0.002	52441	23717				
Filter Peak	9.648	-0.004	52469	34510				
C36	9.848	-0.001	50133	33070				
C38	10.149	0.001	43229	11891				
C40	10.446	0.004	33553	11828				
o-terph	5.960	-0.003	851	663	JET-A (C10-C18)	32196	1.96	
Triacon Surr	8.819	0.004	834767	717035				

M Indicates manual integration within range.
Range Times: NW Diesel(3.967 - 7.454) AK102(2.97 - 7.71) Jet A(2.97 - 5.81)
NW M.Oil(7.45 - 10.15) AK103(7.71 - 9.85) OR Diesel(2.97 - 8.40)

Surrogate	Area	Amount	%Rec
o-Terphenyl	663	0.0	0.1
Triacontane	717035	44.1	98.1

BD 5/22/15

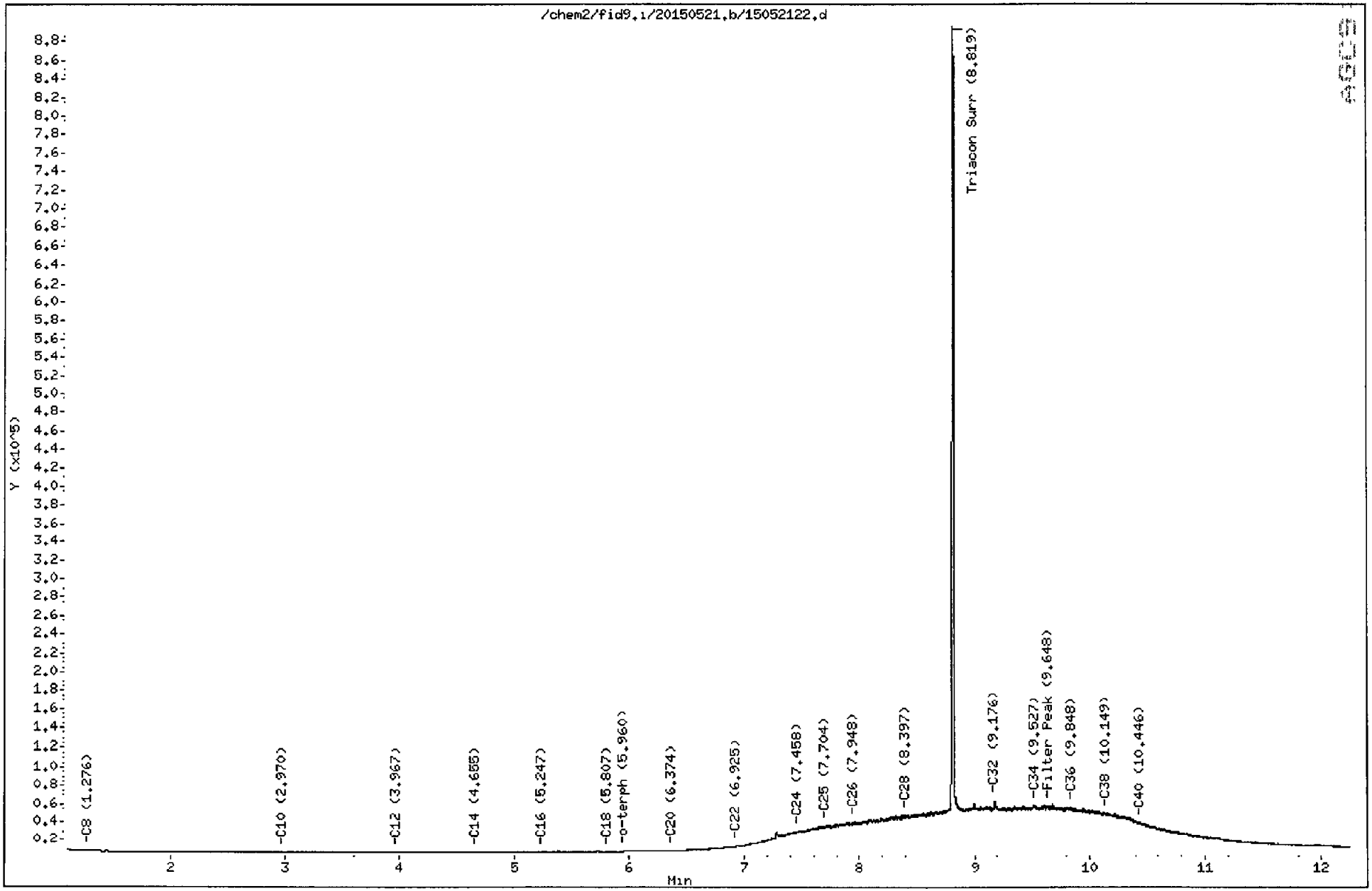
Analyte	RF	Curve Date
o-Terph Surr	21954.4	20-MAY-2015
Triacon Surr	16250.6	20-MAY-2015
Gas	24782.5	22-NOV-2014
Diesel	17412.0	20-MAY-2015
Motor Oil	14270.0	20-MAY-2015
AK102	20067.0	20-MAY-2015
AK103	15600.0	06-MAR-2015
JetA	16448.0	29-JUL-2013
OR Diesel	20254.0	
IT Diesel	19988.0	

Data File: /chem2/fid9.i/20150521.b/15052122.d
Date : 21-MAY-2015 21:26
Client ID:
Sample Info: MOIL#2

Instrument: fid9.i

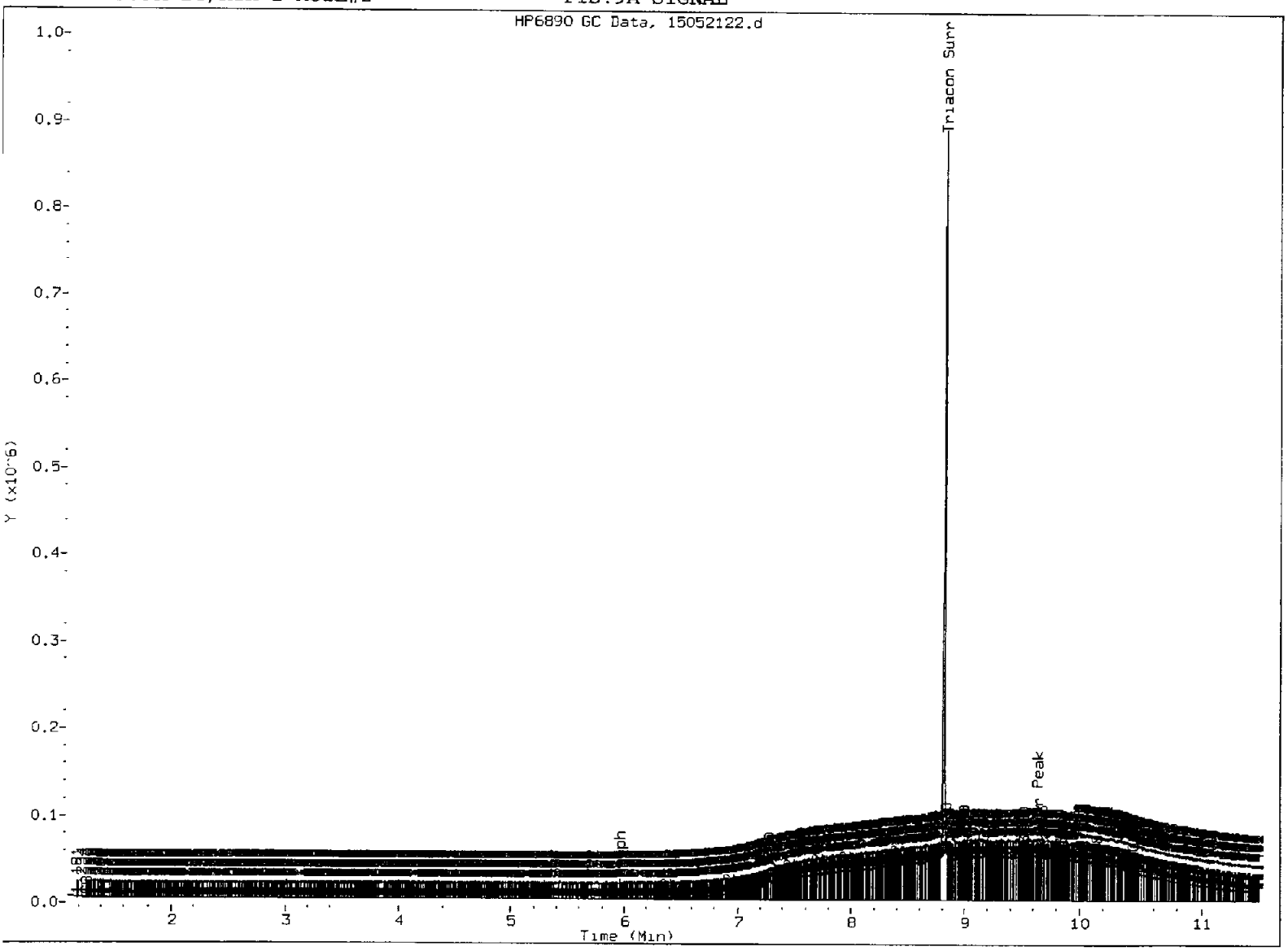
Operator: ML
Column diameter: 0.25

Column phase: RTX-1



FID:9A-2C/RTX-1 MOIL#2

FID:9A SIGNAL



MANUAL INTEGRATION

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation
5. Surrogate Skimmed

Analyst: JM Date: 5/22/15

ACCS 9139

Metals Raw Data
Preparation Bench Sheets and Notes

ARI Job ID: AGC9

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SPIKING LOG

Analyst: TH

Date: 5-18-15

Final Volume 25.0

Final Volume (Hg): 20.0

Sample ID AGLAB JSPK, MB2SPK
AGLCA LSPK, MB2SPK

	Prepcode:			
	Spike Solution:	ICP Routine	ICP No GFA	GFA
	Standard No.:			
	Vol Added (mL):			
	Ag	50		2.0
S	Al	200	200	
T	As	200		10
O	Ba	200	200	
C	Be	50	50	
K	Ca	1000	1000	
	Cd	50		2.0
	Co	50	50	
C	Cr	50	50	
O	Cu	50	50	
N	Fe	200	200	
C	K	1000	1000	
E	Mg	1000	1000	
N	Mn	50	50	
T	Na	1000	1000	
R	Ni	50	50	
A	Pb	200		10
T	Se	200		10
I	Sr	50	50	
O	Tl	200		10
N	V	50	50	
	Zn	50	50	

	BEN		
	ICP-MS #1	ICP-MS #2	ICP-MS Minerals
	D0325		
	0.05		
Ag	25 ✓		
Al			500
As	25 ✓		
Ba	25 ✓		
Be	25		
Ca			500
Cd	25 ✓		
Co	25		
Cr	25 ✓		
Cu	25 ✓		
Fe			500
K			500
Mg			500
Mn	25		
Mo		25	
Na			500
Ni	25		
Pb	25 ✓		
Sb		25	
Se	80 ✓		
Tl	25		
U	25		
V	25		
Zn	80 ✓		

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No.
Hg	TWM	CVA	1.0	0.02	D0219
Hg MBSPK	↓	CVA	1.0	0.04	↓
Sb		ICP	2000		
Sb		GFA	100		
B		ICP	500		
Mo		ICP	500		
Si		ICP	10000		
Sn		ICP	500		
Ti		ICP	2000		

Additional Elements:

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std. No.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SPIKING LOG

Analyst: MB

Date: 5/18/15

Final Volume 50.0

Final Volume (Hg): 50.0

Sample ID AGC9 MSPK, MBSPK

	Prepcode:			
	Spike Solution:	ICP Routine	ICP No GFA	GFA
	Standard No.:			
	Vol Added (mL):			
STOCK CONCENTRATION	Ag	50		2.0
	Al	200	200	
	As	200		10
	Ba	200	200	
	Be	50	50	
	Ca	1000	1000	
	Cd	50		2.0
	Co	50	50	
	Cr	50	50	
	Cu	50	50	
	Fe	200	200	
	K	1000	1000	
	Mg	1000	1000	
	Mn	50	50	
	Na	1000	1000	
	Ni	50	50	
	Pb	200		10
	Se	200		10
	Sr	50	50	
	Tl	200		10
	V	50	50	
	Zn	50	50	

	SWN		
	ICP-MS #1	ICP-MS #2	ICP-MS Minerals
	00325		
	1.0		
Ag	25✓		
Al			500
As	25✓		
Ba	25✓		
Be	25		
Ca			500
Cd	25✓		
Co	25		
Cr	25✓		
Cu	25✓		
Fe			500
K			500
Mg			500
Mn	25		
Mo		25	
Na			500
Ni	25		
Pb	25✓		
Sb		25	
Se	80✓		
Tl	25		
U	25		
V	25		
Zn	80✓		

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No
Hg	SWN	CVA	1.0	0.05	00214
Hg MBSPK	↓	CVA	1.0	0.10	↓
Sb		ICP	2000		
Sb		GFA	100		
B		ICP	500		
Mo		ICP	500		
Si		ICP	10000		
Sn		ICP	500		
Ti		ICP	2000		

Additional Elements:

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std. No.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: TWM Matrix: Water
Analyst: TH Date: 5-18-15
Bath Temp: 91°C Start Time: 1020 End Time: 1220

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGAB J	1	✓	20.0	20.0	S128 1	(Y)	
" JDUP	1	✓			1		
" JSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGCG L	1	✓			S129 1		
" LDUP	1	✓			1		
" LSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGIB1 A	2	✓			S124 1		
" ADUP	2	✓			1		
" ASPK	2	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" D	1	✓			1		
" MB1	—	—			1		
" MB1SPK	—	—	20.0	20.0	1	(Y)	
				TH 5-18-15			

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1501179

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: SMM Matrix: SOIL
Analyst: MB Date: 5/18/15
Bath Temp: 90°C Start Time: 1235 End Time: 1305

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) ~~Volume (mL)~~	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGC9 A	1	-	0.247	50.0	5/29 1	Y	
" B	1	-	0.211		1		
" C	1	-	0.202		1		
" D	1	-	0.236		1		
" E	1	-	0.270		1		
" F	1	-	0.261		1		
" G	1	-	0.279		1		
" H	1	-	0.213		1		
" HDUP	1	-	0.211		1		
" HISPK	1	-	0.214		1		
" I	1	-	0.283		1		
" J	1	-	0.223		1		
" K	1	-	0.247		1		
" MBI	-	-	-		1		
" MBISPK	-	-	-	50.0	1	Y	

MB 5/18/15

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: -
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1408268

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: TH Date: 5-18-15 Time: 0855

Matrix: Water Block ID: #12 Block Temp: 94°C Thermometer: MPS2

ARI Sample ID	Btl #	pH<2	Prep Code: BEN Initial ~~Wt (g)~~ Vol (mL)	Prep Code: BEN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
AGIAB J	1	✓	50.0	25.0			
" JDUP	1	✓					
" JSPK	1	✓					
" MB2	—	—					
" MB2SPK	—	—					
AGICB L	1	✓					
" LDUP	1	✓					
" LSPK	1	✓					
" MB2	—	—					
" MB2SPK	—	—					
TH 5-18-15 ~~AG1B1~~ AG3D A	1	✓					Batch
AG3D MB	—	—					
" MBSPK	—	—					
AG1B2 A	4	✓					
AG1B4 A	4	✓	50.0	25.0			

TH 5-18-15

Chemical/Reagent ID:

HNO_3: D1978 HCl: — H_2O_2: C4188 Tube Lot #: 150117

ARCS 01201

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: MB Date: MS/MSD ISPIKE 5/18/15 Time: 1220

Matrix: SO.1 Block ID: #2 Block Temp: 90°C Thermometer: MP81

ARI Sample ID	Btl #	pH<2	Prep Code: SWN Initial Wt (g) ~~Vol (mL)~~	Prep Code: SWN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
AGC9 A	1	–	1.012	50.0			
" B	1	–	1.054				
" C	1	–	1.013				
" D	1	–	1.055				
" E	1	–	1.015				
" F	1	–	1.035				
" G	1	–	1.061				
" H	1	–	1.052				
" HDUP	1	–	1.054				
" HSPK	1	–	1.052				
" I	1	–	1.092				
" J	1	–	1.075				
" K	1	–	1.039				
" MB1	–	–	–				
" MB1SPK	–	–	–	50.0			

MB 5/18/15

MB 5/18/15

Chemical/Reagent ID:

HNO_3: D1908/00680 HCl: – H_2O_2: C4188 Tube Lot #: 150179

AGC9 : 81202

Metals Raw Data
Run Logs, Calibrations, and Raw Data

ARI Job ID: AGC9

AGC9:61203

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Corrective Actions
Inorganic Analyses

Criteria Flagged:

ARI Job No.: AGC4

Unacceptable Blank: ☐

Date of Event: 5 22-15

Unacceptable Duplicate: ☒

Client ID:

Unacceptable Spike: ☐

Method/Element: CVA / Hg

Unacceptable Reference: ☐

Prep Code: SMM

Details of Problem/Recommended Corrective Action:

1st Analysis: TH 5 22-15 H = 1.15 ppb

HDUP = 1.67 ppb RPD = 46 High X

HSPK = 1.44 ppb %R = 79 ✓

2nd Analysis: H = 1.18 ppb

HDUP = 1.51 ppb RPD = 46 High X

HSPK = 1.41 ppb %R = 73 low X

Samples Affected: H, HDUP, HSPK, MB1, MB1SPK

Corrective Action Taken:

recal

Analyst Initials: TH

Supervisor:

Date: 5-22-15

Date: 5-22-15

5049F

Revision 007
6/11/10

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Corrective Actions
Inorganic Analyses

Criteria Flagged:		ARI Job No.:	AGC9
Unacceptable Blank:	☐	Date of Event:	5/29/15
Unacceptable Duplicate:	☑	Client ID:	
Unacceptable Spike:	☐	Method/Element:	ICPMS
Unacceptable Reference.	☐	Prep Code:	3050B

Details of Problem/Recommended Corrective Action:

High RPD (a 20X : Cr 5-1.3-
Cu ~~27~~ 31.4% ~~a~~ > 20% 5
Ni 34.18%.

Samples Affected:

Corrective Action Taken:

Analyst Initials: ek

Date: 5/29/15

Supervisor: [signature]

Date: 6-1-15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Corrective Actions
Inorganic Analyses

Criteria Flagged:		ARI Job No.:	AGC9
Unacceptable Blank:	☐	Date of Event:	5/28/15
Unacceptable Duplicate:	☑	Client ID:	
Unacceptable Spike:	☐	Method/Element:	
Unacceptable Reference	☐	Prep Code:	

Details of Problem/Recommended Corrective Action:

RPD ↑ Ag @ 23.16%
Cd @ 25.73%

Samples Affected:

Corrective Action Taken:

Analyst Initials: CC

Date: 05/28/15

Supervisor: SMC

Date: 6-1-15

5049F

Revision 007
6/11/10

AGC9 2128

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP (ICP-MS) GFA CVA **Analysis Date:** 5/28/15

M2	Analyst @ 5/28/15	Peer JH 5-29-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	See log
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	✓	✓	See log
Carry-over	✓	✓	
Method QC:			
CRI/CRA	✓	✓	See log
ICSA/ICSAB	✓	✓	See log
Post Spikes/Serial Dilutions	✓	✓	See log
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	AEA8
Matrix Duplicates	✓	✓	AEC9/AEA8
Method Blanks	✓	✓	
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAF's	✓	✓	AEA8/AEC9/AEE0

ARCS GILBERT

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ee **Page** 1 **of** 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		Std Ø	D2037		
		1	D2173		
		2	D2249		
		3	D2250		
		4	D2251		
		5	D2252		
		Rinse			
		ICV	D1815		
		ICB	D2037		
		CCV1	D2251		
		CCB1	D2037		
ZZZ		~~Low check~~ ZZZZZZ	D2173		
		ICSA	D2253		Cr^{53} Ni^{62} Cu^{63} ↑
		~~ICSAB~~	D2254		
		LR200	D2148		
		LR300	D2149		
		B1			
		B2			
		B3			
		B4			
		B5			
		CCV2			
		CCB2			Ni^{62} ↑
		Std Ø			

Analytical Resources, Incorporated
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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 Analyst: ee Page 2 of 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		CCV3			
		CCB3			
		Low Check			
		ICSA			Cr^{53} N, $^{62}Cu^{63}$ ↑
ZZZ		~~ICSAB ZZZZZZ~~			Sc ↑
		ICSAB			
		B6			
		CCV4			
		CCB4			
		std Ø			
		CCV5			
		CCB5			
		AG07 MB	REN	2	Pb only
		AGP2 MB	↓	↓	↓
		↓ A			Cr Ni, Pb only
		AGPØ A			Ni Pb only
		AG 08 A		↓	Cr Ni, Pb
	✓	AG07 A		5	use 2x
		AG07 A		2	Cr Pb
		↓ MBSPK			Pb only
		AGP2 MBSPK			↓
		AGEØ MBSPK	↓	↓	Ag Cd Ba CAF %R ↑ As RR Mo↑ with similar results use Pb
		CCV6			
		CCB6			

AGS 81209

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ee **Page** 3 **of** 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGA8 MB1	SWN	20	
		A			RR Cr 50x
		B			↓
		C			
		FDUP			RR: Cr Ba Pb 50x RR Cu Zn 200x
		F			↓
		FSPK			RR 20x check Cu spike
		FPOST			0.6 mL Mix #1: C2214 to 6 mL Se CAF
		MB1SPK	↓	↓	RR As
	✓	AGE8 MBSPK	REN	2	use previous
		CCV7			
		CCB7			Ni 62 going negative
		std 8			
		CCV8			
		CCB8			
		AGA8 MB2	REN	2	
		JDUP			
	✓	J			RR to check Cr; Second good, use that
		JSPK	↓	↓	
		D	SWN	20	RR Cr Zn 50x
		E			
		G			
		H			
		I	↓	↓	

AGCS 01210

Analytical Resources, Incorporated
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ICP/MS SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ea **Page** 4 **of** 6

All corrections made by analyst unless otherwise noted. ea 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGA8 MB2SPK	REN	2	
		CCV9			
		CCB9			
		AGA8 A	SWN	50	Cr only
		B		↓	↓
		FDUP		↓	RR Cr Cu Pb Zn, use Ba
		F		↓	↓
		FSPK		↓	↓ Ba STL
		FDUP		200	↑ Cr PRD ↑
		F		↓	Pb only RR Cu Zn 500x
		FSPK		↓	Cr ↓ Pb Cr STL ↓
	✓	FSPK		20	↓ AN 2000x FSPK Cu
		↓ MB1SPK	↓	20	As only
		CCV10			
		CCB10			
		AGC9 MB1	SWN	20	
		AGA8 J	REN	2	
		D	SWN	50	Cr Zn Only
		FDUP		500	Cu Zn only Cu RPD 20 49%
		F		↓	Cu Zn Only
		FSPK		↓	Zn Only ↓ STL
		↓ FSPK		2000	Cu only ↓ STL
		AGC9 A		20	
		↓ B	↓	20	RR: Cr Zn Pb @ 50x

AGC9 0121.1

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ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 Analyst: ee Page 5 of 6

All corrections made by analyst unless otherwise noted. ee 5/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGC9 MB1SPK	3WN	20	✓
		CCV11			
		CCB11			
		AGC9 C	5WN	20	
		D			
		E			
		F			RR Cr@50x
		G			
		I			RR Cr Zn Pb @200x
		HDUP			RR: Cr Cu Zn Ba Pb @200x, Cd, Ag RPD ↑ CAF
		H			
		~~HSPK~~			✓
~~ZZZ~~	✓	~~ZZZZZZ~~ ~~HPOST~~	↓	↓	0.080mL SPK Mix #1; c2214
		CCV12			
		CCB12			
		AGG4 MB	REN	2	
		AGC9 MB2		2	
		LDUP			
		L			RR for Zn greater than blank, but will load current — NO Zn (use 5/29)
		LSPK	↓	↓	
		J	5WN	20	
		K	↓	↓	
		AGF8 MB SPK	5WN	20	✓
		AGG4 MB SPK	REN	2	✓

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5/28/15 **Analyst:** ee **Page** 6 **of** 6

All corrections made by analyst unless otherwise noted. ee 05/28/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGC9 MB25PK	REN	2	✓
		CCV13			
		CCB13			
		~~AGF7 MB~~	~~REN~~	~~2~~	
		~~AGF8 MB~~	~~SWN~~	~~20~~	
		AGF8 ADUP	SWN	20	RR Zn 50x
		A	↓	↓	↓ Cu STC
		ASPK			
		B			
		AGF9 A			ee 5/29/15
		B	↓	↓	
		AGG4 A	REN	2	
		AGF7 MBSPK	↓	↓	
		CCV14			
		CCB14			
		AGF7 A	REN	50	Cr only
		↓	↓	2	Ni, Cu Zn As Ag Cd Pb
		CCV15			
		CCB15			
		AGE0 B	REN	50	Sea water
		B7			
		B8			
		CCV16			Ni 62 ↑
		CCB16			↓
		Rinse/DI			End Run

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Thursday, May 28, 2015 07:47 49
Sample Description:
Method File C:\NexION Data\Method\Daily Performancenew mth
Dataset File: C:\NexION Data\Dataset\Default\Daily Performance Check.5682
MassCal File: C:\NexION Data\MassCal\Default tun
Conditions File: C.\NexION Data\Conditions\Default.dac
Dual Detector Mode Pulse
Acq Dead Time (ns). 60
Current Dead Time (ns) 60
Torch Z position (mm). 0 00

Summary

	Analyte	Mass	Meas Intens. Mean	Net Intens. Mean	Net Intens SD	Net Intens. RSD	Mode
	Be	9.0	4323 1	4323.121	61.314	1.4	Standard
	Mg	24.0	36963.8	36963 799	208.339	0.6	Standard
	In	114 9	102870.0	102870.040	80.654	0.1	Standard
	Pb	208 0	39849.6	39849 554	268.329	0.7	Standard
	U	238 1	68688.8	68688.762	265.454	0.4	Standard
⌈	CeO	155 9	1813.4	0.020	0 001	3.1	Standard
| >	Ce	139.9	92952.2	92952 232	1062.514	1.1	Standard
⌊	Ce++	70.0	2380.5	0.026	0.000	1.6	Standard
	Bkgd	220.0	0 1	0.083	0.118	141.4	Standard

Current Conditions File Data

Current Value	Description
1.05	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-1525.00	Analog Stage Voltage
1000.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-15.00	Cell Rod Offset STD [CRO]
7.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1.05	DRC Mode NEB
-8 00	DRC Mode QRO
-2.50	DRC Mode CRO
-4.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
250.00	Axial Field Voltage
-15.00	KED Mode CRO
-12.00	KED Mode QRO
-2.00	KED Mode Cell Entrance Voltage
-24.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
4.00	KED Cell Gas B
0.00	KED RPa

AGCS 81214

SmartTune Wizard - Summary

ptimization Summary

martTune file: C:\NexIONData\Wizard\SmartTune\ariSTDaily+torch.swz

tart Time: 5/28/2015 7:47:49 AM
nd Time: 5/28/2015 7:48:53 AM

aily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 4323.12
Obtained Intensity (Mg 23.985): 36963.80
Obtained Intensity (In 114.904): 102870.04
Obtained Intensity (Pb 207.977): 39849.55
Obtained Intensity (U 238.05): 68688.76
Obtained Intensity (Bkgd 220): 0.08
Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=1813.36 / 92952.23)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.026 (=2380.51 / 92952.23)

AGCS : 01215

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:31:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L				67707	5
	Cl	37		ug/L				5882606	2
>	Sc	45		ug/L				1598309	3
	Cr	52		ug/L				38005	1
	Cr	53		ug/L				216	1
	Mn	55		ug/L				767	8
>	Ge	72		ug/L				1291976	1
	Ni	60		ug/L				37	11
	Ni	62		ug/L				173	3
	Cu	63		ug/L				207	6
	Cu	65		ug/L				74	8
	Zn	66		ug/L				2661	3
	Zn	67		ug/L				379	8
	Zn	68		ug/L				2025	0
	As	75		ug/L				28	144
	As-1	75		ug/L				18195	0
	Se	82		ug/L				29	69
	Se	78		ug/L				18449	0
	Y	89		ug/L				977062	0
	Kr	83		ug/L				343	3
>	In	115		ug/L				1320273	1
	Ag	107		ug/L				46	19
	Cd	111		ug/L				241	4
	Cd	114		ug/L				39	14
	Sb	121		ug/L				30	18
	Sb	123		ug/L				21	26
	Ba	135		ug/L				18	24
	Ba	137		ug/L				26	11
>	Tb	159		ug/L				1492326	1
	Tl	205		ug/L				35	15
	Pb	208		ug/L				187	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:35:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	68384	2
	Cl	37		ug/L			5882606	6038079	2
>	Sc	45		ug/L			1598309	1604087	1
	Cr	52	0.500	ug/L	0 074	14	38005	52617	3
	Cr	53	0.500	ug/L	0 010	1	216	1978	0
	Mn	55	0.500	ug/L	0 023	4	767	22561	3
>	Ge	72		ug/L			1291976	1292923	2
	Ni	60	0.500	ug/L	0 019	3	37	4089	1
	Ni	62	0.500	ug/L	0 024	4	173	783	3
	Cu	63	0.500	ug/L	0 015	3	207	9623	1
	Cu	65	0.500	ug/L	0 011	2	74	4442	1
	Zn	66	4.000	ug/L	0.157	3	2661	22053	1
	Zn	67	4.000	ug/L	0.020	0	379	3318	2
	Zn	68	4.000	ug/L	0.231	5	2025	15502	3
	As	75	0.200	ug/L	0.003	1	28	1137	2
	As-1	75	0.200	ug/L	0 068	34	18195	19295	0
	Se	82	0.500	ug/L	0.008	1	29	302	1
	Se	78	0.500	ug/L	0 266	53	18449	19148	0
	Y	89		ug/L			977062	964608	0
	Kr	83		ug/L			343	360	5
>	In	115		ug/L			1320273	1338562	0
	Ag	107	0.200	ug/L	0.003	1	46	5115	1
	Cd	111	0.100	ug/L	0.003	3	241	902	2
	Cd	114	0.100	ug/L	0.002	1	39	1592	1
	Sb	121	0.200	ug/L	0.002	0	30	3653	1
	Sb	123	0.200	ug/L	0.003	1	21	2803	1
	Ba	135	0.500	ug/L	0 003	0	18	2743	0
	Ba	137	0.500	ug/L	0 008	1	26	4740	1
>	Tb	159		ug/L			1492326	1492785	0
	Tl	205	0.200	ug/L	0 004	2	35	9127	2
	Pb	208	0.100	ug/L	0 002	1	187	6595	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:38:59
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	67107	2
	Cl	37		ug/L			5882606	6085578	1
>	Sc	45		ug/L			1598309	1627223	0
	Cr	52	10.000	ug/L	0.087	0	38005	335589	1
	Cr	53	10.000	ug/L	0.344	3	216	35526	4
	Mn	55	9.999	ug/L	0.227	2	767	433682	2
>	Ge	72		ug/L			1291976	1318045	0
	Ni	60	9.999	ug/L	0.257	2	37	78823	1
	Ni	62	9.998	ug/L	0.164	1	173	11703	1
	Cu	63	9.999	ug/L	0.194	1	207	184203	1
	Cu	65	9.998	ug/L	0.222	2	74	83336	1
	Zn	66	9.968	ug/L	0.147	1	2661	51054	0
	Zn	67	10.109	ug/L	0.156	1	379	8512	1
	Zn	68	10.008	ug/L	0.137	1	2025	36624	1
	As	75	9.999	ug/L	0.205	2	28	48099	1
	As-1	75	9.999	ug/L	0.211	2	18195	64427	0
	Se	82	10.001	ug/L	0.224	2	29	5878	1
	Se	78	9.997	ug/L	0.242	2	18449	31481	0
	Y	89		ug/L			977062	976970	0
	Kr	83		ug/L			343	352	1
>	In	115		ug/L			1320273	1349452	0
	Ag	107	10.000	ug/L	0 027	0	46	249315	0
	Cd	111	10.000	ug/L	0.076	0	241	65579	0
	Cd	114	10.000	ug/L	0.105	1	39	159536	1
	Sb	121	10.000	ug/L	0 069	0	30	179605	0
	Sb	123	10.000	ug/L	0 207	2	21	136691	1
	Ba	135	9.998	ug/L	0 009	0	18	51142	0
	Ba	137	9.998	ug/L	0 100	1	26	88838	0
>	Tb	159		ug/L			1492326	1491898	1
	Tl	205	10.000	ug/L	0.151	1	35	460146	1
	Pb	208	10.000	ug/L	0.139	1	187	588802	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:42:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67707	68142	1
	Cl	37		ug/L			5882606	5951602	2
>	Sc	45		ug/L			1598309	1612614	0
	Cr	52	19.963	ug/L	0.416	2	38005	621323	1
	Cr	53	19.903	ug/L	0 293	1	216	68525	0
	Mn	55	19.929	ug/L	0 307	1	767	843959	2
>	Ge	72		ug/L			1291976	1280970	1
	Ni	60	20.067	ug/L	0 067	0	37	155810	1
	Ni	62	20.001	ug/L	0 717	3	173	22583	2
	Cu	63	19.981	ug/L	0 383	1	207	356166	1
	Cu	65	20.041	ug/L	0 200	0	74	163619	2
	Zn	66	20.130	ug/L	0.243	1	2661	99693	0
	Zn	67	20.272	ug/L	0 592	2	379	16988	2
	Zn	68	20.156	ug/L	0 520	2	2025	71514	1
	As	75	20.025	ug/L	0 043	0	28	94065	1
	As-1	75	20.068	ug/L	0.143	0	18195	108743	0
	Se	82	20.010	ug/L	0.157	0	29	11425	1
	Se	78	20.163	ug/L	0.363	1	18449	43939	0
	Y	89		ug/L			977062	980224	1
	Kr	83		ug/L			343	373	4
>	In	115		ug/L			1320273	1327873	1
	Ag	107	19.834	ug/L	0 096	0	46	470981	1
	Cd	111	19.991	ug/L	0.155	0	241	128510	1
	Cd	114	20.021	ug/L	0.178	0	39	315542	0
	Sb	121	20.037	ug/L	0.270	1	30	356695	0
	Sb	123	20.030	ug/L	0.365	1	21	271003	0
	Ba	135	20.034	ug/L	0 278	1	18	101486	0
	Ba	137	20.046	ug/L	0.202	1	26	176854	0
>	Tb	159		ug/L			1492326	1491208	1
	Tl	205	19.993	ug/L	0.259	1	35	918266	0
	Pb	208	19.959	ug/L	0 486	2	187	1164701	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:47:00
Number of Replicates: 3
Method File: C \NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67707	63843	0
	Cl	37		ug/L			5882606	6006547	0
>	Sc	45		ug/L			1598309	1599765	2
	Cr	52	50.118	ug/L	1.181	2	38005	1506885	1
	Cr	53	50.007	ug/L	0.949	1	216	170563	1
	Mn	55	50.137	ug/L	1.370	2	767	2133249	0
>	Ge	72		ug/L			1291976	1294204	2
	Ni	60	49.954	ug/L	0 465	0	37	390096	3
	Ni	62	49.966	ug/L	0 776	1	173	56547	0
	Cu	63	49.817	ug/L	0 849	1	207	880676	1
	Cu	65	49.669	ug/L	0 934	1	74	396335	0
	Zn	66	49.915	ug/L	1 471	2	2661	243748	0
	Zn	67	49.835	ug/L	0 781	1	379	40987	1
	Zn	68	49.953	ug/L	1.606	3	2025	175229	0
	As	75	49.883	ug/L	1 355	2	28	233864	1
	As-1	75	49.910	ug/L	1 357	2	18195	244020	0
	Se	82	49.810	ug/L	1 175	2	29	28147	0
	Se	78	49.892	ug/L	1.275	2	18449	81898	0
	Y	89		ug/L			977062	980970	0
	Kr	83		ug/L			343	367	2
>	In	115		ug/L			1320273	1314748	0
	Ag	107	50.142	ug/L	0.465	0	46	1195725	0
	Cd	111	50.020	ug/L	0.653	1	241	318664	0
	Cd	114	50.007	ug/L	0.307	0	39	780939	0
	Sb	121	49.961	ug/L	0.257	0	30	877229	0
	Sb	123	50.037	ug/L	0.834	1	21	672802	0
	Ba	135	50.046	ug/L	0 276	0	18	252163	0
	Ba	137	50.062	ug/L	0.525	1	26	440033	0
>	Tb	159		ug/L			1492326	1469442	0
	Tl	205	50.369	ug/L	0.587	1	35	2367114	0
	Pb	208	49.935	ug/L	0.608	1	187	2853014	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:51:45
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	71927	3
	Cl	37		ug/L			5882606	6056314	0
>	Sc	45		ug/L			1598309	1628732	0
	Cr	52	99.417	ug/L	1 596	1	38005	2949376	0
	Cr	53	99.443	ug/L	1.011	1	216	338920	1
	Mn	55	98.962	ug/L	1 381	1	767	4144548	0
>	Ge	72		ug/L			1291976	1254084	1
	Ni	60	99.721	ug/L	0 339	0	37	747502	1
	Ni	62	100.079	ug/L	2 109	2	173	109895	2
	Cu	63	100.050	ug/L	2 003	2	207	1716550	1
	Cu	65	100.699	ug/L	2.143	2	74	797471	3
	Zn	66	99.761	ug/L	2.595	2	2661	465892	1
	Zn	67	99.770	ug/L	1.012	1	379	78569	2
	Zn	68	99.421	ug/L	1.082	1	2025	329835	1
	As	75	100.286	ug/L	1.006	1	28	460119	1
	As-1	75	100.390	ug/L	1.163	1	18195	463719	1
	Se	82	99.787	ug/L	1.349	1	29	54239	0
	Se	78	100.104	ug/L	1.146	1	18449	141665	0
	Y	89		ug/L			977062	965815	2
	Kr	83		ug/L			343	409	0
>	In	115		ug/L			1320273	1279808	1
	Ag	107	100.499	ug/L	3 489	3	46	2371879	2
	Cd	111	99.750	ug/L	1.294	1	241	613318	2
	Cd	114	99.729	ug/L	1.019	1	39	1502344	0
	Sb	121	100.025	ug/L	1 124	1	30	1710930	0
	Sb	123	100.129	ug/L	1 443	1	21	1316190	0
	Ba	135	100.201	ug/L	0 859	0	18	494730	0
	Ba	137	99.966	ug/L	0.589	0	26	854334	0
>	Tb	159		ug/L			1492326	1443880	0
	Tl	205	99.517	ug/L	1.633	1	35	4522569	1
	Pb	208	100.330	ug/L	0.720	0	187	5695341	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Rinse sample
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 08:56:51
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052715a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	66290	1
	Cl	37		ug/L			5882606	5849591	3
>	Sc	45		ug/L			1598309	1600278	2
	Cr	52	-0.048	ug/L	0.042	85	38005	36651	3
	Cr	53	0.002	ug/L	0.012	535	216	223	17
	Mn	55	0.006	ug/L	0.007	117	767	1004	27
>	Ge	72		ug/L			1291976	1282673	0
	Ni	60	0.004	ug/L	0.006	174	37	65	75
	Ni	62	0.250	ug/L	0.018	7	173	452	4
	Cu	63	0.023	ug/L	0.006	26	207	618	18
	Cu	65	0.007	ug/L	0.004	58	74	131	26
	Zn	66	0.008	ug/L	0.022	266	2661	2681	4
	Zn	67	0.043	ug/L	0.032	74	379	411	6
	Zn	68	-0.013	ug/L	0.001	10	2025	1966	0
	As	75	-0.004	ug/L	0.004	110	28	10	194
	As-1	75	0.005	ug/L	0.041	769	18195	18088	0
	Se	82	-0.023	ug/L	0.008	35	29	16	26
	Se	78	0.016	ug/L	0.140	901	18449	18336	0
	Y	89		ug/L			977062	969451	2
	Kr	83		ug/L			343	352	3
>	In	115		ug/L			1320273	1305824	0
	Ag	107	0.002	ug/L	0.001	70	46	95	35
	Cd	111	0.006	ug/L	0.004	62	241	276	7
	Cd	114	0.002	ug/L	0.001	41	39	68	16
	Sb	121	0.082	ug/L	0.004	4	30	1458	4
	Sb	123	0.081	ug/L	0.005	6	21	1103	5
	Ba	135	0.002	ug/L	0 003	145	18	28	53
	Ba	137	0.002	ug/L	0.002	137	26	41	49
>	Tb	159		ug/L			1492326	1469117	1
	Tl	205	0.009	ug/L	0 001	14	35	433	14
	Pb	208	0.006	ug/L	0 006	98	187	548	65

Sample Information

Sample Date/Time: Thursday, May 28, 2015 08:51:45
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Mass Calibration File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

Calibration

Analyte	Mass	r Corr Coef	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Cr	52	**0.9999**	0.018	0.50	10	20	50	100
Cr	53	**0.9999**	0.002	0.50	10	20	50	100
Mn	55	**0.9998**	0 026	0.50	10	20	50	100
Ge	72							
Ni	60	**1.0000**	0 006	0.50	10	20	50	100
Ni	62	**1.0000**	0.001	0.50	10	20	50	100
Cu	63	**1.0000**	0.014	0 50	10	20	50	100
Cu	65	**0.9999**	0.006	0.50	10	20	50	100
Zn	66	**1.0000**	0.004	4.00	10	20	50	100
Zn	67	**1.0000**	0.001	4.00	10	20	50	100
Zn	68	**0.9999**	0.003	4.00	10	20	50	100
As	75	**1.0000**	0.004	0.20	10	20	50	100
As-1	75	**1.0000**	0.004	0 20	10	20	50	100
Se	82	**1.0000**	0.000	0 50	10	20	50	100
Se	78	**1.0000**	0.001	0.50	10	20	50	100
Y	89							
Kr	83							
In	115							
Ag	107	**0.9999**	0 018	0.20	10	20	50	100
Cd	111	**1.0000**	0.005	0.10	10	20	50	100
Cd	114	**1.0000**	0.012	0 10	10	20	50	100
Sb	121	**1.0000**	0.013	0.20	10	20	50	100
Sb	123	**1.0000**	0.010	0.20	10	20	50	100
Ba	135	**1.0000**	0.004	0.50	10	20	50	100
Ba	137	**1.0000**	0.007	0 50	10	20	50	100
Tb	159							
Tl	205	**0.9999**	0.031	0.20	10	20	50	100
Pb	208	**1.0000**	0.039	0 10	10	20	50	100

AGC9 81223

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICV
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:03:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67707	66017	2
	Cl	37		ug/L			5882606	5935830	0
>	Sc	45		ug/L			1598309	1637465	0
	Cr	52	50.631	ug/L	1 588	3	38005	1529265	2
	Cr	53	51.795	ug/L	0.712	1	216	177563	1
	Mn	55	52.666	ug/L	1.390	2	767	2217680	1
>	Ge	72		ug/L			1291976	1275415	0
	Ni	60	51.955	ug/L	1.655	3	37	396033	2
	Ni	62	51.302	ug/L	0.993	1	173	57369	1
	Cu	63	50.956	ug/L	0 465	0	207	889396	1
	Cu	65	51.747	ug/L	1.056	2	74	416703	1
	Zn	66	50.880	ug/L	1.196	2	2661	242983	2
	Zn	67	50.171	ug/L	1.552	3	379	40358	2
	Zn	68	50.527	ug/L	1.344	2	2025	171459	2
	As	75	53.708	ug/L	0.158	0	28	250625	1
	As-1	75	52.662	ug/L	0 079	0	18195	255933	0
	Se	82	77.365	ug/L	0 475	0	29	42604	0
	Se	78	76.021	ug/L	1 192	1	18449	113791	0
	Y	89		ug/L			977062	1002278	0
	Kr	83		ug/L			343	377	1
>	In	115		ug/L			1320273	1312722	1
	Ag	107	48.825	ug/L	0.138	0	46	1182270	1
	Cd	111	49.337	ug/L	1.010	2	241	311206	0
	Cd	114	49.077	ug/L	0.963	1	39	758294	1
	Sb	121	51.445	ug/L	0 651	1	30	902603	0
	Sb	123	50.967	ug/L	0.766	1	21	687201	0
	Ba	135	49.929	ug/L	0 426	0	18	252869	0
	Ba	137	50.067	ug/L	1.188	2	26	438844	1
>	Tb	159		ug/L			1492326	1476911	1
	Tl	205	49.788	ug/L	0.630	1	35	2314251	0
	Pb	208	49.924	ug/L	1.061	2	187	2898292	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:09:43
Number of Replicates: 3
Method File. C \NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens. RSD
	C	13		ug/L			67707	67016	1
	Cl	37		ug/L			5882606	5792379	4
>	Sc	45		ug/L			1598309	1605004	1
	Cr	52	-0.014	ug/L	0.010	73	38005	37756	0
	Cr	53	-0.001	ug/L	0.005	529	216	213	7
	Mn	55	0.001	ug/L	0.001	111	767	797	3
>	Ge	72		ug/L			1291976	1292612	1
	Ni	60	0.000	ug/L	0.001	393	37	39	16
	Ni	62	0.209	ug/L	0.025	11	173	409	7
	Cu	63	0.014	ug/L	0.002	11	207	447	7
	Cu	65	0.002	ug/L	0.001	53	74	91	10
	Zn	66	-0.015	ug/L	0.006	39	2661	2593	2
	Zn	67	-0.011	ug/L	0.051	446	379	370	9
	Zn	68	-0.014	ug/L	0.015	104	2025	1978	2
	As	75	-0.011	ug/L	0.003	22	28	-24	51
	As-1	75	-0.028	ug/L	0.031	109	18195	18072	0
	Se	82	-0.025	ug/L	0.008	32	29	15	27
	Se	78	-0.087	ug/L	0 114	131	18449	18346	0
	Y	89		ug/L			977062	968265	0
	Kr	83		ug/L			343	344	1
>	In	115		ug/L			1320273	1311908	1
	Ag	107	0.000	ug/L	0.000	61	46	56	11
	Cd	111	0.003	ug/L	0 002	73	241	259	4
	Cd	114	0.001	ug/L	0.000	49	39	48	9
	Sb	121	0.022	ug/L	0 002	10	30	409	8
	Sb	123	0.022	ug/L	0 002	10	21	318	8
	Ba	135	-0.001	ug/L	0.001	152	18	15	24
	Ba	137	0.000	ug/L	0 001	250	26	28	19
>	Tb	159		ug/L			1492326	1475422	1
	Tl	205	0.004	ug/L	0 000	8	35	230	8
	Pb	208	0.001	ug/L	0 000	25	187	238	6

nGC9 : 81225

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:13:25
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	66832	4
	Cl	37		ug/L			5882606	6014259	1
>	Sc	45		ug/L			1598309	1584024	2
	Cr	52	50.755	ug/L	1.210	2	38005	1482415	0
	Cr	53	51.563	ug/L	1.892	3	216	170916	1
	Mn	55	51.897	ug/L	2.509	4	767	2112699	2
>	Ge	72		ug/L			1291976	1285254	1
	Ni	60	49.988	ug/L	0.926	1	37	384002	1
	Ni	62	49.270	ug/L	1.001	2	173	55521	0
	Cu	63	49.633	ug/L	0.658	1	207	872947	2
	Cu	65	49.157	ug/L	0.666	1	74	398997	3
	Zn	66	49.397	ug/L	0.855	1	2661	237762	0
	Zn	67	49.712	ug/L	0.586	1	379	40302	0
	Zn	68	50.512	ug/L	1.000	1	2025	172724	1
	As	75	49.851	ug/L	0.970	1	28	234367	0
	As-1	75	49.719	ug/L	0.815	1	18195	244461	0
	Se	82	50.212	ug/L	0.745	1	29	27871	0
	Se	78	49.563	ug/L	0.509	1	18449	81150	1
	Y	89		ug/L			977062	970177	2
	Kr	83		ug/L			343	385	4
>	In	115		ug/L			1320273	1307977	0
	Ag	107	49.573	ug/L	0.872	1	46	1195983	1
	Cd	111	50.539	ug/L	0.162	0	241	317677	0
	Cd	114	50.734	ug/L	0.547	1	39	781144	0
	Sb	121	49.686	ug/L	0 448	0	30	868671	1
	Sb	123	49.670	ug/L	0 200	0	21	667352	0
	Ba	135	50.132	ug/L	0 163	0	18	252993	0
	Ba	137	49.923	ug/L	0.077	0	26	436082	0
>	Tb	159		ug/L			1492326	1469386	0
	Tl	205	50.789	ug/L	0.575	1	35	2348978	0
	Pb	208	49.462	ug/L	0 538	1	187	2857607	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:19:31
Number of Replicates 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67707	64317	2
	Cl	37		ug/L			5882606	5795849	1
>	Sc	45		ug/L			1598309	1557938	1
	Cr	52	-0.049	ug/L	0 037	74	38005	35658	2
	Cr	53	0.000	ug/L	0 003	1053	216	211	6
	Mn	55	-0.000	ug/L	0.002	652	767	737	8
>	Ge	72		ug/L			1291976	1259504	1
	Ni	60	0.001	ug/L	0.002	208	37	43	34
	Ni	62	0.216	ug/L	0 017	7	173	407	5
	Cu	63	0.017	ug/L	0.003	18	207	493	11
	Cu	65	0.003	ug/L	0 002	56	74	98	16
	Zn	66	-0.310	ug/L	0 009	2	2661	1147	3
	Zn	67	-0.241	ug/L	0.006	2	379	180	2
	Zn	68	-0.294	ug/L	0 020	6	2025	1000	6
	As	75	-0.010	ug/L	0.011	109	28	-16	290
	As-1	75	0.058	ug/L	0 032	54	18195	17995	0
	Se	82	-0.017	ug/L	0 018	105	29	19	50
	Se	78	0.224	ug/L	0.144	64	18449	18262	0
	Y	89		ug/L			977062	949456	0
	Kr	83		ug/L			343	332	3
>	In	115		ug/L			1320273	1312205	1
	Ag	107	0.001	ug/L	0 001	101	46	72	36
	Cd	111	0.002	ug/L	0 004	187	241	253	9
	Cd	114	0.001	ug/L	0 001	132	39	50	27
	Sb	121	0.041	ug/L	0.002	3	30	741	4
	Sb	123	0.041	ug/L	0.003	6	21	576	5
	Ba	135	0.000	ug/L	0 001	234	18	20	27
	Ba	137	-0.000	ug/L	0 001	479	26	25	21
>	Tb	159		ug/L			1492326	1477260	0
	Tl	205	0.005	ug/L	0.000	9	35	258	8
	Pb	208	0.001	ug/L	0.000	38	187	243	9

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LOW CHECK ZZZZZZ ae 5/28/15
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:23:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67707	64955	4
	Cl	37		ug/L			5882606	5671474	2
>	Sc	45		ug/L			1598309	1565905	2
	Cr	52	0.465	ug/L	0.057	12	38005	50344	5
	Cr	53	0.520	ug/L	0 025	4	216	1914	2
	Mn	55	0.515	ug/L	0.001	0	767	21505	2
>	Ge	72		ug/L			1291976	1268684	0
	Ni	60	0.520	ug/L	0.014	2	37	3976	2
	Ni	62	0.712	ug/L	0.030	4	173	959	3
	Cu	63	0.532	ug/L	0 009	1	207	9434	1
	Cu	65	0.517	ug/L	0 012	2	74	4212	1
	Zn	66	3.889	ug/L	0.079	2	2661	20886	1
	Zn	67	3.478	ug/L	0 130	3	379	3129	3
	Zn	68	3.772	ug/L	0.064	1	2025	14574	2
	As	75	0.235	ug/L	0 009	3	28	1117	4
	As-1	75	0.247	ug/L	0 026	10	18195	18977	0
	Se	82	0.530	ug/L	0.013	2	29	318	2
	Se	78	0.604	ug/L	0.114	18	18449	18872	0
	Y	89		ug/L			977062	937547	1
	Kr	83		ug/L			343	334	7
>	In	115		ug/L			1320273	1305817	0
	Ag	107	0.203	ug/L	0.002	1	46	4939	1
	Cd	111	0.098	ug/L	0.007	7	241	855	5
	Cd	114	0.101	ug/L	0.002	1	39	1588	1
	Sb	121	0.219	ug/L	0.005	2	30	3856	2
	Sb	123	0.217	ug/L	0 001	0	21	2926	1
	Ba	135	0.483	ug/L	0 018	3	18	2452	4
	Ba	137	0.498	ug/L	0.012	2	26	4370	2
>	Tb	159		ug/L			1492326	1481431	0
	Tl	205	0.192	ug/L	0.005	2	35	8964	1
	Pb	208	0.102	ug/L	0.002	1	187	6141	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSA 7 22222 ve 5/28/15
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:26:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67707	138675	4
	Cl	37		ug/L			5882606	16884492	4
>	Sc	45		ug/L			1598309	1880755	3
	Cr	52	0.561	ug/L	0 026	4	38005	63696	4
	Cr	53	3.734	ug/L	0.042	1	216	14942	4
	Mn	55	0.098	ug/L	0 001	1	767	5660	3
>	Ge	72		ug/L			1291976	1388553	3
	Ni	60	0.272	ug/L	0.002	0	37	2301	3
	Ni	62	4.544	ug/L	0 577	12	173	5712	14
	Cu	63	1.133	ug/L	0.057	5	207	21758	7
	Cu	65	0.432	ug/L	0.019	4	74	3867	4
	Zn	66	0.906	ug/L	0.068	7	2661	7522	5
	Zn	67	5.895	ug/L	0.095	1	379	5523	3
	Zn	68	0.401	ug/L	0.016	3	2025	3642	4
	As	75	0.144	ug/L	0.030	20	28	762	19
	As-1	75	0.297	ug/L	0.100	33	18195	21011	3
	Se	82	-0.059	ug/L	0.025	41	29	-4	343
	Se	78	0.602	ug/L	0.243	40	18449	20650	2
	Y	89		ug/L			977062	1101018	5
	Kr	83		ug/L			343	608	4
>	In	115		ug/L			1320273	1375926	2
	Ag	107	0.009	ug/L	0 002	19	46	269	12
	Cd	111	0.018	ug/L	0 018	96	241	374	33
	Cd	114	0.187	ug/L	0.005	2	39	3072	1
	Sb	121	0.023	ug/L	0.002	8	30	454	6
	Sb	123	0.023	ug/L	0.003	11	21	351	7
	Ba	135	0.040	ug/L	0.004	10	18	232	6
	Ba	137	0.033	ug/L	0.004	13	26	330	10
>	Tb	159		ug/L			1492326	1525161	0
	Tl	205	0.006	ug/L	0 003	44	35	318	39
	Pb	208	0.049	ug/L	0 002	4	187	3144	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor: 222222 ea 5/28/15
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:32:59
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67707	151123	6
	Cl	37		ug/L			5882606	17356326	4
>	Sc	45		ug/L			1598309	1922924	5
	Cr	52	19.974	ug/L	0 813	4	38005	735797	4
	Cr	53	23.536	ug/L	0.766	3	216	94797	2
	Mn	55	19.780	ug/L	0 544	2	767	977910	2
>	Ge	72		ug/L			1291976	1408935	1
	Ni	60	19.842	ug/L	0.287	1	37	167149	2
	Ni	62	23.969	ug/L	0.750	3	173	29723	4
	Cu	63	20.836	ug/L	0 160	0	207	401843	1
	Cu	65	19.887	ug/L	0.280	1	74	176982	2
	Zn	66	19.666	ug/L	0.449	2	2661	105557	3
	Zn	67	22.166	ug/L	0.347	1	379	19933	3
	Zn	68	18.497	ug/L	0.317	1	2025	70736	1
	As	75	17.722	ug/L	0.289	1	28	91390	3
	As-1	75	18.469	ug/L	0.318	1	18195	112052	3
	Se	82	-0.084	ug/L	0.024	28	29	-19	75
	Se	78	0.675	ug/L	0.121	17	18449	21059	2
	Y	89		ug/L			977062	1122380	4
	Kr	83		ug/L			343	653	2
>	In	115		ug/L			1320273	1389657	1
	Ag	107	19.827	ug/L	0 211	1	46	508279	2
	Cd	111	19.181	ug/L	0.187	0	241	128266	2
	Cd	114	19.030	ug/L	0.114	0	39	311315	0
	Sb	121	0.019	ug/L	0.001	4	30	383	3
	Sb	123	0.021	ug/L	0.001	2	21	319	2
	Ba	135	0.043	ug/L	0.005	10	18	249	10
	Ba	137	0.031	ug/L	0 002	5	26	317	5
>	Tb	159		ug/L			1492326	1525362	1
	Tl	205	0.003	ug/L	0.000	12	35	196	10
	Pb	208	0.051	ug/L	0 001	2	187	3271	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR200
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:39:24
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File· C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67707	70397	1
	Cl	37		ug/L			5882606	6456129	1
>	Sc	45		ug/L			1598309	1761075	2
	Cr	52	196.361	ug/L	7.517	3	38005	6254782	1
	Cr	53	197.401	ug/L	3 134	1	216	727091	2
	Mn	55	193.879	ug/L	4.938	2	767	8776643	1
>	Ge	72		ug/L			1291976	1300480	1
	Ni	60	199.962	ug/L	1.457	0	37	1554245	0
	Ni	62	200.045	ug/L	5 842	2	173	227563	1
	Cu	63	199.553	ug/L	5.449	2	207	3550399	2
	Cu	65	197.371	ug/L	5.160	2	74	1620380	2
	Zn	66	198.024	ug/L	1.494	0	2661	956554	1
	Zn	67	192.467	ug/L	0.915	0	379	156807	1
	Zn	68	196.175	ug/L	3.892	1	2025	672897	1
	As	75	198.447	ug/L	4.024	2	28	944092	1
	As-1	75	198.459	ug/L	4.111	2	18195	932672	1
	Se	82	195.866	ug/L	2.565	1	29	109934	1
	Se	78	194.773	ug/L	3.331	1	18449	268253	0
	Y	89		ug/L			977062	996111	1
	Kr	83		ug/L			343	544	10
>	In	115		ug/L			1320273	1281639	0
	Ag	107	203.964	ug/L	1.468	0	46	4821521	0
	Cd	111	198.554	ug/L	0.870	0	241	1222240	0
	Cd	114	204.560	ug/L	1.682	0	39	3086102	0
	Sb	121	209.770	ug/L	1.615	0	30	3593394	0
	Sb	123	208.077	ug/L	2.343	1	21	2739215	0
	Ba	135	203.628	ug/L	0.958	0	18	1006894	1
	Ba	137	204.168	ug/L	1.594	0	26	1747381	0
>	Tb	159		ug/L			1492326	1472345	1
	Tl	205	194.716	ug/L	2 005	1	35	9023270	0
	Pb	208	199.725	ug/L	3.892	1	187	11559439	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR300
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:45:50
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67707	70473	4
	Cl	37		ug/L			5882606	6266536	2
>	Sc	45		ug/L			1598309	1611403	2
	Cr	52	313.330	ug/L	6.369	2	38005	9111914	0
	Cr	53	309.713	ug/L	4.206	1	216	1043802	2
	Mn	55	308.877	ug/L	4.446	1	767	12796358	2
>	Ge	72		ug/L			1291976	1229281	1
	Ni	60	306.180	ug/L	3.711	1	37	2249341	0
	Ni	62	303.300	ug/L	4.458	1	173	326067	0
	Cu	63	300.265	ug/L	2.186	0	207	5049750	1
	Cu	65	297.007	ug/L	2.833	0	74	2304875	1
	Zn	66	284.821	ug/L	1.261	0	2661	1299420	1
	Zn	67	280.719	ug/L	4.754	1	379	216030	2
	Zn	68	287.407	ug/L	5.504	1	2025	930832	0
	As	75	296.957	ug/L	5.366	1	28	1335253	1
	As-1	75	298.074	ug/L	5.130	1	18195	1315339	1
	Se	82	288.091	ug/L	4.587	1	29	152814	0
	Se	78	289.898	ug/L	3.693	1	18449	368823	0
	Y	89		ug/L			977062	964141	1
	Kr	83		ug/L			343	709	6
>	In	115		ug/L			1320273	1245907	0
	Ag	107	299.492	ug/L	1.562	0	46	6882480	0
	Cd	111	295.527	ug/L	1.605	0	241	1768391	1
	Cd	114	301.205	ug/L	3.101	1	39	4417362	0
	Sb	121	310.019	ug/L	3.323	1	30	5162599	0
	Sb	123	309.250	ug/L	2 547	0	21	3957636	0
	Ba	135	310.973	ug/L	4 905	1	18	1494755	1
	Ba	137	323.792	ug/L	2 374	0	26	2693877	0
>	Tb	159		ug/L			1492326	1426723	0
	Tl	205	286.942	ug/L	4.474	1	35	12885936	1
	Pb	208	293.896	ug/L	0 900	0	187	16485106	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B1
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:52:15
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			67707	68192	6
	Cl	37		ug/L			5882606	5877008	3
>	Sc	45		ug/L			1598309	1648946	1
	Cr	52	-0.045	ug/L	0 069	150	38005	37840	3
	Cr	53	0.052	ug/L	0.062	119	216	400	51
	Mn	55	0.055	ug/L	0 076	139	767	3071	101
>	Ge	72		ug/L			1291976	1319025	0
	Ni	60	0.065	ug/L	0 081	124	37	552	115
	Ni	62	1.579	ug/L	0 122	7	173	1997	6
	Cu	63	0.190	ug/L	0.122	64	207	3637	60
	Cu	65	0.111	ug/L	0 137	124	74	993	114
	Zn	66	1.657	ug/L	0.882	53	2661	10810	39
	Zn	67	1.491	ug/L	0.757	50	379	1616	38
	Zn	68	1.590	ug/L	0 841	52	2025	7580	38
	As	75	0.042	ug/L	0.061	145	28	230	126
	As-1	75	0.101	ug/L	0 072	71	18195	19047	1
	Se	82	0.026	ug/L	0.057	216	29	44	71
	Se	78	0.242	ug/L	0 167	68	18449	19150	0
	Y	89		ug/L			977062	978268	1
	Kr	83		ug/L			343	359	8
>	In	115		ug/L			1320273	1334713	0
	Ag	107	0.015	ug/L	0 020	132	46	420	116
	Cd	111	0.013	ug/L	0.016	124	241	323	30
	Cd	114	0.012	ug/L	0.017	137	39	234	113
	Sb	121	0.196	ug/L	0.016	8	30	3533	7
	Sb	123	0.194	ug/L	0.014	7	21	2676	6
	Ba	135	0.018	ug/L	0.013	71	18	112	58
	Ba	137	0.016	ug/L	0 006	35	26	166	29
>	Tb	159		ug/L			1492326	1499258	0
	Tl	205	0.036	ug/L	0.006	16	35	1740	16
	Pb	208	0.022	ug/L	0.013	59	187	1498	51

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 09:57:51
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	66096	4
	Cl	37		ug/L			5882606	5872823	3
>	Sc	45		ug/L			1598309	1617217	2
	Cr	52	-0.008	ug/L	0 048	603	38005	38196	1
	Cr	53	0.020	ug/L	0.008	41	216	287	8
	Mn	55	0.008	ug/L	0 002	30	767	1087	5
>	Ge	72		ug/L			1291976	1300494	2
	Ni	60	0.015	ug/L	0.002	13	37	155	12
	Ni	62	1.277	ug/L	0.072	5	173	1625	5
	Cu	63	0.099	ug/L	0.000	0	207	1970	3
	Cu	65	0.028	ug/L	0 007	25	74	305	19
	Zn	66	-0.196	ug/L	0 017	8	2661	1731	2
	Zn	67	-0.152	ug/L	0.037	24	379	258	9
	Zn	68	-0.193	ug/L	0.031	15	2025	1376	5
	As	75	0.003	ug/L	0.014	534	28	41	165
	As-1	75	0.098	ug/L	0 137	140	18195	18754	1
	Se	82	-0.002	ug/L	0 015	914	29	28	31
	Se	78	0.348	ug/L	0.474	136	18449	19005	0
	Y	89		ug/L			977062	991826	1
	Kr	83		ug/L			343	359	3
>	In	115		ug/L			1320273	1323907	0
	Ag	107	0.003	ug/L	0 001	52	46	111	30
	Cd	111	0.004	ug/L	0.005	140	241	264	11
	Cd	114	0.002	ug/L	0.002	98	39	74	45
	Sb	121	0.064	ug/L	0 005	7	30	1158	6
	Sb	123	0.064	ug/L	0.005	7	21	889	6
	Ba	135	0.008	ug/L	0.001	12	18	60	7
	Ba	137	0.009	ug/L	0 001	6	26	110	4
>	Tb	159		ug/L			1492326	1501007	0
	Tl	205	0.012	ug/L	0 001	6	35	612	6
	Pb	208	0.009	ug/L	0 001	6	187	741	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:06:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	67925	1
	Cl	37		ug/L			5882606	5882116	1
>	Sc	45		ug/L			1598309	1619516	2
	Cr	52	-0.009	ug/L	0 059	625	38005	38208	1
	Cr	53	0.017	ug/L	0 009	52	216	277	13
	Mn	55	0.009	ug/L	0.001	7	767	1156	3
>	Ge	72		ug/L			1291976	1311375	1
	Ni	60	0.014	ug/L	0 002	15	37	148	12
	Ni	62	1.078	ug/L	0 014	1	173	1412	2
	Cu	63	0.084	ug/L	0 002	2	207	1725	2
	Cu	65	0.025	ug/L	0.001	3	74	284	3
	Zn	66	0.739	ug/L	0 019	2	2661	6291	0
	Zn	67	0.698	ug/L	0 021	3	379	956	0
	Zn	68	0.752	ug/L	0 023	3	2025	4647	1
	As	75	-0.006	ug/L	0.000	2	28	0	585
	As-1	75	0.030	ug/L	0.047	155	18195	18608	0
	Se	82	-0.024	ug/L	0 002	9	29	16	8
	Se	78	0.113	ug/L	0 177	156	18449	18871	0
	Y	89		ug/L			977062	1012995	3
	Kr	83		ug/L			343	362	3
>	In	115		ug/L			1320273	1360519	1
	Ag	107	0.003	ug/L	0.003	118	46	112	69
	Cd	111	-0.000	ug/L	0 002	5849	241	248	7
	Cd	114	0.001	ug/L	0 000	28	39	54	8
	Sb	121	0.033	ug/L	0 003	8	30	639	6
	Sb	123	0.034	ug/L	0 003	10	21	496	8
	Ba	135	0.012	ug/L	0.001	6	18	82	4
	Ba	137	0.012	ug/L	0 001	7	26	136	6
>	Tb	159		ug/L			1492326	1509646	0
	Tl	205	0.006	ug/L	0 000	3	35	301	3
	Pb	208	0.012	ug/L	0 001	4	187	926	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:12:13
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67707	69130	2
	Cl	37		ug/L			5882606	5798005	1
>	Sc	45		ug/L			1598309	1631103	4
	Cr	52	-0.011	ug/L	0.028	263	38005	38456	3
	Cr	53	0.011	ug/L	0.006	55	216	257	4
	Mn	55	0.009	ug/L	0.001	11	767	1148	0
>	Ge	72		ug/L			1291976	1311963	3
	Ni	60	0.015	ug/L	0.001	6	37	154	7
	Ni	62	0.975	ug/L	0.077	7	173	1293	5
	Cu	63	0.076	ug/L	0.003	3	207	1567	1
	Cu	65	0.023	ug/L	0.003	13	74	264	7
	Zn	66	0.775	ug/L	0.047	6	2661	6463	1
	Zn	67	0.718	ug/L	0.062	8	379	974	7
	Zn	68	0.754	ug/L	0.047	6	2025	4656	4
	As	75	-0.000	ug/L	0.011	14421	28	30	183
	As-1	75	0.010	ug/L	0 140	1346	18195	18508	0
	Se	82	-0.008	ug/L	0 006	76	29	25	17
	Se	78	0.033	ug/L	0 532	1589	18449	18761	0
	Y	89		ug/L			977062	1005868	0
	Kr	83		ug/L			343	355	8
>	In	115		ug/L			1320273	1350239	2
	Ag	107	0.001	ug/L	0.000	78	46	60	18
	Cd	111	-0.003	ug/L	0.003	91	241	224	6
	Cd	114	0.000	ug/L	0 000	101	39	48	14
	Sb	121	0.018	ug/L	0.002	13	30	346	10
	Sb	123	0.019	ug/L	0.003	14	21	285	12
	Ba	135	0.012	ug/L	0.001	6	18	81	7
	Ba	137	0.014	ug/L	0 002	15	26	152	11
>	Tb	159		ug/L			1492326	1509214	0
	Tl	205	0.003	ug/L	0.000	4	35	189	3
	Pb	208	0.011	ug/L	0.001	5	187	856	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:19:04
Number of Replicates: 3
Method File. C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67707	68438	1
	Cl	37		ug/L			5882606	5804764	2
>	Sc	45		ug/L			1598309	1648694	0
	Cr	52	-0.024	ug/L	0 022	93	38005	38502	0
	Cr	53	0.013	ug/L	0 007	54	216	269	9
	Mn	55	0.012	ug/L	0 001	8	767	1288	3
>	Ge	72		ug/L			1291976	1320625	0
	Ni	60	0.026	ug/L	0.001	2	37	244	1
	Ni	62	0.769	ug/L	0.017	2	173	1065	1
	Cu	63	0.072	ug/L	0.003	3	207	1515	3
	Cu	65	0.031	ug/L	0.001	4	74	330	3
	Zn	66	0.729	ug/L	0.018	2	2661	6285	1
	Zn	67	0.659	ug/L	0 040	6	379	931	3
	Zn	68	0.712	ug/L	0.041	5	2025	4542	2
	As	75	-0.004	ug/L	0.006	173	28	11	258
	As-1	75	-0.027	ug/L	0.052	192	18195	18472	1
	Se	82	-0.014	ug/L	0.032	227	29	22	81
	Se	78	-0.095	ug/L	0 179	188	18449	18734	0
	Y	89		ug/L			977062	989533	1
	Kr	83		ug/L			343	356	11
>	In	115		ug/L			1320273	1344597	1
	Ag	107	0.001	ug/L	0.000	47	46	73	16
	Cd	111	-0.000	ug/L	0 003	1070	241	243	6
	Cd	114	0.001	ug/L	0 000	23	39	59	7
	Sb	121	0.012	ug/L	0.001	8	30	243	8
	Sb	123	0.012	ug/L	0 002	19	21	180	17
	Ba	135	0.018	ug/L	0 001	3	18	109	3
	Ba	137	0.018	ug/L	0.001	7	26	190	5
>	Tb	159		ug/L			1492326	1500311	0
	Tl	205	0.003	ug/L	0.000	3	35	153	2
	Pb	208	0.017	ug/L	0.001	3	187	1203	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:24:40
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C \NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	68539	3
	Cl	37		ug/L			5882606	5968634	1
>	Sc	45		ug/L			1598309	1632173	1
	Cr	52	52.179	ug/L	0.842	1	38005	1569637	0
	Cr	53	51.326	ug/L	0.729	1	216	175375	0
	Mn	55	52.324	ug/L	1.112	2	767	2196020	0
>	Ge	72		ug/L			1291976	1281846	0
	Ni	60	50.185	ug/L	0.341	0	37	384541	1
	Ni	62	50.865	ug/L	1.242	2	173	57169	1
	Cu	63	51.052	ug/L	0.197	0	207	895522	0
	Cu	65	50.979	ug/L	1.123	2	74	412588	1
	Zn	66	52.059	ug/L	0.574	1	2661	249818	1
	Zn	67	51.370	ug/L	1.033	2	379	41525	1
	Zn	68	52.292	ug/L	0.681	1	2025	178287	1
	As	75	51.175	ug/L	0.636	1	28	239996	0
	As-1	75	50.948	ug/L	0.764	1	18195	249424	0
	Se	82	52.016	ug/L	0.437	0	29	28799	0
	Se	78	51.058	ug/L	0.586	1	18449	82824	0
	Y	89		ug/L			977062	1009709	1
	Kr	83		ug/L			343	361	4
>	In	115		ug/L			1320273	1334045	1
	Ag	107	50.036	ug/L	0.494	0	46	1231135	0
	Cd	111	49.745	ug/L	1.146	2	241	318886	2
	Cd	114	50.425	ug/L	0.638	1	39	791828	1
	Sb	121	50.167	ug/L	0 376	0	30	894489	0
	Sb	123	49.344	ug/L	0 850	1	21	676076	0
	Ba	135	49.166	ug/L	0 611	1	18	253033	0
	Ba	137	49.766	ug/L	0.082	0	26	443374	1
>	Tb	159		ug/L			1492326	1502529	1
	Tl	205	50.871	ug/L	0 625	1	35	2405715	0
	Pb	208	49.500	ug/L	0 524	1	187	2924124	1

AGC 01238

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:31:07
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67707	68374	4
	Cl	37		ug/L			5882606	6015532	1
>	Sc	45		ug/L			1598309	1657179	3
	Cr	52	-0.074	ug/L	0 035	47	38005	37171	1
	Cr	53	0.002	ug/L	0 004	218	216	230	9
	Mn	55	0.000	ug/L	0 002	1285	767	799	4
>	Ge	72		ug/L			1291976	1324461	0
	Ni	60	0.001	ug/L	0 001	159	37	42	15
	Ni	62	0.570	ug/L	0.022	3	173	838	2
	Cu	63	0.039	ug/L	0.001	2	207	916	1
	Cu	65	0.005	ug/L	0.002	42	74	114	14
	Zn	66	0.654	ug/L	0.044	6	2661	5935	3
	Zn	67	0.630	ug/L	0.052	8	379	910	4
	Zn	68	0.633	ug/L	0.014	2	2025	4280	1
	As	75	-0.009	ug/L	0 013	151	28	-12	521
	As-1	75	-0.042	ug/L	0 021	51	18195	18456	0
	Se	82	-0.011	ug/L	0.019	172	29	23	43
	Se	78	-0.132	ug/L	0 072	54	18449	18741	0
	Y	89		ug/L			977062	995648	1
	Kr	83		ug/L			343	348	3
>	In	115		ug/L			1320273	1359082	0
	Ag	107	0.001	ug/L	0.000	21	46	62	5
	Cd	111	0.001	ug/L	0 002	159	241	254	4
	Cd	114	0.000	ug/L	0 000	50	39	47	6
	Sb	121	0.039	ug/L	0.001	1	30	741	0
	Sb	123	0.039	ug/L	0 000	0	21	565	0
	Ba	135	0.002	ug/L	0 001	28	18	31	11
	Ba	137	0.002	ug/L	0.001	29	26	48	12
>	Tb	159		ug/L			1492326	1512946	1
	Tl	205	0.005	ug/L	0 000	9	35	268	7
	Pb	208	0.001	ug/L	0 000	14	187	254	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:43:40
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L				69868	2
	Cl	37		ug/L				5971125	1
>	Sc	45		ug/L				1593503	1
	Cr	52		ug/L				38265	1
	Cr	53		ug/L				218	5
	Mn	55		ug/L				810	3
>	Ge	72		ug/L				1300426	0
	Ni	60		ug/L				44	5
	Ni	62		ug/L				744	2
	Cu	63		ug/L				766	1
	Cu	65		ug/L				97	19
	Zn	66		ug/L				4990	3
	Zn	67		ug/L				752	3
	Zn	68		ug/L				3608	2
	As	75		ug/L				-12	259
	As-1	75		ug/L				18257	0
	Se	82		ug/L				12	60
	Se	78		ug/L				18525	0
	Y	89		ug/L				985570	2
	Kr	83		ug/L				362	3
>	In	115		ug/L				1349760	1
	Ag	107		ug/L				62	36
	Cd	111		ug/L				232	6
	Cd	114		ug/L				44	31
	Sb	121		ug/L				288	7
	Sb	123		ug/L				229	15
	Ba	135		ug/L				29	16
	Ba	137		ug/L				52	15
>	Tb	159		ug/L				1521468	0
	Tl	205		ug/L				143	12
	Pb	208		ug/L				258	17

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:47:22
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File. C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			69868	67505	3
	Cl	37		ug/L			5971125	6112659	2
>	Sc	45		ug/L			1593503	1652097	1
	Cr	52	50.209	ug/L	1 848	3	38265	1530500	2
	Cr	53	51.212	ug/L	2 177	4	218	177100	3
	Mn	55	52.122	ug/L	0.268	0	810	2214786	1
>	Ge	72		ug/L			1300426	1311289	1
	Ni	60	50.176	ug/L	0 824	1	44	393251	0
	Ni	62	50.372	ug/L	1 800	3	744	58483	2
	Cu	63	49.288	ug/L	1 325	2	766	885050	3
	Cu	65	49.763	ug/L	1.876	3	97	411969	3
	Zn	66	49.893	ug/L	1.359	2	4990	247338	2
	Zn	67	50.765	ug/L	0 481	0	752	42357	0
	Zn	68	50.455	ug/L	1.084	2	3608	177619	2
	As	75	49.696	ug/L	0.945	1	-12	238358	1
	As-1	75	49.477	ug/L	1.049	2	18257	248247	1
	Se	82	50.577	ug/L	0.383	0	12	28628	0
	Se	78	49.653	ug/L	1.009	2	18525	82858	0
	Y	89		ug/L			985570	1004974	1
	Kr	83		ug/L			362	371	4
>	In	115		ug/L			1349760	1336643	2
	Ag	107	49.023	ug/L	1 325	2	62	1208215	0
	Cd	111	49.633	ug/L	0 803	1	232	318803	2
	Cd	114	50.777	ug/L	0.874	1	44	798786	0
	Sb	121	50.170	ug/L	1 120	2	288	896327	0
	Sb	123	49.827	ug/L	0 434	0	229	684274	1
	Ba	135	49.687	ug/L	0.902	1	29	256214	1
	Ba	137	50.168	ug/L	0 721	1	52	447763	1
>	Tb	159		ug/L			1521468	1507558	1
	Tl	205	50.377	ug/L	0 792	1	143	2390336	0
	Pb	208	49.574	ug/L	1 189	2	258	2937886	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:53:48
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C \NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			69868	68382	3
	Cl	37		ug/L			5971125	5843237	3
>	Sc	45		ug/L			1593503	1617601	2
	Cr	52	-0.027	ug/L	0 022	83	38265	38069	2
	Cr	53	0.001	ug/L	0 004	411	218	224	6
	Mn	55	-0.002	ug/L	0.001	73	810	756	4
>	Ge	72		ug/L			1300426	1275211	0
	Ni	60	0.001	ug/L	0 001	101	44	48	10
	Ni	62	-0.008	ug/L	0 013	162	744	721	2
	Cu	63	0.000	ug/L	0 001	360	766	757	2
	Cu	65	0.000	ug/L	0.002	334	97	99	13
	Zn	66	0.067	ug/L	0 036	54	4990	5207	3
	Zn	67	0.024	ug/L	0 036	151	752	756	3
	Zn	68	0.040	ug/L	0 018	45	3608	3673	1
	As	75	0.000	ug/L	0 005	2509	-12	-11	201
	As-1	75	0.088	ug/L	0 018	20	18257	18302	0
	Se	82	0.027	ug/L	0 023	84	12	27	46
	Se	78	0.332	ug/L	0 072	21	18525	18584	0
	Y	89		ug/L			985570	990960	0
	Kr	83		ug/L			362	334	10
>	In	115		ug/L			1349760	1332433	1
	Ag	107	-0.000	ug/L	0.000	2037	62	61	5
	Cd	111	0.006	ug/L	0.003	49	232	266	5
	Cd	114	0.001	ug/L	0 002	176	44	59	45
	Sb	121	0.025	ug/L	0 001	5	288	731	1
	Sb	123	0.024	ug/L	0 002	8	229	554	6
	Ba	135	0.000	ug/L	0.000	156	29	30	6
	Ba	137	0.000	ug/L	0 001	388	52	55	23
>	Tb	159		ug/L			1521468	1496233	0
	Tl	205	0.003	ug/L	0 001	18	143	276	9
	Pb	208	0.000	ug/L	0 000	223	258	267	10

ACS 81212

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LOW CHECK
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 10:57:30
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			69868	68169	2
	Cl	37		ug/L			5971125	5829466	2
>	Sc	45		ug/L			1593503	1629314	2
	Cr	52	0.488	ug/L	0 029	5	38265	53398	1
	Cr	53	0.518	ug/L	0 022	4	218	1985	1
	Mn	55	0.518	ug/L	0 012	2	810	22529	3
>	Ge	72		ug/L			1300426	1298076	1
	Ni	60	0.530	ug/L	0 009	1	44	4153	2
	Ni	62	0.432	ug/L	0 019	4	744	1233	2
	Cu	63	0.531	ug/L	0.017	3	766	10192	4
	Cu	65	0.559	ug/L	0 003	0	97	4677	1
	Zn	66	3.935	ug/L	0.098	2	4990	23896	1
	Zn	67	3.543	ug/L	0 147	4	752	3623	1
	Zn	68	3.932	ug/L	0 199	5	3608	17017	2
	As	75	0.237	ug/L	0 010	4	-12	1111	5
	As-1	75	0.236	ug/L	0.053	22	18257	19306	0
	Se	82	0.521	ug/L	0.034	6	12	304	5
	Se	78	0.550	ug/L	0.246	44	18525	19192	0
	Y	89		ug/L			985570	991770	0
	Kr	83		ug/L			362	363	6
>	In	115		ug/L			1349760	1336462	1
	Ag	107	0.205	ug/L	0.002	0	62	5106	0
	Cd	111	0.102	ug/L	0.008	8	232	887	5
	Cd	114	0.102	ug/L	0 002	1	44	1652	2
	Sb	121	0.209	ug/L	0 002	0	288	4014	1
	Sb	123	0.202	ug/L	0 003	1	229	3002	1
	Ba	135	0.490	ug/L	0.012	2	29	2556	3
	Ba	137	0.495	ug/L	0.015	3	52	4467	2
>	Tb	159		ug/L			1521468	1506915	1
	Tl	205	0.195	ug/L	0.003	1	143	9386	1
	Pb	208	0.109	ug/L	0.002	1	258	6690	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSA
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:01:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C \NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			69868	146666	2
	Cl	37		ug/L			5971125	16878446	6
>	Sc	45		ug/L			1593503	1895866	3
	Cr	52	0.507	ug/L	0.047	9	38265	62756	0
	Cr	53	3.746	ug/L	0 029	0	218	15109	3
	Mn	55	0.101	ug/L	0 001	1	810	5875	2
>	Ge	72		ug/L			1300426	1400173	3
	Ni	60	0.290	ug/L	0.015	5	44	2480	8
	Ni	62	3.290	ug/L	0.425	12	744	4840	13
	Cu	63	1.059	ug/L	0.030	2	766	21120	6
	Cu	65	0.430	ug/L	0.006	1	97	3906	3
	Zn	66	0.168	ug/L	0.053	31	4990	6239	0
	Zn	67	5.329	ug/L	0.328	6	752	5475	7
	Zn	68	-0.305	ug/L	0.014	4	3608	2762	1
	As	75	0.144	ug/L	0.017	11	-12	726	14
	As-1	75	0.255	ug/L	0.061	23	18257	20914	2
	Se	82	-0.047	ug/L	0.010	20	12	-14	36
	Se	78	0.461	ug/L	0.247	53	18525	20575	1
	Y	89		ug/L			985570	1109852	3
	Kr	83		ug/L			362	626	5
>	In	115		ug/L			1349760	1389266	2
	Ag	107	0.008	ug/L	0.001	8	62	267	7
	Cd	111	0.020	ug/L	0.005	24	232	371	6
	Cd	114	0.182 -	ug/L	0.004	2	44	3025	0
	Sb	121	0.009	ug/L	0.003	30	288	455	10
	Sb	123	0.007	ug/L	0.001	18	229	342	5
	Ba	135	0.033	ug/L	0.001	2	29	206	0
	Ba	137	0.026	ug/L	0 002	6	52	293	3
>	Tb	159		ug/L			1521468	1543429	1
	Tl	205	0.003	ug/L	0.001	42	143	298	20
	Pb	208	0.046	ug/L	0 001	1	258	3047	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor: 222222 ee 5/28/15
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:07:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			69868	151152	1
	Cl	37		ug/L			5971125	17082132	1
>	Sc	45		ug/L			1593503	1920766	1
	Cr	52	20.223	ug/L	0.542	2	38265	744266	1
	Cr	53	23.140	ug/L	0 325	1	218	93201	1
	Mn	55	19.718	ug/L	0.429	2	810	974472	0
>	Ge	72		ug/L			1300426	1403874	1
	Ni	60	20.419	ug/L	0.634	3	44	171421	4
	Ni	62	23.368	ug/L	0 805	3	744	29481	3
	Cu	63	20.090	ug/L	0 464	2	766	386648	1
	Cu	65	19.894	ug/L	0 508	2	97	176397	1
	Zn	66	18.909	ug/L	0 232	1	4990	103714	1
	Zn	67	22.359	ug/L	0 732	3	752	20431	3
	Zn	68	17.664	ug/L	0.691	3	3608	69126	4
	As	75	17.733	ug/L	0 075	0	-12	91056	1
	As-1	75	18.410	ug/L	0 121	0	18257	111278	1
	Se	82	-0.039	ug/L	0 010	25	12	-10	60
	Se	78	0.449	ug/L	0 161	35	18525	20621	1
	Y	89		ug/L			985570	1110316	2
	Kr	83		ug/L			362	625	4
>	In	115		ug/L			1349760	1389268	0
	Ag	107	19.697	ug/L	0.339	1	62	504847	2
	Cd	111	19.400	ug/L	0.095	0	232	129670	1
	Cd	114	18.921	ug/L	0.063	0	44	309481	1
	Sb	121	0.005	ug/L	0 001	11	288	391	3
	Sb	123	0.004	ug/L	0 002	44	229	293	9
	Ba	135	0.042	ug/L	0 001	3	29	256	1
	Ba	137	0.030	ug/L	0.002	7	52	332	6
>	Tb	159		ug/L			1521468	1513725	1
	Tl	205	0.001	ug/L	0.000	24	143	187	6
	Pb	208	0.049	ug/L	0.001	1	258	3201	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:15:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			69868	146043	4
	Cl	37		ug/L			5971125	17048459	4
>	Sc	45		ug/L			1593503	1898697	4
	Cr	52	19.778	ug/L	0 494	2	38265	720217	2
	Cr	53	23.036	ug/L	1 195	5	218	91585	0
	Mn	55	19.595	ug/L	0.340	1	810	957058	2
>	Ge	72		ug/L			1300426	1387288	2
	Ni	60	20.022	ug/L	0 476	2	44	166006	1
	Ni	62	22.788	ug/L	0.644	2	744	28427	3
	Cu	63	20.654	ug/L	0 127	0	766	392789	2
	Cu	65	19.853	ug/L	0.665	3	97	173870	0
	Zn	66	19.226	ug/L	0 604	3	4990	104092	3
	Zn	67	21.918	ug/L	0 543	2	752	19810	4
	Zn	68	17.918	ug/L	0.195	1	3608	69220	3
	As	75	17.715	ug/L	0.317	1	-12	89864	1
	As-1	75	18.408	ug/L	0.367	1	18257	109926	1
	Se	82	-0.045	ug/L	0.021	46	12	-13	92
	Se	78	0.509	ug/L	0 193	37	18525	20454	1
	Y	89		ug/L			985570	1083789	1
	Kr	83		ug/L			362	627	9
>	In	115		ug/L			1349760	1359518	0
	Ag	107	19.889	ug/L	0.125	0	62	498788	0
	Cd	111	19.068	ug/L	0.298	1	232	124711	0
	Cd	114	19.192	ug/L	0.170	0	44	307187	1
	Sb	121	0.004	ug/L	0 001	21	288	354	3
	Sb	123	0.003	ug/L	0 002	74	229	266	10
	Ba	135	0.035	ug/L	0.001	1	29	213	0
	Ba	137	0.029	ug/L	0 002	6	52	313	5
>	Tb	159		ug/L			1521468	1496319	0
	Tl	205	0.001	ug/L	0 000	15	143	171	2
	Pb	208	0.046	ug/L	0.001	2	258	2958	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:21:37
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			69868	72744	3
	Cl	37		ug/L			5971125	6190011	2
>	Sc	45		ug/L			1593503	1769227	0
	Cr	52	-0.059	ug/L	0 020	33	38265	40610	0
	Cr	53	0.177	ug/L	0.026	14	218	896	10
	Mn	55	0.009	ug/L	0 002	16	810	1323	4
>	Ge	72		ug/L			1300426	1365562	1
	Ni	60	0.022	ug/L	0.003	15	44	226	11
	Ni	62	0.293	ug/L	0.018	6	744	1131	1
	Cu	63	0.041	ug/L	0 001	3	766	1572	2
	Cu	65	0.027	ug/L	0 004	12	97	338	7
	Zn	66	0.398	ug/L	0 033	8	4990	7253	2
	Zn	67	0.328	ug/L	0 009	2	752	1069	1
	Zn	68	0.423	ug/L	0.052	12	3608	5305	3
	As	75	-0.003	ug/L	0.008	277	-12	-28	147
	As-1	75	-0.009	ug/L	0 051	533	18257	19124	0
	Se	82	0.010	ug/L	0.015	145	12	19	45
	Se	78	-0.023	ug/L	0 174	763	18525	19421	0
	Y	89		ug/L			985570	1055233	1
	Kr	83		ug/L			362	362	7
>	In	115		ug/L			1349760	1372851	0
	Ag	107	0.000	ug/L	0.001	453	62	68	30
	Cd	111	0.000	ug/L	0 002	479	232	239	6
	Cd	114	0.000	ug/L	0 000	73	44	53	10
	Sb	121	-0.010	ug/L	0.000	2	288	112	3
	Sb	123	-0.010	ug/L	0 001	5	229	90	8
	Ba	135	0.011	ug/L	0 003	21	29	90	14
	Ba	137	0.012	ug/L	0.001	7	52	161	4
>	Tb	159		ug/L			1521468	1493825	0
	Tl	205	-0.001	ug/L	0.000	49	143	108	14
	Pb	208	0.017	ug/L	0.001	3	258	1229	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:27:32
Number of Replicates. 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			69868	70749	2
	Cl	37		ug/L			5971125	6351613	0
>	Sc	45		ug/L			1593503	1775111	3
	Cr	52	50.598	ug/L	1.956	3	38265	1655885	0
	Cr	53	50.564	ug/L	2 198	4	218	187753	1
	Mn	55	51.386	ug/L	2 449	4	810	2343535	1
>	Ge	72		ug/L			1300426	1361803	2
	Ni	60	49.916	ug/L	1 641	3	44	406141	1
	Ni	62	50.338	ug/L	1 518	3	744	60682	0
	Cu	63	50.221	ug/L	1 334	2	766	936244	2
	Cu	65	50.471	ug/L	1.224	2	97	433864	0
	Zn	66	51.191	ug/L	0 927	1	4990	263405	1
	Zn	67	50.838	ug/L	0 888	1	752	44045	1
	Zn	68	52.379	ug/L	0 487	0	3608	191340	1
	As	75	50.480	ug/L	1.360	2	-12	251373	0
	As-1	75	50.363	ug/L	1.579	3	18257	262003	0
	Se	82	51.329	ug/L	0.847	1	12	30168	1
	Se	78	50.759	ug/L	1.465	2	18525	87516	0
	Y	89		ug/L			985570	1043265	1
	Kr	83		ug/L			362	382	5
>	In	115		ug/L			1349760	1354112	0
	Ag	107	50.971	ug/L	0.689	1	62	1273020	0
	Cd	111	50.578	ug/L	0.721	1	232	329099	0
	Cd	114	50.623	ug/L	1.383	2	44	806819	1
	Sb	121	50.457	ug/L	0.415	0	288	913473	0
	Sb	123	49.294	ug/L	0 512	1	229	685843	0
	Ba	135	48.750	ug/L	0 424	0	29	254699	0
	Ba	137	48.739	ug/L	0.892	1	52	440741	1
>	Tb	159		ug/L			1521468	1470374	0
	Tl	205	52.680	ug/L	0.946	1	143	2438069	1
	Pb	208	51.937	ug/L	0.061	0	258	3002560	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB4
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:33:58
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			69868	73139	3
	Cl	37		ug/L			5971125	6243822	3
>	Sc	45		ug/L			1593503	1750111	0
	Cr	52	-0.070	ug/L	0 045	63	38265	39813	3
	Cr	53	0.048	ug/L	0.006	12	218	415	5
	Mn	55	-0.002	ug/L	0 001	51	810	813	5
>	Ge	72		ug/L			1300426	1358153	2
	Ni	60	0.000	ug/L	0 001	317	44	50	23
	Ni	62	0.023	ug/L	0.021	89	744	804	1
	Cu	63	0.004	ug/L	0 001	34	766	865	0
	Cu	65	0.001	ug/L	0 001	77	97	113	6
	Zn	66	-0.556	ug/L	0.033	5	4990	2411	5
	Zn	67	-0.517	ug/L	0 010	1	752	346	0
	Zn	68	-0.522	ug/L	0.030	5	3608	1901	3
	As	75	0.002	ug/L	0.008	332	-12	-1	3227
	As-1	75	-0.040	ug/L	0.107	269	18257	18867	0
	Se	82	0.021	ug/L	0 012	55	12	25	29
	Se	78	-0.136	ug/L	0 411	302	18525	19156	0
	Y	89		ug/L			985570	1031729	1
	Kr	83		ug/L			362	363	5
>	In	115		ug/L			1349760	1366000	1
	Ag	107	-0.000	ug/L	0 000	73	62	52	13
	Cd	111	0.001	ug/L	0.003	405	232	239	6
	Cd	114	0.000	ug/L	0 001	234	44	49	21
	Sb	121	0.020	ug/L	0 001	4	288	652	2
	Sb	123	0.017	ug/L	0.002	13	229	463	6
	Ba	135	-0.002	ug/L	0.001	40	29	18	25
	Ba	137	-0.001	ug/L	0.001	56	52	42	12
>	Tb	159		ug/L			1521468	1492250	0
	Tl	205	0.002	ug/L	0.001	23	143	252	10
	Pb	208	0.002	ug/L	0.000	9	258	354	3

AGCS 81249

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:42:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L				71708	1
	Cl	37		ug/L				6333363	1
>	Sc	45		ug/L				1764261	4
	Cr	52		ug/L				39922	1
	Cr	53		ug/L				337	6
	Mn	55		ug/L				816	2
>	Ge	72		ug/L				1351736	0
	Ni	60		ug/L				55	18
	Ni	62		ug/L				712	5
	Cu	63		ug/L				711	5
	Cu	65		ug/L				105	3
	Zn	66		ug/L				2747	3
	Zn	67		ug/L				413	0
	Zn	68		ug/L				2046	4
	As	75		ug/L				10	103
	As-1	75		ug/L				19038	0
	Se	82		ug/L				27	26
	Se	78		ug/L				19298	0
	Y	89		ug/L				1042231	1
	Kr	83		ug/L				336	5
>	In	115		ug/L				1372269	1
	Ag	107		ug/L				48	8
	Cd	111		ug/L				235	3
	Cd	114		ug/L				45	17
	Sb	121		ug/L				223	19
	Sb	123		ug/L				167	11
	Ba	135		ug/L				22	12
	Ba	137		ug/L				42	2
>	Tb	159		ug/L				1505082	0
	Tl	205		ug/L				96	17
	Pb	208		ug/L				330	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:46:24
Number of Replicates: 3
Method File: C \NexIONData\Method\200.8GFA7+++.mth
Tuning File: C.\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	70660	4
	Cl	37		ug/L			6333363	6411457	1
>	Sc	45		ug/L			1764261	1755253	0
	Cr	52	49.924	ug/L	0 465	0	39922	1614978	0
	Cr	53	50.737	ug/L	0 325	0	337	186558	0
	Mn	55	52.197	ug/L	0 924	1	816	2356229	1
>	Ge	72		ug/L			1351736	1361491	2
	Ni	60	50.137	ug/L	1 473	2	55	407857	0
	Ni	62	50.609	ug/L	2 172	4	712	60915	1
	Cu	63	49.433	ug/L	1.178	2	711	921153	0
	Cu	65	50.617	ug/L	1.095	2	105	435029	0
	Zn	66	50.821	ug/L	1 022	2	2747	258976	0
	Zn	67	51.383	ug/L	0.786	1	413	44126	1
	Zn	68	51.539	ug/L	1 027	1	2046	186532	0
	As	75	49.843	ug/L	1.267	2	10	248164	0
	As-1	75	49.651	ug/L	1.651	3	19038	258552	0
	Se	82	51.420	ug/L	0.739	1	27	30229	1
	Se	78	50.697	ug/L	2.012	3	19298	87439	0
	Y	89		ug/L			1042231	1055654	2
	Kr	83		ug/L			336	397	5
>	In	115		ug/L			1372269	1343182	0
	Ag	107	51.139	ug/L	0 626	1	48	1267006	1
	Cd	111	50.595	ug/L	0.513	1	235	326563	0
	Cd	114	50.810	ug/L	0 385	0	45	803428	1
	Sb	121	50.314	ug/L	0.341	0	223	903486	0
	Sb	123	49.961	ug/L	0 359	0	167	689459	0
	Ba	135	49.186	ug/L	0 283	0	22	254903	0
	Ba	137	49.005	ug/L	0 516	1	42	439613	1
>	Tb	159		ug/L			1505082	1479434	1
	Tl	205	52.551	ug/L	1 401	2	96	2446666	1
	Pb	208	51.718	ug/L	0.618	1	330	3008065	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB5
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:52:51
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815a.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			71708	76247	1
	Cl	37		ug/L			6333363	6338780	1
>	Sc	45		ug/L			1764261	1751448	1
	Cr	52	0.001	ug/L	0.057	4215	39922	39659	3
	Cr	53	-0.007	ug/L	0.004	63	337	311	5
	Mn	55	0.002	ug/L	0 001	42	816	879	2
>	Ge	72		ug/L			1351736	1360311	1
	Ni	60	-0.001	ug/L	0 000	46	55	49	6
	Ni	62	-0.117	ug/L	0.039	33	712	578	6
	Cu	63	-0.002	ug/L	0.002	116	711	683	5
	Cu	65	0.002	ug/L	0 001	48	105	120	4
	Zn	66	0.035	ug/L	0.026	72	2747	2941	2
	Zn	67	0.020	ug/L	0 021	105	413	433	3
	Zn	68	0.047	ug/L	0 005	9	2046	2226	1
	As	75	-0.006	ug/L	0 003	47	10	-21	73
	As-1	75	-0.056	ug/L	0.078	138	19038	18883	0
	Se	82	-0.018	ug/L	0 003	15	27	16	11
	Se	78	-0.189	ug/L	0.270	142	19298	19163	0
	Y	89		ug/L			1042231	1041672	1
	Kr	83		ug/L			336	354	1
>	In	115		ug/L			1372269	1367759	0
	Ag	107	0.001	ug/L	0.001	115	48	65	30
	Cd	111	0.003	ug/L	0.003	80	235	255	5
	Cd	114	0.001	ug/L	0.001	105	45	56	21
	Sb	121	0.024	ug/L	0.001	4	223	664	3
	Sb	123	0.026	ug/L	0.001	3	167	525	1
	Ba	135	0.001	ug/L	0 001	65	22	26	10
	Ba	137	0.001	ug/L	0 002	110	42	55	24
>	Tb	159		ug/L			1505082	1505699	0
	Tl	205	0.004	ug/L	0.001	19	96	287	12
	Pb	208	0.001	ug/L	0.000	17	330	401	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 MB REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 11:57:08
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File. C \NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	79504	1
	Cl	37		ug/L			6333363	6222269	1
>	Sc	45		ug/L			1764261	1795725	2
	Cr	52	0.052	ug/L	0.043	82	39922	42281	0
	Cr	53	-0.002	ug/L	0.007	388	337	336	6
	Mn	55	0.013	ug/L	0.001	5	816	1447	3
>	Ge	72		ug/L			1351736	1419067	0
	Ni	60	0.005	ug/L	0 000	7	55	98	2
	Ni	62	-0.130	ug/L	0.029	22	712	586	6
	Cu	63	0.015	ug/L	0.001	6	711	1032	1
	Cu	65	0.021	ug/L	0 003	13	105	295	8
	Zn	66	0.905	ug/L	0 032	3	2747	7643	2
	Zn	67	0.804	ug/L	0.054	6	413	1146	4
	Zn	68	0.894	ug/L	0.017	1	2046	5485	0
	As	75	-0.011	ug/L	0 004	34	10	-44	42
	As-1	75	-0.138	ug/L	0.024	17	19038	19294	0
	Se	82	-0.007	ug/L	0 013	190	27	24	31
	Se	78	-0.460	ug/L	0 080	17	19298	19616	0
	Y	89		ug/L			1042231	1068573	1
	Kr	83		ug/L			336	355	5
>	In	115		ug/L			1372269	1384945	0
	Ag	107	0.000	ug/L	0.000	22	48	58	4
	Cd	111	0.001	ug/L	0 002	198	235	245	7
	Cd	114	0.002	ug/L	0.000	23	45	70	9
	Sb	121	0.004	ug/L	0.001	20	223	292	3
	Sb	123	0.006	ug/L	0.002	40	167	248	11
	Ba	135	0.009	ug/L	0.001	10	22	68	6
	Ba	137	0.007	ug/L	0 000	6	42	109	3
>	Tb	159		ug/L			1505082	1526542	0
	Tl	205	0.004	ug/L	0 001	42	96	267	26
	Pb	208	0.010	ug/L	0 000	4	330	953	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 MB REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:00:49
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	82454	3
	Cl	37		ug/L			6333363	6237188	2
>	Sc	45		ug/L			1764261	1764520	2
	Cr	52	0.090	ug/L	0.055	60	39922	42761	1
	Cr	53	0.002	ug/L	0.004	211	337	344	2
	Mn	55	0.073	ug/L	0.004	4	816	4109	1
>	Ge	72		ug/L			1351736	1402335	0
	Ni	60	0.005	ug/L	0.001	24	55	99	10
	Ni	62	-0.174	ug/L	0.017	9	712	526	4
	Cu	63	0.008	ug/L	0.004	45	711	892	7
	Cu	65	0.017	ug/L	0.003	15	105	259	8
	Zn	66	0.476	ug/L	0.038	8	2747	5324	4
	Zn	67	0.417	ug/L	0 034	8	413	794	4
	Zn	68	0.479	ug/L	0.055	11	2046	3891	5
	As	75	-0.001	ug/L	0.005	347	10	3	748
	As-1	75	-0.101	ug/L	0.023	22	19038	19251	0
	Se	82	-0.014	ug/L	0 011	80	27	20	33
	Se	78	-0.356	ug/L	0 073	20	19298	19527	0
	Y	89		ug/L			1042231	1071028	0
	Kr	83		ug/L			336	372	0
>	In	115		ug/L			1372269	1391168	1
	Ag	107	0.001	ug/L	0.002	121	48	84	50
	Cd	111	0.001	ug/L	0 001	49	235	245	3
	Cd	114	0.001	ug/L	0 002	179	45	61	44
	Sb	121	0.000	ug/L	0 002	372	223	234	12
	Sb	123	-0.000	ug/L	0 001	281	167	164	6
	Ba	135	0.021	ug/L	0.002	7	22	134	4
	Ba	137	0.019	ug/L	0 001	4	42	222	2
>	Tb	159		ug/L			1505082	1514462	0
	Tl	205	0.001	ug/L	0.001	97	96	146	32
	Pb	208	0.008	ug/L	0 001	9	330	823	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:04:31
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			71708	236426	3
	Cl	37		ug/L			6333363	7074802	1
>	Sc	45		ug/L			1764261	1846153	0
	Cr	52	9.456	ug/L	0 107	1	39922	355600	1
	Cr	53	8.951	ug/L	0 074	0	337	34906	0
	Mn	55	5.446	ug/L	0.122	2	816	259349	2
>	Ge	72		ug/L			1351736	1244845	1
	Ni	60	9.942	ug/L	0.275	2	55	73997	1
	Ni	62	6.843	ug/L	0 198	2	712	8103	3
	Cu	63	2.462	ug/L	0 106	4	711	42555	2
	Cu	65	1.592	ug/L	0 026	1	105	12608	0
	Zn	66	14.004	ug/L	0 376	2	2747	67087	1
	Zn	67	12.760	ug/L	0.440	3	413	10305	2
	Zn	68	13.894	ug/L	0 585	4	2046	47347	2
	As	75	0.833	ug/L	0 020	2	10	3803	1
	As-1	75	0.552	ug/L	0.063	11	19038	19966	0
	Se	82	1.772	ug/L	0 065	3	27	976	2
	Se	78	1.053	ug/L	0 234	22	19298	19060	0
	Y	89		ug/L			1042231	1076301	0
	Kr	83		ug/L			336	598	2
>	In	115		ug/L			1372269	1264976	0
	Ag	107	0.005	ug/L	0 001	13	48	154	9
	Cd	111	0.088	ug/L	0.008	8	235	749	6
	Cd	114	0.060	ug/L	0.002	3	45	941	3
	Sb	121	0.491	ug/L	0.006	1	223	8503	0
	Sb	123	0.484	ug/L	0.011	2	167	6446	1
	Ba	135	11.772	ug/L	0.139	1	22	57470	0
	Ba	137	11.618	ug/L	0.161	1	42	98173	1
>	Tb	159		ug/L			1505082	1385481	1
	Tl	205	0.001	ug/L	0.001	97	96	125	29
	Pb	208	0.030	ug/L	0 001	1	330	1934	0

AGCS 012515

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP0 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:08:12
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	113269	1
	Cl	37		ug/L			6333363	7398889	2
>	Sc	45		ug/L			1764261	1949316	1
	Cr	52	3.206	ug/L	0.081	2	39922	156440	1
	Cr	53	3.187	ug/L	0 036	1	337	13363	0
	Mn	55	2.340	ug/L	0 041	1	816	118137	1
>	Ge	72		ug/L			1351736	1364959	1
	Ni	60	3.717	ug/L	0.068	1	55	30385	2
	Ni	62	2.401	ug/L	0 038	1	712	3584	1
	Cu	63	0.976	ug/L	0 044	4	711	18934	3
	Cu	65	0.815	ug/L	0 001	0	105	7130	1
	Zn	66	2.837	ug/L	0 022	0	2747	17115	1
	Zn	67	2.626	ug/L	0.120	4	413	2657	4
	Zn	68	2.975	ug/L	0.159	5	2046	12741	3
	As	75	0.397	ug/L	0.013	3	10	1991	2
	As-1	75	0.309	ug/L	0.048	15	19038	20716	0
	Se	82	0.499	ug/L	0.031	6	27	321	5
	Se	78	0.293	ug/L	0 170	57	19298	19879	0
	Y	89		ug/L			1042231	1117104	0
	Kr	83		ug/L			336	509	7
>	In	115		ug/L			1372269	1342442	0
	Ag	107	0.002	ug/L	0.000	32	48	85	14
	Cd	111	0.042	ug/L	0 000	1	235	498	0
	Cd	114	0.025	ug/L	0.000	1	45	440	0
	Sb	121	0.297	ug/L	0.002	0	223	5544	0
	Sb	123	0.304	ug/L	0.005	1	167	4349	1
	Ba	135	3.279	ug/L	0.017	0	22	17003	0
	Ba	137	3.298	ug/L	0.053	1	42	29606	1
>	Tb	159		ug/L			1505082	1437670	1
	Tl	205	0.000	ug/L	0.000	136	96	97	6
	Pb	208	0.014	ug/L	0.001	3	330	1125	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO8 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:11:53
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++ mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File. C.\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			71708	952894	3
	Cl	37		ug/L			6333363	6550387	1
>	Sc	45		ug/L			1764261	1856047	2
	Cr	52	14.208	ug/L	0 309	2	39922	515952	2
	Cr	53	11.160	ug/L	0 090	0	337	43673	3
	Mn	55	16.073	ug/L	0 411	2	816	767655	2
>	Ge	72		ug/L			1351736	1053668	2
	Ni	60	25.678	ug/L	0 262	1	55	161753	2
	Ni	62	16.466	ug/L	0.858	5	712	15733	6
	Cu	63	10.351	ug/L	0.180	1	711	149773	3
	Cu	65	8.158	ug/L	0 089	1	105	54348	2
	Zn	66	380.599	ug/L	6 583	1	2747	1487819	3
	Zn	67	340.394	ug/L	6.439	1	413	224434	1
	Zn	68	371.795	ug/L	3 461	0	2046	1031664	1
	As	75	1.089	ug/L	0 002	0	10	4207	2
	As-1	75	0.992	ug/L	0.037	3	19038	18543	2
	Se	82	2.153	ug/L	0.004	0	27	1000	2
	Se	78	2.393	ug/L	0 155	6	19298	17528	2
	Y	89		ug/L			1042231	1008276	2
	Kr	83		ug/L			336	885	3
>	In	115		ug/L			1372269	1121484	1
	Ag	107	0.009	ug/L	0 000	2	48	227	1
	Cd	111	0.974	ug/L	0.024	2	235	5435	2
	Cd	114	0.929	ug/L	0 004	0	45	12297	2
	Sb	121	0.479	ug/L	0.003	0	223	7361	2
	Sb	123	0.477	ug/L	0 003	0	167	5630	1
	Ba	135	73.140	ug/L	0 306	0	22	316483	1
	Ba	137	72.835	ug/L	0.236	0	42	545522	1
>	Tb	159		ug/L			1505082	1267852	1
	Tl	205	0.005	ug/L	0.001	11	96	289	7
	Pb	208	0.240	ug/L	0 002	0	330	12246	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 A REN
Sample Dil Factor: 5
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:15:34

Del: use 2x

Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			71708	195048	4
	Cl	37		ug/L			6333363	7659605	2
>	Sc	45		ug/L			1764261	2071769	1
	Cr	52	7.532	ug/L	0.189	2	39922	327332	0
	Cr	53	7.156	ug/L	0.316	4	337	31386	3
	Mn	55	11.479	ug/L	0.455	3	816	612191	2
>	Ge	72		ug/L			1351736	1488749	0
	Ni	60	3.196	ug/L	0.045	1	55	28500	1
	Ni	62	3.830	ug/L	0.130	3	712	5769	2
	Cu	63	1.086	ug/L	0.014	1	711	22906	1
	Cu	65	0.723	ug/L	0.006	0	105	6908	1
	Zn	66	5.733	ug/L	0.118	2	2747	34638	1
	Zn	67	5.428	ug/L	0.242	4	413	5505	3
	Zn	68	5.856	ug/L	0.119	2	2046	25182	2
	As	75	0.264	ug/L	0.002	0	10	1451	0
	As-1	75	0.115	ug/L	0.024	20	19038	21576	0
	Se	82	0.481	ug/L	0.021	4	27	339	4
	Se	78	0.049	ug/L	0 075	153	19298	21326	0
	Y	89		ug/L			1042231	1176050	0
	Kr	83		ug/L			336	517	6
>	In	115		ug/L			1372269	1452159	0
	Ag	107	0.005	ug/L	0 000	4	48	177	3
	Cd	111	0.086	ug/L	0 015	17	235	846	11
	Cd	114	0.047	ug/L	0.003	6	45	850	5
	Sb	121	0.360	ug/L	0 003	0	223	7215	0
	Sb	123	0.356	ug/L	0 002	0	167	5493	0
	Ba	135	6.334	ug/L	0.092	1	22	35511	1
	Ba	137	6.277	ug/L	0 054	0	42	60910	1
>	Tb	159		ug/L			1505082	1536708	0
	Tl	205	-0.001	ug/L	0.000	17	96	67	8
	Pb	208	0.059	ug/L	0 001	1	330	3915	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 A REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:19:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	302899	4
	Cl	37		ug/L			6333363	7843712	1
>	Sc	45		ug/L			1764261	2093186	0
	Cr	52	17.844	ug/L	0.321	1	39922	718843	1
	Cr	53	17.338	ug/L	0.171	0	337	76287	0
	Mn	55	27.764	ug/L	0.593	2	816	1495148	2
>	Ge	72		ug/L			1351736	1409722	1
	Ni	60	7.757	ug/L	0.143	1	55	65408	1
	Ni	62	7.709	ug/L	0.266	3	712	10245	3
	Cu	63	2.733	ug/L	0.055	2	711	53436	0
	Cu	65	1.887	ug/L	0.043	2	105	16902	1
	Zn	66	12.685	ug/L	0.153	1	2747	69111	2
	Zn	67	12.017	ug/L	0.164	1	413	11019	2
	Zn	68	13.011	ug/L	0.102	0	2046	50366	0
	As	75	0.642	ug/L	0.001	0	10	3320	1
	As-1	75	0.500	ug/L	0.024	4	19038	22353	0
	Se	82	1.178	ug/L	0.020	1	27	745	0
	Se	78	0.858	ug/L	0.106	12	19298	21317	0
	Y	89		ug/L			1042231	1185549	0
	Kr	83		ug/L			336	578	1
>	In	115		ug/L			1372269	1413835	0
	Ag	107	0.341	ug/L	0.009	2	48	8944	1
	Cd	111	0.205	ug/L	0.005	2	235	1633	2
	Cd	114	0.108	ug/L	0.004	3	45	1842	3
	Sb	121	0.859	ug/L	0.011	1	223	16456	1
	Sb	123	0.854	ug/L	0 013	1	167	12569	1
	Ba	135	15.441	ug/L	0 173	1	22	84246	0
	Ba	137	15.502	ug/L	0 092	0	42	146397	0
>	Tb	159		ug/L			1505082	1512864	1
	Tl	205	-0.000	ug/L	0 000	24	96	83	3
	Pb	208	0.129	ug/L	0.002	1	330	8002	1

AGO8 81259

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGO7 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:22:57
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			71708	103428	4
	Cl	37		ug/L			6333363	7704110	3
>	Sc	45		ug/L			1764261	2069981	1
	Cr	52	25.309	ug/L	0.850	3	39922	988306	1
	Cr	53	25.058	ug/L	0 511	2	337	108878	3
	Mn	55	25.064	ug/L	0 958	3	816	1334352	2
>	Ge	72		ug/L			1351736	1538989	1
	Ni	60	26.262	ug/L	0 664	2	55	241572	1
	Ni	62	26.225	ug/L	0.815	3	712	36085	1
	Cu	63	25.615	ug/L	0 339	1	711	540070	0
	Cu	65	25.482	ug/L	0 387	1	105	247660	0
	Zn	66	80.087	ug/L	1.777	2	2747	459563	0
	Zn	67	73.465	ug/L	0.621	0	413	71123	0
	Zn	68	78.321	ug/L	1.994	2	2046	319252	1
	As	75	29.607	ug/L	0.361	1	10	166679	0
	As-1	75	26.711	ug/L	0.369	1	19038	167302	0
	Se	82	78.341	ug/L	0.528	0	27	52051	0
	Se	78	73.324	ug/L	0 616	0	19298	133209	0
	Y	89		ug/L			1042231	1198817	1
	Kr	83		ug/L			336	495	6
>	In	115		ug/L			1372269	1535380	0
	Ag	107	26.051	ug/L	0 093	0	48	737806	0
	Cd	111	24.011	ug/L	0 427	1	235	177279	0
	Cd	114	24.049	ug/L	0 587	2	45	434625	1
	Sb	121	-0.007	ug/L	0.000	1	223	108	2
	Sb	123	-0.007	ug/L	0 000	6	167	83	7
	Ba	135	23.331	ug/L	0.204	0	22	138218	0
	Ba	137	23.305	ug/L	0 230	0	42	238983	0
>	Tb	159		ug/L			1505082	1616690	0
	Tl	205	25.540	ug/L	0 294	1	96	1299747	1
	Pb	208	26.214	ug/L	0 095	0	330	1666488	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP2 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:26:38
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			71708	92017	3
	Cl	37		ug/L			6333363	7967542	2
>	Sc	45		ug/L			1764261	2039787	2
	Cr	52	23.751	ug/L	0 818	3	39922	916766	2
	Cr	53	23.981	ug/L	0.352	1	337	102655	1
	Mn	55	24.154	ug/L	1 048	4	816	1266693	1
>	Ge	72		ug/L			1351736	1498570	1
	Ni	60	24.651	ug/L	0.216	0	55	220840	0
	Ni	62	25.360	ug/L	1.091	4	712	34007	3
	Cu	63	24.892	ug/L	0.532	2	711	511042	1
	Cu	65	25.244	ug/L	0 833	3	105	238867	1
	Zn	66	83.635	ug/L	1.058	1	2747	467240	0
	Zn	67	75.916	ug/L	2 137	2	413	71542	1
	Zn	68	80.666	ug/L	2 098	2	2046	320108	1
	As	75	28.876	ug/L	0.901	3	10	158268	1
	As-1	75	26.223	ug/L	0 259	0	19038	160324	0
	Se	82	76.848	ug/L	2 539	3	27	49707	1
	Se	78	72.603	ug/L	0.685	0	19298	128648	1
	Y	89		ug/L			1042231	1193588	0
	Kr	83		ug/L			336	450	8
>	In	115		ug/L			1372269	1541193	1
	Ag	107	24.810	ug/L	1 006	4	48	705051	2
	Cd	111	23.231	ug/L	0 184	0	235	172199	1
	Cd	114	23.207	ug/L	0.334	1	45	421016	0
	Sb	121	-0.005	ug/L	0 000	9	223	142	5
	Sb	123	-0.004	ug/L	0.001	22	167	120	11
	Ba	135	22.850	ug/L	0.288	1	22	135875	0
	Ba	137	22.977	ug/L	0 120	0	42	236509	0
>	Tb	159		ug/L			1505082	1620143	0
	Tl	205	24.278	ug/L	0 192	0	96	1238121	0
	Pb	208	25.239	ug/L	0.250	0	330	1607872	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGE0 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:30:19
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

~~ER As use~~ ee 05/28/15

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			71708	88804	1
	Cl	37		ug/L			6333363	7405466	1
>	Sc	45		ug/L			1764261	1855238	1
	Cr	52	24.160	ug/L	0.296	1	39922	847684	1
	Cr	53	24.578	ug/L	0.298	1	337	95695	1
	Mn	55	24.711	ug/L	0.277	1	816	1179407	0
>	Ge	72		ug/L			1351736	1441224	1
	Ni	60	24.574	ug/L	0.206	0	55	211737	0
	Ni	62	24.626	ug/L	0.537	2	712	31785	1
	Cu	63	24.632	ug/L	0.352	1	711	486445	1
	Cu	65	24.171	ug/L	0 078	0	105	220035	0
	Zn	66	88.844	ug/L	4 138	4	2747	477058	3
	Zn	67	79.985	ug/L	1 064	1	413	72476	0
	Zn	68	87.007	ug/L	2.510	2	2046	331906	2
	As	75	31.608	ug/L	0.626	1	10	166645	1
	As-1	75	28.220	ug/L	0.360	1	19038	164387	0
	Se	82	92.431	ug/L	0.996	1	27	57507	0
	Se	78	86.977	ug/L	0 267	0	19298	144151	0
	Y	89		ug/L			1042231	1102029	1
	Kr	83		ug/L			336	440	3
>	In	115		ug/L			1372269	1489218	1
	Ag	107	24.649	ug/L	0.315	1	48	677166	2
	Cd	111	25.207	ug/L	0 373	1	235	180510	1
	Cd	114	25.018	ug/L	0.441	1	45	438553	0
	Sb	121	-0.009	ug/L	0.000	0	223	60	0
	Sb	123	-0.009	ug/L	0.000	3	167	50	8
	Ba	135	22.981	ug/L	0 140	0	22	132056	1
	Ba	137	22.705	ug/L	0 295	1	42	225827	0
>	Tb	159		ug/L			1505082	1563584	0
	Tl	205	24.321	ug/L	0 146	0	96	1197086	0
	Pb	208	25.083	ug/L	0.188	0	330	1542243	0

ABC Laboratories

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:35:06
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			71708	77218	4
	Cl	37		ug/L			6333363	7066195	1
>	Sc	45		ug/L			1764261	1862056	1
	Cr	52	50.929	ug/L	0 649	1	39922	1746926	2
	Cr	53	50.594	ug/L	0.620	1	337	197330	0
	Mn	55	51.790	ug/L	1 047	2	816	2479656	0
>	Ge	72		ug/L			1351736	1405882	0
	Ni	60	51.053	ug/L	0 837	1	55	429041	1
	Ni	62	51.387	ug/L	1 205	2	712	63902	2
	Cu	63	50.668	ug/L	1.754	3	711	975251	3
	Cu	65	51.508	ug/L	0 381	0	105	457271	0
	Zn	66	52.889	ug/L	1 038	1	2747	278267	1
	Zn	67	52.465	ug/L	0 479	0	413	46527	1
	Zn	68	52.458	ug/L	1 115	2	2046	196066	1
	As	75	50.888	ug/L	0.548	1	10	261732	1
	As-1	75	50.494	ug/L	0 394	0	19038	271312	0
	Se	82	53.038	ug/L	0 652	1	27	32202	1
	Se	78	51.661	ug/L	0 607	1	19298	91670	0
	Y	89		ug/L			1042231	1108924	1
	Kr	83		ug/L			336	425	4
>	In	115		ug/L			1372269	1465030	1
	Ag	107	49.714	ug/L	0 711	1	48	1343319	1
	Cd	111	49.670	ug/L	0 245	0	235	349684	0
	Cd	114	50.360	ug/L	0 950	1	45	868575	2
	Sb	121	49.545	ug/L	0 275	0	223	970410	1
	Sb	123	49.179	ug/L	0.578	1	167	740241	1
	Ba	135	48.553	ug/L	0.280	0	22	274446	1
	Ba	137	48.788	ug/L	0.096	0	42	477343	1
>	Tb	159		ug/L			1505082	1579335	1
	Tl	205	52.450	ug/L	0.430	0	96	2607598	2
	Pb	208	51.074	ug/L	0.585	1	330	3171330	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB6
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:41:32
Number of Replicates. 3
Method File: C.\NexIONData\Method\200 8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File C:\NexIONData\Conditions\Default.dac
Calibration File. C.\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	74652	2
	Cl	37		ug/L			6333363	6463715	1
>	Sc	45		ug/L			1764261	1739674	1
	Cr	52	0.033	ug/L	0.035	105	39922	40386	2
	Cr	53	-0.022	ug/L	0 005	24	337	254	8
	Mn	55	0.002	ug/L	0 001	33	816	915	3
>	Ge	72		ug/L			1351736	1370082	1
	Ni	60	-0.000	ug/L	0.001	497	55	55	12
	Ni	62	0.007	ug/L	0 018	252	712	730	2
	Cu	63	0.000	ug/L	0 001	252	711	725	2
	Cu	65	0.008	ug/L	0.003	36	105	179	13
	Zn	66	0.352	ug/L	0 021	5	2747	4570	3
	Zn	67	0.311	ug/L	0 021	6	413	685	1
	Zn	68	0.370	ug/L	0 028	7	2046	3407	1
	As	75	-0.004	ug/L	0 003	58	10	-11	113
	As-1	75	0.069	ug/L	0 068	98	19038	19629	0
	Se	82	-0.005	ug/L	0 012	272	27	24	27
	Se	78	0.282	ug/L	0 244	86	19298	19937	0
	Y	89		ug/L			1042231	1078112	0
	Kr	83		ug/L			336	379	4
>	In	115		ug/L			1372269	1429042	1
	Ag	107	0.001	ug/L	0.000	29	48	69	7
	Cd	111	0.008	ug/L	0 003	41	235	300	7
	Cd	114	0.001	ug/L	0.000	48	45	58	10
	Sb	121	0.023	ug/L	0.001	3	223	664	2
	Sb	123	0.021	ug/L	0.002	11	167	484	6
	Ba	135	0.004	ug/L	0.001	31	22	45	14
	Ba	137	0.003	ug/L	0.001	34	42	71	13
>	Tb	159		ug/L			1505082	1557208	0
	Tl	205	0.004	ug/L	0.000	3	96	290	2
	Pb	208	0.002	ug/L	0.000	16	330	480	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1 SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:51:02
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	77498	0
	Cl	37		ug/L			6333363	6491006	0
>	Sc	45		ug/L			1764261	1753320	2
	Cr	52	0.076	ug/L	0 046	61	39922	42041	2
	Cr	53	-0.018	ug/L	0.005	26	337	269	4
	Mn	55	0.022	ug/L	0.001	4	816	1792	0
>	Ge	72		ug/L			1351736	1384521	1
	Ni	60	0.008	ug/L	0.001	14	55	122	8
	Ni	62	-0.164	ug/L	0 040	24	712	532	10
	Cu	63	0.006	ug/L	0.001	24	711	843	3
	Cu	65	0.022	ug/L	0 002	10	105	298	6
	Zn	66	1.992	ug/L	0.070	3	2747	13029	1
	Zn	67	1.760	ug/L	0.061	3	413	1946	1
	Zn	68	1.879	ug/L	0.038	2	2046	8936	1
	As	75	-0.010	ug/L	0 003	27	10	-42	34
	As-1	75	0.026	ug/L	0 082	311	19038	19625	0
	Se	82	-0.019	ug/L	0 008	42	27	16	30
	Se	78	0.131	ug/L	0 306	233	19298	19940	0
	Y	89		ug/L			1042231	1070475	1
	Kr	83		ug/L			336	378	6
>	In	115		ug/L			1372269	1426553	1
	Ag	107	0.000	ug/L	0.000	97	48	61	17
	Cd	111	0.009	ug/L	0.002	17	235	305	2
	Cd	114	-0.000	ug/L	0.001	370	45	42	35
	Sb	121	0.001	ug/L	0.002	250	223	245	13
	Sb	123	0.000	ug/L	0.001	1064	167	175	6
	Ba	135	0.016	ug/L	0.002	15	22	109	13
	Ba	137	0.014	ug/L	0.002	10	42	179	8
>	Tb	159		ug/L			1505082	1555743	1
	Tl	205	0.001	ug/L	0.000	36	96	128	9
	Pb	208	0.016	ug/L	0 000	1	330	1311	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 A SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:54:43
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

RR Cr

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			71708	75085	1
	Cl	37		ug/L			6333363	6400512	0
>	Sc	45		ug/L			1764261	1728925	1
	Cr	52	338.469	ug/L	9 334	2	39922	10556687	1
	Cr	53	336.619	ug/L	4.241	1	337	1217179	0
	Mn	55	9697.995	ug/L	243 983	2	816	430996763	1
>	Ge	72		ug/L			1351736	1212466	1
	Ni	60	12.997	ug/L	0 224	1	55	94227	1
	Ni	62	13.806	ug/L	0.203	1	712	15272	0
	Cu	63	27.697	ug/L	0 610	2	711	460058	2
	Cu	65	29.458	ug/L	0.790	2	105	225533	1
	Zn	66	198.937	ug/L	5.210	2	2747	895703	1
	Zn	67	189.731	ug/L	1.807	0	413	144126	0
	Zn	68	193.445	ug/L	3.117	1	2046	618596	1
	As	75	6.033	ug/L	0.042	0	10	26766	0
	As-1	75	6.285	ug/L	0.101	1	19038	44072	0
	Se	82	0.526	ug/L	0.034	6	27	299	5
	Se	78	1.158	ug/L	0.245	21	19298	18691	0
	Y	89		ug/L			1042231	1286528	0
	Kr	83		ug/L			336	866	3
>	In	115		ug/L			1372269	1283338	1
	Ag	107	0.200	ug/L	0 008	3	48	4783	2
	Cd	111	1.088	ug/L	0.088	8	235	6922	6
	Cd	114	0.461	ug/L	0.006	1	45	7008	0
	Sb	121	0.309	ug/L	0.002	0	223	5515	0
	Sb	123	0.308	ug/L	0.010	3	167	4212	1
	Ba	135	89.651	ug/L	1.252	1	22	443847	0
	Ba	137	91.076	ug/L	1.952	2	42	780424	1
>	Tb	159		ug/L			1505082	1490839	0
	Tl	205	0.039	ug/L	0.002	4	96	1936	3
	Pb	208	93.462	ug/L	0.396	0	330	5478145	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 B SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 12:58:24
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	79423	2
	Cl	37		ug/L			6333363	6369891	2
>	Sc	45		ug/L			1764261	1850985	1
	Cr	52	293.549	ug/L	5 050	1	39922	9808471	0
	Cr	53	296.537	ug/L	1 889	0	337	1148061	0
	Mn	55	2902.415	ug/L	50.541	1	816	138112533	1
>	Ge	72		ug/L			1351736	1372908	0
	Ni	60	13.098	ug/L	0 091	0	55	107532	0
	Ni	62	14.376	ug/L	0.328	2	712	17976	1
	Cu	63	34.959	ug/L	0 577	1	711	657285	0
	Cu	65	34.880	ug/L	0.309	0	105	302436	1
	Zn	66	34.861	ug/L	0.783	2	2747	180054	1
	Zn	67	36.676	ug/L	0.259	0	413	31887	0
	Zn	68	34.423	ug/L	1.651	4	2046	126326	3
	As	75	6.394	ug/L	0.057	0	10	32124	0
	As-1	75	6.484	ug/L	0.129	1	19038	50873	0
	Se	82	0.130	ug/L	0.031	24	27	104	16
	Se	78	-0.114	ug/L	0 280	245	19298	19443	1
	Y	89		ug/L			1042231	1373601	1
	Kr	83		ug/L			336	625	3
>	In	115		ug/L			1372269	1384186	1
	Ag	107	0.098	ug/L	0 002	2	48	2547	1
	Cd	111	0.280	ug/L	0.012	4	235	2095	3
	Cd	114	0.061	ug/L	0.001	2	45	1037	1
	Sb	121	0.028	ug/L	0 001	4	223	750	4
	Sb	123	0.026	ug/L	0.001	1	167	538	2
	Ba	135	31.330	ug/L	0 379	1	22	167345	2
	Ba	137	30.979	ug/L	0 188	0	42	286389	0
>	Tb	159		ug/L			1505082	1578494	0
	Tl	205	0.041	ug/L	0 001	2	96	2139	2
	Pb	208	6.817	ug/L	0.047	0	330	423365	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 C SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:02:05
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C·\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	77412	0
	Cl	37		ug/L			6333363	6351893	1
>	Sc	45		ug/L			1764261	1820253	2
	Cr	52	9.387	ug/L	0 437	4	39922	348113	1
	Cr	53	9.447	ug/L	0 134	1	337	36298	1
	Mn	55	78.054	ug/L	2 242	2	816	3652908	3
>	Ge	72		ug/L			1351736	1414017	1
	Ni	60	5.135	ug/L	0 099	1	55	43450	2
	Ni	62	6.232	ug/L	0.067	1	712	8450	2
	Cu	63	8.576	ug/L	0 196	2	711	166613	0
	Cu	65	8.588	ug/L	0.275	3	105	76742	1
	Zn	66	23.096	ug/L	0.746	3	2747	123888	5
	Zn	67	24.153	ug/L	1.027	4	413	21783	5
	Zn	68	23.482	ug/L	0.130	0	2046	89465	2
	As	75	9.076	ug/L	0.118	1	10	46954	0
	As-1	75	9.244	ug/L	0.201	2	19038	66215	0
	Se	82	0.068	ug/L	0.014	21	27	69	14
	Se	78	-0.268	ug/L	0.331	123	19298	19809	1
	Y	89		ug/L			1042231	1300177	1
	Kr	83		ug/L			336	553	2
>	In	115		ug/L			1372269	1425651	1
	Ag	107	0.026	ug/L	0.002	7	48	737	5
	Cd	111	0.117	ug/L	0.004	3	235	1046	2
	Cd	114	0.016	ug/L	0.001	5	45	314	6
	Sb	121	0.005	ug/L	0.000	10	223	319	4
	Sb	123	0.005	ug/L	0.001	27	167	241	7
	Ba	135	19.473	ug/L	0.206	1	22	107115	0
	Ba	137	19.701	ug/L	0.080	0	42	187604	1
>	Tb	159		ug/L			1505082	1576107	1
	Tl	205	0.021	ug/L	0.000	1	96	1155	1
	Pb	208	1.880	ug/L	0 019	0	330	116851	1

RR Cu

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:05:47
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b cal

RR Cr, Ba, Pb 50x
Zn 200x

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			71708	72394	2
	Cl	37		ug/L			6333363	6507940	2
>	Sc	45		ug/L			1764261	1815000	2
	Cr	52	458.191	ug/L	4 249	0	39922	14989442	1
	Cr	53	466.657	ug/L	12.675	2	337	1771105	2
	Mn	55	15925.895	ug/L	60.662	0	816	743166886	2
>	Ge	72		ug/L			1351736	1234807	1
	Ni	60	41.725	ug/L	0.889	2	55	307928	0
	Ni	62	45.504	ug/L	0 453	0	712	49770	1
	Cu	63	185.329	ug/L	3.684	1	711	3130866	0
	Cu	65	183.903	ug/L	4 599	2	105	1433325	0
	Zn	66	2307.600	ug/L	18.372	0	2747	10556257	1
	Zn	67	2025.246	ug/L	65.942	3	413	1562710	1
	Zn	68	2211.394	ug/L	17.477	0	2046	7182408	1
	As	75	6.544	ug/L	0.137	2	10	29566	0
	As-1	75	6.704	ug/L	0 213	3	19038	46711	0
	Se	82	0.564	ug/L	0 044	7	27	325	6
	Se	78	0.838	ug/L	0.324	38	19298	18644	0
	Y	89		ug/L			1042231	1446355	3
	Kr	83		ug/L			336	926	2
>	In	115		ug/L			1372269	1280083	1
	Ag	107	0.502	ug/L	0.018	3	48	11891	1
	Cd	111	6.302	ug/L	0.065	1	235	38954	0
	Cd	114	5.414	ug/L	0.130	2	45	81599	0
	Sb	121	2.341	ug/L	0 063	2	223	40247	1
	Sb	123	2.303	ug/L	0 030	1	167	30439	0
	Ba	135	452.638	ug/L	9 388	2	22	2234986	0
	Ba	137	451.908	ug/L	5.654	1	42	3862602	0
>	Tb	159		ug/L			1505082	1514084	0
	Tl	205	0.050	ug/L	0 001	1	96	2484	1
	Pb	208	457.950	ug/L	1.247	0	330	27259799	0

RR Cu

ICP-MS Quantitative Analysis - Summary Report

RR Cr, Ba, Pb, Zn

Sample ID: AGA8 F SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:09:28
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	74705	1
	Cl	37		ug/L			6333363	6267852	1
>	Sc	45		ug/L			1764261	1788744	0
	Cr	52	**619.703**	ug/L	7 655	1	39922	19967788	1
	Cr	53	**639.427**	ug/L	12 696	1	337	2391957	1
	Mn	55	**18713.738**	ug/L	222 623	1	816	860595615	0
>	Ge	72		ug/L			1351736	1204124	0
	Ni	60	**41.679**	ug/L	0.944	2	55	299983	1
	Ni	62	**44.791**	ug/L	0.664	1	712	47789	2
	Cu	63	**233.355**	ug/L	4.625	1	711	3844489	1
	Cu	65	**232.248**	ug/L	2.034	0	105	1765537	0
	Zn	66	**2361.849**	ug/L	33 733	1	2747	10536030	0
	Zn	67	**2095.392**	ug/L	9.328	0	413	1577179	0
	Zn	68	**2251.315**	ug/L	36.313	1	2046	7130159	0
	As	75	**6.867**	ug/L	0.090	1	10	30257	0
	As-1	75	**7.094**	ug/L	0.108	1	19038	47220	0
	Se	82	**0.590**	ug/L	0.056	9	27	330	8
	Se	78	**1.093**	ug/L	0.153	13	19298	18487	0
	Y	89		ug/L			1042231	1378554	1
	Kr	83		ug/L			336	939	4
>	In	115		ug/L			1372269	1273423	0
	Ag	107	**0.561**	ug/L	0 028	5	48	13225	5
	Cd	111	**6.699**	ug/L	0 177	2	235	41182	2
	Cd	114	**5.560**	ug/L	0.035	0	45	83376	0
	Sb	121	**1.947**	ug/L	0 026	1	223	33337	0
	Sb	123	**1.884**	ug/L	0 039	2	167	24796	1
	Ba	135	**491.284**	ug/L	7 365	1	22	2413521	1
	Ba	137	**497.512**	ug/L	3 547	0	42	4230625	0
>	Tb	159		ug/L			1505082	1491458	0
	Tl	205	**0.047**	ug/L	0 001	2	96	2293	2
	Pb	208	**469.327**	ug/L	6.012	1	330	27519202	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:13:09
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexIONData\MassCal\Default.tun
Optimization File: C \NexIONData\Conditions\Default.dac
Calibration File. C:\NexIONData\System\052815b.cal

RR Cr, Ba, Pb, Zn, Cu
+
RR @ 20x to check Cu FSPK

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			71708	73005	0
	Cl	37		ug/L			6333363	6047945	0
>	Sc	45		ug/L			1764261	1701560	0
	Cr	52	757.736	ug/L	11 323	1	39922	23216967	1
	Cr	53	764.698	ug/L	1.908	0	337	2721194	0
	Mn	55	15487.523	ug/L	210 611	1	816	677517483	1
>	Ge	72		ug/L			1351736	1174719	0
	Ni	60	148.507	ug/L	3.197	2	55	1042732	2
	Ni	62	146.915	ug/L	1.399	0	712	151497	0
	Cu	63	21565.122	ug/L	330 231	1	711	346577457	1
	Cu	65	21832.488	ug/L	302.204	1	105	161912659	1
	Zn	66	3378.384	ug/L	36.615	1	2747	14702863	1
	Zn	67	3049.900	ug/L	18 160	0	413	2239429	0
	Zn	68	3142.597	ug/L	56.004	1	2046	9710257	2
	As	75	33.846	ug/L	0.147	0	10	145460	0
	As-1	75	32.747	ug/L	0.175	0	19038	152837	0
	Se	82	58.768	ug/L	0.445	0	27	29812	0
	Se	78	57.915	ug/L	0.623	1	19298	83840	0
	Y	89		ug/L			1042231	1289130	0
	Kr	83		ug/L			336	977	2
>	In	115		ug/L			1372269	1170367	0
	Ag	107	26.147	ug/L	0.231	0	48	564477	0
	Cd	111	29.879	ug/L	0.471	1	235	168124	1
	Cd	114	28.478	ug/L	0.495	1	45	392376	1
	Sb	121	3.873	ug/L	0.053	1	223	60777	1
	Sb	123	3.746	ug/L	0.032	0	167	45182	0
	Ba	135	383.361	ug/L	2.053	0	22	1731001	0
	Ba	137	391.847	ug/L	3.658	0	42	3062527	0
>	Tb	159		ug/L			1505082	1432637	1
	Tl	205	21.997	ug/L	0.413	1	96	991828	0
	Pb	208	1073.323	ug/L	12.454	1	330	60447011	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FPOST SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:16:50
Number of Replicates: 3
Method File: C \NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			71708	74232	4
	Cl	37		ug/L			6333363	6192894	2
>	Sc	45		ug/L			1764261	1683328	1
	Cr	52	661.696	ug/L	7 205	1	39922	20059975	0
	Cr	53	672.331	ug/L	3 205	0	337	2366946	1
	Mn	55	19836.536	ug/L	395.113	1	816	858336592	0
>	Ge	72		ug/L			1351736	1189820	0
	Ni	60	66.086	ug/L	0 741	1	55	470039	1
	Ni	62	68.720	ug/L	0 455	0	712	72110	1
	Cu	63	256.861	ug/L	3 373	1	711	4181700	0
	Cu	65	255.096	ug/L	8.804	3	105	1916083	3
	Zn	66	2406.133	ug/L	45 492	1	2747	10606333	1
	Zn	67	2164.877	ug/L	17.226	0	413	1610093	0
	Zn	68	2282.019	ug/L	29 714	1	2046	7141881	0
	As	75	35.768	ug/L	0 032	0	10	155697	0
	As-1	75	33.956	ug/L	0.409	1	19038	159899	1
	Se	82	75.083	ug/L	0.486	0	27	38571	0
	Se	78	73.248	ug/L	1 461	1	19298	102901	1
	Y	89		ug/L			1042231	1339526	2
	Kr	83		ug/L			336	952	3
>	In	115		ug/L			1372269	1256584	1
	Ag	107	23.105	ug/L	0.317	1	48	535500	0
	Cd	111	29.935	ug/L	0 329	1	235	180836	0
	Cd	114	28.784	ug/L	0 619	2	45	425757	1
	Sb	121	1.960	ug/L	0.045	2	223	33122	1
	Sb	123	1.907	ug/L	0.014	0	167	24762	0
	Ba	135	520.270	ug/L	8.740	1	22	2521929	0
	Ba	137	515.955	ug/L	11.387	2	42	4329083	1
>	Tb	159		ug/L			1505082	1479416	0
	Tl	205	22.378	ug/L	0 061	0	96	1042157	0
	Pb	208	487.191	ug/L	2.889	0	330	28336910	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:20:31
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815b.cal

RR As

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			71708	70594	0
	Cl	37		ug/L			6333363	6171775	1
>	Sc	45		ug/L			1764261	1678673	2
	Cr	52	25.500	ug/L	1 097	4	39922	807074	2
	Cr	53	25.393	ug/L	0.196	0	337	89444	1
	Mn	55	27.384	ug/L	1 705	6	816	1182366	6
>	Ge	72		ug/L			1351736	1309692	0
	Ni	60	25.696	ug/L	0.168	0	55	201195	0
	Ni	62	24.878	ug/L	0.708	2	712	29173	2
	Cu	63	26.324	ug/L	1.266	4	711	472431	5
	Cu	65	26.814	ug/L	1 212	4	105	221840	5
	Zn	66	85.269	ug/L	0 798	0	2747	416306	0
	Zn	67	76.748	ug/L	1 416	1	413	63216	1
	Zn	68	83.116	ug/L	1 299	1	2046	288248	1
	As	75	30.232	ug/L	0.490	1	10	144851	1
	As-1	75	27.792	ug/L	0 309	1	19038	147404	0
	Se	82	80.616	ug/L	1.823	2	27	45583	1
	Se	78	77.390	ug/L	1.105	1	19298	118616	0
	Y	89		ug/L			1042231	1001386	1
	Kr	83		ug/L			336	383	3
>	In	115		ug/L			1372269	1389485	0
	Ag	107	25.407	ug/L	0 133	0	48	651192	0
	Cd	111	24.919	ug/L	0 362	1	235	166506	1
	Cd	114	24.810	ug/L	0 217	0	45	405834	0
	Sb	121	-0.006	ug/L	0.001	11	223	115	11
	Sb	123	-0.005	ug/L	0.000	4	167	101	3
	Ba	135	24.574	ug/L	0 102	0	22	131757	0
	Ba	137	24.551	ug/L	0.150	0	42	227853	0
>	Tb	159		ug/L			1505082	1518221	0
	Tl	205	24.617	ug/L	0.195	0	96	1176466	0
	Pb	208	25.423	ug/L	0.365	1	330	1517726	1

AGC 91215

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGE0 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:24:12
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815b.cal

Del

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	76592	1
	Cl	37		ug/L			6333363	5892081	1
>	Sc	45		ug/L			1764261	1559161	2
	Cr	52	24.956	ug/L	0.747	2	39922	734398	0
	Cr	53	25.025	ug/L	0.915	3	337	81864	3
	Mn	55	28.786	ug/L	5.538	19	816	1151618	17
>	Ge	72		ug/L			1351736	1257406	1
	Ni	60	24.790	ug/L	0.292	1	55	186352	0
	Ni	62	24.298	ug/L	0 355	1	712	27374	2
	Cu	63	26.161	ug/L	1 699	6	711	450900	7
	Cu	65	26.962	ug/L	2 316	8	105	214252	9
	Zn	66	94.523	ug/L	1.711	1	2747	442811	2
	Zn	67	83.898	ug/L	2 900	3	413	66328	4
	Zn	68	90.790	ug/L	1.473	1	2046	302088	0
	As	75	31.961	ug/L	0 859	2	10	147004	1
	As-1	75	29.426	ug/L	0 699	2	19038	148781	1
	Se	82	91.898	ug/L	2 554	2	27	49877	1
	Se	78	89.381	ug/L	2 129	2	19298	128731	1
	Y	89		ug/L			1042231	969020	0
	Kr	83		ug/L			336	360	2
>	In	115		ug/L			1372269	1345014	0
	Ag	107	24.818	ug/L	0 309	1	48	615725	1
	Cd	111	25.621	ug/L	0 058	0	235	165714	0
	Cd	114	25.594	ug/L	0 408	1	45	405264	1
	Sb	121	-0.008	ug/L	0.001	8	223	74	16
	Sb	123	-0.007	ug/L	0.002	24	167	62	40
	Ba	135	23.926	ug/L	0.351	1	22	124173	1
	Ba	137	23.924	ug/L	0 089	0	42	214921	0
>	Tb	159		ug/L			1505082	1474023	0
	Tl	205	23.852	ug/L	0.176	0	96	1106749	0
	Pb	208	24.611	ug/L	0 091	0	330	1426519	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:28:59
Number of Replicates: 3
Method File: C \NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C.\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			71708	68125	2
	Cl	37		ug/L			6333363	6170277	3
>	Sc	45		ug/L			1764261	1653227	2
	Cr	52	50.165	ug/L	0 748	1	39922	1527986	0
	Cr	53	51.324	ug/L	0.300	0	337	177727	1
	Mn	55	50.636	ug/L	1 522	3	816	2152015	0
>	Ge	72		ug/L			1351736	1300084	1
	Ni	60	50.252	ug/L	0 460	0	55	390532	1
	Ni	62	49.130	ug/L	0.281	0	712	56522	1
	Cu	63	50.216	ug/L	0.631	1	711	893743	0
	Cu	65	49.263	ug/L	1.275	2	105	404310	0
	Zn	66	51.660	ug/L	0.925	1	2747	251379	1
	Zn	67	51.801	ug/L	0.601	1	413	42485	2
	Zn	68	52.471	ug/L	0.876	1	2046	181329	0
	As	75	50.319	ug/L	0 878	1	10	239296	1
	As-1	75	49.970	ug/L	0 994	1	19038	248437	0
	Se	82	51.390	ug/L	0.846	1	27	28851	1
	Se	78	50.051	ug/L	1.276	2	19298	82691	0
	Y	89		ug/L			1042231	1008943	2
	Kr	83		ug/L			336	387	9
>	In	115		ug/L			1372269	1337813	0
	Ag	107	49.861	ug/L	0 221	0	48	1230382	0
	Cd	111	50.635	ug/L	0.617	1	235	325516	0
	Cd	114	50.761	ug/L	1.012	1	45	799434	2
	Sb	121	50.640	ug/L	0 552	1	223	905718	0
	Sb	123	51.028	ug/L	0.530	1	167	701364	0
	Ba	135	50.427	ug/L	1 079	2	22	260284	1
	Ba	137	50.166	ug/L	0.659	1	42	448196	0
>	Tb	159		ug/L			1505082	1476007	0
	Tl	205	50.962	ug/L	0.687	1	96	2367626	0
	Pb	208	50.933	ug/L	0.562	1	330	2955722	0

ARCS - 01275

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB7
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:35:26
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815b cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			71708	68449	0
	Cl	37		ug/L			6333363	5686435	1
>	Sc	45		ug/L			1764261	1596792	1
	Cr	52	0.076	ug/L	0.005	6	39922	38314	1
	Cr	53	-0.028	ug/L	0.003	9	337	211	3
	Mn	55	0.026	ug/L	0.001	2	816	1824	2
>	Ge	72		ug/L			1351736	1295794	1
	Ni	60	0.000	ug/L	0.001	223	55	56	13
	Ni	62	-0.370 ~	ug/L	0.022	5	712	264	8
	Cu	63	0.002	ug/L	0.002	82	711	720	5
	Cu	65	0.022	ug/L	0.004	18	105	282	12
	Zn	66	0.362	ug/L	0 017	4	2747	4373	1
	Zn	67	0.325	ug/L	0.019	5	413	659	1
	Zn	68	0.376	ug/L	0 030	8	2046	3240	2
	As	75	-0.003	ug/L	0.005	181	10	-2	1093
	As-1	75	0.045	ug/L	0.084	186	19038	18456	1
	Se	82	-0.001	ug/L	0.011	1228	27	25	23
	Se	78	0.180	ug/L	0.300	166	19298	18727	1
	Y	89		ug/L			1042231	993728	0
	Kr	83		ug/L			336	338	3
>	In	115		ug/L			1372269	1371373	1
	Ag	107	0.001	ug/L	0.000	43	48	76	14
	Cd	111	0.006	ug/L	0.005	81	235	272	10
	Cd	114	0.002	ug/L	0.001	34	45	70	11
	Sb	121	0.021	ug/L	0.001	5	223	600	4
	Sb	123	0.020	ug/L	0.002	11	167	454	6
	Ba	135	0.005	ug/L	0.001	24	22	46	11
	Ba	137	0.003	ug/L	0.002	58	42	73	24
>	Tb	159		ug/L			1505082	1488934	0
	Tl	205	0.005	ug/L	0.000	8	96	323	6
	Pb	208	0.002	ug/L	0.000	14	330	444	4

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:45:00
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L				67898	2
	Cl	37		ug/L				5760484	1
>	Sc	45		ug/L				1610711	3
	Cr	52		ug/L				38065	1
	Cr	53		ug/L				203	2
	Mn	55		ug/L				1658	2
>	Ge	72		ug/L				1293916	1
	Ni	60		ug/L				46	22
	Ni	62		ug/L				240	12
	Cu	63		ug/L				692	4
	Cu	65		ug/L				311	1
	Zn	66		ug/L				4584	2
	Zn	67		ug/L				730	5
	Zn	68		ug/L				3468	0
	As	75		ug/L				28	67
	As-1	75		ug/L				18458	0
	Se	82		ug/L				18	28
	Se	78		ug/L				18694	0
	Y	89		ug/L				973453	0
	Kr	83		ug/L				355	4
>	In	115		ug/L				1353268	0
	Ag	107		ug/L				55	8
	Cd	111		ug/L				244	6
	Cd	114		ug/L				67	14
	Sb	121		ug/L				194	12
	Sb	123		ug/L				127	3
	Ba	135		ug/L				44	21
	Ba	137		ug/L				87	11
>	Tb	159		ug/L				1500497	0
	Tl	205		ug/L				126	7
	Pb	208		ug/L				476	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:48:42
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C \NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File. C.\NexIONData\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	70328	2
	Cl	37		ug/L			5760484	5833916	2
>	Sc	45		ug/L			1610711	1637642	1
	Cr	52	51.454	ug/L	0.554	1	38065	1553377	1
	Cr	53	52.312	ug/L	2.302	4	203	179264	3
	Mn	55	51.591	ug/L	1.498	2	1658	2173119	1
>	Ge	72		ug/L			1293916	1280856	0
	Ni	60	50.397	ug/L	0.191	0	46	385865	0
	Ni	62	50.163	ug/L	1.166	2	240	56412	2
	Cu	63	50.190	ug/L	0 356	0	692	880196	0
	Cu	65	50.284	ug/L	0.330	0	311	406910	0
	Zn	66	51.057	ug/L	0.892	1	4584	246770	1
	Zn	67	51.850	ug/L	0 414	0	730	42227	0
	Zn	68	51.192	ug/L	0 398	0	3468	175864	0
	As	75	50.764	ug/L	0 602	1	28	237891	0
	As-1	75	50.486	ug/L	0.655	1	18458	247377	0
	Se	82	51.763	ug/L	0 211	0	18	28626	0
	Se	78	50.639	ug/L	0 423	0	18694	82447	0
	Y	89		ug/L			973453	1008730	2
	Kr	83		ug/L			355	367	2
>	In	115		ug/L			1353268	1332979	0
	Ag	107	49.004	ug/L	1.059	2	55	1204835	1
	Cd	111	50.193	ug/L	0.767	1	244	321530	1
	Cd	114	50.970	ug/L	0.301	0	67	799825	0
	Sb	121	50.899	ug/L	0 344	0	194	907024	0
	Sb	123	50.216	ug/L	0.633	1	127	687702	1
	Ba	135	50.480	ug/L	0.705	1	44	259649	1
	Ba	137	50.860	ug/L	0.406	0	87	452803	0
>	Tb	159		ug/L			1500497	1489311	0
	Tl	205	50.528	ug/L	0 586	1	126	2368628	0
	Pb	208	49.759	ug/L	0 423	0	476	2914009	1

ACCQ QLITE

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB8
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 13:55:08
Number of Replicates 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815b.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	70705	4
	Cl	37		ug/L			5760484	5786655	2
>	Sc	45		ug/L			1610711	1621863	0
	Cr	52	-0.014	ug/L	0 012	84	38065	37917	1
	Cr	53	-0.003	ug/L	0.003	88	203	195	3
	Mn	55	-0.003	ug/L	0.001	19	1658	1547	1
>	Ge	72		ug/L			1293916	1271089	2
	Ni	60	0.001	ug/L	0.001	153	46	49	10
	Ni	62	0.054	ug/L	0.010	18	240	296	2
	Cu	63	0.004	ug/L	0.003	61	692	757	4
	Cu	65	0.001	ug/L	0.006	478	311	314	12
	Zn	66	0.042	ug/L	0.040	94	4584	4699	1
	Zn	67	0.008	ug/L	0.029	346	730	723	2
	Zn	68	0.009	ug/L	0.034	398	3468	3434	2
	As	75	-0.006	ug/L	0.008	124	28	-1	3165
	As-1	75	0.027	ug/L	0 089	326	18458	18249	0
	Se	82	0.009	ug/L	0.008	92	18	22	21
	Se	78	0.117	ug/L	0 310	264	18694	18506	1
	Y	89		ug/L			973453	976197	1
	Kr	83		ug/L			355	329	3
>	In	115		ug/L			1353268	1346399	0
	Ag	107	0.001	ug/L	0.001	113	55	70	26
	Cd	111	0.004	ug/L	0.002	45	244	271	5
	Cd	114	-0.000	ug/L	0.001	49091	67	67	20
	Sb	121	0.024	ug/L	0.001	5	194	618	4
	Sb	123	0.025	ug/L	0.001	3	127	466	3
	Ba	135	0.001	ug/L	0 001	172	44	48	14
	Ba	137	-0.001	ug/L	0 001	87	87	78	10
>	Tb	159		ug/L			1500497	1483208	1
	Tl	205	0.004	ug/L	0.001	12	126	322	8
	Pb	208	0.001	ug/L	0.001	114	476	504	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB2 REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:03:13
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	78087	1
	Cl	37		ug/L			5760484	5786389	3
>	Sc	45		ug/L			1610711	1680223	2
	Cr	52	0.167	ug/L	0 062	36	38065	44723	1
	Cr	53	0.172	ug/L	0.011	6	203	815	1
	Mn	55	0.040	ug/L	0 001	3	1658	3439	4
>	Ge	72		ug/L			1293916	1310344	2
	Ni	60	0.033	ug/L	0 002	7	46	306	5
	Ni	62	0.052	ug/L	0 022	41	240	302	7
	Cu	63	0.053	ug/L	0 002	3	692	1647	0
	Cu	65	0.051	ug/L	0 002	3	311	740	4
	Zn	66	0.781	ug/L	0.058	7	4584	8430	1
	Zn	67	0.638	ug/L	0.046	7	730	1261	1
	Zn	68	0.706	ug/L	0.048	6	3468	5942	1
	As	75	-0.003	ug/L	0.006	191	28	14	196
	As-1	75	0.002	ug/L	0 065	3993	18458	18695	0
	Se	82	-0.002	ug/L	0.017	1081	18	17	56
	Se	78	0.018	ug/L	0 245	1375	18694	18949	0
	Y	89		ug/L			973453	1009057	2
	Kr	83		ug/L			355	364	4
>	In	115		ug/L			1353268	1370914	1
	Ag	107	0.002	ug/L	0 001	52	55	94	20
	Cd	111	0.009	ug/L	0.002	17	244	303	4
	Cd	114	0.001	ug/L	0.000	69	67	78	7
	Sb	121	0.005	ug/L	0.001	15	194	287	6
	Sb	123	0.007	ug/L	0.002	29	127	221	13
	Ba	135	0.016	ug/L	0.000	0	44	129	1
	Ba	137	0.014	ug/L	0.003	17	87	220	9
>	Tb	159		ug/L			1500497	1522487	0
	Tl	205	0.003	ug/L	0.001	44	126	248	20
	Pb	208	0.028	ug/L	0.000	1	476	2151	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 JDUP REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:06:54
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	78985	1
	Cl	37		ug/L			5760484	5723928	3
>	Sc	45		ug/L			1610711	1699811	2
	Cr	52	0.074	ug/L	0 051	69	38065	42400	1
	Cr	53	0.066	ug/L	0 002	2	203	450	3
	Mn	55	0.064	ug/L	0.003	4	1658	4548	0
>	Ge	72		ug/L			1293916	1332127	0
	Ni	60	0.009	ug/L	0.003	30	46	118	17
	Ni	62	0.029	ug/L	0.010	35	240	281	4
	Cu	63	0.084	ug/L	0 003	3	692	2251	3
	Cu	65	0.084	ug/L	0 003	3	311	1023	2
	Zn	66	-0.031	ug/L	0.029	94	4584	4566	2
	Zn	67	-0.079	ug/L	0 061	77	730	686	7
	Zn	68	-0.054	ug/L	0 030	55	3468	3381	2
	As	75	0.032	ug/L	0.004	13	28	183	11
	As-1	75	-0.012	ug/L	0 019	160	18458	18948	0
	Se	82	0.130	ug/L	0 012	9	18	93	6
	Se	78	-0.030	ug/L	0 059	197	18694	19207	0
	Y	89		ug/L			973453	1027091	1
	Kr	83		ug/L			355	341	1
>	In	115		ug/L			1353268	1388262	0
	Ag	107	0.001	ug/L	0 000	10	55	83	3
	Cd	111	0.007	ug/L	0.002	33	244	297	5
	Cd	114	-0.000	ug/L	0 001	623	67	67	15
	Sb	121	-0.002	ug/L	0 001	51	194	159	13
	Sb	123	-0.001	ug/L	0.000	79	127	122	5
	Ba	135	0.010	ug/L	0.003	25	44	101	13
	Ba	137	0.010	ug/L	0.001	12	87	180	7
>	Tb	159		ug/L			1500497	1540754	1
	Tl	205	-0.000	ug/L	0.000	619	126	126	18
	Pb	208	0.011	ug/L	0.000	3	476	1138	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 J REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:10:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

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	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67898	81554	3
	Cl	37		ug/L			5760484	5756887	5
>	Sc	45		ug/L			1610711	1689576	1
	Cr	52	0.221	ug/L	0.207	93	38065	46698	15
	Cr	53	0.221	ug/L	0 249	112	203	1003	90
	Mn	55	3.473	ug/L	5 876	169	1658	155406	167
>	Ge	72		ug/L			1293916	1338291	1
	Ni	60	0.044	ug/L	0 033	74	46	402	66
	Ni	62	0.048	ug/L	0 011	22	240	304	5
	Cu	63	0.739	ug/L	1 109	150	692	14399	142
	Cu	65	0.638	ug/L	0 942	147	311	5766	139
	Zn	66	0.682	ug/L	0 359	52	4584	8136	23
	Zn	67	0.556	ug/L	0 253	45	730	1221	18
	Zn	68	0.617	ug/L	0.297	48	3468	5764	19
	As	75	0.075	ug/L	0 009	11	28	394	10
	As-1	75	-0.020	ug/L	0 042	206	18458	18995	1
	Se	82	0.251	ug/L	0.028	11	18	163	8
	Se	78	-0.067	ug/L	0 146	217	18694	19246	1
	Y	89		ug/L			973453	1019274	1
	Kr	83		ug/L			355	371	3
>	In	115		ug/L			1353268	1372286	0
	Ag	107	0.002	ug/L	0.002	128	55	102	58
	Cd	111	0.010	ug/L	0 001	13	244	314	2
	Cd	114	0.007	ug/L	0.003	49	67	179	30
	Sb	121	-0.000	ug/L	0.001	489	194	193	9
	Sb	123	0.002	ug/L	0 001	75	127	156	13
	Ba	135	0.030	ug/L	0 005	15	44	204	11
	Ba	137	0.032	ug/L	0 008	24	87	377	19
>	Tb	159		ug/L			1500497	1533746	0
	Tl	205	0.002	ug/L	0.004	188	126	232	83
	Pb	208	0.130	ug/L	0 187	144	476	8303	135

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 JSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:14:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
C	13		ug/L			67898	78007	4
Cl	37		ug/L			5760484	5716259	1
> Sc	45		ug/L			1610711	1691345	2
Cr	52	24.796	ug/L	0.795	3	38065	793588	1
Cr	53	25.053	ug/L	0 416	1	203	88802	1
Mn	55	25.548	ug/L	0 475	1	1658	1112471	1
> Ge	72		ug/L			1293916	1313135	0
Ni	60	25.801	ug/L	0 524	2	46	202559	2
Ni	62	25.277	ug/L	0 431	1	240	29260	1
Cu	63	25.661	ug/L	0 474	1	692	461739	2
Cu	65	25.781	ug/L	0.503	1	311	214051	2
Zn	66	76.510	ug/L	2 769	3	4584	376740	2
Zn	67	69.278	ug/L	1.323	1	730	57590	1
Zn	68	75.338	ug/L	1.454	1	3468	263662	1
As	75	27.928	ug/L	0.163	0	28	134188	0
As-1	75	26.319	ug/L	0.117	0	18458	141177	0
Se	82	71.423	ug/L	0 073	0	18	40488	0
Se	78	70.384	ug/L	0 366	0	18694	110086	0
Y	89		ug/L			973453	1021363	2
Kr	83		ug/L			355	368	2
> In	115		ug/L			1353268	1376597	0
Ag	107	24.924	ug/L	0.180	0	55	632902	0
Cd	111	23.482	ug/L	0 129	0	244	155475	0
Cd	114	23.313	ug/L	0.066	0	67	377833	0
Sb	121	-0.002	ug/L	0.001	38	194	160	9
Sb	123	-0.001	ug/L	0 000	60	127	118	5
Ba	135	24.505	ug/L	0.185	0	44	130192	1
Ba	137	24.619	ug/L	0 206	0	87	226397	0
> Tb	159		ug/L			1500497	1525105	0
Tl	205	24.010	ug/L	0 177	0	126	1152671	0
Pb	208	24.612	ug/L	0 187	0	476	1476146	0

AGC 01283

ee 05/28/15

RR Cr Zn ~~Ba Pb~~

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 D SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:17:58
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File· C:\NexION Data\Conditions\Default.dac
Calibration File. C·\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	70441	2
	Cl	37		ug/L			5760484	5859220	1
>	Sc	45		ug/L			1610711	1608929	0
	Cr	52	498.235	ug/L	4 237	0	38065	14449021	1
	Cr	53	505.496	ug/L	2 431	0	203	1700937	1
	Mn	55	10653.297	ug/L	223.329	2	1658	440655850	1
>	Ge	72		ug/L			1293916	1139532	0
	Ni	60	57.281	ug/L	0 128	0	46	390175	0
	Ni	62	57.468	ug/L	0 922	1	240	57458	1
	Cu	63	143.556	ug/L	1 485	1	692	2238665	1
	Cu	65	141.041	ug/L	0 920	0	311	1014916	1
	Zn	66	615.214	ug/L	8.730	1	4584	2600607	0
	Zn	67	550.983	ug/L	9.936	1	730	392987	0
	Zn	68	589.072	ug/L	7 014	1	3468	1768227	0
	As	75	21.842	ug/L	0 038	0	28	91077	1
	As-1	75	22.594	ug/L	0 035	0	18458	107476	0
	Se	82	0.415	ug/L	0 058	13	18	220	13
	Se	78	1.038	ug/L	0.194	18	18694	17628	0
	Y	89		ug/L			973453	1199172	1
	Kr	83		ug/L			355	919	2
>	In	115		ug/L			1353268	1209710	1
	Ag	107	0.301	ug/L	0.007	2	55	6757	1
	Cd	111	2.608	ug/L	0 006	0	244	15367	0
	Cd	114	1.811	ug/L	0 030	1	67	25846	0
	Sb	121	0.990	ug/L	0 014	1	194	16172	0
	Sb	123	0.965	ug/L	0.011	1	127	12099	0
	Ba	135	234.000	ug/L	5.072	2	44	1091964	1
	Ba	137	240.032	ug/L	4.656	1	87	1938886	1
>	Tb	159		ug/L			1500497	1422187	0
	Tl	205	0.053	ug/L	0 001	1	126	2482	1
	Pb	208	221.548	ug/L	2.387	1	476	12387404	0

AGA8 B1284

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 E SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:21:39
Number of Replicates: 3
Method File C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	72156	2
	Cl	37		ug/L			5760484	5539065	1
>	Sc	45		ug/L			1610711	1674040	2
	Cr	52	7.829	ug/L	0 190	2	38065	275105	0
	Cr	53	7.851	ug/L	0 044	0	203	27693	2
	Mn	55	68.971	ug/L	1 900	2	1658	2969695	2
>	Ge	72		ug/L			1293916	1270748	0
	Ni	60	6.018	ug/L	0 043	0	46	45748	0
	Ni	62	7.136	ug/L	0.102	1	240	8163	1
	Cu	63	10.624	ug/L	0 242	2	692	185378	1
	Cu	65	10.695	ug/L	0 248	2	311	86095	1
	Zn	66	14.833	ug/L	0.281	1	4584	74320	1
	Zn	67	17.103	ug/L	0 373	2	730	14298	1
	Zn	68	15.740	ug/L	0.223	1	3468	56007	1
	As	75	20.205	ug/L	0 107	0	28	93954	0
	As-1	75	20.905	ug/L	0 147	0	18458	112245	0
	Se	82	0.109	ug/L	0.020	18	18	77	14
	Se	78	0.354	ug/L	0 143	40	18694	18802	0
	Y	89		ug/L			973453	1161967	1
	Kr	83		ug/L			355	477	6
>	In	115		ug/L			1353268	1342239	1
	Ag	107	0.022	ug/L	0.001	4	55	590	3
	Cd	111	0.108	ug/L	0 014	12	244	936	8
	Cd	114	0.023	ug/L	0 001	2	67	429	1
	Sb	121	0.002	ug/L	0.002	91	194	224	14
	Sb	123	0.004	ug/L	0 001	19	127	175	4
	Ba	135	26.416	ug/L	0 338	1	44	136835	1
	Ba	137	26.766	ug/L	0 419	1	87	239955	0
>	Tb	159		ug/L			1500497	1498030	1
	Tl	205	0.033	ug/L	0.001	2	126	1699	3
	Pb	208	1.283	ug/L	0 002	0	476	76034	1

AGC-01265

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 G SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:25:20
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	76045	1
	Cl	37		ug/L			5760484	5555580	5
>	Sc	45		ug/L			1610711	1776329	2
	Cr	52	13.651	ug/L	0.364	2	38065	477749	1
	Cr	53	13.605	ug/L	0.162	1	203	50747	1
	Mn	55	176.163	ug/L	6 633	3	1658	8041567	1
>	Ge	72		ug/L			1293916	1282678	1
	Ni	60	10.849	ug/L	0.185	1	46	83215	2
	Ni	62	12.666	ug/L	0.193	1	240	14439	0
	Cu	63	15.996	ug/L	0.162	1	692	281371	1
	Cu	65	15.983	ug/L	0 672	4	311	129666	2
	Zn	66	34.759	ug/L	0 639	1	4584	169663	1
	Zn	67	38.522	ug/L	0 827	2	730	31596	0
	Zn	68	35.864	ug/L	0.831	2	3468	124384	1
	As	75	6.798	ug/L	0 113	1	28	31919	0
	As-1	75	7.009	ug/L	0 209	2	18458	50138	0
	Se	82	0.212	ug/L	0.028	13	18	135	10
	Se	78	0.346	ug/L	0 337	97	18694	18963	0
	Y	89		ug/L			973453	1334089	1
	Kr	83		ug/L			355	587	6
>	In	115		ug/L			1353268	1330147	1
	Ag	107	0.039	ug/L	0.001	2	55	1015	3
	Cd	111	0.170	ug/L	0 005	2	244	1325	3
	Cd	114	0.028	ug/L	0 002	6	67	503	6
	Sb	121	0.005	ug/L	0 001	29	194	280	9
	Sb	123	0.006	ug/L	0 001	11	127	209	4
	Ba	135	52.618	ug/L	0.542	1	44	270056	1
	Ba	137	52.616	ug/L	1 043	1	87	467423	1
>	Tb	159		ug/L			1500497	1503658	1
	Tl	205	0.057	ug/L	0 001	2	126	2820	3
	Pb	208	2.620	ug/L	0 057	2	476	155291	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 H SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:29:01
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	76990	0
	Cl	37		ug/L			5760484	5505323	0
>	Sc	45		ug/L			1610711	1785605	1
	Cr	52	13.886	ug/L	0 342	2	38065	487835	1
	Cr	53	14.097	ug/L	0.332	2	203	52846	1
	Mn	55	158.078	ug/L	2 683	1	1658	7257573	0
>	Ge	72		ug/L			1293916	1294480	0
	Ni	60	12.402	ug/L	0.275	2	46	95995	1
	Ni	62	13.528	ug/L	0 360	2	240	15550	2
	Cu	63	18.576	ug/L	0.188	1	692	329686	1
	Cu	65	18.909	ug/L	0 392	2	311	154837	1
	Zn	66	28.036	ug/L	0 461	1	4584	139010	1
	Zn	67	34.025	ug/L	0 665	1	730	28255	1
	Zn	68	30.287	ug/L	0 711	2	3468	106567	1
	As	75	2.639	ug/L	0.039	1	28	12523	1
	As-1	75	2.655	ug/L	0 059	2	18458	30641	0
	Se	82	0.227	ug/L	0 040	17	18	144	15
	Se	78	0.170	ug/L	0 082	47	18694	18919	0
	Y	89		ug/L			973453	1365532	1
	Kr	83		ug/L			355	627	3
>	In	115		ug/L			1353268	1325513	0
	Ag	107	0.051	ug/L	0 001	2	55	1299	3
	Cd	111	0.222	ug/L	0 002	0	244	1654	0
	Cd	114	0.033	ug/L	0 001	3	67	583	2
	Sb	121	0.002	ug/L	0 001	56	194	226	9
	Sb	123	0.003	ug/L	0.001	26	127	163	6
	Ba	135	61.338	ug/L	0 328	0	44	313712	0
	Ba	137	61.231	ug/L	0 322	0	87	542071	0
>	Tb	159		ug/L			1500497	1506240	0
	Tl	205	0.072	ug/L	0.002	2	126	3518	1
	Pb	208	2.964	ug/L	0.044	1	476	175978	1

AGC 012267

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 I SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:32:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	73758	4
	Cl	37		ug/L			5760484	5673014	2
>	Sc	45		ug/L			1610711	1812094	1
	Cr	52	15.549	ug/L	0 269	1	38065	549347	2
	Cr	53	15.780	ug/L	0 209	1	203	60011	0
	Mn	55	233.063	ug/L	7.185	3	1658	10855665	1
>	Ge	72		ug/L			1293916	1308778	1
	Ni	60	11.261	ug/L	0.107	0	46	88134	1
	Ni	62	12.816	ug/L	0 354	2	240	14903	1
	Cu	63	17.279	ug/L	0 220	1	692	310056	0
	Cu	65	17.531	ug/L	0 287	1	311	145143	0
	Zn	66	37.136	ug/L	0 185	0	4584	184659	1
	Zn	67	41.674	ug/L	1 101	2	730	34816	1
	Zn	68	37.984	ug/L	0.543	1	3468	134224	0
	As	75	2.362	ug/L	0 037	1	28	11336	1
	As-1	75	2.368	ug/L	0 073	3	18458	29647	0
	Se	82	0.180	ug/L	0 027	15	18	120	13
	Se	78	0.121	ug/L	0 170	140	18694	19063	0
	Y	89		ug/L			973453	1366283	1
	Kr	83		ug/L			355	644	5
>	In	115		ug/L			1353268	1342769	1
	Ag	107	0.043	ug/L	0.002	5	55	1130	4
	Cd	111	0.189	ug/L	0 023	12	244	1459	9
	Cd	114	0.052	ug/L	0 002	4	67	893	3
	Sb	121	0.004	ug/L	0 003	60	194	268	16
	Sb	123	0.006	ug/L	0 002	29	127	205	10
	Ba	135	59.356	ug/L	0 654	1	44	307515	0
	Ba	137	59.053	ug/L	0 518	0	87	529599	1
>	Tb	159		ug/L			1500497	1490754	0
	Tl	205	0.064	ug/L	0.001	1	126	3136	1
	Pb	208	4.892	ug/L	0 009	0	476	287177	0

AGCS : 81288

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB2SPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:36:24
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	74321	1
	Cl	37		ug/L			5760484	5608538	2
>	Sc	45		ug/L			1610711	1632736	2
	Cr	52	25.230	ug/L	0 921	3	38065	778740	1
	Cr	53	24.559	ug/L	0.835	3	203	84016	1
	Mn	55	25.220	ug/L	1.305	5	1658	1059730	3
>	Ge	72		ug/L			1293916	1336422	0
	Ni	60	24.398	ug/L	0 377	1	46	194921	0
	Ni	62	24.010	ug/L	0 371	1	240	28298	0
	Cu	63	24.728	ug/L	0.461	1	692	452803	1
	Cu	65	24.391	ug/L	0.046	0	311	206106	0
	Zn	66	74.351	ug/L	1.072	1	4584	372760	0
	Zn	67	67.142	ug/L	1.013	1	730	56829	1
	Zn	68	73.564	ug/L	0.855	1	3468	262129	1
	As	75	27.236	ug/L	0.401	1	28	133180	1
	As-1	75	25.825	ug/L	0.217	0	18458	141343	0
	Se	82	70.210	ug/L	1.062	1	18	40503	0
	Se	78	69.825	ug/L	0.527	0	18694	111300	0
	Y	89		ug/L			973453	1011250	0
	Kr	83		ug/L			355	377	7
>	In	115		ug/L			1353268	1354885	1
	Ag	107	24.868	ug/L	0.184	0	55	621473	1
	Cd	111	23.466	ug/L	0.395	1	244	152896	1
	Cd	114	23.554	ug/L	0.663	2	67	375597	1
	Sb	121	-0.007	ug/L	0.000	6	194	74	9
	Sb	123	-0.005	ug/L	0.001	18	127	51	25
	Ba	135	24.134	ug/L	0.447	1	44	126171	0
	Ba	137	23.967	ug/L	0.622	2	87	216860	0
>	Tb	159		ug/L			1500497	1514634	0
	Tl	205	23.088	ug/L	0.061	0	126	1100835	0
	Pb	208	23.909	ug/L	0.406	1	476	1424128	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:41:10
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	66133	1
	Cl	37		ug/L			5760484	5574123	2
>	Sc	45		ug/L			1610711	1583338	4
	Cr	52	50.606	ug/L	1 290	2	38065	1476818	1
	Cr	53	51.262	ug/L	1.472	2	203	169787	1
	Mn	55	51.669	ug/L	1 289	2	1658	2103468	2
>	Ge	72		ug/L			1293916	1249792	1
	Ni	60	50.881	ug/L	0 996	1	46	380086	1
	Ni	62	49.705	ug/L	0.696	1	240	54536	0
	Cu	63	50.032	ug/L	1 827	3	692	856034	3
	Cu	65	50.849	ug/L	0 493	0	311	401488	0
	Zn	66	50.101	ug/L	0.359	0	4584	236350	0
	Zn	67	50.907	ug/L	0 893	1	730	40464	1
	Zn	68	50.981	ug/L	0.712	1	3468	170916	2
	As	75	50.300	ug/L	0.869	1	28	229993	1
	As-1	75	50.198	ug/L	0 962	1	18458	240093	1
	Se	82	51.214	ug/L	0.226	0	18	27637	1
	Se	78	50.701	ug/L	0 286	0	18694	80526	1
	Y	89		ug/L			973453	956843	2
	Kr	83		ug/L			355	341	8
>	In	115		ug/L			1353268	1298289	0
	Ag	107	49.335	ug/L	0 354	0	55	1181484	1
	Cd	111	50.253	ug/L	0 692	1	244	313521	0
	Cd	114	51.175	ug/L	0.577	1	67	782098	0
	Sb	121	50.804	ug/L	0.634	1	194	881736	0
	Sb	123	50.353	ug/L	0.349	0	127	671608	0
	Ba	135	50.773	ug/L	1.020	2	44	254333	1
	Ba	137	50.646	ug/L	1.433	2	87	439122	2
>	Tb	159		ug/L			1500497	1470977	0
	Tl	205	49.955	ug/L	0.672	1	126	2313117	1
	Pb	208	48.984	ug/L	0 868	1	476	2832958	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB9
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:47:37
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	65870	0
	Cl	37		ug/L			5760484	5642812	4
>	Sc	45		ug/L			1610711	1524639	0
	Cr	52	0.020	ug/L	0 033	170	38065	36568	2
	Cr	53	0.005	ug/L	0 003	64	203	208	4
	Mn	55	-0.006	ug/L	0.001	18	1658	1336	3
>	Ge	72		ug/L			1293916	1265537	2
	Ni	60	-0.001	ug/L	0 000	5	46	34	3
	Ni	62	0.017	ug/L	0.016	93	240	254	8
	Cu	63	-0.004	ug/L	0 001	26	692	611	2
	Cu	65	-0.008	ug/L	0.003	34	311	238	9
	Zn	66	-0.681	ug/L	0 015	2	4584	1291	5
	Zn	67	-0.669	ug/L	0 009	1	730	184	5
	Zn	68	-0.691	ug/L	0.020	2	3468	1091	4
	As	75	-0.007	ug/L	0 003	42	28	-3	356
	As-1	75	0.008	ug/L	0.102	1309	18458	18082	0
	Se	82	0.005	ug/L	0 012	251	18	20	32
	Se	78	0.064	ug/L	0 353	548	18694	18358	0
	Y	89		ug/L			973453	925972	2
	Kr	83		ug/L			355	357	4
>	In	115		ug/L			1353268	1322349	0
	Ag	107	0.002	ug/L	0.002	130	55	94	56
	Cd	111	-0.000	ug/L	0.004	1298	244	236	9
	Cd	114	0.001	ug/L	0.002	262	67	77	37
	Sb	121	0.024	ug/L	0 002	6	194	606	4
	Sb	123	0.024	ug/L	0.002	8	127	456	5
	Ba	135	-0.005	ug/L	0.001	10	44	18	13
	Ba	137	-0.005	ug/L	0.001	11	87	37	14
>	Tb	159		ug/L			1500497	1471129	0
	Tl	205	0.004	ug/L	0.001	27	126	298	16
	Pb	208	-0.001	ug/L	0.000	40	476	413	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 A SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:55:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

Cr Only

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	69680	2
	Cl	37		ug/L			5760484	5866973	1
>	Sc	45		ug/L			1610711	1600906	0
	Cr	52	136.999	ug/L	1.526	1	38065	3980572	1
	Cr	53	138.075	ug/L	4.601	3	203	462348	2
	Mn	55	3869.696	ug/L	61 390	1	1658	159266635	1
>	Ge	72		ug/L			1293916	1178292	0
	Ni	60	5.422	ug/L	0.139	2	46	38229	3
	Ni	62	5.531	ug/L	0.154	2	240	5915	2
	Cu	63	11.848	ug/L	0.360	3	692	191608	2
	Cu	65	12.289	ug/L	0.073	0	311	91696	0
	Zn	66	87.431	ug/L	0.874	0	4584	385752	0
	Zn	67	83.472	ug/L	1.740	2	730	62127	1
	Zn	68	85.814	ug/L	1.639	1	3468	269045	1
	As	75	2.502	ug/L	0 017	0	28	10810	0
	As-1	75	2.750	ug/L	0 052	1	18458	28289	0
	Se	82	0.258	ug/L	0.026	10	18	147	9
	Se	78	0.994	ug/L	0 149	15	18694	18177	0
	Y	89		ug/L			973453	1045071	1
	Kr	83		ug/L			355	485	5
>	In	115		ug/L			1353268	1274816	1
	Ag	107	0.079	ug/L	0 001	1	55	1903	1
	Cd	111	0.427	ug/L	0.013	3	244	2843	3
	Cd	114	0.202	ug/L	0 008	3	67	3097	2
	Sb	121	0.137	ug/L	0 002	1	194	2509	0
	Sb	123	0.138	ug/L	0 004	2	127	1923	3
	Ba	135	35.523	ug/L	0 347	0	44	174739	0
	Ba	137	35.081	ug/L	0.302	0	87	298702	0
>	Tb	159		ug/L			1500497	1452934	1
	Tl	205	0.017	ug/L	0.001	3	126	881	3
	Pb	208	37.145	ug/L	0 517	1	476	2122103	0

ACC 81252

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 B SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 14:59:23
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C.\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c.cal

Cr only

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	71132	3
	Cl	37		ug/L			5760484	5827045	1
>	Sc	45		ug/L			1610711	1607213	0
	Cr	52	123.055	ug/L	1 616	1	38065	3593448	1
	Cr	53	123.435	ug/L	2 684	2	203	415000	1
	Mn	55	1202.320	ug/L	21 989	1	1658	49685410	2
>	Ge	72		ug/L			1293916	1257734	2
	Ni	60	5.399	ug/L	0 248	4	46	40600	2
	Ni	62	6.004	ug/L	0.366	6	240	6829	3
	Cu	63	13.829	ug/L	0.574	4	692	238538	3
	Cu	65	14.337	ug/L	0.538	3	311	114080	1
	Zn	66	13.663	ug/L	0.326	2	4584	68088	0
	Zn	67	14.319	ug/L	0.405	2	730	11960	0
	Zn	68	13.316	ug/L	0.146	1	3468	47412	2
	As	75	2.594	ug/L	0.050	1	28	11962	1
	As-1	75	2.712	ug/L	0.165	6	18458	30017	1
	Se	82	0.050	ug/L	0.022	43	18	44	25
	Se	78	0.230	ug/L	0.458	198	18694	18448	1
	Y	89		ug/L			973453	1087354	2
	Kr	83		ug/L			355	432	2
>	In	115		ug/L			1353268	1312111	1
	Ag	107	0.038	ug/L	0.001	1	55	979	2
	Cd	111	0.115	ug/L	0.009	7	244	962	6
	Cd	114	0.023	ug/L	0 002	9	67	422	8
	Sb	121	0.008	ug/L	0 001	17	194	330	6
	Sb	123	0.011	ug/L	0 000	1	127	267	1
	Ba	135	12.644	ug/L	0 325	2	44	64033	0
	Ba	137	12.571	ug/L	0.120	0	87	110225	0
>	Tb	159		ug/L			1500497	1470755	1
	Tl	205	0.016	ug/L	0 000	2	126	856	1
	Pb	208	2.779	ug/L	0 055	1	476	161132	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:03:04
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

RR Cr Pb Zn Cu

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	68671	1
	Cl	37		ug/L			5760484	5976122	1
>	Sc	45		ug/L			1610711	1610006	2
	Cr	52	197.125	ug/L	4 783	2	38065	5740916	1
	Cr	53	201.833	ug/L	4.798	2	203	679444	1
	Mn	55	6748.246	ug/L	334 076	4	1658	279064377	1
>	Ge	72		ug/L			1293916	1201313	0
	Ni	60	17.555	ug/L	0 223	1	46	126085	1
	Ni	62	19.131	ug/L	0 296	1	240	20316	1
	Cu	63	76.425	ug/L	1 504	1	692	1256702	1
	Cu	65	75.961	ug/L	0 980	1	311	576388	1
	Zn	66	1025.298	ug/L	10 859	1	4584	4566587	1
	Zn	67	897.668	ug/L	19 615	2	730	674612	2
	Zn	68	973.886	ug/L	20 279	2	3468	3079903	2
	As	75	2.773	ug/L	0.034	1	28	12211	0
	As-1	75	2.981	ug/L	0 040	1	18458	29827	0
	Se	82	0.293	ug/L	0 014	4	18	168	4
	Se	78	0.872	ug/L	0.076	8	18694	18388	0
	Y	89		ug/L			973453	1125965	0
	Kr	83		ug/L			355	512	3
>	In	115		ug/L			1353268	1264177	0
	Ag	107	0.207	ug/L	0 003	1	55	4875	2
	Cd	111	2.619	ug/L	0.025	0	244	16127	1
	Cd	114	2.327	ug/L	0.048	2	67	34695	1
	Sb	121	1.078	ug/L	0 021	1	194	18387	1
	Sb	123	1.089	ug/L	0 023	2	127	14253	1
	Ba	135	184.552	ug/L	3 007	1	44	900067	1
	Ba	137	184.288	ug/L	1 929	1	87	1555746	0
>	Tb	159		ug/L			1500497	1460838	1
	Tl	205	0.021	ug/L	0.001	2	126	1068	2
	Pb	208	196.007	ug/L	2.465	1	476	11256253	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:06:45
Number of Replicates: 3
Method File: C.\NexIONData\Method\200.8GFA7+++ mth
Tuning File: C.\NexIONData\MassCal\Default tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

KR Cr Pb Zn Cu

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	66195	3
	Cl	37		ug/L			5760484	5685259	1
>	Sc	45		ug/L			1610711	1579506	1
	Cr	52	**265.374**	ug/L	5.330	2	38065	7571717	1
	Cr	53	**272.378**	ug/L	3.509	1	203	899756	0
	Mn	55	**7995.115**	ug/L	107 747	1	1658	324646228	0
>	Ge	72		ug/L			1293916	1199004	0
	Ni	60	**16.639**	ug/L	0.155	0	46	119281	0
	Ni	62	**18.422**	ug/L	0.109	0	240	19533	1
	Cu	63	**93.471**	ug/L	0.221	0	692	1533930	0
	Cu	65	**95.295**	ug/L	1.801	1	311	721653	2
	Zn	66	**1029.674**	ug/L	16 047	1	4584	4576836	0
	Zn	67	**892.120**	ug/L	11.663	1	730	669141	1
	Zn	68	**971.190**	ug/L	10.638	1	3468	3065465	1
	As	75	**2.826**	ug/L	0.006	0	28	12421	0
	As-1	75	**3.035**	ug/L	0.036	1	18458	29998	0
	Se	82	**0.302**	ug/L	0.005	1	18	172	0
	Se	78	**0.885**	ug/L	0.115	13	18694	18368	0
	Y	89		ug/L			973453	1078589	0
	Kr	83		ug/L			355	522	4
>	In	115		ug/L			1353268	1251514	0
	Ag	107	**0.230**	ug/L	0 009	4	55	5362	3
	Cd	111	**2.704**	ug/L	0.010	0	244	16475	0
	Cd	114	**2.370**	ug/L	0 015	0	67	34974	0
	Sb	121	**0.890**	ug/L	0 015	1	194	15063	0
	Sb	123	**0.872**	ug/L	0.007	0	127	11329	0
	Ba	135	**200.929**	ug/L	3.756	1	44	970199	1
	Ba	137	**203.404**	ug/L	3 851	1	87	1699950	1
>	Tb	159		ug/L			1500497	1440261	0
	Tl	205	**0.018**	ug/L	0.000	2	126	941	2
	Pb	208	**200.028**	ug/L	0.927	0	476	11326548	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:10:26
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cr Pb En Cu

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	66339	1
	Cl	37		ug/L			5760484	5728001	1
>	Sc	45		ug/L			1610711	1513856	2
	Cr	52	331.052	ug/L	7.781	2	38065	9041814	0
	Cr	53	331.652	ug/L	9.473	2	203	1049570	0
	Mn	55	6703.472	ug/L	279.263	4	1658	260727892	1
>	Ge	72		ug/L			1293916	1194135	1
	Ni	60	58.657	ug/L	1.577	2	46	418596	1
	Ni	62	59.994	ug/L	1.240	2	240	62843	1
	Cu	63	8996.751	ug/L	152 068	1	692	146959624	0
	Cu	65	8833.395	ug/L	245.490	2	311	66575550	1
	Zn	66	1469.209	ug/L	30.236	2	4584	6501522	0
	Zn	67	1288.896	ug/L	48.700	3	730	962292	2
	Zn	68	1395.909	ug/L	36.403	2	3468	4385824	1
	As	75	14.464	ug/L	0.265	1	28	63200	0
	As-1	75	14.056	ug/L	0.301	2	18458	76493	0
	Se	82	25.689	ug/L	0.646	2	18	13251	1
	Se	78	25.552	ug/L	0.598	2	18694	47326	0
	Y	89		ug/L			973453	1069062	1
	Kr	83		ug/L			355	537	4
>	In	115		ug/L			1353268	1221570	0
	Ag	107	10.789	ug/L	0.054	0	55	243138	0
	Cd	111	12.734	ug/L	0.040	0	244	74922	0
	Cd	114	12.231	ug/L	0.195	1	67	175938	1
	Sb	121	1.802	ug/L	0 025	1	194	29605	1
	Sb	123	1.770	ug/L	0 016	0	127	22320	1
	Ba	135	157.461	ug/L	0 769	0	44	742128	0
	Ba	137	158.907	ug/L	0 480	0	87	1296347	0
>	Tb	159		ug/L			1500497	1435453	1
	Tl	205	9.164	ug/L	0 208	2	126	414112	0
	Pb	208	445.435	ug/L	5 073	1	476	25135842	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:14:07
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67898	67850	3
	Cl	37		ug/L			5760484	5742738	1
>	Sc	45		ug/L			1610711	1499946	2
	Cr	52	53.996	ug/L	0 281	0	38065	1491407	2
	Cr	53	53.943	ug/L	1 140	2	203	169334	1
	Mn	55	1819.159	ug/L	45.677	2	1658	70142034	2
>	Ge	72		ug/L			1293916	1215321	1
	Ni	60	4.507	ug/L	0 075	1	46	32789	3
	Ni	62	4.943	ug/L	0 108	2	240	5476	1
	Cu	63	20.233	ug/L	0 192	0	692	337088	2
	Cu	65	20.318	ug/L	0 432	2	311	156149	0
	Zn	66	277.113	ug/L	4 346	1	4584	1251616	1
	Zn	67	244.220	ug/L	4 065	1	730	186146	0
	Zn	68	273.337	ug/L	8 570	3	3468	876711	2
	As	75	0.708	ug/L	0.007	0	28	3173	1
	As-1	75	0.870	ug/L	0 070	8	18458	21081	0
	Se	82	0.072	ug/L	0 013	18	18	54	12
	Se	78	0.611	ug/L	0.252	41	18694	18287	0
	Y	89		ug/L			973453	981144	0
	Kr	83		ug/L			355	380	4
>	In	115		ug/L			1353268	1291493	0
	Ag	107	0.053	ug/L	0.003	6	55	1314	6
	Cd	111	0.681	ug/L	0.007	1	244	4456	0
	Cd	114	0.603	ug/L	0 013	2	67	9231	2
	Sb	121	0.281	ug/L	0.004	1	194	5030	1
	Sb	123	0.281	ug/L	0.004	1	127	3847	1
	Ba	135	45.012	ug/L	0 871	1	44	224306	1
	Ba	137	45.486	ug/L	0.736	1	87	392356	1
>	Tb	159		ug/L			1500497	1413868	1
	Tl	205	0.007	ug/L	0 001	15	126	435	11
	Pb	208	50.273	ug/L	0.707	1	476	2794526	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:17:49
Number of Replicates: 3
Method File. C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

RR Cu Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	64327	1
	Cl	37		ug/L			5760484	5692425	3
>	Sc	45		ug/L			1610711	1506982	2
	Cr	52	71.974	ug/L	1 278	1	38065	1984788	1
	Cr	53	71.480	ug/L	3 567	4	203	225259	2
	Mn	55	2126.225	ug/L	98 485	4	1658	82306523	1
>	Ge	72		ug/L			1293916	1226736	0
	Ni	60	4.278	ug/L	0 086	2	46	31413	2
	Ni	62	4.610	ug/L	0 058	1	240	5172	1
	Cu	63	24.546	ug/L	0.249	1	692	412611	1
	Cu	65	24.603	ug/L	0 191	0	311	190839	1
	Zn	66	270.387	ug/L	0 825	0	4584	1232973	0
	Zn	67	240.507	ug/L	3.453	1	730	185082	1
	Zn	68	264.489	ug/L	1.621	0	3468	856540	0
	As	75	0.710	ug/L	0.009	1	28	3214	1
	As-1	75	0.812	ug/L	0 022	2	18458	21027	0
	Se	82	0.062	ug/L	0 016	26	18	49	17
	Se	78	0.375	ug/L	0.062	16	18694	18177	0
	Y	89		ug/L			973453	970700	0
	Kr	83		ug/L			355	377	3
>	In	115		ug/L			1353268	1289455	1
	Ag	107	0.058	ug/L	0 001	2	55	1441	3
	Cd	111	0.721	ug/L	0.003	0	244	4695	1
	Cd	114	0.614	ug/L	0 010	1	67	9385	1
	Sb	121	0.222	ug/L	0 006	2	194	4011	1
	Sb	123	0.225	ug/L	0 007	3	127	3106	1
	Ba	135	49.240	ug/L	0 166	0	44	244995	1
	Ba	137	49.493	ug/L	0 446	0	87	426220	0
>	Tb	159		ug/L			1500497	1433180	0
	Tl	205	0.004	ug/L	0 001	16	126	316	9
	Pb	208	50.466	ug/L	0.661	1	476	2843798	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:21:30
Number of Replicates. 3
Method File C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

RR Cu Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	66258	6
	Cl	37		ug/L			5760484	5657283	1
>	Sc	45		ug/L			1610711	1505178	1
	Cr	52	84.310	ug/L	1.234	1	38065	2316889	1
	Cr	53	84.913	ug/L	0 716	0	203	267431	0
	Mn	55	1713.644	ug/L	10 657	0	1658	66315321	1
>	Ge	72		ug/L			1293916	1220372	1
	Ni	60	15.307	ug/L	0.210	1	46	111681	0
	Ni	62	15.157	ug/L	0.484	3	240	16394	2
	Cu	63	2328.032	ug/L	56 225	2	692	38860831	0
	Cu	65	2338.115	ug/L	21 446	0	311	18012720	0
	Zn	66	389.249	ug/L	14 446	3	4584	1763223	2
	Zn	67	349.263	ug/L	6.567	1	730	267048	1
	Zn	68	379.977	ug/L	12.077	3	3468	1222347	1
	As	75	3.726	ug/L	0.054	1	28	16657	0
	As-1	75	3.690	ug/L	0.091	2	18458	33359	0
	Se	82	6.826	ug/L	0.211	3	18	3610	1
	Se	78	7.054	ug/L	0.368	5	18694	26114	0
	Y	89		ug/L			973453	943723	2
	Kr	83		ug/L			355	378	3
>	In	115		ug/L			1353268	1264603	0
	Ag	107	2.738	ug/L	0.064	2	55	63905	2
	Cd	111	3.293	ug/L	0.072	2	244	20229	2
	Cd	114	3.171	ug/L	0.104	3	67	47259	2
	Sb	121	0.459	ug/L	0.011	2	194	7945	1
	Sb	123	0.465	ug/L	0.002	0	127	6163	0
	Ba	135	39.684	ug/L	0.663	1	44	193637	1
	Ba	137	39.547	ug/L	0.321	0	87	334036	0
>	Tb	159		ug/L			1500497	1435212	0
	Tl	205	2.399	ug/L	0.005	0	126	108489	0
	Pb	208	115.124	ug/L	0.609	0	476	6496206	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:25:11
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File· C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815c.cal

De 1

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	66625	1
	Cl	37		ug/L			5760484	5536728	2
>	Sc	45		ug/L			1610711	1599097	2
	Cr	52	740.122	ug/L	20 515	2	38065	21302813	0
	Cr	53	747.808	ug/L	10 470	1	203	2500578	2
	Mn	55	15135.968	ug/L	596.640	3	1658	621799085	0
>	Ge	72		ug/L			1293916	1103857	0
	Ni	60	146.029	ug/L	1.095	0	46	963477	0
	Ni	62	147.404	ug/L	5 631	3	240	142424	2
	Cu	63	21571.073	ug/L	428.979	1	692	325732128	1
	Cu	65	21446.106	ug/L	270 143	1	311	149445710	0
	Zn	66	3380.598	ug/L	32 846	0	4584	13827076	1
	Zn	67	2966.912	ug/L	36.298	1	730	2047550	2
	Zn	68	3170.803	ug/L	44 121	1	3468	9207182	1
	As	75	34.037	ug/L	0 653	1	28	137456	1
	As-1	75	33.216	ug/L	0 814	2	18458	145635	1
	Se	82	57.462	ug/L	0 578	1	18	27384	0
	Se	78	57.455	ug/L	1 071	1	18694	78466	0
	Y	89		ug/L			973453	1214689	0
	Kr	83		ug/L			355	969	2
>	In	115		ug/L			1353268	1106296	0
	Ag	107	26.335	ug/L	0 178	0	55	537405	0
	Cd	111	29.498	ug/L	0 447	1	244	156900	0
	Cd	114	28.055	ug/L	0.078	0	67	365404	0
	Sb	121	4.114	ug/L	0 028	0	194	60994	0
	Sb	123	3.995	ug/L	0 064	1	127	45503	1
	Ba	135	383.040	ug/L	9 336	2	44	1634693	1
	Ba	137	394.764	ug/L	5 913	1	87	2916289	1
>	Tb	159		ug/L			1500497	1384552	1
	Tl	205	21.286	ug/L	0 251	1	126	927711	0
	Pb	208	1036.827	ug/L	9.754	0	476	56434500	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:28:52
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

As only

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	67299	4
	Cl	37		ug/L			5760484	5547476	3
>	Sc	45		ug/L			1610711	1490729	0
	Cr	52	26.097	ug/L	0 702	2	38065	734666	3
	Cr	53	25.955	ug/L	0 406	1	203	81094	1
	Mn	55	26.912	ug/L	0 401	1	1658	1032955	1
>	Ge	72		ug/L			1293916	1228164	1
	Ni	60	25.090	ug/L	0 528	2	46	184185	0
	Ni	62	24.997	ug/L	0.598	2	240	27069	3
	Cu	63	25.764	ug/L	1 230	4	692	433350	3
	Cu	65	26.661	ug/L	1 053	3	311	206936	2
	Zn	66	81.272	ug/L	1 074	1	4584	374054	1
	Zn	67	73.553	ug/L	0.406	0	730	57151	2
	Zn	68	80.111	ug/L	1.278	1	3468	262010	1
	As	75	29.531	ug/L	0 466	1	28	132691	1
	As-1	75	27.675	ug/L	0 502	1	18458	137925	0
	Se	82	77.798	ug/L	1.161	1	18	41241	1
	Se	78	76.389	ug/L	1 334	1	18694	110218	0
	Y	89		ug/L			973453	924996	0
	Kr	83		ug/L			355	328	2
>	In	115		ug/L			1353268	1304889	0
	Ag	107	24.769	ug/L	0 556	2	55	596174	2
	Cd	111	24.379	ug/L	0.388	1	244	152994	1
	Cd	114	24.458	ug/L	0.388	1	67	375728	1
	Sb	121	-0.005	ug/L	0 001	11	194	96	10
	Sb	123	-0.003	ug/L	0.000	9	127	86	3
	Ba	135	24.716	ug/L	0.422	1	44	124465	1
	Ba	137	24.585	ug/L	0.532	2	87	214297	1
>	Tb	159		ug/L			1500497	1434839	1
	Tl	205	24.312	ug/L	0.166	0	126	1098066	1
	Pb	208	24.897	ug/L	0 308	1	476	1404729	0

AGS 81994

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV10
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:33:38
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	64824	0
	Cl	37		ug/L			5760484	5548876	3
>	Sc	45		ug/L			1610711	1481592	2
	Cr	52	50.959	ug/L	0.892	1	38065	1392173	2
	Cr	53	51.444	ug/L	1.760	3	203	159487	1
	Mn	55	51.648	ug/L	0.658	1	1658	1968528	1
>	Ge	72		ug/L			1293916	1197000	2
	Ni	60	49.244	ug/L	1.164	2	46	352231	0
	Ni	62	49.088	ug/L	1.316	2	240	51573	1
	Cu	63	49.406	ug/L	1 505	3	692	809404	1
	Cu	65	50.331	ug/L	2 495	4	311	380358	2
	Zn	66	49.754	ug/L	2 059	4	4584	224717	2
	Zn	67	50.841	ug/L	1 095	2	730	38696	0
	Zn	68	51.250	ug/L	1.297	2	3468	164506	2
	As	75	50.209	ug/L	1 172	2	28	219817	0
	As-1	75	50.321	ug/L	1 497	2	18458	230396	0
	Se	82	50.162	ug/L	0 968	1	18	25918	0
	Se	78	50.331	ug/L	2 126	4	18694	76651	1
	Y	89		ug/L			973453	903746	2
	Kr	83		ug/L			355	358	5
>	In	115		ug/L			1353268	1254566	0
	Ag	107	48.859	ug/L	1.110	2	55	1130523	1
	Cd	111	49.513	ug/L	0 327	0	244	298528	1
	Cd	114	49.770	ug/L	0 196	0	67	735047	0
	Sb	121	50.717	ug/L	0.298	0	194	850611	0
	Sb	123	50.228	ug/L	0.387	0	127	647403	1
	Ba	135	49.819	ug/L	0 512	1	44	241159	0
	Ba	137	50.862	ug/L	0 460	0	87	426181	0
>	Tb	159		ug/L			1500497	1394029	0
	Tl	205	50.607	ug/L	0.107	0	126	2220710	0
	Pb	208	49.231	ug/L	0 146	0	476	2698605	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB10
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:40:05
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	63870	2
	Cl	37		ug/L			5760484	5335827	1
>	Sc	45		ug/L			1610711	1468227	3
	Cr	52	0.001	ug/L	0 060	4209	38065	34708	2
	Cr	53	0.001	ug/L	0.001	109	203	188	1
	Mn	55	-0.005	ug/L	0.001	18	1658	1309	0
>	Ge	72		ug/L			1293916	1182778	0
	Ni	60	-0.000	ug/L	0.000	116	46	39	7
	Ni	62	-0.034	ug/L	0 018	53	240	184	10
	Cu	63	-0.006	ug/L	0.002	35	692	539	6
	Cu	65	-0.006	ug/L	0 002	28	311	239	5
	Zn	66	-0.143	ug/L	0 015	10	4584	3563	1
	Zn	67	-0.168	ug/L	0 044	26	730	543	6
	Zn	68	-0.164	ug/L	0 002	1	3468	2659	0
	As	75	-0.006	ug/L	0.008	138	28	0	9544350
	As-1	75	0.116	ug/L	0.044	37	18458	17357	0
	Se	82	0.009	ug/L	0 025	289	18	20	60
	Se	78	0.444	ug/L	0.148	33	18694	17606	0
	Y	89		ug/L			973453	895952	1
	Kr	83		ug/L			355	322	7
>	In	115		ug/L			1353268	1266327	0
	Ag	107	0.001	ug/L	0.002	161	55	76	53
	Cd	111	0.006	ug/L	0.001	18	244	263	2
	Cd	114	0.000	ug/L	0.001	11279	67	63	31
	Sb	121	0.021	ug/L	0.003	15	194	541	10
	Sb	123	0.023	ug/L	0.004	15	127	421	11
	Ba	135	-0.001	ug/L	0.001	80	44	37	9
	Ba	137	-0.003	ug/L	0.001	36	87	59	14
>	Tb	159		ug/L			1500497	1407458	0
	Tl	205	0.005	ug/L	0.000	9	126	336	6
	Pb	208	-0.003	ug/L	0.001	25	476	280	15

ACCB 01303

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB1 SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:54:44
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	73235	2
	Cl	37		ug/L			5760484	5292414	4
>	Sc	45		ug/L			1610711	1495862	3
	Cr	52	0.056	ug/L	0.056	100	38065	36818	0
	Cr	53	0.008	ug/L	0 000	1	203	212	3
	Mn	55	0.006	ug/L	0.003	46	1658	1782	2
>	Ge	72		ug/L			1293916	1193077	2
	Ni	60	0.006	ug/L	0 000	7	46	87	6
	Ni	62	-0.036	ug/L	0.019	54	240	184	13
	Cu	63	0.007	ug/L	0.002	30	692	746	3
	Cu	65	0.004	ug/L	0 000	12	311	316	2
	Zn	66	0.751	ug/L	0.086	11	4584	7542	2
	Zn	67	0.646	ug/L	0.043	6	730	1154	0
	Zn	68	0.693	ug/L	0 058	8	3468	5367	1
	As	75	-0.003	ug/L	0 010	311	28	10	417
	As-1	75	0.163	ug/L	0 076	46	18458	17704	0
	Se	82	0.023	ug/L	0.016	72	18	28	27
	Se	78	0.611	ug/L	0.256	41	18694	17951	0
	Y	89		ug/L			973453	907725	3
	Kr	83		ug/L			355	312	0
>	In	115		ug/L			1353268	1263612	2
	Ag	107	0.001	ug/L	0.001	67	55	69	15
	Cd	111	0.007	ug/L	0.004	59	244	270	8
	Cd	114	-0.001	ug/L	0.000	44	67	51	8
	Sb	121	-0.001	ug/L	0.001	117	194	160	15
	Sb	123	0.001	ug/L	0.001	155	127	131	13
	Ba	135	0.005	ug/L	0.002	44	44	65	17
	Ba	137	0.005	ug/L	0.001	15	87	127	5
>	Tb	159		ug/L			1500497	1423748	2
	Tl	205	0.000	ug/L	0.000	971	126	121	5
	Pb	208	0.003	ug/L	0 001	30	476	604	5

AGC9 : 21504

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 J REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 15:59:31
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	73094	0
	Cl	37		ug/L			5760484	5313966	2
>	Sc	45		ug/L			1610711	1551028	0
	Cr	52	0.089	ug/L	0 050	56	38065	39117	3
	Cr	53	0.080	ug/L	0 010	12	203	454	6
	Mn	55	0.104	ug/L	0 049	46	1658	5755	33
>	Ge	72		ug/L			1293916	1216994	1
	Ni	60	0.026	ug/L	0 001	4	46	230	4
	Ni	62	-0.019	ug/L	0.008	42	240	206	5
	Cu	63	0.131	ug/L	0 044	33	692	2838	27
	Cu	65	0.118	ug/L	0 033	27	311	1199	22
	Zn	66	3.677	ug/L	0 167	4	4584	20886	3
	Zn	67	3.165	ug/L	0 182	5	730	3092	3
	Zn	68	3.569	ug/L	0.214	5	3468	14681	4
	As	75	0.075	ug/L	0 004	5	28	358	4
	As-1	75	0.147	ug/L	0 090	61	18458	17990	1
	Se	82	0.279	ug/L	0.009	3	18	163	1
	Se	78	0.549	ug/L	0.310	56	18694	18238	1
	Y	89		ug/L			973453	939672	0
	Kr	83		ug/L			355	317	5
>	In	115		ug/L			1353268	1312332	0
	Ag	107	0.002	ug/L	0 001	50	55	104	24
	Cd	111	0.016	ug/L	0.005	28	244	338	8
	Cd	114	0.007	ug/L	0 003	39	67	170	24
	Sb	121	-0.001	ug/L	0 002	207	194	176	14
	Sb	123	0.001	ug/L	0.001	135	127	132	9
	Ba	135	0.033	ug/L	0 003	9	44	210	6
	Ba	137	0.035	ug/L	0 006	16	87	390	12
>	Tb	159		ug/L			1500497	1467281	0
	Tl	205	0.001	ug/L	0.001	60	126	167	15
	Pb	208	0.020	ug/L	0 005	25	476	1622	17

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 D SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:03:12
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C \NexIONData\System\052815c.cal

Cr Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	65080	3
	Cl	37		ug/L			5760484	5560408	1
>	Sc	45		ug/L			1610711	1500827	1
	Cr	52	200.784	ug/L	3 992	1	38065	5451535	0
	Cr	53	204.694	ug/L	3 527	1	203	642581	2
	Mn	55	4319.746	ug/L	137.433	3	1658	166635799	2
>	Ge	72		ug/L			1293916	1118685	1
	Ni	60	22.994	ug/L	0.570	2	46	153746	0
	Ni	62	23.775	ug/L	0 635	2	240	23457	2
	Cu	63	59.998	ug/L	0.857	1	692	918721	0
	Cu	65	58.541	ug/L	0 771	1	311	413669	1
	Zn	66	264.926	ug/L	7.288	2	4584	1101393	1
	Zn	67	241.791	ug/L	3.758	1	730	169646	0
	Zn	68	258.936	ug/L	4 957	1	3468	764598	0
	As	75	9.181	ug/L	0 092	1	28	37594	0
	As-1	75	9.703	ug/L	0 157	1	18458	54410	0
	Se	82	0.237	ug/L	0 030	12	18	129	9
	Se	78	1.183	ug/L	0 252	21	18694	17464	0
	Y	89		ug/L			973453	1012199	1
	Kr	83		ug/L			355	477	2
>	In	115		ug/L			1353268	1213535	1
	Ag	107	0.119	ug/L	0.003	2	55	2721	2
	Cd	111	1.057	ug/L	0 027	2	244	6379	2
	Cd	114	0.763	ug/L	0.017	2	67	10966	3
	Sb	121	0.426	ug/L	0 014	3	194	7090	1
	Sb	123	0.424	ug/L	0 017	3	127	5392	2
	Ba	135	95.352	ug/L	1.730	1	44	446390	0
	Ba	137	95.654	ug/L	1 498	1	87	775137	0
>	Tb	159		ug/L			1500497	1403748	1
	Tl	205	0.021	ug/L	0 000	1	126	1029	2
	Pb	208	90.502	ug/L	0.967	1	476	4994650	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FDUP SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:18:23
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens RSD
	C	13		ug/L			67898	65550	2
	Cl	37		ug/L			5760484	5595088	1
>	Sc	45		ug/L			1610711	1421156	3
	Cr	52	21.826	ug/L	0 420	1	38065	590935	2
	Cr	53	21.915	ug/L	0 626	2	203	65259	0
	Mn	55	742.372	ug/L	16 757	2	1658	27110878	1
>	Ge	72		ug/L			1293916	1165248	2
	Ni	60	1.797	ug/L	0.056	3	46	12552	3
	Ni	62	2.053	ug/L	0 039	1	240	2307	1
	Cu	63	8.105	ug/L	0.308	3	692	129751	1
	Cu	65	8.301	ug/L	0 174	2	311	61320	0
	Zn	66	109.498	ug/L	2 424	2	4584	476561	0
	Zn	67	97.677	ug/L	2 970	3	730	71768	2
	Zn	68	107.973	ug/L	3 404	3	3468	333809	0
	As	75	0.284	ug/L	0.005	1	28	1234	0
	As-1	75	0.518	ug/L	0 151	29	18458	18750	0
	Se	82	0.036	ug/L	0 012	34	18	34	20
	Se	78	0.855	ug/L	0 516	60	18694	17807	0
	Y	89		ug/L			973453	904382	0
	Kr	83		ug/L			355	334	1
>	In	115		ug/L			1353268	1268576	0
	Ag	107	0.020	ug/L	0 001	4	55	522	4
	Cd	111	0.279	ug/L	0 013	4	244	1926	4
	Cd	114	0.239	ug/L	0 005	2	67	3632	1
	Sb	121	0.107	ug/L	0 001	0	194	1992	0
	Sb	123	0.108	ug/L	0 004	3	127	1530	2
	Ba	135	18.080	ug/L	0 104	0	44	88527	0
	Ba	137	18.196	ug/L	0.153	0	87	154225	0
>	Tb	159		ug/L			1500497	1418364	0
	Tl	205	0.001	ug/L	0.000	24	126	165	6
	Pb	208	19.840	ug/L	0.120	0	476	1106745	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 F SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:22:04
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	65545	3
	Cl	37		ug/L			5760484	5534209	1
>	Sc	45		ug/L			1610711	1435645	2
	Cr	52	28.365	ug/L	0 666	2	38065	765754	1
	Cr	53	28.573	ug/L	0 662	2	203	85927	0
	Mn	55	849.477	ug/L	16 988	1	1658	31346244	0
>	Ge	72		ug/L			1293916	1170706	0
	Ni	60	1.764	ug/L	0 019	1	46	12384	1
	Ni	62	1.892	ug/L	0 043	2	240	2153	1
	Cu	63	9.944	ug/L	0 152	1	692	159891	1
	Cu	65	10.041	ug/L	0 210	2	311	74491	1
	Zn	66	108.982	ug/L	1.319	1	4584	476723	0
	Zn	67	97.547	ug/L	2 767	2	730	72025	2
	Zn	68	106.052	ug/L	1 731	1	3468	329646	1
	As	75	0.291	ug/L	0 004	1	28	1271	1
	As-1	75	0.463	ug/L	0 040	8	18458	18619	0
	Se	82	0.044	ug/L	0.017	37	18	38	21
	Se	78	0.629	ug/L	0 148	23	18694	17639	0
	Y	89		ug/L			973453	920197	1
	Kr	83		ug/L			355	320	4
>	In	115		ug/L			1353268	1255295	1
	Ag	107	0.022	ug/L	0.001	2	55	560	1
	Cd	111	0.288	ug/L	0 013	4	244	1960	3
	Cd	114	0.245	ug/L	0 008	3	67	3683	2
	Sb	121	0.085	ug/L	0.002	2	194	1611	3
	Sb	123	0.084	ug/L	0 001	1	127	1198	2
	Ba	135	19.827	ug/L	0 195	0	44	96054	0
	Ba	137	19.955	ug/L	0 355	1	87	167333	0
>	Tb	159		ug/L			1500497	1403804	1
	Tl	205	0.001	ug/L	0.000	38	126	153	9
	Pb	208	20.122	ug/L	0.096	0	476	1110963	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 500
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:25:45
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	63469	1
	Cl	37		ug/L			5760484	5651419	3
>	Sc	45		ug/L			1610711	1442414	2
	Cr	52	33.329	ug/L	0 696	2	38065	898267	2
	Cr	53	33.373	ug/L	0 951	2	203	100801	0
	Mn	55	678.579	ug/L	16.993	2	1658	25160156	1
>	Ge	72		ug/L			1293916	1181518	1
	Ni	60	5.957	ug/L	0 094	1	46	42105	0
	Ni	62	6.230	ug/L	0.081	1	240	6654	2
	Cu	63	916.954	ug/L	20 959	2	692	14819684	1
	Cu	65	942.371	ug/L	5.150	0	311	7029183	1
	Zn	66	159.388	ug/L	5 487	3	4584	701470	1
	Zn	67	139.960	ug/L	4 867	3	730	104007	3
	Zn	68	156.104	ug/L	4 971	3	3468	488055	2
	As	75	1.479	ug/L	0 012	0	28	6418	1
	As-1	75	1.542	ug/L	0 053	3	18458	23306	0
	Se	82	2.771	ug/L	0 032	1	18	1429	0
	Se	78	3.128	ug/L	0 212	6	18694	20710	0
	Y	89		ug/L			973453	915857	0
	Kr	83		ug/L			355	317	6
>	In	115		ug/L			1353268	1251699	1
	Ag	107	1.092	ug/L	0.018	1	55	25262	0
	Cd	111	1.312	ug/L	0.044	3	244	8105	1
	Cd	114	1.282	ug/L	0.039	3	67	18946	1
	Sb	121	0.182	ug/L	0 003	1	194	3217	0
	Sb	123	0.182	ug/L	0 007	3	127	2457	1
	Ba	135	15.838	ug/L	0.274	1	44	76514	1
	Ba	137	15.894	ug/L	0 173	1	87	132915	0
>	Tb	159		ug/L			1500497	1390626	0
	Tl	205	0.982	ug/L	0.007	0	126	43105	0
	Pb	208	46.501	ug/L	0.664	1	476	2542742	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGA8 FSPK SWN
Sample Dil Factor: 2000
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:29:27
Number of Replicates: 3
Method File: C:\NexIONData\Method\200.8GFA7+++ mth
Tuning File: C \NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			67898	64764	0
	Cl	37		ug/L			5760484	5430477	2
>	Sc	45		ug/L			1610711	1436303	2
	Cr	52	8.279	ug/L	0 112	1	38065	247663	0
	Cr	53	8.443	ug/L	0 208	2	203	25532	1
	Mn	55	171.501	ug/L	5 630	3	1658	6331576	1
>	Ge	72		ug/L			1293916	1194198	0
	Ni	60	1.525	ug/L	0 015	0	46	10929	1
	Ni	62	1.492	ug/L	0.027	1	240	1779	1
	Cu	63	237.596	ug/L	4.165	1	692	3882417	1
	Cu	65	238.272	ug/L	5 090	2	311	1796709	2
	Zn	66	40.349	ug/L	0.970	2	4584	182717	2
	Zn	67	35.635	ug/L	0.441	1	730	27268	1
	Zn	68	39.073	ug/L	0 607	1	3468	125906	1
	As	75	0.369	ug/L	0.014	3	28	1637	3
	As-1	75	0.420	ug/L	0.023	5	18458	18812	0
	Se	82	0.686	ug/L	0 015	2	18	370	1
	Se	78	0.902	ug/L	0 081	8	18694	18315	0
	Y	89		ug/L			973453	901904	0
	Kr	83		ug/L			355	327	6
>	In	115		ug/L			1353268	1262578	0
	Ag	107	0.270	ug/L	0 004	1	55	6340	1
	Cd	111	0.339	ug/L	0 017	5	244	2282	3
	Cd	114	0.313	ug/L	0 005	1	67	4711	0
	Sb	121	0.038	ug/L	0 001	3	194	827	2
	Sb	123	0.041	ug/L	0.002	5	127	646	5
	Ba	135	3.893	ug/L	0 028	0	44	19006	1
	Ba	137	3.898	ug/L	0.059	1	87	32942	0
>	Tb	159		ug/L			1500497	1418274	1
	Tl	205	0.241	ug/L	0.002	1	126	10887	1
	Pb	208	11.367	ug/L	0 165	1	476	634180	0

AGC3 B1S18

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 A SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:33:08
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File. C.\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	73718	3
	Cl	37		ug/L			5760484	5481657	0
>	Sc	45		ug/L			1610711	1565369	0
	Cr	52	111.848	ug/L	0 713	0	38065	3184345	0
	Cr	53	113.325	ug/L	1 278	1	203	371123	0
	Mn	55	603.248	ug/L	24 402	4	1658	24273133	3
>	Ge	72		ug/L			1293916	1166636	2
	Ni	60	261.445	ug/L	10.224	3	46	1822124	1
	Ni	62	257.286	ug/L	6.193	2	240	262565	1
	Cu	63	146.840	ug/L	5.259	3	692	2343251	1
	Cu	65	143.519	ug/L	4.829	3	311	1056868	1
	Zn	66	101.681	ug/L	1.504	1	4584	443461	1
	Zn	67	95.392	ug/L	0.716	0	730	70201	1
	Zn	68	99.672	ug/L	1.094	1	3468	308888	1
	As	75	12.052	ug/L	0.275	2	28	51446	0
	As-1	75	12.482	ug/L	0 345	2	18458	68217	0
	Se	82	0.104	ug/L	0 018	17	18	68	12
	Se	78	0.352	ug/L	0.231	65	18694	17257	0
	Y	89		ug/L			973453	1136690	0
	Kr	83		ug/L			355	465	3
>	In	115		ug/L			1353268	1222040	1
	Ag	107	0.068	ug/L	0 004	6	55	1575	7
	Cd	111	0.376	ug/L	0 007	1	244	2425	2
	Cd	114	0.229	ug/L	0 006	2	67	3361	1
	Sb	121	0.328	ug/L	0 006	1	194	5534	0
	Sb	123	0.324	ug/L	0.005	1	127	4183	0
	Ba	135	36.585	ug/L	0 342	0	44	172524	1
	Ba	137	36.826	ug/L	0 568	1	87	300563	0
>	Tb	159		ug/L			1500497	1427412	0
	Tl	205	0.028	ug/L	0 000	1	126	1384	1
	Pb	208	57.945	ug/L	0.660	1	476	3252122	0

AGC9 · 05151

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 B SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:36:49
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

RR: Cr, Zn, Pb

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	83886	1
	Cl	37		ug/L			5760484	5835834	1
>	Sc	45		ug/L			1610711	1450259	1
	Cr	52	**597.612**	ug/L	11 512	1	38065	15612318	1
	Cr	53	**604.097**	ug/L	12 973	2	203	1831773	0
	Mn	55	**3931.876**	ug/L	84.875	2	1658	146573723	0
>	Ge	72		ug/L			1293916	1074520	0
	Ni	60	**361.847**	ug/L	7 969	2	46	2323663	1
	Ni	62	**352.083**	ug/L	1 853	0	240	330947	1
	Cu	63	**198.892**	ug/L	1 859	0	692	2924324	0
	Cu	65	**198.488**	ug/L	3.018	1	311	1346618	0
	Zn	66	**458.828**	ug/L	2 522	0	4584	1829952	0
	Zn	67	**401.773**	ug/L	3 261	0	730	270404	0
	Zn	68	**434.839**	ug/L	9.433	2	3468	1231583	2
	As	75	**17.517**	ug/L	0.220	1	28	68875	0
	As-1	75	**18.251**	ug/L	0.281	1	18458	84804	0
	Se	82	**0.165**	ug/L	0 017	10	18	91	8
	Se	78	**0.848**	ug/L	0 193	22	18694	16421	0
	Y	89		ug/L			973453	967968	2
	Kr	83		ug/L			355	398	4
>	In	115		ug/L			1353268	1135881	1
	Ag	107	**0.539**	ug/L	0.012	2	55	11337	1
	Cd	111	**4.157**	ug/L	0 054	1	244	22879	0
	Cd	114	**4.076**	ug/L	0.079	1	67	54547	0
	Sb	121	**0.388**	ug/L	0 003	0	194	6059	1
	Sb	123	**0.374**	ug/L	0.002	0	127	4468	1
	Ba	135	**61.583**	ug/L	1.307	2	44	269868	1
	Ba	137	**62.205**	ug/L	0.840	1	87	471862	0
>	Tb	159		ug/L			1500497	1379450	0
	Tl	205	**0.048**	ug/L	0.001	1	126	2211	0
	Pb	208	**491.629**	ug/L	4.189	0	476	26661452	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:40:30
Number of Replicates. 3
Method File C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	68025	4
	Cl	37		ug/L			5760484	5513258	3
>	Sc	45		ug/L			1610711	1408547	0
	Cr	52	26.084	ug/L	0 390	1	38065	693792	1
	Cr	53	26.557	ug/L	0.177	0	203	78400	0
	Mn	55	26.815	ug/L	0 446	1	1658	972486	1
>	Ge	72		ug/L			1293916	1163507	0
	Ni	60	25.778	ug/L	0 592	2	46	179318	2
	Ni	62	25.180	ug/L	0.222	0	240	25827	0
	Cu	63	25.501	ug/L	0.555	2	692	406519	1
	Cu	65	25.889	ug/L	0 504	1	311	190441	1
	Zn	66	81.145	ug/L	1 501	1	4584	353843	2
	Zn	67	74.409	ug/L	0 310	0	730	54763	1
	Zn	68	80.518	ug/L	1.120	1	3468	249497	2
	As	75	29.874	ug/L	0.263	0	28	127187	1
	As-1	75	28.118	ug/L	0.128	0	18458	132512	1
	Se	82	77.657	ug/L	0 644	0	18	39004	1
	Se	78	76.553	ug/L	0.509	0	18694	104617	0
	Y	89		ug/L			973453	877341	2
	Kr	83		ug/L			355	315	5
>	In	115		ug/L			1353268	1265735	1
	Ag	107	25.037	ug/L	0 303	1	55	584524	0
	Cd	111	24.555	ug/L	0.817	3	244	149446	2
	Cd	114	24.451	ug/L	0 491	2	67	364316	1
	Sb	121	-0.007	ug/L	0 001	13	194	57	28
	Sb	123	-0.006	ug/L	0.000	4	127	46	7
	Ba	135	25.335	ug/L	0 722	2	44	123731	1
	Ba	137	25.443	ug/L	0 360	1	87	215117	0
>	Tb	159		ug/L			1500497	1433008	1
	Tl	205	24.252	ug/L	0 227	0	126	1093944	0
	Pb	208	24.744	ug/L	0.255	1	476	1394393	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV11
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:45:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	62679	3
	Cl	37		ug/L			5760484	5245754	2
>	Sc	45		ug/L			1610711	1369281	1
	Cr	52	52.810	ug/L	1 504	2	38065	1332058	1
	Cr	53	52.584	ug/L	1.735	3	203	150695	2
	Mn	55	52.730	ug/L	2 333	4	1658	1857003	3
>	Ge	72		ug/L			1293916	1132193	0
	Ni	60	49.711	ug/L	0 766	1	46	336444	1
	Ni	62	50.119	ug/L	1 114	2	240	49817	2
	Cu	63	49.548	ug/L	0 716	1	692	768085	1
	Cu	65	50.249	ug/L	1 221	2	311	359394	1
	Zn	66	51.044	ug/L	0 698	1	4584	218091	2
	Zn	67	51.703	ug/L	1.158	2	730	37218	1
	Zn	68	51.576	ug/L	0 648	1	3468	156589	0
	As	75	50.253	ug/L	1.137	2	28	208144	1
	As-1	75	50.530	ug/L	0.977	1	18458	218828	1
	Se	82	49.981	ug/L	0.709	1	18	24431	0
	Se	78	50.706	ug/L	0.303	0	18694	72953	0
	Y	89		ug/L			973453	863804	0
	Kr	83		ug/L			355	323	5
>	In	115		ug/L			1353268	1213883	0
	Ag	107	48.644	ug/L	0.315	0	55	1089186	0
	Cd	111	50.201	ug/L	0.735	1	244	292843	1
	Cd	114	50.326	ug/L	0.946	1	67	719146	1
	Sb	121	50.683	ug/L	0.439	0	194	822477	0
	Sb	123	49.994	ug/L	0 465	0	127	623475	0
	Ba	135	51.256	ug/L	0 952	1	44	240068	1
	Ba	137	51.108	ug/L	0 454	0	87	414358	0
>	Tb	159		ug/L			1500497	1378900	0
	Tl	205	50.433	ug/L	0.440	0	126	2189116	1
	Pb	208	49.092	ug/L	0.306	0	476	2661763	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB11
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 16:51:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	61408	2
	Cl	37		ug/L			5760484	5054537	0
>	Sc	45		ug/L			1610711	1411314	1
	Cr	52	-0.021	ug/L	0.014	68	38065	32830	2
	Cr	53	-0.001	ug/L	0.004	342	203	174	6
	Mn	55	-0.008	ug/L	0.001	16	1658	1154	4
>	Ge	72		ug/L			1293916	1137541	1
	Ni	60	-0.000	ug/L	0.001	378	46	38	21
	Ni	62	-0.024	ug/L	0.011	46	240	187	4
	Cu	63	0.000	ug/L	0.004	1499	692	612	9
	Cu	65	-0.001	ug/L	0.001	135	311	267	1
	Zn	66	0.025	ug/L	0.019	78	4584	4134	1
	Zn	67	-0.043	ug/L	0.028	64	730	611	3
	Zn	68	-0.016	ug/L	0.030	187	3468	3000	1
	As	75	-0.001	ug/L	0.008	573	28	19	164
	As-1	75	0.180	ug/L	0.080	44	18458	16949	0
	Se	82	0.023	ug/L	0.011	49	18	27	22
	Se	78	0.663	ug/L	0.260	39	18694	17175	0
	Y	89		ug/L			973453	852790	2
	Kr	83		ug/L			355	296	4
>	In	115		ug/L			1353268	1230891	0
	Ag	107	0.001	ug/L	0.000	28	55	69	8
	Cd	111	0.003	ug/L	0.002	74	244	237	5
	Cd	114	0.000	ug/L	0.000	1008	67	62	10
	Sb	121	0.023	ug/L	0.002	8	194	556	5
	Sb	123	0.023	ug/L	0.003	13	127	402	9
	Ba	135	-0.003	ug/L	0.001	31	44	27	14
	Ba	137	-0.003	ug/L	0.001	28	87	53	13
>	Tb	159		ug/L			1500497	1383105	0
	Tl	205	0.003	ug/L	0.000	12	126	263	6
	Pb	208	-0.001	ug/L	0.001	104	476	408	7

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 C SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:12:02
Number of Replicates: 3
Method File: C:\NexIONData\Method\200 8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File C:\NexIONData\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	81213	6
	Cl	37		ug/L			5760484	5327444	0
>	Sc	45		ug/L			1610711	1603509	0
	Cr	52	32.152	ug/L	0 638	1	38065	964601	1
	Cr	53	32.821	ug/L	0 962	2	203	110252	3
	Mn	55	713.944	ug/L	4 642	0	1658	29433949	0
>	Ge	72		ug/L			1293916	1181334	2
	Ni	60	26.572	ug/L	0.577	2	46	187619	1
	Ni	62	29.605	ug/L	1 058	3	240	30779	1
	Cu	63	55.273	ug/L	2 018	3	692	893621	2
	Cu	65	56.416	ug/L	1 853	3	311	420845	1
	Zn	66	249.296	ug/L	4 091	1	4584	1094792	0
	Zn	67	225.823	ug/L	3.383	1	730	167361	1
	Zn	68	239.862	ug/L	6 080	2	3468	748061	0
	As	75	8.921	ug/L	0.159	1	28	38571	1
	As-1	75	9.275	ug/L	0 286	3	18458	55656	1
	Se	82	0.200	ug/L	0 006	2	18	118	4
	Se	78	0.606	ug/L	0 452	74	18694	17766	1
	Y	89		ug/L			973453	1219706	1
	Kr	83		ug/L			355	557	3
>	In	115		ug/L			1353268	1239984	1
	Ag	107	0.163	ug/L	0 001	0	55	3788	1
	Cd	111	0.986	ug/L	0 036	3	244	6093	2
	Cd	114	0.751	ug/L	0.012	1	67	11016	0
	Sb	121	0.280	ug/L	0.003	0	194	4821	1
	Sb	123	0.289	ug/L	0.006	2	127	3794	0
	Ba	135	68.396	ug/L	1.531	2	44	327149	0
	Ba	137	68.829	ug/L	1.402	2	87	569871	0
>	Tb	159		ug/L			1500497	1432293	1
	Tl	205	0.092	ug/L	0.003	3	126	4262	2
	Pb	208	91.813	ug/L	0.945	1	476	5170083	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 D SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:15:43
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File. C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	84175	3
	Cl	37		ug/L			5760484	5150097	0
>	Sc	45		ug/L			1610711	1597672	0
	Cr	52	13.684	ug/L	0.445	3	38065	430817	3
	Cr	53	13.409	ug/L	0.369	2	203	44993	1
	Mn	55	153.431	ug/L	0.476	0	1658	6303933	0
>	Ge	72		ug/L			1293916	1217138	1
	Ni	60	11.449	ug/L	0.258	2	46	83314	0
	Ni	62	12.775	ug/L	0.116	0	240	13821	2
	Cu	63	18.206	ug/L	0.320	1	692	303768	0
	Cu	65	18.311	ug/L	0.561	3	311	140956	2
	Zn	66	48.018	ug/L	1.690	3	4584	220717	1
	Zn	67	50.423	ug/L	0.944	1	730	39034	0
	Zn	68	49.271	ug/L	0.927	1	3468	160939	0
	As	75	12.848	ug/L	0.156	1	28	57229	0
	As-1	75	13.276	ug/L	0.263	1	18458	74604	0
	Se	82	0.164	ug/L	0.023	14	18	103	11
	Se	78	0.365	ug/L	0.375	102	18694	18018	1
	Y	89		ug/L			973453	1254556	0
	Kr	83		ug/L			355	557	4
>	In	115		ug/L			1353268	1248692	1
	Ag	107	0.071	ug/L	0.001	0	55	1695	1
	Cd	111	0.469	ug/L	0.024	5	244	3040	5
	Cd	114	0.233	ug/L	0.003	1	67	3490	0
	Sb	121	0.032	ug/L	0 002	6	194	706	5
	Sb	123	0.034	ug/L	0.001	3	127	548	1
	Ba	135	70.246	ug/L	1.126	1	44	338405	0
	Ba	137	70.191	ug/L	0 327	0	87	585384	1
>	Tb	159		ug/L			1500497	1433417	2
	Tl	205	0.046	ug/L	0 002	5	126	2197	3
	Pb	208	6.776	ug/L	0.111	1	476	382205	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 E SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:19:24
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
C	13		ug/L			67898	72502	2
Cl	37		ug/L			5760484	5234614	1
> Sc	45		ug/L			1610711	1611002	0
Cr	52	11.636	ug/L	0 221	1	38065	375047	1
Cr	53	11.801	ug/L	0.293	2	203	39952	1
Mn	55	85.274	ug/L	0 738	0	1658	3533445	0
> Ge	72		ug/L			1293916	1189499	0
Ni	60	8.349	ug/L	0 056	0	46	59403	1
Ni	62	9.473	ug/L	0 153	1	240	10072	2
Cu	63	12.898	ug/L	0.098	0	692	210540	1
Cu	65	13.187	ug/L	0 464	3	311	99289	2
Zn	66	44.047	ug/L	0 724	1	4584	198266	0
Zn	67	43.782	ug/L	0 376	0	730	33217	0
Zn	68	44.000	ug/L	0.401	0	3468	140817	0
As	75	57.758	ug/L	0.840	1	28	251338	0
As-1	75	59.778	ug/L	0 876	1	18458	268876	0
Se	82	0.146	ug/L	0 002	1	18	91	1
Se	78	0.769	ug/L	0.061	7	18694	18087	0
Y	89		ug/L			973453	1152929	0
Kr	83		ug/L			355	476	1
> In	115		ug/L			1353268	1249543	0
Ag	107	0.050	ug/L	0 002	4	55	1211	4
Cd	111	0.200	ug/L	0 014	7	244	1427	6
Cd	114	0.081	ug/L	0 002	2	67	1253	1
Sb	121	0.003	ug/L	0.001	26	194	233	6
Sb	123	0.004	ug/L	0.001	24	127	170	8
Ba	135	29.306	ug/L	0 204	0	44	141315	0
Ba	137	29.008	ug/L	0 359	1	87	242111	0
> Tb	159		ug/L			1500497	1418390	0
Tl	205	0.037	ug/L	0 001	1	126	1752	1
Pb	208	4.423	ug/L	0.029	0	476	247070	0

AGC9 - 6181S

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 F SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:23:05
Number of Replicates: 3
Method File: C.\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C \NexIONData\System\052815c.cal

RR: Cr

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	73184	0
	Cl	37		ug/L			5760484	5616613	1
>	Sc	45		ug/L			1610711	1573959	1
	Cr	52	471.020	ug/L	12 522	2	38065	13360889	1
	Cr	53	478.028	ug/L	12 161	2	203	1573163	1
	Mn	55	3035.016	ug/L	49 537	1	1658	122794223	0
>	Ge	72		ug/L			1293916	1097467	1
	Ni	60	58.016	ug/L	0.895	1	46	380562	1
	Ni	62	58.387	ug/L	1 925	3	240	56216	2
	Cu	63	113.843	ug/L	3.065	2	692	1709533	1
	Cu	65	115.285	ug/L	1.590	1	311	798933	0
	Zn	66	177.090	ug/L	2 173	1	4584	723755	1
	Zn	67	168.623	ug/L	2 326	1	730	116262	0
	Zn	68	173.815	ug/L	1.813	1	3468	504587	1
	As	75	21.820	ug/L	0 154	0	28	87625	0
	As-1	75	22.808	ug/L	0.251	1	18458	104333	0
	Se	82	0.321	ug/L	0 013	4	18	167	2
	Se	78	1.678	ug/L	0 331	19	18694	17668	1
	Y	89		ug/L			973453	1293847	1
	Kr	83		ug/L			355	749	1
>	In	115		ug/L			1353268	1189927	0
	Ag	107	0.893	ug/L	0 024	2	55	19651	3
	Cd	111	1.290	ug/L	0.028	2	244	7585	1
	Cd	114	0.616	ug/L	0.010	1	67	8687	1
	Sb	121	0.653	ug/L	0 021	3	194	10555	2
	Sb	123	0.658	ug/L	0 007	1	127	8159	1
	Ba	135	93.663	ug/L	0 561	0	44	430014	0
	Ba	137	95.237	ug/L	0 787	0	87	756865	1
>	Tb	159		ug/L			1500497	1404579	1
	Tl	205	0.043	ug/L	0 000	0	126	2021	0
	Pb	208	129.914	ug/L	1.139	0	476	7173846	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 G SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:26:48
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67898	74961	6
	Cl	37		ug/L			5760484	5347751	2
>	Sc	45		ug/L			1610711	1602702	1
	Cr	52	14.680	ug/L	0.241	1	38065	460908	3
	Cr	53	15.074	ug/L	0.303	2	203	50718	2
	Mn	55	109.329	ug/L	3.323	3	1658	4505617	2
>	Ge	72		ug/L			1293916	1173812	2
	Ni	60	11.993	ug/L	0.279	2	46	84155	1
	Ni	62	13.403	ug/L	0.344	2	240	13966	1
	Cu	63	17.811	ug/L	0.440	2	692	286555	1
	Cu	65	17.693	ug/L	0.486	2	311	131330	0
	Zn	66	33.442	ug/L	1.427	4	4584	149453	1
	Zn	67	37.004	ug/L	0.678	1	730	27800	1
	Zn	68	34.167	ug/L	0.309	0	3468	108615	2
	As	75	2.976	ug/L	0.115	3	28	12796	1
	As-1	75	3.261	ug/L	0.216	6	18458	30293	0
	Se	82	0.187	ug/L	0.023	12	18	110	8
	Se	78	1.031	ug/L	0.363	35	18694	18144	0
	Y	89		ug/L			973453	1231889	0
	Kr	83		ug/L			355	539	4
>	In	115		ug/L			1353268	1262250	1
	Ag	107	0.045	ug/L	0.001	3	55	1088	2
	Cd	111	0.814	ug/L	0 013	1	244	5162	2
	Cd	114	0.649	ug/L	0.010	1	67	9705	0
	Sb	121	0.009	ug/L	0 001	7	194	340	4
	Sb	123	0.009	ug/L	0.002	27	127	235	13
	Ba	135	54.673	ug/L	0.501	0	44	266281	1
	Ba	137	55.552	ug/L	0.175	0	87	468327	0
>	Tb	159		ug/L			1500497	1445691	1
	Tl	205	0.056	ug/L	0 001	1	126	2674	2
	Pb	208	5.285	ug/L	0.053	1	476	300801	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 I SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:30:29
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c cal

RR: Cr
Zn
Pb

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens. RSD
	C	13		ug/L			67898	73148	2
	Cl	37		ug/L			5760484	5736496	2
>	Sc	45		ug/L			1610711	1576354	1
	Cr	52	619.746	ug/L	6.834	1	38065	17597694	0
	Cr	53	640.486	ug/L	10 204	1	203	2111153	1
	Mn	55	5247.629	ug/L	76 744	1	1658	212683463	2
>	Ge	72		ug/L			1293916	1171642	2
	Ni	60	323.528	ug/L	1.164	0	46	2265609	1
	Ni	62	318.909	ug/L	2 808	0	240	326914	2
	Cu	63	263.375	ug/L	4.862	1	692	4221306	0
	Cu	65	255.017	ug/L	2.300	0	311	1886399	1
	Zn	66	1800.260	ug/L	54 819	3	4584	7813643	0
	Zn	67	1608.977	ug/L	27 218	1	730	1178628	1
	Zn	68	1731.550	ug/L	23 395	1	3468	5337408	1
	As	75	19.439	ug/L	0 107	0	28	83343	1
	As-1	75	20.005	ug/L	0 168	0	18458	99750	1
	Se	82	0.235	ug/L	0.028	11	18	135	11
	Se	78	0.158	ug/L	0.279	176	18694	17105	0
	Y	89		ug/L			973453	1101757	2
	Kr	83		ug/L			355	520	3
>	In	115		ug/L			1353268	1175325	2
	Ag	107	1.055	ug/L	0.014	1	55	22914	1
	Cd	111	4.644	ug/L	0.122	2	244	26413	0
	Cd	114	4.167	ug/L	0.078	1	67	57712	2
	Sb	121	1.021	ug/L	0.020	1	194	16196	0
	Sb	123	0.991	ug/L	0.020	2	127	12075	0
	Ba	135	238.182	ug/L	0.754	0	44	1080008	1
	Ba	137	242.655	ug/L	3.523	1	87	1904213	0
>	Tb	159		ug/L			1500497	1412025	1
	Tl	205	0.029	ug/L	0.001	4	126	1391	4
	Pb	208	1838.836	ug/L	11.744	0	476	102078486	1

AGC9 DL821

ICP-MS Quantitative Analysis - Summary Report

RR: Cr Cu Zn Ba Pb

Sample ID: AGC9 HDUP SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:34:10
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default tun
Optimization File: C.\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	70493	0
	Cl	37		ug/L			5760484	5407636	0
>	Sc	45		ug/L			1610711	1525642	2
	Cr	52	595.283	ug/L	24 646	4	38065	16351887	2
	Cr	53	621.586	ug/L	12 589	2	203	1982580	1
	Mn	55	13265.506	ug/L	553.395	4	1658	519987322	2
>	Ge	72		ug/L			1293916	1127693	2
	Ni	60	105.372	ug/L	0 821	0	46	710202	1
	Ni	62	107.905	ug/L	0 894	0	240	106593	2
	Cu	63	360.770	ug/L	5.062	1	692	5566260	1
	Cu	65	368.337	ug/L	2 775	0	311	2622646	2
	Zn	66	1235.534	ug/L	17.172	1	4584	5163933	0
	Zn	67	1105.082	ug/L	10.691	0	730	779354	1
	Zn	68	1200.755	ug/L	24.931	2	3468	3563244	1
	As	75	19.978	ug/L	0 435	2	28	82417	0
	As-1	75	20.690	ug/L	0 532	2	18458	98724	0
	Se	82	0.371	ug/L	0 026	7	18	196	7
	Se	78	0.878	ug/L	0.322	36	18694	17264	0
	Y	89		ug/L			973453	1168199	0
	Kr	83		ug/L			355	651	6
>	In	115		ug/L			1353268	1159731	1
	Ag	107	0.550	ug/L	0.006	1	55	11803	1
	Cd	111	4.354	ug/L	0.169	3	244	24458	4
	Cd	114	3.714	ug/L	0.048	1	67	50749	0
	Sb	121	2.247	ug/L	0.021	0	194	34998	0
	Sb	123	2.213	ug/L	0.055	2	127	26471	1
	Ba	135	348.437	ug/L	3 258	0	44	1558962	0
	Ba	137	358.861	ug/L	5 582	1	87	2778951	0
>	Tb	159		ug/L			1500497	1390443	0
	Tl	205	0.047	ug/L	0.001	2	126	2158	1
	Pb	208	390.408	ug/L	6 527	1	476	21339929	0

AGC 9182

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 H SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:37:51
Number of Replicates. 3
Method File: C \NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

RR: Cr
Cu
Zn
Ba
Pb

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	70565	1
	Cl	37		ug/L			5760484	5399701	2
>	Sc	45		ug/L			1610711	1526431	2
	Cr	52	313.518	ug/L	8 216	2	38065	8638130	3
	Cr	53	317.030	ug/L	5 628	1	203	1011793	0
	Mn	55	9136.028	ug/L	191.204	2	1658	358405568	0
>	Ge	72		ug/L			1293916	1123586	1
	Ni	60	75.415	ug/L	1 695	2	46	506417	1
	Ni	62	77.971	ug/L	2 302	2	240	76780	1
	Cu	63	266.953	ug/L	8 302	3	692	4103141	1
	Cu	65	264.216	ug/L	8 560	3	311	1873940	1
	Zn	66	1063.986	ug/L	21.718	2	4584	4431340	0
	Zn	67	947.950	ug/L	15.763	1	730	666184	0
	Zn	68	1017.088	ug/L	20.483	2	3468	3007757	0
	As	75	18.854	ug/L	0 341	1	28	77509	0
	As-1	75	19.576	ug/L	0 402	2	18458	93945	0
	Se	82	0.324	ug/L	0 052	15	18	172	13
	Se	78	1.005	ug/L	0.293	29	18694	17343	0
	Y	89		ug/L			973453	1215776	0
	Kr	83		ug/L			355	663	2
>	In	115		ug/L			1353268	1166197	0
	Ag	107	0.435	ug/L	0.008	1	55	9395	1
	Cd	111	3.418	ug/L	0.016	0	244	19352	0
	Cd	114	2.862	ug/L	0 025	0	67	39343	0
	Sb	121	2.195	ug/L	0.031	1	194	34387	0
	Sb	123	2.150	ug/L	0 012	0	127	25869	0
	Ba	135	243.782	ug/L	6.573	2	44	1096789	2
	Ba	137	245.432	ug/L	2 210	0	87	1911421	1
>	Tb	159		ug/L			1500497	1381938	1
	Tl	205	0.045	ug/L	0 002	3	126	2061	3
	Pb	208	335.190	ug/L	5 221	1	476	18208624	0

ACZ - 01323

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 HSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:41:33
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815c.cal

RK: Cr Cu Zn Ba Pb

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens	Intens. RSD
	C	13		ug/L			67898	67931	3
	Cl	37		ug/L			5760484	5412871	0
>	Sc	45		ug/L			1610711	1525534	2
	Cr	52	468.029	ug/L	16 355	3	38065	12863614	0
	Cr	53	477.517	ug/L	22.597	4	203	1522314	2
	Mn	55	11110.210	ug/L	309.966	2	1658	435546777	0
>	Ge	72		ug/L			1293916	1115505	0
	Ni	60	64.462	ug/L	0 619	0	46	429841	1
	Ni	62	69.163	ug/L	1 603	2	240	67652	1
	Cu	63	186.940	ug/L	3 351	1	692	2853551	1
	Cu	65	184.099	ug/L	2 436	1	311	1296714	1
	Zn	66	1053.721	ug/L	12 255	1	4584	4357724	0
	Zn	67	947.590	ug/L	23 060	2	730	661250	2
	Zn	68	1021.920	ug/L	8 754	0	3468	3000902	1
	As	75	44.214	ug/L	0.592	1	28	180446	0
	As-1	75	43.225	ug/L	0 540	1	18458	186745	0
	Se	82	72.429	ug/L	1 038	1	18	34877	1
	Se	78	72.152	ug/L	0.558	0	18694	95461	0
	Y	89		ug/L			973453	1216718	0
	Kr	83		ug/L			355	765	5
>	In	115		ug/L			1353268	1162325	1
	Ag	107	24.040	ug/L	0 304	1	55	515419	1
	Cd	111	27.903	ug/L	0.424	1	244	155937	0
	Cd	114	27.019	ug/L	0 371	1	67	369704	0
	Sb	121	3.268	ug/L	0 050	1	194	50929	0
	Sb	123	3.226	ug/L	0.060	1	127	38615	0
	Ba	135	369.734	ug/L	5 896	1	44	1657820	0
	Ba	137	383.272	ug/L	6 096	1	87	2974660	0
>	Tb	159		ug/L			1500497	1379414	0
	Tl	205	22.968	ug/L	0 266	1	126	997348	1
	Pb	208	360.816	ug/L	1.070	0	476	19567885	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 HPOST SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:45:14
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

Del

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	71539	3
	Cl	37		ug/L			5760484	5344028	1
>	Sc	45		ug/L			1610711	1547671	2
	Cr	52	333.268	ug/L	10.472	3	38065	9303775	0
	Cr	53	333.360	ug/L	9 000	2	203	1078537	0
	Mn	55	8975.780	ug/L	322 105	3	1658	356944650	1
>	Ge	72		ug/L			1293916	1126873	0
	Ni	60	98.739	ug/L	0 678	0	46	665074	0
	Ni	62	100.963	ug/L	0.768	0	240	99673	0
	Cu	63	287.184	ug/L	4 848	1	692	4427935	1
	Cu	65	294.950	ug/L	5 657	1	311	2098617	2
	Zn	66	1139.224	ug/L	24 172	2	4584	4758936	1
	Zn	67	1010.770	ug/L	11 887	1	730	712453	0
	Zn	68	1074.738	ug/L	16 570	1	3468	3188060	1
	As	75	48.176	ug/L	0.393	0	28	198623	0
	As-1	75	47.132	ug/L	0.491	1	18458	204246	0
	Se	82	74.453	ug/L	0.565	0	18	36218	0
	Se	78	73.648	ug/L	0 629	0	18694	98096	0
	Y	89		ug/L			973453	1183800	0
	Kr	83		ug/L			355	642	3
>	In	115		ug/L			1353268	1167492	1
	Ag	107	24.112	ug/L	0.397	1	55	519213	0
	Cd	111	27.534	ug/L	0 232	0	244	154576	1
	Cd	114	27.023	ug/L	0.153	0	67	371425	1
	Sb	121	2.183	ug/L	0.013	0	194	34233	1
	Sb	123	2.152	ug/L	0 022	1	127	25915	0
	Ba	135	268.960	ug/L	1 527	0	44	1211540	1
	Ba	137	279.383	ug/L	2 745	0	87	2178082	0
>	Tb	159		ug/L			1500497	1388795	1
	Tl	205	23.512	ug/L	0.161	0	126	1027864	0
	Pb	208	353.881	ug/L	5 178	1	476	19320882	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV12
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:50:01
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			67898	62011	2
	Cl	37		ug/L			5760484	5297690	0
>	Sc	45		ug/L			1610711	1422319	0
	Cr	52	51.143	ug/L	1.195	2	38065	1341384	2
	Cr	53	51.718	ug/L	1.029	1	203	154006	2
	Mn	55	51.154	ug/L	0.825	1	1658	1872137	2
>	Ge	72		ug/L			1293916	1155704	1
	Ni	60	50.207	ug/L	1 087	2	46	346815	1
	Ni	62	48.821	ug/L	1.451	2	240	49531	2
	Cu	63	48.967	ug/L	0.307	0	692	774831	1
	Cu	65	49.852	ug/L	1 096	2	311	363937	1
	Zn	66	50.356	ug/L	0.970	1	4584	219627	1
	Zn	67	49.190	ug/L	1 043	2	730	36174	1
	Zn	68	49.478	ug/L	0.409	0	3468	153473	1
	As	75	49.768	ug/L	0 826	1	28	210416	1
	As-1	75	49.842	ug/L	0.802	1	18458	220547	0
	Se	82	50.003	ug/L	0.562	1	18	24950	1
	Se	78	50.065	ug/L	0 393	0	18694	73735	1
	Y	89		ug/L			973453	887757	1
	Kr	83		ug/L			355	342	3
>	In	115		ug/L			1353268	1192126	0
	Ag	107	49.360	ug/L	0.583	1	55	1085333	0
	Cd	111	50.611	ug/L	0.266	0	244	289960	1
	Cd	114	50.456	ug/L	0 438	0	67	708068	0
	Sb	121	51.767	ug/L	0 220	0	194	825005	0
	Sb	123	51.330	ug/L	0 464	0	127	628650	0
	Ba	135	50.697	ug/L	0.116	0	44	233210	1
	Ba	137	50.783	ug/L	0.155	0	87	404361	1
>	Tb	159		ug/L			1500497	1341121	2
	Tl	205	51.185	ug/L	0.930	1	126	2160315	1
	Pb	208	50.214	ug/L	0.862	1	476	2647322	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB12
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 17:56:27
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	62701	2
	Cl	37		ug/L			5760484	5077951	1
>	Sc	45		ug/L			1610711	1355996	2
	Cr	52	0.015	ug/L	0.080	525	38065	32382	3
	Cr	53	0.006	ug/L	0.003	52	203	187	2
	Mn	55	0.007	ug/L	0 014	181	1658	1648	26
>	Ge	72		ug/L			1293916	1143511	0
	Ni	60	-0.000	ug/L	0.001	760	46	40	11
	Ni	62	-0.028	ug/L	0 011	39	240	184	6
	Cu	63	-0.019	ug/L	0.001	5	692	308	6
	Cu	65	-0.020	ug/L	0 001	5	311	129	6
	Zn	66	-0.356	ug/L	0 009	2	4584	2545	0
	Zn	67	-0.337	ug/L	0.020	6	730	404	3
	Zn	68	-0.340	ug/L	0.031	9	3468	2041	3
	As	75	0.004	ug/L	0 013	316	28	41	126
	As-1	75	0.161	ug/L	0 045	27	18458	16963	0
	Se	82	-0.007	ug/L	0 007	102	18	12	29
	Se	78	0.560	ug/L	0 123	21	18694	17152	0
	Y	89		ug/L			973453	848303	2
	Kr	83		ug/L			355	325	9
>	In	115		ug/L			1353268	1221014	2
	Ag	107	0.002	ug/L	0 001	52	55	95	26
	Cd	111	0.004	ug/L	0 002	64	244	242	7
	Cd	114	0.001	ug/L	0.001	185	67	69	24
	Sb	121	0.021	ug/L	0.000	2	194	526	3
	Sb	123	0.024	ug/L	0.001	3	127	409	2
	Ba	135	-0.002	ug/L	0.002	92	44	30	29
	Ba	137	-0.002	ug/L	0 001	51	87	59	16
>	Tb	159		ug/L			1500497	1355389	1
	Tl	205	0.004	ug/L	0 001	20	126	273	12
	Pb	208	0.007	ug/L	0 001	14	476	829	6

AGCS - 21327

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGG4 MB REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:00:09
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C.\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	68757	0
	Cl	37		ug/L			5760484	5121042	2
>	Sc	45		ug/L			1610711	1460378	2
	Cr	52	0.046	ug/L	0.019	42	38065	35729	2
	Cr	53	0.013	ug/L	0.002	13	203	224	3
	Mn	55	0.027	ug/L	0.003	9	1658	2503	1
>	Ge	72		ug/L			1293916	1169238	0
	Ni	60	0.013	ug/L	0.002	13	46	132	8
	Ni	62	-0.019	ug/L	0 010	50	240	198	5
	Cu	63	0.078	ug/L	0.003	4	692	1865	3
	Cu	65	0.076	ug/L	0 003	3	311	843	2
	Zn	66	3.910	ug/L	0.144	3	4584	21080	3
	Zn	67	3.432	ug/L	0 128	3	730	3166	2
	Zn	68	3.694	ug/L	0.065	1	3468	14490	1
	As	75	-0.002	ug/L	0.006	285	28	16	149
	As-1	75	0.123	ug/L	0 074	60	18458	17186	1
	Se	82	0.031	ug/L	0 013	43	18	31	20
	Se	78	0.466	ug/L	0.262	56	18694	17428	0
	Y	89		ug/L			973453	880937	1
	Kr	83		ug/L			355	300	3
>	In	115		ug/L			1353268	1229179	0
	Ag	107	0.003	ug/L	0 001	19	55	123	11
	Cd	111	0.021	ug/L	0.004	18	244	347	6
	Cd	114	0.000	ug/L	0 000	77	67	67	6
	Sb	121	0.005	ug/L	0.001	22	194	256	7
	Sb	123	0.007	ug/L	0 001	8	127	207	3
	Ba	135	0.016	ug/L	0 003	17	44	115	11
	Ba	137	0.014	ug/L	0.001	9	87	193	5
>	Tb	159		ug/L			1500497	1369162	1
	Tl	205	0.003	ug/L	0.002	58	126	250	31
	Pb	208	0.037	ug/L	0.000	1	476	2443	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB2 REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:03:51
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	72387	5
	Cl	37		ug/L			5760484	5113093	2
>	Sc	45		ug/L			1610711	1428039	1
	Cr	52	0.175	ug/L	0.155	88	38065	38283	11
	Cr	53	0.102	ug/L	0 138	135	203	488	86
	Mn	55	1.614	ug/L	2 519	156	1658	61510	152
>	Ge	72		ug/L			1293916	1161391	2
	Ni	60	0.034	ug/L	0 032	95	46	275	79
	Ni	62	0.003	ug/L	0 041	1523	240	218	19
	Cu	63	0.120	ug/L	0 069	57	692	2512	41
	Cu	65	0.109	ug/L	0 054	50	311	1072	35
	Zn	66	1.088	ug/L	0.244	22	4584	8782	10
	Zn	67	0.881	ug/L	0 083	9	730	1294	3
	Zn	68	1.039	ug/L	0 250	24	3468	6279	10
	As	75	0.009	ug/L	0 009	97	28	64	60
	As-1	75	0.155	ug/L	0 085	54	18458	17201	0
	Se	82	0.007	ug/L	0.020	280	18	19	49
	Se	78	0.535	ug/L	0 329	61	18694	17386	0
	Y	89		ug/L			973453	886791	1
	Kr	83		ug/L			355	326	11
>	In	115		ug/L			1353268	1223478	0
	Ag	107	0.004	ug/L	0 003	67	55	134	42
	Cd	111	0.010	ug/L	0.001	8	244	281	2
	Cd	114	0.001	ug/L	0 001	113	67	78	24
	Sb	121	0.001	ug/L	0 003	390	194	187	23
	Sb	123	0.002	ug/L	0 002	118	127	141	21
	Ba	135	0.170	ug/L	0 010	5	44	842	5
	Ba	137	0.155	ug/L	0.008	4	87	1342	4
>	Tb	159		ug/L			1500497	1383631	0
	Tl	205	0.002	ug/L	0.003	111	126	216	51
	Pb	208	0.081	ug/L	0.101	124	476	4870	113

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 LDUP REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:07:32
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	70055	2
	Cl	37		ug/L			5760484	5295899	3
>	Sc	45		ug/L			1610711	1462388	1
	Cr	52	0.079	ug/L	0.010	12	38065	36636	1
	Cr	53	0.068	ug/L	0.003	4	203	393	1
	Mn	55	0.119	ug/L	0 006	4	1658	5966	2
>	Ge	72		ug/L			1293916	1162113	1
	Ni	60	0.017	ug/L	0.003	18	46	156	13
	Ni	62	-0.026	ug/L	0.014	56	240	190	9
	Cu	63	0.012	ug/L	0 001	10	692	807	2
	Cu	65	0.015	ug/L	0.003	23	311	389	8
	Zn	66	0.302	ug/L	0.004	1	4584	5416	1
	Zn	67	0.241	ug/L	0.049	20	730	830	2
	Zn	68	0.298	ug/L	0.034	11	3468	4023	2
	As	75	0.017	ug/L	0.013	75	28	97	56
	As-1	75	0.209	ug/L	0.065	31	18458	17435	0
	Se	82	0.064	ug/L	0.010	15	18	48	9
	Se	78	0.744	ug/L	0.259	34	18694	17638	0
	Y	89		ug/L			973453	896350	1
	Kr	83		ug/L			355	299	6
>	In	115		ug/L			1353268	1244074	0
	Ag	107	0.001	ug/L	0.000	26	55	72	8
	Cd	111	0.009	ug/L	0 003	35	244	277	7
	Cd	114	0.001	ug/L	0 000	22	67	74	3
	Sb	121	-0.002	ug/L	0 000	5	194	150	1
	Sb	123	0.000	ug/L	0 001	190	127	123	9
	Ba	135	0.022	ug/L	0 002	8	44	146	6
	Ba	137	0.019	ug/L	0 001	6	87	239	4
>	Tb	159		ug/L			1500497	1388467	0
	Tl	205	0.000	ug/L	0.000	79	126	125	5
	Pb	208	0.037	ug/L	0 001	1	476	2441	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 L REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:11:13
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	72971	3
	Cl	37		ug/L			5760484	5101505	3
>	Sc	45		ug/L			1610711	1463710	1
	Cr	52	0.090	ug/L	0.015	16	38065	36962	0
	Cr	53	0.054	ug/L	0.005	9	203	350	3
	Mn	55	0.116	ug/L	0.001	1	1658	5882	1
>	Ge	72		ug/L			1293916	1170892	1
	Ni	60	0.012	ug/L	0.002	18	46	125	12
	Ni	62	-0.039	ug/L	0.015	39	240	177	7
	Cu	63	0.018	ug/L	0.002	13	692	918	2
	Cu	65	0.022	ug/L	0.002	7	311	442	2
	Zn	66	9.701	ug/L	0.364	3	4584	46206	2
	Zn	67	8.396	ug/L	0.114	1	730	6804	1
	Zn	68	9.295	ug/L	0.541	5	3468	31739	3
	As	75	-0.001	ug/L	0.002	332	28	22	41
	As-1	75	0.156	ug/L	0.080	51	18458	17348	0
	Se	82	0.019	ug/L	0 006	31	18	25	11
	Se	78	0.563	ug/L	0 296	52	18694	17562	0
	Y	89		ug/L			973453	898906	0
	Kr	83		ug/L			355	292	3
>	In	115		ug/L			1353268	1253400	1
	Ag	107	0.000	ug/L	0.000	29	55	60	5
	Cd	111	0.008	ug/L	0 002	24	244	273	3
	Cd	114	-0.000	ug/L	0 001	218	67	58	14
	Sb	121	-0.002	ug/L	0 001	33	194	140	8
	Sb	123	-0.001	ug/L	0 001	199	127	108	16
	Ba	135	0.049	ug/L	0.009	18	44	280	14
	Ba	137	0.049	ug/L	0 004	9	87	487	6
>	Tb	159		ug/L			1500497	1393508	1
	Tl	205	-0.001	ug/L	0 000	21	126	80	10
	Pb	208	0.039	ug/L	0.001	3	476	2595	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 LSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:14:54
Number of Replicates: 3
Method File. C.\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			67898	72858	2
	Cl	37		ug/L			5760484	5175400	2
>	Sc	45		ug/L			1610711	1473404	2
	Cr	52	25.671	ug/L	0 173	0	38065	714697	2
	Cr	53	25.537	ug/L	0 176	0	203	78856	2
	Mn	55	25.661	ug/L	0 752	2	1658	973086	0
>	Ge	72		ug/L			1293916	1172041	3
	Ni	60	25.177	ug/L	0.660	2	46	176314	0
	Ni	62	24.923	ug/L	0 602	2	240	25742	0
	Cu	63	24.894	ug/L	0.709	2	692	399566	0
	Cu	65	25.747	ug/L	1 085	4	311	190619	0
	Zn	66	75.749	ug/L	3 096	4	4584	332721	1
	Zn	67	69.402	ug/L	2.221	3	730	51466	1
	Zn	68	73.855	ug/L	2 030	2	3468	230670	1
	As	75	28.026	ug/L	1 055	3	28	120098	0
	As-1	75	26.685	ug/L	1 133	4	18458	127433	0
	Se	82	71.005	ug/L	2 689	3	18	35898	1
	Se	78	70.876	ug/L	3.014	4	18694	98753	0
	Y	89		ug/L			973453	914463	1
	Kr	83		ug/L			355	342	2
>	In	115		ug/L			1353268	1252653	1
	Ag	107	24.927	ug/L	0 433	1	55	575870	0
	Cd	111	23.348	ug/L	0 469	2	244	140653	1
	Cd	114	23.767	ug/L	0.196	0	67	350500	1
	Sb	121	-0.004	ug/L	0.001	17	194	118	7
	Sb	123	-0.002	ug/L	0.001	72	127	95	15
	Ba	135	24.966	ug/L	0.458	1	44	120673	0
	Ba	137	24.918	ug/L	0.393	1	87	208491	1
>	Tb	159		ug/L			1500497	1390590	1
	Tl	205	24.260	ug/L	0 446	1	126	1061729	0
	Pb	208	25.021	ug/L	0.381	1	476	1368086	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 J SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:18:36
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			67898	69565	2
	Cl	37		ug/L			5760484	5077727	2
>	Sc	45		ug/L			1610711	1567030	1
	Cr	52	12.380	ug/L	0 121	0	38065	385759	1
	Cr	53	12.203	ug/L	0 357	2	203	40169	1
	Mn	55	133.146	ug/L	5 121	3	1658	5363432	2
>	Ge	72		ug/L			1293916	1172958	1
	Ni	60	9.457	ug/L	0 101	1	46	66338	1
	Ni	62	11.086	ug/L	0 264	2	240	11583	1
	Cu	63	18.273	ug/L	0.479	2	692	293811	1
	Cu	65	18.310	ug/L	0.362	1	311	135848	0
	Zn	66	42.158	ug/L	0.643	1	4584	187301	0
	Zn	67	43.346	ug/L	1 187	2	730	32429	1
	Zn	68	42.306	ug/L	0 614	1	3468	133629	0
	As	75	13.067	ug/L	0.107	0	28	56100	1
	As-1	75	13.523	ug/L	0 082	0	18458	72934	1
	Se	82	0.184	ug/L	0 025	13	18	109	10
	Se	78	0.432	ug/L	0 122	28	18694	17444	0
	Y	89		ug/L			973453	1177059	1
	Kr	83		ug/L			355	493	0
>	In	115		ug/L			1353268	1197785	1
	Ag	107	0.040	ug/L	0.003	8	55	928	7
	Cd	111	0.174	ug/L	0.014	8	244	1216	7
	Cd	114	0.045	ug/L	0.001	2	67	698	3
	Sb	121	0.016	ug/L	0.000	2	194	423	0
	Sb	123	0.015	ug/L	0.001	8	127	302	4
	Ba	135	44.895	ug/L	1.030	2	44	207455	0
	Ba	137	44.448	ug/L	0.255	0	87	355597	1
>	Tb	159		ug/L			1500497	1383386	0
	Tl	205	0.052	ug/L	0.001	1	126	2363	0
	Pb	208	2.836	ug/L	0 020	0	476	154660	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 K SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:22:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas Intens.	Intens. RSD
	C	13		ug/L			67898	69362	1
	Cl	37		ug/L			5760484	5192180	2
>	Sc	45		ug/L			1610711	1503865	1
	Cr	52	8.071	ug/L	0.370	4	38065	253646	2
	Cr	53	7.933	ug/L	0.088	1	203	25134	1
	Mn	55	63.086	ug/L	0.893	1	1658	2440414	1
>	Ge	72		ug/L			1293916	1151604	0
	Ni	60	6.820	ug/L	0 096	1	46	46982	1
	Ni	62	8.086	ug/L	0 144	1	240	8355	2
	Cu	63	7.030	ug/L	0 014	0	692	111373	0
	Cu	65	7.190	ug/L	0 171	2	311	52552	2
	Zn	66	17.419	ug/L	0 269	1	4584	78385	1
	Zn	67	18.987	ug/L	0 082	0	730	14315	0
	Zn	68	17.725	ug/L	0.190	1	3468	56764	0
	As	75	4.831	ug/L	0 022	0	28	20379	0
	As-1	75	5.140	ug/L	0 031	0	18458	37401	0
	Se	82	0.067	ug/L	0 018	26	18	49	18
	Se	78	0.705	ug/L	0 034	4	18694	17438	0
	Y	89		ug/L			973453	1092802	1
	Kr	83		ug/L			355	441	7
>	In	115		ug/L			1353268	1220723	2
	Ag	107	0.023	ug/L	0 001	2	55	576	3
	Cd	111	0.097	ug/L	0 012	12	244	789	7
	Cd	114	0.015	ug/L	0 001	4	67	274	3
	Sb	121	-0.000	ug/L	0.001	350	194	170	10
	Sb	123	0.001	ug/L	0 001	74	127	127	6
	Ba	135	16.216	ug/L	0 327	2	44	76389	0
	Ba	137	16.351	ug/L	0.392	2	87	133328	0
>	Tb	159		ug/L			1500497	1380773	0
	Tl	205	0.021	ug/L	0.001	3	126	1015	3
	Pb	208	0.910	ug/L	0.009	0	476	49839	1

AGC9 6134

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGF8 MBSPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:25:58
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	64854	0
	Cl	37		ug/L			5760484	5023258	0
>	Sc	45		ug/L			1610711	1425302	1
	Cr	52	25.908	ug/L	0 291	1	38065	697439	0
	Cr	53	25.637	ug/L	0 280	1	203	76582	1
	Mn	55	25.855	ug/L	0 869	3	1658	948764	3
>	Ge	72		ug/L			1293916	1164073	0
	Ni	60	24.868	ug/L	0 416	1	46	173075	2
	Ni	62	24.556	ug/L	0.551	2	240	25205	1
	Cu	63	25.052	ug/L	0 307	1	692	399590	1
	Cu	65	25.377	ug/L	0 737	2	311	186748	2
	Zn	66	81.770	ug/L	1.600	1	4584	356723	2
	Zn	67	74.561	ug/L	1 526	2	730	54895	1
	Zn	68	80.808	ug/L	2.522	3	3468	250460	2
	As	75	29.893	ug/L	0 417	1	28	127329	1
	As-1	75	28.140	ug/L	0.587	2	18458	132660	1
	Se	82	78.436	ug/L	0 917	1	18	39415	1
	Se	78	77.429	ug/L	2 377	3	18694	105667	2
	Y	89		ug/L			973453	886097	0
	Kr	83		ug/L			355	316	2
>	In	115		ug/L			1353268	1213110	0
	Ag	107	25.092	ug/L	0 344	1	55	561464	0
	Cd	111	24.840	ug/L	0 543	2	244	144935	2
	Cd	114	24.774	ug/L	0 122	0	67	353818	0
	Sb	121	-0.008	ug/L	0 000	5	194	52	12
	Sb	123	-0.006	ug/L	0 001	13	127	43	22
	Ba	135	25.059	ug/L	0 462	1	44	117324	2
	Ba	137	25.154	ug/L	0.200	0	87	203856	1
>	Tb	159		ug/L			1500497	1366392	1
	Tl	205	24.250	ug/L	0.280	1	126	1042919	0
	Pb	208	25.097	ug/L	0 585	2	476	1348309	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGG4 MBSPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:29:39
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			67898	71434	1
	Cl	37		ug/L			5760484	5143015	2
>	Sc	45		ug/L			1610711	1444756	0
	Cr	52	25.582	ug/L	0 450	1	38065	698621	2
	Cr	53	25.628	ug/L	0 485	1	203	77601	1
	Mn	55	25.689	ug/L	0 297	1	1658	955729	1
>	Ge	72		ug/L			1293916	1186432	1
	Ni	60	24.439	ug/L	0 218	0	46	173350	1
	Ni	62	24.824	ug/L	0 354	1	240	25965	0
	Cu	63	25.262	ug/L	0 248	0	692	410669	1
	Cu	65	25.225	ug/L	0 302	1	311	189228	1
	Zn	66	77.898	ug/L	2.395	3	4584	346445	1
	Zn	67	70.565	ug/L	1 419	2	730	52982	0
	Zn	68	77.016	ug/L	3.163	4	3468	243387	2
	As	75	28.230	ug/L	0.439	1	28	122534	0
	As-1	75	26.815	ug/L	0.709	2	18458	129616	1
	Se	82	72.548	ug/L	0.466	0	18	37155	0
	Se	78	72.292	ug/L	1.446	2	18694	101681	0
	Y	89		ug/L			973453	889702	1
	Kr	83		ug/L			355	329	2
>	In	115		ug/L			1353268	1243579	0
	Ag	107	24.645	ug/L	0.405	1	55	565303	0
	Cd	111	23.937	ug/L	0.247	1	244	143168	0
	Cd	114	24.080	ug/L	0.604	2	67	352563	2
	Sb	121	-0.006	ug/L	0.001	9	194	74	12
	Sb	123	-0.005	ug/L	0.001	12	127	52	13
	Ba	135	24.721	ug/L	0 241	0	44	118646	1
	Ba	137	25.008	ug/L	0.084	0	87	207755	1
>	Tb	159		ug/L			1500497	1363139	0
	Tl	205	24.441	ug/L	0 284	1	126	1048786	1
	Pb	208	25.454	ug/L	0 351	1	476	1364511	1

AGG-8135

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 MB2SPK REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:33:20
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			67898	72583	2
	Cl	37		ug/L			5760484	5081982	1
>	Sc	45		ug/L			1610711	1443981	1
	Cr	52	25.016	ug/L	0.561	2	38065	683479	2
	Cr	53	25.372	ug/L	0.190	0	203	76785	0
	Mn	55	25.515	ug/L	0.223	0	1658	948641	1
>	Ge	72		ug/L			1293916	1161626	2
	Ni	60	25.025	ug/L	0.675	2	46	173737	1
	Ni	62	24.943	ug/L	0.721	2	240	25536	1
	Cu	63	25.073	ug/L	0.449	1	692	399097	2
	Cu	65	25.412	ug/L	0.724	2	311	186574	1
	Zn	66	79.177	ug/L	3.235	4	4584	344639	2
	Zn	67	70.668	ug/L	2.601	3	730	51934	1
	Zn	68	76.309	ug/L	1.225	1	3468	236186	1
	As	75	28.418	ug/L	1.173	4	28	120729	2
	As-1	75	26.919	ug/L	0.936	3	18458	127314	1
	Se	82	73.471	ug/L	2.454	3	18	36826	1
	Se	78	73.008	ug/L	1.730	2	18694	100362	0
	Y	89		ug/L			973453	895152	0
	Kr	83		ug/L			355	343	2
>	In	115		ug/L			1353268	1221389	1
	Ag	107	24.884	ug/L	0 013	0	55	560646	1
	Cd	111	23.998	ug/L	0 189	0	244	140968	1
	Cd	114	24.031	ug/L	0 445	1	67	345494	1
	Sb	121	-0.008	ug/L	0.001	7	194	53	16
	Sb	123	-0.005	ug/L	0 000	6	127	49	7
	Ba	135	24.874	ug/L	0 494	1	44	117223	0
	Ba	137	24.992	ug/L	0.541	2	87	203870	0
>	Tb	159		ug/L			1500497	1370524	0
	Tl	205	23.984	ug/L	0.254	1	126	1034800	1
	Pb	208	24.868	ug/L	0 206	0	476	1340320	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV13
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:38:07
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens. RSD
	C	13		ug/L			67898	63360	5
	Cl	37		ug/L			5760484	5097181	1
>	Sc	45		ug/L			1610711	1403653	1
	Cr	52	50.818	ug/L	0 882	1	38065	1315472	1
	Cr	53	51.170	ug/L	0 777	1	203	150355	1
	Mn	55	50.680	ug/L	0.936	1	1658	1830128	0
>	Ge	72		ug/L			1293916	1123824	0
	Ni	60	50.370	ug/L	0.312	0	46	338381	1
	Ni	62	50.490	ug/L	0.578	1	240	49812	0
	Cu	63	50.006	ug/L	0.275	0	692	769434	0
	Cu	65	50.409	ug/L	0 710	1	311	357938	2
	Zn	66	51.114	ug/L	0.703	1	4584	216768	2
	Zn	67	50.541	ug/L	0.880	1	730	36130	1
	Zn	68	51.841	ug/L	0.555	1	3468	156216	0
	As	75	50.628	ug/L	0.383	0	28	208169	1
	As-1	75	50.822	ug/L	0.431	0	18458	218392	1
	Se	82	50.495	ug/L	0.226	0	18	24501	0
	Se	78	50.948	ug/L	0.038	0	18694	72682	0
	Y	89		ug/L			973453	872072	0
	Kr	83		ug/L			355	337	7
>	In	115		ug/L			1353268	1183721	0
	Ag	107	47.946	ug/L	0 086	0	55	1046879	0
	Cd	111	50.144	ug/L	0 320	0	244	285248	0
	Cd	114	50.623	ug/L	0.798	1	67	705469	2
	Sb	121	51.258	ug/L	0 292	0	194	811170	1
	Sb	123	50.844	ug/L	0.243	0	127	618342	1
	Ba	135	50.971	ug/L	0 096	0	44	232812	0
	Ba	137	50.905	ug/L	0 415	0	87	402482	1
>	Tb	159		ug/L			1500497	1350866	1
	Tl	205	49.537	ug/L	1 912	3	126	2106812	4
	Pb	208	49.737	ug/L	0 568	1	476	2641681	0

ASC5 - 81288

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB13
Sample Dil Factor:
Comments:
Sample Date/Time: Thursday, May 28, 2015 18:44:34
Number of Replicates: 3
Method File: C \NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			67898	62218	2
	Cl	37		ug/L			5760484	5094060	1
>	Sc	45		ug/L			1610711	1384872	1
	Cr	52	0.008	ug/L	0 011	136	38065	32927	2
	Cr	53	0.003	ug/L	0 003	77	203	184	5
	Mn	55	-0.012	ug/L	0 001	6	1658	994	3
>	Ge	72		ug/L			1293916	1114996	1
	Ni	60	0.002	ug/L	0 003	173	46	49	34
	Ni	62	-0.034	ug/L	0 021	62	240	174	10
	Cu	63	-0.017	ug/L	0.003	15	692	343	9
	Cu	65	-0.019	ug/L	0 004	19	311	130	19
	Zn	66	-0.347	ug/L	0 010	2	4584	2519	1
	Zn	67	-0.344	ug/L	0 028	8	730	389	4
	Zn	68	-0.354	ug/L	0 000	0	3468	1951	1
	As	75	-0.001	ug/L	0.012	1794	28	21	235
	As-1	75	0.255	ug/L	0 061	24	18458	16912	0
	Se	82	0.007	ug/L	0 027	400	18	18	67
	Se	78	0.917	ug/L	0.202	22	18694	17114	0
	Y	89		ug/L			973453	851606	0
	Kr	83		ug/L			355	295	6
>	In	115		ug/L			1353268	1193678	1
	Ag	107	0.001	ug/L	0.001	107	55	69	32
	Cd	111	-0.001	ug/L	0 002	167	244	207	6
	Cd	114	0.000	ug/L	0.001	213	67	64	16
	Sb	121	0.023	ug/L	0 003	11	194	546	9
	Sb	123	0.028	ug/L	0.004	12	127	455	10
	Ba	135	-0.001	ug/L	0.004	272	44	33	53
	Ba	137	-0.001	ug/L	0.004	355	87	68	46
>	Tb	159		ug/L			1500497	1350408	1
	Tl	205	0.006	ug/L	0.003	49	126	377	35
	Pb	208	0.003	ug/L	0.004	119	476	587	33

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP (ICP-MS) GFA CVA **Analysis Date:** 5-29-15

MS2	Analyst BAE 6/1/15	Peer 6/1/15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	See log
ICB/CCB	✓	✓	↓
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	✓	✓	See log
Carry-over	✓	✓	
Method QC:			
CRI/CRA	✓	✓	
ICSA/ICSAB	✓	✓	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	✓	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	AGF8
Matrix Duplicates	✓	✓	AGC9
Method Blanks	✓	✓	AGT3
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAF's	✓	✓	CAF-AGF8, AGC9, AGT3

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexlon ICP-MS Serial No. 81DN1050201

Analysis Date: 5/29/15 Analyst: AA/ae Page 1 of 7

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		STD 0	D2293		
		1	D2173		
		2	D2249		
		3	D2250		
		4	D2251		
		5	D2252		
		Rinse Solution			
		ICV	D1815		
		ICB	STD 0		
		CCV1	STD4		
		CCB1	STD 0		
		Low check	D2173		
		ICSA	D2253		
		ICSAB	D2254		
		LR200	D2148		
		LR300	D2149		
		B1			
		B2			
ZZZ		ZZZZZZ			
↓		↓			equip
		CCV2			
		CCB2			
		AGP4 MB1	SWN	20	
		AGC9 L	REN	2	Zn

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ICP/MS SAMPLE RUN LOG

PE Nexion ICP-MS Serial No. 81DN1050201

Analysis Date: 5-29-15 **Analyst:** ~~KS~~ / ee **Page** 2 **of** 7

All corrections made by analyst unless otherwise noted. ee 5/29/15

Edit Label	Delete Data	ARI Sample ID	Prep Code	Dilution	Comments
		AGP4 A	SWN	20	
		AGC9 B		50	Cr Zn Pb
		E		↓	Cr
		I		200	Cr Zn Pb
		HDup			Cr Cu Zn Ba Pb High RPD
		H			CAF
		Hspk	↓	↓	↓ SR
		AGP4 MBSpk	SWN	20	As ↑ (BR)
		CCV3	→	→	
		CCB3	↓	↓	End AGC9
		~~AGH0 MB1~~	~~REN~~	2	
		A			
		C			
		BDup			
		B			
		Bspk	BA 6/1/15		
		EDup			
		E			
		Espk			
		MBlspk	↓	↓	
		CCV4			
		CCB4			
		AGG6 MB	REN	2	
		~~AGH0 MB2~~	↓	↓	

Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time. Friday, May 29, 2015 08 41.45
Sample Description
Method File: C:\NexION Data\Method\Daily Performancenew.mth
Dataset File: C.\NexION Data\Dataset\Default\Daily Performance Check 5689
MassCal File C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode Pulse
Acq Dead Time (ns) 60
Current Dead Time (ns): 60
Torch Z position (mm) 0 00

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	3844.4	3844.387	35.136	0.9	Standard
	Mg	24.0	34993.3	34993 325	476.226	1.4	Standard
	In	114 9	97051.9	97051 872	29.092	0.0	Standard
	Pb	208 0	37092.2	37092 202	245.039	0.7	Standard
	U	238 1	61153 1	61153.072	578.629	0 9	Standard
⌈	CeO	155 9	1482 5	0 017	0.000	2.1	Standard
|>	Ce	139.9	88102.6	88102.612	325 859	0.4	Standard
⌊	Ce++	70.0	2216.0	0 025	0 001	3 7	Standard
	Bkgd	220 0	0.0	0.000	0.000		Standard

Current Conditions File Data

Current Value	Description
1.05	Nebulizer Gas Flow STD/KED [NEB]
1.20	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-12.00	Deflector Voltage
1600.00	ICP RF Power
-1525 00	Analog Stage Voltage
1000 00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-15.00	Cell Rod Offset STD [CRO]
7.00	Discriminator Threshold
-2 00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.25	RPq
1 06	DRC Mode NEB
-8 00	DRC Mode QRO
-2.50	DRC Mode CRO
-4.00	DRC Mode Cell Entrance/Exit Voltage
0.60	Cell Gas A
0.00	Cell Gas B
250 00	Axial Field Voltage
-15 00	KED Mode CRO
-12.00	KED Mode QRO
-2.00	KED Mode Cell Entrance Voltage
-24.00	KED Mode Cell Exit Voltage
0.00	KED Cell Gas A
4.00	KED Cell Gas B
0.00	KED RPa

SmartTune Wizard - Summary

ptimization Summary

martTune file: C:\NexIONData\Wizard\SmartTune\ariSTDaily+torch.swz

tart Time: 5/29/2015 8:25:41 AM
nd Time: 5/29/2015 8:41:01 AM

aily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 3166.43
Obtained Intensity (Mg 23.985): 26735.50
Obtained Intensity (In 114.904): 77391.74
Obtained Intensity (Pb 207.977): 30576.00
Obtained Intensity (U 238.05): 51916.56
Obtained Intensity (Bkgd 220): 0.00
Obtained Formula (CeO 155.9 / Ce 139.905): 0.013 (=1013.06 / 75434.72)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.018 (=1348.28 / 75434.72)

orch Alignment - [Passed]

Vertical	Horizontal	Intensity
0.55 mm	-0.13 mm	93005.12

ebulizer Gas Flow STD/KED [NEB] - [Passed] Optimum value(s): 1.06
Obtained Intensity (In 114.904): 91149.79
Obtained Formula (CeO 155.9 / Ce 139.905): 0.025 (=1902.22 / 77147.46)

ass Calibration and Resolution - [Passed] Optimum value(s): N/A
Target/Obtained mass (7.016/6.975), Target/Obtained resolution (0.7/0.712)
Target/Obtained mass (23.985/24.025), Target/Obtained resolution (0.7/0.711)
Target/Obtained mass (114.904/114.925), Target/Obtained resolution (0.7/0.706)
Target/Obtained mass (238.05/238.075), Target/Obtained resolution (0.7/0.693)

utoLens STD/DRC - [Passed] Optimum value(s): Correlation Coefficient = 0.998; Intercept = -11.25

aily Performance Check - [Failed]
Obtained Intensity (Be 9.0122): 4513.22
Obtained Intensity (Mg 23.985): 40828.27
Obtained Intensity (In 114.904): 107636.34
Obtained Intensity (Pb 207.977): 40542.89
Obtained Intensity (U 238.05): 67985.37
Obtained Intensity (Bkgd 220): 0.00
Obtained Formula (CeO 155.9 / Ce 139.905): 0.027 (=2512.55 / 92990.79) - <Target not achieved>
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.031 (=2848.32 / 92990.79) - <Target not achieved>

Reduce N2 flow + Rerun

SmartTune Wizard - Summary

timization Summary

artTune file: C:\NexIONData\Wizard\SmartTune\ariSTDaily+torch.swz

art Time: 5/29/2015 8:41:44 AM
d Time: 5/29/2015 8:42:48 AM

ily Performance Check - [Passed] Optimum value(s): N/A
    Obtained Intensity (Be 9.0122): 3844.39
    Obtained Intensity (Mg 23.985): 34993.32
    Obtained Intensity (In 114.904): 97051.87
    Obtained Intensity (Pb 207.977): 37092.20
    Obtained Intensity (U 238.05): 61153.07
    Obtained Intensity (Bkgd 220): 0.00
    Obtained Formula (CeO 155.9 / Ce 139.905): 0.017 (=1482.47 / 88102.61)
    Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.025 (=2215.96 / 88102.61)

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Blank
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:10:47
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File. C:\NexION Data\System\052815c.cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens. RSD
C	13		ug/L				57288	4
Cl	37		ug/L				5736874	2
> Sc	45		ug/L				1601846	3
Cr	52		ug/L				37631	5
Cr	53		ug/L				215	2
Mn	55		ug/L				1014	6
> Ge	72		ug/L				1246977	1
Ni	60		ug/L				31	12
Ni	62		ug/L				357	2
Cu	63		ug/L				537	6
Cu	65		ug/L				179	4
Zn	66		ug/L				393	6
Zn	67		ug/L				61	20
Zn	68		ug/L				447	8
As	75		ug/L				42	15
As-1	75		ug/L				18670	0
Se	82		ug/L				24	18
Se	78		ug/L				18915	0
Y	89		ug/L				942555	2
Kr	83		ug/L				364	3
> In	115		ug/L				1213363	0
Ag	107		ug/L				30	32
Cd	111		ug/L				208	4
Cd	114		ug/L				33	18
Sb	121		ug/L				19	20
Sb	123		ug/L				12	54
Ba	135		ug/L				8	18
Ba	137		ug/L				12	36
> Tb	159		ug/L				1299254	0
Tl	205		ug/L				37	16
Pb	208		ug/L				209	5

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:14:29
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	59813	2
	Cl	37		ug/L			5736874	5868233	1
>	Sc	45		ug/L			1601846	1584268	1
	Cr	52	0.500	ug/L	0.059	11	37631	55190	3
	Cr	53	0.500	ug/L	0 007	1	215	1992	0
	Mn	55	0.500	ug/L	0 024	4	1014	23555	3
>	Ge	72		ug/L			1246977	1276203	3
	Ni	60	0.500	ug/L	0 018	3	31	4285	1
	Ni	62	0.500	ug/L	0 023	4	357	970	2
	Cu	63	0.500	ug/L	0 029	5	537	10251	3
	Cu	65	0.500	ug/L	0 022	4	179	4495	5
	Zn	66	4.000	ug/L	0.155	3	393	27501	1
	Zn	67	4.000	ug/L	0.174	4	61	4261	0
	Zn	68	4.000	ug/L	0.089	2	447	19233	1
	As	75	0.200	ug/L	0 010	4	42	1178	1
	As-1	75	0.200	ug/L	0 197	98	18670	19681	0
	Se	82	0.500	ug/L	0 032	6	24	320	3
	Se	78	0.500	ug/L	1 416	283	18915	19544	0
	Y	89		ug/L			942555	950765	1
	Kr	83		ug/L			364	366	4
>	In	115		ug/L			1213363	1216502	1
	Ag	107	0.200	ug/L	0 006	3	30	4984	3
	Cd	111	0.100	ug/L	0.004	4	208	815	2
	Cd	114	0.100	ug/L	0 001	1	33	1502	1
	Sb	121	0.200	ug/L	0 004	2	19	3569	2
	Sb	123	0.200	ug/L	0 005	2	12	2752	2
	Ba	135	0.500	ug/L	0 013	2	8	2527	2
	Ba	137	0.500	ug/L	0.006	1	12	4435	0
>	Tb	159		ug/L			1299254	1297950	1
	Tl	205	0.200	ug/L	0 004	1	37	8483	0
	Pb	208	0.100	ug/L	0 001	1	209	6277	1

ACCS : 21317

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:18:11
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C \NexION Data\MassCal\Default tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	61414	4
	Cl	37		ug/L			5736874	5885265	2
>	Sc	45		ug/L			1601846	1613573	2
	Cr	52	9.996	ug/L	0.289	2	37631	355234	1
	Cr	53	10.001	ug/L	0 351	3	215	37704	2
	Mn	55	10.000	ug/L	0.306	3	1014	464419	0
>	Ge	72		ug/L			1246977	1275630	0
	Ni	60	9.999	ug/L	0 283	2	31	82926	2
	Ni	62	10.000	ug/L	0 129	1	357	12490	1
	Cu	63	10.000	ug/L	0 118	1	537	190971	0
	Cu	65	10.000	ug/L	0.161	1	179	86658	1
	Zn	66	9.610	ug/L	0 104	1	393	52760	1
	Zn	67	9.733	ug/L	0 150	1	61	8822	2
	Zn	68	9.684	ug/L	0.047	0	447	38426	0
	As	75	10.000	ug/L	0.087	0	42	50871	0
	As-1	75	10.002	ug/L	0.089	0	18670	67757	0
	Se	82	10.001	ug/L	0.105	1	24	6247	0
	Se	78	10.018	ug/L	0.153	1	18915	32985	0
	Y	89		ug/L			942555	968862	2
	Kr	83		ug/L			364	367	1
>	In	115		ug/L			1213363	1246846	0
	Ag	107	10.000	ug/L	0 062	0	30	244819	0
	Cd	111	10.000	ug/L	0 054	0	208	65348	0
	Cd	114	10.000	ug/L	0.065	0	33	158187	0
	Sb	121	10.000	ug/L	0 241	2	19	179551	2
	Sb	123	10.000	ug/L	0 014	0	12	136036	0
	Ba	135	9.999	ug/L	0.131	1	8	49287	1
	Ba	137	9.999	ug/L	0 130	1	12	86615	1
>	Tb	159		ug/L			1299254	1320207	1
	Tl	205	10.000	ug/L	0.197	1	37	442513	1
	Pb	208	10.000	ug/L	0.066	0	209	571369	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:22:06
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052815c.cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
C	13		ug/L			57288	60322	3
Cl	37		ug/L			5736874	5950427	3
Sc	45		ug/L			1601846	1613108	1
Cr	52	19.971	ug/L	0.142	0	37631	668310	2
Cr	53	19.916	ug/L	0.204	1	215	73643	2
Mn	55	19.944	ug/L	0.422	2	1014	915055	2
Ge	72		ug/L			1246977	1303485	0
Ni	60	19.911	ug/L	0 394	1	31	165754	1
Ni	62	19.737	ug/L	0.473	2	357	23606	1
Cu	63	19.851	ug/L	0.305	1	537	375653	1
Cu	65	19.902	ug/L	0.098	0	179	172688	0
Zn	66	19.624	ug/L	0 215	1	393	103017	0
Zn	67	19.769	ug/L	0 246	1	61	17549	0
Zn	68	19.582	ug/L	0.320	1	447	73645	1
As	75	19.880	ug/L	0.171	0	42	100878	0
As-1	75	19.874	ug/L	0.137	0	18670	115886	0
Se	82	19.891	ug/L	0 400	2	24	12402	1
Se	78	19.875	ug/L	0.196	0	18915	46745	0
Y	89		ug/L			942555	977441	2
Kr	83		ug/L			364	366	2
In	115		ug/L			1213363	1228554	1
Ag	107	19.912	ug/L	0.630	3	30	471882	2
Cd	111	20.006	ug/L	0.349	1	208	128755	0
Cd	114	19.990	ug/L	0 256	1	33	310851	0
Sb	121	19.996	ug/L	0 311	1	19	353426	0
Sb	123	19.992	ug/L	0.290	1	12	267490	0
Ba	135	20.073	ug/L	0 282	1	8	98910	1
Ba	137	20.020	ug/L	0 090	0	12	171560	1
Tb	159		ug/L			1299254	1323388	0
Tl	205	19.921	ug/L	0 255	1	37	869998	1
Pb	208	19.940	ug/L	0 139	0	209	1128250	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 4
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:26:10
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052815c cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	61375	3
	Cl	37		ug/L			5736874	6045650	2
>	Sc	45		ug/L			1601846	1618137	1
	Cr	52	49.765	ug/L	1 103	2	37631	1577271	1
	Cr	53	49.809	ug/L	0 918	1	215	180950	1
	Mn	55	49.762	ug/L	1.406	2	1014	2235094	1
>	Ge	72		ug/L			1246977	1285372	1
	Ni	60	49.682	ug/L	0 953	1	31	395223	0
	Ni	62	49.963	ug/L	1.242	2	357	58144	1
	Cu	63	49.669	ug/L	0 777	1	537	896512	2
	Cu	65	49.717	ug/L	0 206	0	179	413422	1
	Zn	66	49.607	ug/L	1.159	2	393	246796	2
	Zn	67	49.579	ug/L	0 839	1	61	41605	0
	Zn	68	49.772	ug/L	0 718	1	447	179881	0
	As	75	49.808	ug/L	0.819	1	42	244457	0
	As-1	75	49.890	ug/L	0 799	1	18670	255186	0
	Se	82	49.660	ug/L	0.445	0	24	29493	0
	Se	78	49.936	ug/L	0 341	0	18915	85897	0
	Y	89		ug/L			942555	965723	1
	Kr	83		ug/L			364	377	1
>	In	115		ug/L			1213363	1227214	0
	Ag	107	49.860	ug/L	1 421	2	30	1164046	2
	Cd	111	49.687	ug/L	0.782	1	208	309447	0
	Cd	114	49.744	ug/L	0 007	0	33	753508	0
	Sb	121	49.881	ug/L	1 197	2	19	870365	1
	Sb	123	49.976	ug/L	0.344	0	12	666440	0
	Ba	135	49.744	ug/L	0 187	0	8	238752	1
	Ba	137	49.767	ug/L	0 407	0	12	416278	0
>	Tb	159		ug/L			1299254	1319252	1
	Tl	205	50.241	ug/L	0 501	0	37	2241060	0
	Pb	208	49.625	ug/L	0 449	0	209	2697517	0

AGCS 01558

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Standard 5
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:30:55
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C \NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			57288	65135	3
	Cl	37		ug/L			5736874	6122036	2
>	Sc	45		ug/L			1601846	1596425	2
	Cr	52	100.803	ug/L	2 260	2	37631	3197560	0
	Cr	53	100.191	ug/L	1 950	1	215	361083	1
	Mn	55	100.505	ug/L	0 758	0	1014	4529853	2
>	Ge	72		ug/L			1246977	1272222	1
	Ni	60	100.313	ug/L	1.075	1	31	798294	2
	Ni	62	100.070	ug/L	1 884	1	357	115186	2
	Cu	63	100.588	ug/L	1.633	1	537	1832496	2
	Cu	65	99.984	ug/L	3.262	3	179	822117	2
	Zn	66	99.799	ug/L	1.002	1	393	487750	0
	Zn	67	99.873	ug/L	2.664	2	61	82536	1
	Zn	68	99.718	ug/L	1.982	1	447	352967	1
	As	75	100.198	ug/L	1.871	1	42	489947	1
	As-1	75	100.217	ug/L	1.874	1	18670	491608	2
	Se	82	100.081	ug/L	1.605	1	24	58961	0
	Se	78	100.142	ug/L	0.674	0	18915	151734	1
	Y	89		ug/L			942555	961833	1
	Kr	83		ug/L			364	420	3
>	In	115		ug/L			1213363	1193116	0
	Ag	107	101.341	ug/L	1 755	1	30	2407849	1
	Cd	111	100.736	ug/L	1 010	1	208	625082	0
	Cd	114	100.456	ug/L	1.284	1	33	1502235	1
	Sb	121	100.206	ug/L	1 262	1	19	1711682	0
	Sb	123	100.309	ug/L	1.700	1	12	1313917	1
	Ba	135	100.985	ug/L	1.126	1	8	487213	1
	Ba	137	100.664	ug/L	0 809	0	12	837181	1
>	Tb	159		ug/L			1299254	1306629	1
	Tl	205	100.168	ug/L	1 791	1	37	4449634	0
	Pb	208	100.755	ug/L	1.421	1	209	5563838	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: Rinse sample
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:36:02
Number of Replicates 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052815c.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			57288	57261	2
	Cl	37		ug/L			5736874	5802931	2
>	Sc	45		ug/L			1601846	1558537	1
	Cr	52	0.079	ug/L	0 024	30	37631	39035	1
	Cr	53	0.005	ug/L	0.019	402	215	225	29
	Mn	55	0.008	ug/L	0 013	157	1014	1354	42
>	Ge	72		ug/L			1246977	1260618	0
	Ni	60	0.010	ug/L	0.014	130	31	113	94
	Ni	62	0.137	ug/L	0 014	9	357	516	2
	Cu	63	0.019	ug/L	0.016	87	537	881	33
	Cu	65	0.011	ug/L	0 015	141	179	268	45
	Zn	66	0.045	ug/L	0 014	30	393	614	10
	Zn	67	0.047	ug/L	0 021	45	61	100	17
	Zn	68	0.051	ug/L	0 018	35	447	629	9
	As	75	0.008	ug/L	0.015	191	42	79	88
	As-1	75	0.025	ug/L	0 062	246	18670	18991	1
	Se	82	0.018	ug/L	0 018	101	24	35	30
	Se	78	0.074	ug/L	0 199	268	18915	19218	1
	Y	89		ug/L			942555	951255	1
	Kr	83		ug/L			364	355	6
>	In	115		ug/L			1213363	1226485	0
	Ag	107	0.014	ug/L	0 013	93	30	375	86
	Cd	111	0.014	ug/L	0.017	115	208	303	35
	Cd	114	0.012	ug/L	0.013	107	33	219	91
	Sb	121	0.102	ug/L	0.022	21	19	1817	21
	Sb	123	0.095	ug/L	0.016	16	12	1288	17
	Ba	135	0.009	ug/L	0.013	138	8	53	117
	Ba	137	0.009	ug/L	0.012	130	12	89	113
>	Tb	159		ug/L			1299254	1285201	1
	Tl	205	0.017	ug/L	0 014	81	37	772	78
	Pb	208	0.011	ug/L	0 013	122	209	799	91

Sample Information

Sample Date/Time: Friday, May 29, 2015 09:30:55
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Mass Calibration File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

Calibration

Analyte	Mass	r Corr Coef	Slope	Std 1 Conc	Std 2 Conc	Std 3 Conc	Std 4 Conc	Std 5 Conc
C	13							
Cl	37							
Sc	45							
Cr	52	**0.9999**	0.020	0 50	10	20	50	100
Cr	53	**1.0000**	0.002	0.50	10	20	50	100
Mn	55	**0.9999**	0.028	0.50	10	20	50	100
Ge	72							
Ni	60	**1.0000**	0 006	0.50	10	20	50	100
Ni	62	**1.0000**	0.001	0.50	10	20	50	100
Cu	63	**0.9999**	0.014	0.50	10	20	50	100
Cu	65	**1.0000**	0.006	0.50	10	20	50	100
Zn	66	**0.9999**	0 004	4.00	10	20	50	100
Zn	67	**0.9999**	0 001	4.00	10	20	50	100
Zn	68	**0.9999**	0.003	4.00	10	20	50	100
As	75	**1.0000**	0.004	0.20	10	20	50	100
As-1	75	**1.0000**	0.004	0 20	10	20	50	100
Se	82	**1.0000**	0.000	0 50	10	20	50	100
Se	78	**1.0000**	0.001	0.50	10	20	50	100
Y	89							
Kr	83							
In	115							
Ag	107	**0.9997**	0.020	0 20	10	20	50	100
Cd	111	**0.9999**	0.005	0.10	10	20	50	100
Cd	114	**1.0000**	0 013	0.10	10	20	50	100
Sb	121	**1.0000**	0.014	0.20	10	20	50	100
Sb	123	**1.0000**	0 011	0.20	10	20	50	100
Ba	135	**0.9998**	0.004	0.50	10	20	50	100
Ba	137	**0.9999**	0.007	0.50	10	20	50	100
Tb	159							
Tl	205	**1.0000**	0 034	0 20	10	20	50	100
Pb	208	**0.9999**	0 042	0.10	10	20	50	100

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICV
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:45:44
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File C:\NexION Data\System\052915.cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens	Intens RSD
C	13		ug/L			57288	60636	2
Cl	37		ug/L			5736874	6041787	1
> Sc	45		ug/L			1601846	1659648	0
Cr	52	49.218	ug/L	0 688	1	37631	1643631	1
Cr	53	50.315	ug/L	0.341	0	215	188686	0
Mn	55	50.092	ug/L	1 294	2	1014	2347767	2
> Ge	72		ug/L			1246977	1273269	1
Ni	60	51.732	ug/L	1 042	2	31	411947	0
Ni	62	50.945	ug/L	1.015	1	357	58862	1
Cu	63	52.340	ug/L	1 345	2	537	954263	1
Cu	65	51.912	ug/L	1.077	2	179	427309	1
Zn	66	51.331	ug/L	0.512	0	393	251286	1
Zn	67	51.022	ug/L	1.188	2	61	42234	1
Zn	68	50.635	ug/L	1.401	2	447	179592	2
As	75	54.509	ug/L	1 291	2	42	266755	1
As-1	75	53.483	ug/L	1 049	1	18670	271433	0
Se	82	78.139	ug/L	1 939	2	24	45901	1
Se	78	77.232	ug/L	1.190	1	18915	121517	0
Y	89		ug/L			942555	986328	1
Kr	83		ug/L			364	351	6
> In	115		ug/L			1213363	1216892	0
Ag	107	48.973	ug/L	0 805	1	30	1186885	1
Cd	111	48.335	ug/L	0.909	1	208	306037	2
Cd	114	49.412	ug/L	0.661	1	33	753653	1
Sb	121	50.551	ug/L	0 247	0	19	880781	0
Sb	123	50.911	ug/L	0 501	0	12	680222	0
Ba	135	49.868	ug/L	0 397	0	8	245393	1
Ba	137	49.807	ug/L	0 359	0	12	422475	0
> Tb	159		ug/L			1299254	1327586	1
Tl	205	50.052	ug/L	0 688	1	37	2259151	0
Pb	208	49.698	ug/L	0 857	1	209	2788368	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICB
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:52:09
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	58066	0
	Cl	37		ug/L			5736874	5792141	2
>	Sc	45		ug/L			1601846	1586642	2
	Cr	52	0.040	ug/L	0.035	87	37631	38496	0
	Cr	53	-0.002	ug/L	0 004	225	215	206	5
	Mn	55	-0.000	ug/L	0 002	405	1014	986	5
>	Ge	72		ug/L			1246977	1245508	1
	Ni	60	0.001	ug/L	0 000	17	31	42	3
	Ni	62	0.113	ug/L	0 012	11	357	483	2
	Cu	63	0.006	ug/L	0 001	21	537	639	2
	Cu	65	-0.002	ug/L	0 001	28	179	161	4
	Zn	66	0.039	ug/L	0 002	5	393	579	0
	Zn	67	0.029	ug/L	0 007	24	61	84	8
	Zn	68	0.043	ug/L	0.006	14	447	595	2
	As	75	-0.006	ug/L	0 004	58	42	12	141
	As-1	75	0.039	ug/L	0 072	184	18670	18825	0
	Se	82	-0.007	ug/L	0 017	242	24	20	46
	Se	78	0.155	ug/L	0 262	168	18915	19090	0
	Y	89		ug/L			942555	936498	3
	Kr	83		ug/L			364	366	3
>	In	115		ug/L			1213363	1203359	0
	Ag	107	0.002	ug/L	0 001	44	30	81	27
	Cd	111	0.005	ug/L	0 001	29	208	235	2
	Cd	114	0.001	ug/L	0.001	92	33	51	32
	Sb	121	0.022	ug/L	0.001	3	19	396	2
	Sb	123	0.022	ug/L	0.001	6	12	300	6
	Ba	135	0.001	ug/L	0.001	77	8	12	25
	Ba	137	0.001	ug/L	0.000	25	12	22	11
>	Tb	159		ug/L			1299254	1292246	2
	Tl	205	0.004	ug/L	0.000	2	37	202	0
	Pb	208	0.002	ug/L	0 000	2	209	300	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 09:55:51
Number of Replicates: 3
Method File: C.\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C.\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			57288	61848	1
	Cl	37		ug/L			5736874	5931645	1
>	Sc	45		ug/L			1601846	1573408	1
	Cr	52	49.940	ug/L	0 877	1	37631	1580374	1
	Cr	53	49.635	ug/L	0.760	1	215	176440	0
	Mn	55	49.073	ug/L	1.145	2	1014	2180095	1
>	Ge	72		ug/L			1246977	1256526	2
	Ni	60	50.491	ug/L	1.543	3	31	396658	2
	Ni	62	50.210	ug/L	1.465	2	357	57230	0
	Cu	63	49.761	ug/L	1.747	3	537	894893	0
	Cu	65	51.428	ug/L	1.669	3	179	417643	2
	Zn	66	50.236	ug/L	1.608	3	393	242581	1
	Zn	67	51.450	ug/L	1 876	3	61	42012	2
	Zn	68	50.523	ug/L	0 952	1	447	176802	1
	As	75	50.166	ug/L	1 380	2	42	242189	0
	As-1	75	50.025	ug/L	1 730	3	18670	251643	0
	Se	82	50.413	ug/L	1.267	2	24	29226	1
	Se	78	49.722	ug/L	2 447	4	18915	83941	1
	Y	89		ug/L			942555	977786	1
	Kr	83		ug/L			364	371	7
>	In	115		ug/L			1213363	1206963	1
	Ag	107	47.994	ug/L	1 190	2	30	1153397	1
	Cd	111	49.115	ug/L	0 906	1	208	308373	0
	Cd	114	49.304	ug/L	0 276	0	33	745820	0
	Sb	121	49.983	ug/L	0 422	0	19	863726	1
	Sb	123	49.555	ug/L	0 680	1	12	656616	0
	Ba	135	48.878	ug/L	0 239	0	8	238552	1
	Ba	137	48.956	ug/L	0 596	1	12	411826	0
>	Tb	159		ug/L			1299254	1317452	2
	Tl	205	49.909	ug/L	0 933	1	37	2235275	0
	Pb	208	48.165	ug/L	0 957	1	209	2681478	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:01:58
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens RSD
	C	13		ug/L			57288	57935	2
	Cl	37		ug/L			5736874	5696665	2
>	Sc	45		ug/L			1601846	1558012	2
	Cr	52	0.061	ug/L	0 044	72	37631	38433	1
	Cr	53	0.001	ug/L	0 006	635	215	212	9
	Mn	55	-0.001	ug/L	0 000	21	1014	946	2
>	Ge	72		ug/L			1246977	1254050	1
	Ni	60	0.001	ug/L	0.001	116	31	37	17
	Ni	62	0.117	ug/L	0 017	14	357	490	3
	Cu	63	0.003	ug/L	0 002	57	537	593	3
	Cu	65	-0.004	ug/L	0 001	24	179	149	4
	Zn	66	1.352	ug/L	0 038	2	393	6904	2
	Zn	67	1.226	ug/L	0.029	2	61	1059	1
	Zn	68	1.296	ug/L	0 034	2	447	4966	2
	As	75	-0.008	ug/L	0.014	172	42	3	2151
	As-1	75	-0.010	ug/L	0.097	1019	18670	18727	0
	Se	82	-0.004	ug/L	0 028	645	24	22	70
	Se	78	-0.014	ug/L	0 309	2222	18915	19000	0
	Y	89		ug/L			942555	932929	1
	Kr	83		ug/L			364	358	7
>	In	115		ug/L			1213363	1208266	0
	Ag	107	0.002	ug/L	0 001	36	30	70	21
	Cd	111	0.001	ug/L	0 002	146	208	216	5
	Cd	114	0.001	ug/L	0.000	12	33	50	3
	Sb	121	0.090	ug/L	0 001	0	19	1578	1
	Sb	123	0.092	ug/L	0.001	0	12	1231	1
	Ba	135	0.001	ug/L	0 001	106	8	14	44
	Ba	137	0.001	ug/L	0.000	14	12	23	6
>	Tb	159		ug/L			1299254	1293405	0
	Tl	205	0.005	ug/L	0.000	8	37	236	6
	Pb	208	0.001	ug/L	0.000	7	209	271	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LOW CHECK
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:05:39
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915 cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
C	13		ug/L			57288	60517	2
Cl	37		ug/L			5736874	5716958	3
> Sc	45		ug/L			1601846	1567377	3
Cr	52	0.546	ug/L	0 036	6	37631	53609	1
Cr	53	0.498	ug/L	0 032	6	215	1971	3
Mn	55	0.493	ug/L	0 020	4	1014	22792	0
> Ge	72		ug/L			1246977	1255164	0
Ni	60	0.510	ug/L	0 016	3	31	4034	3
Ni	62	0.599	ug/L	0 027	4	357	1037	2
Cu	63	0.524	ug/L	0 019	3	537	9951	3
Cu	65	0.526	ug/L	0.004	0	179	4444	0
Zn	66	5.244	ug/L	0 169	3	393	25662	3
Zn	67	4.654	ug/L	0 084	1	61	3853	1
Zn	68	5.012	ug/L	0 034	0	447	17931	0
As	75	0.230	ug/L	0 014	6	42	1154	6
As-1	75	0.205	ug/L	0.019	9	18670	19746	0
Se	82	0.523	ug/L	0 033	6	24	327	6
Se	78	0.456	ug/L	0 084	18	18915	19634	0
Y	89		ug/L			942555	941219	1
Kr	83		ug/L			364	345	3
> In	115		ug/L			1213363	1219789	1
Ag	107	0.199	ug/L	0.009	4	30	4863	2
Cd	111	0.099	ug/L	0.007	7	208	840	6
Cd	114	0.099	ug/L	0.002	2	33	1553	1
Sb	121	0.232	ug/L	0.011	4	19	4069	3
Sb	123	0.236	ug/L	0.008	3	12	3176	1
Ba	135	0.493	ug/L	0.018	3	8	2440	4
Ba	137	0.493	ug/L	0 001	0	12	4203	1
> Tb	159		ug/L			1299254	1286427	1
Tl	205	0.192	ug/L	0 005	2	37	8434	0
Pb	208	0.104	ug/L	0 004	3	209	5857	1

AGC9 · 81356

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSA
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:09:20
Number of Replicates: 3
Method File C \NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052915 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			57288	140000	5
	Cl	37		ug/L			5736874	16771256	7
>	Sc	45		ug/L			1601846	1812254	2
	Cr	52	0.604	ug/L	0.044	7	37631	64080	3
	Cr	53	2.890	ug/L	0 083	2	215	12064	4
	Mn	55	0.104	ug/L	0 003	3	1014	6481	4
>	Ge	72		ug/L			1246977	1326451	2
	Ni	60	0.279	ug/L	0 009	3	31	2343	2
	Ni	62	4.495	ug/L	0 497	11	357	5769	12
	Cu	63	1.215	ug/L	0 051	4	537	23658	6
	Cu	65	0.455	ug/L	0.013	2	179	4095	5
	Zn	66	1.095	ug/L	0 248	22	393	5967	17
	Zn	67	6.699	ug/L	0 226	3	61	5834	4
	Zn	68	0.579	ug/L	0.261	45	447	2592	33
	As	75	0.121	ug/L	0.004	3	42	662	4
	As-1	75	0.286	ug/L	0.035	12	18670	21269	3
	Se	82	-0.047	ug/L	0.004	9	24	-2	109
	Se	78	0.655	ug/L	0.113	17	18915	21027	3
	Y	89		ug/L			942555	1037039	3
	Kr	83		ug/L			364	628	0
>	In	115		ug/L			1213363	1260164	2
	Ag	107	0.009	ug/L	0.000	3	30	256	2
	Cd	111	0.016	ug/L	0 006	33	208	323	9
	Cd	114	0.180 –	ug/L	0 006	3	33	2870	1
	Sb	121	0.034	ug/L	0.002	6	19	630	8
	Sb	123	0.034	ug/L	0 003	9	12	480	9
	Ba	135	0.038	ug/L	0 002	5	8	203	6
	Ba	137	0.033	ug/L	0 001	4	12	299	2
>	Tb	159		ug/L			1299254	1400929	1
	Tl	205	0.004	ug/L	0.001	12	37	253	8
	Pb	208	0.045	ug/L	0 001	1	209	2901	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ICSAB
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:15:26
Number of Replicates: 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915 cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens.	Meas Intens.	Intens. RSD
	C	13		ug/L			57288	146412	3
	Cl	37		ug/L			5736874	17685102	2
>	Sc	45		ug/L			1601846	1905358	4
	Cr	52	19.568	ug/L	0 824	4	37631	776252	0
	Cr	53	22.078	ug/L	0 908	4	215	95084	1
	Mn	55	19.496	ug/L	0 611	3	1014	1048818	2
>	Ge	72		ug/L			1246977	1385745	3
	Ni	60	20.220	ug/L	0.227	1	31	175267	3
	Ni	62	23.349	ug/L	0.463	1	357	29571	3
	Cu	63	20.468	ug/L	0.701	3	537	406258	1
	Cu	65	20.158	ug/L	0.351	1	179	180681	2
	Zn	66	19.835	ug/L	0.599	3	393	105871	0
	Zn	67	23.518	ug/L	0.175	0	61	21230	4
	Zn	68	18.664	ug/L	0.944	5	447	72283	1
	As	75	17.548	ug/L	0.295	1	42	93476	2
	As-1	75	18.244	ug/L	0.409	2	18670	114412	2
	Se	82	-0.026	ug/L	0.019	74	24	11	107
	Se	78	0.260	ug/L	0 383	147	18915	21382	1
	Y	89		ug/L			942555	1076023	2
	Kr	83		ug/L			364	618	3
>	In	115		ug/L			1213363	1306784	0
	Ag	107	19.006	ug/L	0 377	1	30	494701	2
	Cd	111	18.667	ug/L	0.132	0	208	127056	0
	Cd	114	18.794	ug/L	0 102	0	33	307842	1
	Sb	121	0.024	ug/L	0 003	12	19	475	12
	Sb	123	0.026	ug/L	0 003	11	12	382	11
	Ba	135	0.044	ug/L	0 003	7	8	243	7
	Ba	137	0.036	ug/L	0.001	3	12	340	3
>	Tb	159		ug/L			1299254	1435875	1
	Tl	205	0.004	ug/L	0 001	24	37	251	22
	Pb	208	0.047	ug/L	0 001	1	209	3087	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR200
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:21:51
Number of Replicates 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C \NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			57288	70880	2
	Cl	37		ug/L			5736874	6558238	1
>	Sc	45		ug/L			1601846	1751227	1
	Cr	52	193.889	ug/L	1 872	0	37631	6711821	2
	Cr	53	197.855	ug/L	0 642	0	215	782211	1
	Mn	55	192.254	ug/L	5 005	2	1014	9502573	1
>	Ge	72		ug/L			1246977	1274849	1
	Ni	60	208.454	ug/L	7 886	3	31	1661494	2
	Ni	62	206.619	ug/L	5 550	2	357	237863	1
	Cu	63	204.235	ug/L	2.438	1	537	3726971	1
	Cu	65	204.351	ug/L	8 089	3	179	1683149	2
	Zn	66	200.894	ug/L	3.740	1	393	983379	1
	Zn	67	197.445	ug/L	3 949	2	61	163455	1
	Zn	68	197.940	ug/L	2 849	1	447	701596	0
	As	75	206.040	ug/L	4 923	2	42	1009337	0
	As-1	75	205.721	ug/L	3.686	1	18670	990983	0
	Se	82	204.869	ug/L	6 934	3	24	120429	1
	Se	78	202.808	ug/L	2 747	1	18915	288044	0
	Y	89		ug/L			942555	1008962	0
	Kr	83		ug/L			364	604	3
>	In	115		ug/L			1213363	1237504	1
	Ag	107	196.515	ug/L	5 828	2	30	4842181	1
	Cd	111	195.258	ug/L	2 699	1	208	1256437	0
	Cd	114	202.681	ug/L	1 739	0	33	3143474	0
	Sb	121	205.017	ug/L	2.580	1	19	3632492	1
	Sb	123	204.833	ug/L	2 271	1	12	2782878	0
	Ba	135	205.958	ug/L	2.226	1	8	1030541	0
	Ba	137	205.432	ug/L	2.187	1	12	1771882	0
>	Tb	159		ug/L			1299254	1373987	0
	Tl	205	192.426	ug/L	0.696	0	37	8990495	1
	Pb	208	200.882	ug/L	2 770	1	209	11665498	0

ACS 6131

ICP-MS Quantitative Analysis - Summary Report

Sample ID: LR300
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:28:16
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File. C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			57288	68636	2
	Cl	37		ug/L			5736874	6414578	0
>	Sc	45		ug/L			1601846	1651181	1
	Cr	52	298.244	ug/L	5 277	1	37631	9711814	1
	Cr	53	295.109	ug/L	9 578	3	215	1099622	1
	Mn	55	289.939	ug/L	4.065	1	1014	13513001	1
>	Ge	72		ug/L			1246977	1228000	0
	Ni	60	304.774	ug/L	6.692	2	31	2340630	1
	Ni	62	308.792	ug/L	10.041	3	357	342299	2
	Cu	63	295.198	ug/L	7 408	2	537	5188689	2
	Cu	65	311.052	ug/L	6 801	2	179	2468596	1
	Zn	66	290.783	ug/L	8 280	2	393	1370971	2
	Zn	67	287.422	ug/L	7.077	2	61	229184	1
	Zn	68	290.993	ug/L	1 160	0	447	993441	0
	As	75	303.615	ug/L	2 900	0	42	1433073	1
	As-1	75	303.487	ug/L	2 685	0	18670	1399769	1
	Se	82	293.655	ug/L	1.602	0	24	166325	0
	Se	78	290.817	ug/L	2 547	0	18915	389813	0
	Y	89		ug/L			942555	956437	0
	Kr	83		ug/L			364	735	2
>	In	115		ug/L			1213363	1181362	1
	Ag	107	286.911	ug/L	1 056	0	30	6750105	1
	Cd	111	290.768	ug/L	2 570	0	208	1786076	0
	Cd	114	298.708	ug/L	3 968	1	33	4422274	0
	Sb	121	307.284	ug/L	4 176	1	19	5196889	0
	Sb	123	304.183	ug/L	6 723	2	12	3944952	1
	Ba	135	316.842	ug/L	7.649	2	8	1513217	1
	Ba	137	329.330	ug/L	3 730	1	12	2711600	0
>	Tb	159		ug/L			1299254	1345852	1
	Tl	205	279.704	ug/L	1.978	0	37	12799877	0
	Pb	208	290.401	ug/L	4.167	1	209	16518347	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B1
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:34:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			57288	67530	1
	Cl	37		ug/L			5736874	6069022	4
>	Sc	45		ug/L			1601846	1654739	2
	Cr	52	0.051	ug/L	0 061	119	37631	40519	3
	Cr	53	0.032	ug/L	0.002	4	215	342	0
	Mn	55	0.017	ug/L	0 004	22	1014	1849	8
>	Ge	72		ug/L			1246977	1320044	1
	Ni	60	0.097	ug/L	0 004	4	31	833	2
	Ni	62	1.132	ug/L	0 093	8	357	1724	5
	Cu	63	0.087	ug/L	0.002	2	537	2210	3
	Cu	65	0.042	ug/L	0 003	6	179	549	2
	Zn	66	2.601	ug/L	0 143	5	393	13588	4
	Zn	67	2.269	ug/L	0 083	3	61	2009	4
	Zn	68	2.555	ug/L	0.083	3	447	9842	1
	As	75	-0.001	ug/L	0.006	1056	42	41	80
	As-1	75	-0.081	ug/L	0.050	61	18670	19364	0
	Se	82	0.004	ug/L	0.010	242	24	28	18
	Se	78	-0.291	ug/L	0.196	67	18915	19621	0
	Y	89		ug/L			942555	986946	3
	Kr	83		ug/L			364	369	5
>	In	115		ug/L			1213363	1238192	1
	Ag	107	0.018	ug/L	0 018	98	30	478	90
	Cd	111	0.017	ug/L	0.014	85	208	319	27
	Cd	114	0.012	ug/L	0 012	104	33	216	87
	Sb	121	0.183	ug/L	0 013	6	19	3265	5
	Sb	123	0.180	ug/L	0.009	5	12	2458	4
	Ba	135	0.032	ug/L	0 007	21	8	167	19
	Ba	137	0.031	ug/L	0 007	21	12	277	19
>	Tb	159		ug/L			1299254	1327059	0
	Tl	205	0.042	ug/L	0 002	4	37	1924	3
	Pb	208	0.027	ug/L	0.004	16	209	1740	13

AGC 01333

ICP-MS Quantitative Analysis - Summary Report

Sample ID: B2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:40:18
Number of Replicates: 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	63962	2
	Cl	37		ug/L			5736874	6036553	1
>	Sc	45		ug/L			1601846	1645862	0
	Cr	52	0.047	ug/L	0.024	51	37631	40197	1
	Cr	53	0.026	ug/L	0 010	38	215	318	11
	Mn	55	0.017	ug/L	0 004	25	1014	1842	10
>	Ge	72		ug/L			1246977	1307156	0
	Ni	60	0.096	ug/L	0 004	3	31	820	3
	Ni	62	0.923	ug/L	0 074	8	357	1462	5
	Cu	63	0.071	ug/L	0 002	2	537	1892	2
	Cu	65	0.038	ug/L	0 007	19	179	505	12
	Zn	66	2.587	ug/L	0 053	2	393	13395	2
	Zn	67	2.214	ug/L	0 024	1	61	1943	1
	Zn	68	2.482	ug/L	0 088	3	447	9482	2
	As	75	-0.002	ug/L	0.009	491	42	35	126
	As-1	75	-0.055	ug/L	0 036	64	18670	19302	0
	Se	82	0.007	ug/L	0 012	164	24	30	24
	Se	78	-0.197	ug/L	0.142	72	18915	19560	0
	Y	89		ug/L			942555	972734	1
	Kr	83		ug/L			364	356	5
>	In	115		ug/L			1213363	1240151	1
	Ag	107	0.003	ug/L	0.001	22	30	117	16
	Cd	111	0.003	ug/L	0 002	60	208	231	6
	Cd	114	0.003	ug/L	0 000	4	33	75	1
	Sb	121	0.059	ug/L	0.004	6	19	1060	6
	Sb	123	0.060	ug/L	0 004	6	12	826	5
	Ba	135	0.024	ug/L	0.003	13	8	130	11
	Ba	137	0.027	ug/L	0 002	7	12	246	7
>	Tb	159		ug/L			1299254	1340708	1
	Tl	205	0.015	ug/L	0 000	2	37	736	1
	Pb	208	0.023	ug/L	0.001	3	209	1496	2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ~~CCV2~~ 272222 HS-29-15
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:45:55
Number of Replicates. 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C \NexION Data\Conditions\Default.dac
Calibration File C \NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			57288	62817	4
	Cl	37		ug/L			5736874	6304939	0
>	Sc	45		ug/L			1601846	1642402	2
	Cr	52	49.954	ug/L	1 307	2	37631	1649738	1
	Cr	53	49.315	ug/L	0 334	0	215	183016	2
	Mn	55	50.399	ug/L	0 644	1	1014	2337204	1
>	Ge	72		ug/L			1246977	1297890	0
	Ni	60	50.220	ug/L	0.852	1	31	407688	1
	Ni	62	50.510	ug/L	0 424	0	357	59497	0
	Cu	63	49.676	ug/L	0 502	1	537	923394	1
	Cu	65	50.494	ug/L	1.283	2	179	423768	2
	Zn	66	51.112	ug/L	0 383	0	393	255059	0
	Zn	67	50.061	ug/L	0.838	1	61	42248	1
	Zn	68	50.922	ug/L	0 640	1	447	184133	1
	As	75	49.751	ug/L	0 065	0	42	248220	0
	As-1	75	49.484	ug/L	0.267	0	18670	257484	0
	Se	82	50.896	ug/L	0 731	1	24	30489	1
	Se	78	49.877	ug/L	0 288	0	18915	86976	0
	Y	89		ug/L			942555	1007976	1
	Kr	83		ug/L			364	390	0
>	In	115		ug/L			1213363	1245241	0
	Ag	107	49.270	ug/L	0 661	1	30	1221845	0
	Cd	111	48.956	ug/L	0 196	0	208	317180	0
	Cd	114	49.209	ug/L	0.089	0	33	768038	0
	Sb	121	49.665	ug/L	0.521	1	19	885468	0
	Sb	123	50.000	ug/L	0.785	1	12	683581	1
	Ba	135	48.652	ug/L	0.326	0	8	244990	1
	Ba	137	48.518	ug/L	0.151	0	12	421139	0
>	Tb	159		ug/L			1299254	1346110	1
	Tl	205	49.950	ug/L	0.214	0	37	2286319	0
	Pb	208	48.630	ug/L	0.493	1	209	2766942	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: ~~CCB2~~ ZZZZZZ at 5-29-15
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:52:21
Number of Replicates: 3
Method File C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915 cal

Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens	Meas. Intens.	Intens. RSD
C	13		ug/L			57288	61885	3
Cl	37		ug/L			5736874	5986660	4
> Sc	45		ug/L			1601846	1617855	0
Cr	52	0.035	ug/L	0.012	36	37631	39103	0
Cr	53	0.008	ug/L	0.006	74	215	246	8
Mn	55	-0.002	ug/L	0.001	33	1014	940	2
> Ge	72		ug/L			1246977	1269048	1
Ni	60	0.001	ug/L	0 000	27	31	38	5
Ni	62	0.577	ug/L	0 031	5	357	1023	2
Cu	63	0.020	ug/L	0 001	7	537	918	1
Cu	65	-0.004	ug/L	0 002	33	179	146	7
Zn	66	0.109	ug/L	0.016	15	393	933	8
Zn	67	0.086	ug/L	0 003	3	61	132	3
Zn	68	0.108	ug/L	0 015	13	447	835	6
As	75	-0.014	ug/L	0 006	45	42	-26	119
As-1	75	0.044	ug/L	0 077	174	18670	19206	0
Se	82	-0.023	ug/L	0 014	62	24	11	71
Se	78	0.186	ug/L	0 262	141	18915	19493	0
Y	89		ug/L			942555	952156	0
Kr	83		ug/L			364	375	8
> In	115		ug/L			1213363	1239924	0
Ag	107	0.002	ug/L	0 000	25	30	78	15
Cd	111	0.003	ug/L	0.003	107	208	229	7
Cd	114	0.001	ug/L	0 000	2	33	54	1
Sb	121	0.098	ug/L	0 001	0	19	1756	0
Sb	123	0.097	ug/L	0.002	1	12	1333	1
Ba	135	0.001	ug/L	0 001	63	8	13	22
Ba	137	0.002	ug/L	0 000	24	12	25	12
> Tb	159		ug/L			1299254	1306435	2
Tl	205	0.008	ug/L	0 001	11	37	410	12
Pb	208	0.002	ug/L	0.000	12	209	340	6

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 10:58:42
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File. C:\NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	64747	0
	Cl	37		ug/L			5736874	6190025	1
>	Sc	45		ug/L			1601846	1638624	2
	Cr	52	49.109	ug/L	0.926	1	37631	1619323	2
	Cr	53	49.631	ug/L	0 292	0	215	183753	1
	Mn	55	49.999	ug/L	0 820	1	1014	2313109	0
>	Ge	72		ug/L			1246977	1290927	2
	Ni	60	50.887	ug/L	0.980	1	31	410776	0
	Ni	62	49.824	ug/L	0.498	0	357	58370	1
	Cu	63	49.021	ug/L	1.126	2	537	906022	0
	Cu	65	50.737	ug/L	1.294	2	179	423347	1
	Zn	66	49.932	ug/L	1.457	2	393	247733	0
	Zn	67	51.947	ug/L	0 764	1	61	43592	1
	Zn	68	51.721	ug/L	1.636	3	447	185937	2
	As	75	50.179	ug/L	1.231	2	42	248919	0
	As-1	75	49.994	ug/L	1.416	2	18670	258432	0
	Se	82	50.902	ug/L	0 971	1	24	30322	1
	Se	78	50.116	ug/L	1 540	3	18915	86796	0
	Y	89		ug/L			942555	991187	2
	Kr	83		ug/L			364	386	4
>	In	115		ug/L			1213363	1239768	0
	Ag	107	47.822	ug/L	0.700	1	30	1180687	0
	Cd	111	48.803	ug/L	0 378	0	208	314787	0
	Cd	114	49.732	ug/L	0 294	0	33	772796	1
	Sb	121	49.830	ug/L	0 909	1	19	884434	0
	Sb	123	49.368	ug/L	0 547	1	12	671965	0
	Ba	135	48.492	ug/L	0 227	0	8	243110	1
	Ba	137	49.045	ug/L	0 363	0	12	423827	0
>	Tb	159		ug/L			1299254	1344803	0
	Tl	205	50.066	ug/L	0.788	1	37	2289259	0
	Pb	208	48.462	ug/L	0 539	1	209	2754731	0

ACCUTEST

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB2
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 11:05:08
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	62335	3
	Cl	37		ug/L			5736874	6076146	1
>	Sc	45		ug/L			1601846	1599703	0
	Cr	52	0.039	ug/L	0.010	26	37631	38796	1
	Cr	53	0.003	ug/L	0.003	81	215	227	5
	Mn	55	-0.003	ug/L	0.001	30	1014	884	3
>	Ge	72		ug/L			1246977	1278836	1
	Ni	60	0.001	ug/L	0.001	54	31	41	13
	Ni	62	0.386	ug/L	0.010	2	357	811	1
	Cu	63	0.016	ug/L	0.000	1	537	843	1
	Cu	65	-0.002	ug/L	0 003	135	179	167	14
	Zn	66	0.041	ug/L	0 008	19	393	602	5
	Zn	67	0.028	ug/L	0.003	11	61	86	2
	Zn	68	0.046	ug/L	0.008	16	447	622	3
	As	75	-0.005	ug/L	0.005	98	42	20	110
	As-1	75	0.009	ug/L	0.048	538	18670	19188	0
	Se	82	-0.003	ug/L	0.017	551	24	23	41
	Se	78	0.041	ug/L	0 179	436	18915	19451	0
	Y	89		ug/L			942555	953278	0
	Kr	83		ug/L			364	365	8
>	In	115		ug/L			1213363	1239909	1
	Ag	107	0.002	ug/L	0 000	25	30	68	15
	Cd	111	0.003	ug/L	0 002	56	208	233	3
	Cd	114	0.001	ug/L	0 001	63	33	50	19
	Sb	121	0.099	ug/L	0 001	1	19	1771	0
	Sb	123	0.096	ug/L	0.000	0	12	1321	1
	Ba	135	0.001	ug/L	0 000	55	8	11	13
	Ba	137	0.000	ug/L	0 000	65	12	16	16
>	Tb	159		ug/L			1299254	1315714	0
	Tl	205	0.007	ug/L	0.001	9	37	349	9
	Pb	208	0.001	ug/L	0.000	15	209	284	3

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP4 MB1 SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, May 29, 2015 11:12:09
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens.	Meas Intens	Intens RSD
	C	13		ug/L			57288	68663	1
	Cl	37		ug/L			5736874	6028940	2
>	Sc	45		ug/L			1601846	1639598	2
	Cr	52	↓ 0.107	ug/L	0 065	60	37631	41940	2
	Cr	53	0.012	ug/L	0.007	54	215	265	7
	Mn	55	0.007	ug/L	0 002	30	1014	1379	8
>	Ge	72		ug/L			1246977	1296272	1
	Ni	60	0.008	ug/L	0 002	25	31	99	19
	Ni	62	0.309	ug/L	0 010	3	357	731	0
	Cu	63	↓ 0.018	ug/L	0 001	5	537	890	3
	Cu	65	0.004	ug/L	0 003	78	179	219	13
	Zn	66	0.613	ug/L	0 001	0	393	3459	1
	Zn	67	0.549	ug/L	0 016	2	61	525	1
	Zn	68	0.604	ug/L	0 004	0	447	2642	2
	As	75	↓ -0.005	ug/L	0.002	34	42	20	39
	As-1	75	0.023	ug/L	0 070	304	18670	19515	0
	Se	82	↓ 0.010	ug/L	0.023	220	24	32	43
	Se	78	0.097	ug/L	0 235	243	18915	19790	0
	Y	89		ug/L			942555	995633	0
	Kr	83		ug/L			364	354	3
>	In	115		ug/L			1213363	1271751	1
	Ag	107	↓ 0.006	ug/L	0.009	148	30	191	124
	Cd	111	0.005	ug/L	0.011	203	208	255	30
	Cd	114	0.006	ug/L	0.008	141	33	125	103
	Sb	121	0.039	ug/L	0.003	8	19	740	9
	Sb	123	0.041	ug/L	0.004	9	12	580	11
	Ba	135	↓ 0.008	ug/L	0.003	43	8	49	38
	Ba	137	0.009	ug/L	0.005	53	12	91	47
>	Tb	159		ug/L			1299254	1335970	1
	Tl	205	0.006	ug/L	0.004	60	37	312	54
	Pb	208	↓ 0.008	ug/L	0 003	35	209	647	24

AGC 81369

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 L REN
Sample Dil Factor: 2
Comments:
Sample Date/Time: Friday, May 29, 2015 11:15:50
Number of Replicates. 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052915 cal

Zn

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			57288	74743	0
	Cl	37		ug/L			5736874	5993238	0
>	Sc	45		ug/L			1601846	1739550	0
	Cr	52	0.106	ug/L	0 036	33	37631	44496	2
	Cr	53	0.056	ug/L	0 005	8	215	453	4
	Mn	55	0.113	ug/L	0.000	0	1014	6646	0
>	Ge	72		ug/L			1246977	1339391	0
	Ni	60	0.015	ug/L	0.003	19	31	161	15
	Ni	62	0.251	ug/L	0 020	8	357	686	4
	Cu	63	0.037	ug/L	0.003	7	537	1281	4
	Cu	65	0.024	ug/L	0 001	5	179	402	2
	Zn	66	3.164	ug/L	0.057	1	393	16689	1
	Zn	67	2.823	ug/L	0.114	4	61	2520	3
	Zn	68	3.039	ug/L	0.024	0	447	11792	0
	As	75	-0.015	ug/L	0.007	48	42	-32	115
	As-1	75	-0.031	ug/L	0.038	123	18670	19901	0
	Se	82	-0.018	ug/L	0 022	121	24	15	85
	Se	78	-0.082	ug/L	0 150	181	18915	20202	0
	Y	89		ug/L			942555	1036974	1
	Kr	83		ug/L			364	375	6
>	In	115		ug/L			1213363	1291069	0
	Ag	107	0.001	ug/L	0 001	41	30	70	22
	Cd	111	0.003	ug/L	0.002	86	208	239	6
	Cd	114	0.002	ug/L	0 001	29	33	65	13
	Sb	121	0.028	ug/L	0 000	0	19	537	0
	Sb	123	0.027	ug/L	0.002	7	12	390	6
	Ba	135	0.024	ug/L	0 003	12	8	136	11
	Ba	137	0.024	ug/L	0.003	10	12	229	9
>	Tb	159		ug/L			1299254	1373043	1
	Tl	205	0.005	ug/L	0.001	13	37	285	13
	Pb	208	0.032	ug/L	0.001	2	209	2087	3

AGC9 : 81978

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP4 A SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, May 29, 2015 11:19:32
Number of Replicates. 3
Method File. C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File. C.\NexION Data\System\052915.cal

Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas Intens	Intens RSD
C	13		ug/L			57288	80113	0
Cl	37		ug/L			5736874	6273142	2
> Sc	45		ug/L			1601846	1874707	1
Cr	52	26.663	ug/L	0 140	0	37631	1025960	1
Cr	53	27.282	ug/L	0 380	1	215	115669	0
Mn	55	281.479	ug/L	1.476	0	1014	14895616	0
> Ge	72		ug/L			1246977	1311016	1
Ni	60	30.147	ug/L	0 353	1	31	247209	0
Ni	62	32.623	ug/L	0 752	2	357	38943	1
Cu	63	55.385	ug/L	1 043	1	537	1039708	0
Cu	65	56.684	ug/L	0 559	0	179	480452	0
Zn	66	220.642	ug/L	2 087	0	393	1110749	0
Zn	67	204.931	ug/L	1 641	0	61	174497	1
Zn	68	216.060	ug/L	1 829	0	447	787605	1
As	75	3.738	ug/L	0 024	0	42	18878	0
As-1	75	3.754	ug/L	0.072	1	18670	37870	0
Se	82	0.182	ug/L	0 005	2	24	136	1
Se	78	-0.037	ug/L	0.197	536	18915	19834	0
Y	89		ug/L			942555	1524473	2
Kr	83		ug/L			364	711	2
> In	115		ug/L			1213363	1252881	0
Ag	107	0.102	ug/L	0.004	3	30	2566	2
Cd	111	1.476	ug/L	0.035	2	208	9826	1
Cd	114	1.292	ug/L	0.024	1	33	20321	2
Sb	121	0.063	ug/L	0.002	2	19	1143	1
Sb	123	0.066	ug/L	0.006	9	12	914	8
Ba	135	101.430	ug/L	1.002	0	8	513853	0
Ba	137	101.767	ug/L	0.292	0	12	888718	0
> Tb	159		ug/L			1299254	1400266	1
Tl	205	0.055	ug/L	0.001	2	37	2656	2
Pb	208	22.362	ug/L	0 336	1	209	1323543	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 B SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Friday, May 29, 2015 11:23:13
Number of Replicates 3
Method File: C:\NexION Data\Method\200 8GFA7+++.mth
Tuning File: C.\NexIONData\MassCal\Default.tun
Optimization File C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052915.cal

Cr Zn Pb

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			57288	72541	4
	Cl	37		ug/L			5736874	6670144	1
>	Sc	45		ug/L			1601846	1629169	2
	Cr	52	239.513	ug/L	4.921	2	37631	7700881	1
	Cr	53	243.592	ug/L	5.390	2	215	895524	0
	Mn	55	1610.449	ug/L	11.455	0	1014	74050771	2
>	Ge	72		ug/L			1246977	1229518	0
	Ni	60	150.803	ug/L	5 446	3	31	1159537	3
	Ni	62	151.240	ug/L	2 210	1	357	168064	1
	Cu	63	80.460	ug/L	0 788	0	537	1416570	1
	Cu	65	83.616	ug/L	2.002	2	179	664533	1
	Zn	66	205.374	ug/L	7 225	3	393	969719	3
	Zn	67	181.673	ug/L	2 591	1	61	145074	0
	Zn	68	196.005	ug/L	2.485	1	447	670103	0
	As	75	7.632	ug/L	0.139	1	42	36103	1
	As-1	75	7.895	ug/L	0 144	1	18670	54383	0
	Se	82	0.072	ug/L	0 007	9	24	65	5
	Se	78	0.028	ug/L	0 085	303	18915	18686	0
	Y	89		ug/L			942555	1011859	0
	Kr	83		ug/L			364	383	1
>	In	115		ug/L			1213363	1217990	0
	Ag	107	0.217	ug/L	0.006	2	30	5287	2
	Cd	111	1.744	ug/L	0 023	1	208	11255	1
	Cd	114	1.702	ug/L	0 010	0	33	26011	0
	Sb	121	0.183	ug/L	0.004	2	19	3206	2
	Sb	123	0.189	ug/L	0.001	0	12	2537	1
	Ba	135	24.504	ug/L	0 108	0	8	120692	0
	Ba	137	24.828	ug/L	0.476	1	12	210790	1
>	Tb	159		ug/L			1299254	1369362	0
	Tl	205	0.023	ug/L	0 001	5	37	1092	5
	Pb	208	207.156	ug/L	2 406	1	209	11989805	0

AGC9 . B1ST2

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 F SWN
Sample Dil Factor: 50
Comments:
Sample Date/Time: Friday, May 29, 2015 11:26:54
Number of Replicates. 3
Method File: C:\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default.dac
Calibration File. C:\NexIONData\System\052915 cal

CC

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens	Intens RSD
	C	13		ug/L			57288	65743	3
	Cl	37		ug/L			5736874	6268706	0
>	Sc	45		ug/L			1601846	1689754	2
	Cr	52	**195.191**	ug/L	5 113	2	37631	6515951	0
	Cr	53	**196.344**	ug/L	6 297	3	215	748590	0
	Mn	55	**1263.153**	ug/L	49.967	3	1014	60209661	1
>	Ge	72		ug/L			1246977	1248298	1
	Ni	60	**23.975**	ug/L	0.670	2	31	187154	0
	Ni	62	**24.576**	ug/L	1.091	4	357	28011	2
	Cu	63	**48.121**	ug/L	1.071	2	537	860180	1
	Cu	65	**50.066**	ug/L	1.917	3	179	403908	1
	Zn	66	**76.969**	ug/L	0.440	0	393	369209	1
	Zn	67	**71.251**	ug/L	1.895	2	61	57803	2
	Zn	68	**75.162**	ug/L	1.483	1	447	261114	0
	As	75	**9.312**	ug/L	0 210	2	42	44706	0
	As-1	75	**9.678**	ug/L	0.283	2	18670	63450	0
	Se	82	**0.149**	ug/L	0 023	15	24	110	10
	Se	78	**0.337**	ug/L	0 277	82	18915	19368	0
	Y	89		ug/L			942555	1186757	1
	Kr	83		ug/L			364	515	5
>	In	115		ug/L			1213363	1236328	0
	Ag	107	**0.362**	ug/L	0 003	0	30	8943	1
	Cd	111	**0.515**	ug/L	0 021	4	208	3519	3
	Cd	114	**0.258**	ug/L	0 004	1	33	4030	0
	Sb	121	**0.318**	ug/L	0 004	1	19	5651	0
	Sb	123	**0.318**	ug/L	0 005	1	12	4335	1
	Ba	135	**36.922**	ug/L	0.220	0	8	184585	0
	Ba	137	**36.640**	ug/L	0 113	0	12	315755	0
>	Tb	159		ug/L			1299254	1353984	0
	Tl	205	**0.019**	ug/L	0 001	3	37	907	3
	Pb	208	**53.610**	ug/L	0 350	0	209	3068252	0

AGC9 DATA

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 I SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, May 29, 2015 11:30:36
Number of Replicates. 3
Method File: C.\NexION Data\Method\200.8GFA7+++ mth
Tuning File: C \NexION Data\MassCal\Default.tun
Optimization File C:\NexION Data\Conditions\Default.dac
Calibration File: C.\NexION Data\System\052915.cal

Cr Pb Zn

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas. Intens	Intens RSD
	C	13		ug/L			57288	63534	1
	Cl	37		ug/L			5736874	6300713	1
>	Sc	45		ug/L			1601846	1608724	1
	Cr	52	63.594	ug/L	1 540	2	37631	2047625	3
	Cr	53	64.202	ug/L	0 813	1	215	233339	2
	Mn	55	526.946	ug/L	13 794	2	1014	23928196	2
>	Ge	72		ug/L			1246977	1273218	2
	Ni	60	33.268	ug/L	0 708	2	31	264876	0
	Ni	62	33.332	ug/L	0 841	2	357	38626	0
	Cu	63	27.520	ug/L	1 114	4	537	501764	1
	Cu	65	27.352	ug/L	0 868	3	179	225151	0
	Zn	66	204.739	ug/L	0 282	0	393	1001092	2
	Zn	67	178.328	ug/L	2 862	1	61	147445	1
	Zn	68	190.548	ug/L	3 558	1	447	674549	2
	As	75	2.079	ug/L	0.031	1	42	10213	0
	As-1	75	2.147	ug/L	0.132	6	18670	29186	0
	Se	82	0.037	ug/L	0 010	27	24	47	11
	Se	78	0.012	ug/L	0.366	3003	18915	19322	0
	Y	89		ug/L			942555	986415	1
	Kr	83		ug/L			364	373	3
>	In	115		ug/L			1213363	1254683	3
	Ag	107	0.104	ug/L	0.001	0	30	2622	3
	Cd	111	0.495	ug/L	0.014	2	208	3440	0
	Cd	114	0.423	ug/L	0.011	2	33	6686	1
	Sb	121	0.126	ug/L	0.006	4	19	2286	1
	Sb	123	0.127	ug/L	0.007	5	12	1761	3
	Ba	135	24.200	ug/L	0.455	1	8	122738	1
	Ba	137	24.603	ug/L	0.235	0	12	215143	2
>	Tb	159		ug/L			1299254	1327782	0
	Tl	205	0.004	ug/L	0.000	9	37	237	7
	Pb	208	197.291	ug/L	1.236	0	209	11072345	0

AGC9 · 052915

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 HDUP SWN
Sample Dil Factor: ~~90~~ 200 on 5-29-15
Comments:
Sample Date/Time: Friday, May 29, 2015 11:34:17
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default dac
Calibration File: C:\NexION Data\System\052915.cal

Cr Cu Zn Ba Pb

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			57288	59380	2
	Cl	37		ug/L			5736874	6188163	2
>	Sc	45		ug/L			1601846	1636518	1
	Cr	52	**61.609**	ug/L	1.317	2	37631	2018953	1
	Cr	53	**60.726**	ug/L	0.494	0	215	224518	1
	Mn	55	**1288.652**	ug/L	5.405	0	1014	59527355	0
>	Ge	72		ug/L			1246977	1279929	1
	Ni	60	**10.567**	ug/L	0 332	3	31	84617	3
	Ni	62	**11.362**	ug/L	0 220	1	357	13480	1
	Cu	63	**37.198**	ug/L	1.287	3	537	681765	1
	Cu	65	**38.293**	ug/L	0 733	1	179	316918	1
	Zn	66	**138.230**	ug/L	1 788	1	393	679536	1
	Zn	67	**126.316**	ug/L	1.617	1	61	105015	0
	Zn	68	**136.857**	ug/L	2 872	2	447	487150	1
	As	75	**2.041**	ug/L	0.016	0	42	10084	1
	As-1	75	**2.047**	ug/L	0 090	4	18670	28870	0
	Se	82	**0.024**	ug/L	0.014	57	24	40	22
	Se	78	**-0.211**	ug/L	0 280	133	18915	19130	0
	Y	89		ug/L			942555	994749	1
	Kr	83		ug/L			364	389	4
>	In	115		ug/L			1213363	1232472	1
	Ag	107	**0.054**	ug/L	0 002	3	30	1350	2
	Cd	111	**0.471**	ug/L	0 007	1	208	3231	2
	Cd	114	**0.392**	ug/L	0 008	2	33	6086	1
	Sb	121	**0.255**	ug/L	0 006	2	19	4512	1
	Sb	123	**0.257**	ug/L	0.008	3	12	3489	4
	Ba	135	**34.272**	ug/L	0 694	2	8	170787	1
	Ba	137	**34.290**	ug/L	0 292	0	12	294566	1
>	Tb	159		ug/L			1299254	1299965	1
	Tl	205	**0.006**	ug/L	0 000	1	37	292	0
	Pb	208	**40.517**	ug/L	0.138	0	209	2226473	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 H SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, May 29, 2015 11:37:58
Number of Replicates: 3
Method File: C \NexION Data\Method\200.8GFA7+++ mth
Tuning File. C.\NexIONData\MassCal\Default.tun
Optimization File. C:\NexIONData\Conditions\Default.dac
Calibration File: C:\NexIONData\System\052915.cal

Cr Cu Zn Ba Pb

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc. RSD	Blank Intens.	Meas. Intens.	Intens. RSD
	C	13		ug/L			57288	62149	4
	Cl	37		ug/L			5736874	5975492	1
>	Sc	45		ug/L			1601846	1563312	1
	Cr	52	33.368	ug/L	0.255	0	37631	1061397	0
	Cr	53	33.490	ug/L	0.551	1	215	118371	2
	Mn	55	957.668	ug/L	17 518	1	1014	42255381	0
>	Ge	72		ug/L			1246977	1279313	1
	Ni	60	7.705	ug/L	0 112	1	31	61687	2
	Ni	62	8.347	ug/L	0 068	0	357	9996	0
	Cu	63	27.049	ug/L	0 289	1	537	495889	1
	Cu	65	28.102	ug/L	0 394	1	179	232534	1
	Zn	66	118.861	ug/L	2.450	2	393	584057	1
	Zn	67	106.000	ug/L	0 587	0	61	88102	0
	Zn	68	114.350	ug/L	1 561	1	447	406959	0
	As	75	1.941	ug/L	0 024	1	42	9589	1
	As-1	75	1.923	ug/L	0 041	2	18670	28271	0
	Se	82	0.031	ug/L	0 016	51	24	43	22
	Se	78	-0.287	ug/L	0.126	43	18915	19023	0
	Y	89		ug/L			942555	993635	1
	Kr	83		ug/L			364	372	2
>	In	115		ug/L			1213363	1212670	0
	Ag	107	0.044	ug/L	0 002	5	30	1085	5
	Cd	111	0.367	ug/L	0 010	2	208	2524	2
	Cd	114	0.304	ug/L	0 009	3	33	4649	2
	Sb	121	0.250	ug/L	0.002	0	19	4359	0
	Sb	123	0.255	ug/L	0.001	0	12	3402	0
	Ba	135	24.222	ug/L	0 154	0	8	118781	0
	Ba	137	24.486	ug/L	0 315	1	12	206989	1
>	Tb	159		ug/L			1299254	1286521	0
	Tl	205	0.005	ug/L	0 000	8	37	275	7
	Pb	208	34.532	ug/L	0 188	0	209	1878030	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGC9 HSPK SWN
Sample Dil Factor: 200
Comments:
Sample Date/Time: Friday, May 29, 2015 11:41:39
Number of Replicates: 3
Method File. C.\NexIONData\Method\200.8GFA7+++.mth
Tuning File: C:\NexIONData\MassCal\Default.tun
Optimization File: C:\NexIONData\Conditions\Default dac
Calibration File: C:\NexIONData\System\052915 cal

Cr Cu Zn Ba Pb

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc. RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			57288	62106	6
	Cl	37		ug/L			5736874	6018485	2
>	Sc	45		ug/L			1601846	1603158	1
	Cr	52	**48.155**	ug/L	1 488	3	37631	1553873	2
	Cr	53	**49.675**	ug/L	1.516	3	215	179906	1
	Mn	55	**1138.901**	ug/L	11 729	1	1014	51534411	0
>	Ge	72		ug/L			1246977	1265454	1
	Ni	60	**6.803**	ug/L	0 152	2	31	53871	2
	Ni	62	**7.341**	ug/L	0 155	2	357	8738	0
	Cu	63	**19.017**	ug/L	0 599	3	537	344878	1
	Cu	65	**19.798**	ug/L	0 501	2	179	162059	1
	Zn	66	**119.875**	ug/L	4.151	3	393	582527	2
	Zn	67	**110.212**	ug/L	1 958	1	61	90596	0
	Zn	68	**116.287**	ug/L	2 732	2	447	409282	0
	As	75	**4.702**	ug/L	0 090	1	42	22907	1
	As-1	75	**4.523**	ug/L	0 136	2	18670	40159	1
	Se	82	**8.233**	ug/L	0 184	2	24	4829	0
	Se	78	**8.041**	ug/L	0 303	3	18915	29768	0
	Y	89		ug/L			942555	1007415	0
	Kr	83		ug/L			364	394	3
>	In	115		ug/L			1213363	1219494	0
	Ag	107	**2.515**	ug/L	0 025	0	30	61105	1
	Cd	111	**2.932**	ug/L	0 014	0	208	18797	0
	Cd	114	**2.856**	ug/L	0 025	0	33	43676	0
	Sb	121	**0.350**	ug/L	0 007	1	19	6133	2
	Sb	123	**0.357**	ug/L	0 004	1	12	4787	0
	Ba	135	**35.748**	ug/L	0 508	1	8	176291	1
	Ba	137	**35.849**	ug/L	0 553	1	12	304713	1
>	Tb	159		ug/L			1299254	1285811	2
	Tl	205	**2.444**	ug/L	0 040	1	37	106869	1
	Pb	208	**37.835**	ug/L	1 164	3	209	2055593	1

AGC9 SWN

ICP-MS Quantitative Analysis - Summary Report

Sample ID: AGP4 MB1SPK SWN
Sample Dil Factor: 20
Comments:
Sample Date/Time: Friday, May 29, 2015 11:45:20
Number of Replicates 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

No As

	Analyte	Mass	Conc. Mean	Units	Conc. SD	Conc RSD	Blank Intens	Meas Intens	Intens. RSD
	C	13		ug/L			57288	64732	4
	Cl	37		ug/L			5736874	6026043	3
>	Sc	45		ug/L			1601846	1584283	1
	Cr	52	25.291	ug/L	0 588	2	37631	824418	2
	Cr	53	25.447	ug/L	0.754	2	215	91191	2
	Mn	55	25.425	ug/L	0 401	1	1014	1137943	1
>	Ge	72		ug/L			1246977	1249614	2
	Ni	60	26.940	ug/L	0 450	1	31	210557	1
	Ni	62	26.598	ug/L	0 747	2	357	30323	1
	Cu	63	26.374	ug/L	0.350	1	537	472253	2
	Cu	65	27.076	ug/L	0 599	2	179	218785	0
	Zn	66	85.460	ug/L	3 341	3	393	410113	1
	Zn	67	76.220	ug/L	1 571	2	61	61900	3
	Zn	68	83.269	ug/L	3 039	3	447	289478	2
	As	75	31.498	ug/L	0.985	3	42	151257	0
	As-1	75	29.367	ug/L	0 844	2	18670	154676	0
	Se	82	82.228	ug/L	1 657	2	24	47399	0
	Se	78	80.943	ug/L	1.275	1	18915	124069	1
	Y	89		ug/L			942555	944550	1
	Kr	83		ug/L			364	355	1
>	In	115		ug/L			1213363	1205450	0
	Ag	107	25.676	ug/L	0 253	0	30	616428	0
	Cd	111	24.731	ug/L	0.171	0	208	155211	0
	Cd	114	25.225	ug/L	0 081	0	33	381134	0
	Sb	121	0.008	ug/L	0 001	8	19	163	6
	Sb	123	0.008	ug/L	0.001	12	12	118	10
	Ba	135	25.294	ug/L	0 226	0	8	123298	0
	Ba	137	25.276	ug/L	0 148	0	12	212382	0
>	Tb	159		ug/L			1299254	1271636	0
	Tl	205	25.105	ug/L	0 247	0	37	1085511	0
	Pb	208	26.281	ug/L	0 414	1	209	1412679	1

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCV3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 11:50:08
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++ mth
Tuning File. C.\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915.cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens	Intens RSD
	C	13		ug/L			57288	60038	2
	Cl	37		ug/L			5736874	5876336	2
>	Sc	45		ug/L			1601846	1570683	1
	Cr	52	49.172	ug/L	0 725	1	37631	1553830	0
	Cr	53	48.973	ug/L	0 731	1	215	173782	0
	Mn	55	49.758	ug/L	1 783	3	1014	2206053	1
>	Ge	72		ug/L			1246977	1243692	0
	Ni	60	48.715	ug/L	1 233	2	31	378957	2
	Ni	62	49.933	ug/L	0.898	1	357	56362	1
	Cu	63	49.097	ug/L	0 436	0	537	874510	0
	Cu	65	50.700	ug/L	0.873	1	179	407706	1
	Zn	66	51.032	ug/L	0 593	1	393	244018	0
	Zn	67	50.660	ug/L	0 781	1	61	40965	1
	Zn	68	52.192	ug/L	1 027	1	447	180812	1
	As	75	49.753	ug/L	0 295	0	42	237863	0
	As-1	75	49.809	ug/L	0 464	0	18670	248225	0
	Se	82	49.897	ug/L	0 337	0	24	28643	0
	Se	78	49.875	ug/L	0 616	1	18915	83337	0
	Y	89		ug/L			942555	959318	0
	Kr	83		ug/L			364	334	1
>	In	115		ug/L			1213363	1190576	0
	Ag	107	48.176	ug/L	1.118	2	30	1142214	1
	Cd	111	49.010	ug/L	0.972	1	208	303556	1
	Cd	114	49.238	ug/L	0.427	0	33	734718	0
	Sb	121	50.457	ug/L	0 576	1	19	860080	0
	Sb	123	49.926	ug/L	0.133	0	12	652633	0
	Ba	135	48.663	ug/L	0.653	1	8	234265	0
	Ba	137	49.048	ug/L	1.062	2	12	406994	1
>	Tb	159		ug/L			1299254	1268267	0
	Tl	205	50.829	ug/L	0.760	1	37	2192006	1
	Pb	208	49.122	ug/L	0.473	0	209	2633348	0

ICP-MS Quantitative Analysis - Summary Report

Sample ID: CCB3
Sample Dil Factor:
Comments:
Sample Date/Time: Friday, May 29, 2015 11:56:34
Number of Replicates: 3
Method File: C:\NexION Data\Method\200.8GFA7+++.mth
Tuning File: C:\NexION Data\MassCal\Default.tun
Optimization File: C:\NexION Data\Conditions\Default.dac
Calibration File: C:\NexION Data\System\052915 cal

	Analyte	Mass	Conc. Mean	Units	Conc SD	Conc RSD	Blank Intens	Meas Intens.	Intens RSD
	C	13		ug/L			57288	58669	1
	Cl	37		ug/L			5736874	5689668	0
>	Sc	45		ug/L			1601846	1512247	1
	Cr	52	0.037	ug/L	0.045	122	37631	36595	1
	Cr	53	-0.002	ug/L	0.003	111	215	194	2
	Mn	55	-0.001	ug/L	0.001	55	1014	899	2
>	Ge	72		ug/L			1246977	1216470	2
	Ni	60	0.001	ug/L	0.000	34	31	39	9
	Ni	62	0.290	ug/L	0.020	6	357	667	4
	Cu	63	0.009	ug/L	0.001	9	537	684	3
	Cu	65	-0.005	ug/L	0.001	10	179	132	5
	Zn	66	0.039	ug/L	0.002	5	393	565	1
	Zn	67	0.031	ug/L	0 013	43	61	84	10
	Zn	68	0.050	ug/L	0.011	22	447	604	7
	As	75	-0.005	ug/L	0 008	143	42	15	238
	As-1	75	0.092	ug/L	0 105	113	18670	18624	0
	Se	82	-0.006	ug/L	0.011	201	24	21	28
	Se	78	0.336	ug/L	0 384	114	18915	18870	0
	Y	89		ug/L			942555	914946	1
	Kr	83		ug/L			364	344	7
>	In	115		ug/L			1213363	1206434	1
	Ag	107	0.001	ug/L	0 001	62	30	55	27
	Cd	111	0.004	ug/L	0.003	72	208	228	5
	Cd	114	0.001	ug/L	0 000	20	33	52	6
	Sb	121	0.080	ug/L	0 002	2	19	1397	0
	Sb	123	0.080	ug/L	0 003	4	12	1073	2
	Ba	135	0.001	ug/L	0 000	45	8	11	13
	Ba	137	0.001	ug/L	0.000	54	12	17	15
>	Tb	159		ug/L			1299254	1251253	0
	Tl	205	0.004	ug/L	0.000	10	37	221	9
	Pb	208	0.002	ug/L	0 000	10	209	302	3

ARCS : 81328

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP ICP-MS GFA CVA **Analysis Date:** 5-20-15

	Analyst TK 5-20-15	Peer AS 5-20-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	—	—	
Carry-over	—	✓	
Method QC:			
CRI/CRA	✓	✓	
ICSA/ICSAB	—	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	
Matrix Duplicates	✓	✓	
Method Blanks	✓	✓	
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAFs	—	—	

ARCS-01331

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-20-15

Page: 1 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
STD 0.0	TWM	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				High X
" 5.0				
" 10.0				
STD 0.0				
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			7.74	Begin CLP Y.R=97 ✓
ICB			-0.02	✓
CCV1			3.93	Y.R=98 ✓
CCB1			-0.03	✓
CRA			0.07	✓
AGAB MB2			-0.01	✓
" MB2SPK			1.92	Y.R=96 ✓
" J			-0.01	
" JDUP			-0.01	No RPD; undetected ✓
" JSPK			0.99	Y.R=99 ✓
AGCG MB2			-0.01	✓
" MB2SPK			1.83	Y.R=92 ✓
" L			-0.02	
" LDUP			-0.01	No RPD; undetected ✓
CCV2			3.82	Y.R=96 ✓
CCB2	↓	↓	-0.01	✓

Chemical/Reagent ID:

10% $SnCl_2$: D2059

14% NH_2OH/NaCl: D1435

Standard ID:

Standard: 3062-15

ICV/CCV: D0176

5026F

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-20-15

Page: 2 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments	
AGLG LSPK	TWM	1X	0.99	Y.R=99	✓
AGIB1 MB1			-0.02		✓
" MB1SPK			1.90	Y.R=95	✓
" A			0.06		
" ADUP			0.01	No RPD; undetected	✓
" ASPK			0.82	Y.R=82	✓
" B					
" C					
" D					
CCV3			3.80	Y.R=95	✓
CCB3			-0.02	End CLP	✓
AGEO MB			-0.00		✓
" MBSPK			1.86	Y.R=93	✓
" B	↓				
AGLG MB	LEM		-0.02		✓
" A			-0.00		
" ADUP			-0.01	No RPD; undetected	✓
" ASPK	↓		0.91	Y.R=91	✓
CCV4	TWM		3.78	Y.R=95	✓
CCB4	↓		-0.02		✓
AGHH MB	LEM		-0.01		✓
" A			-0.01		
" ADUP			-0.02	No RPD; undetected	✓
" ASPK			0.96	Y.R=96	✓
AGFS MB			-0.01		✓
" A			-0.01		
" ADUP			-0.02	No RPD; undetected	✓
" ASPK	↓		0.99	Y.R=99	✓
CCV5	TWM		3.79	Y.R=95	✓
CCB5	↓	↓	-0.02		✓

5.20.15

Chemical/Reagent ID:

10% $SnCl_2$: D2058

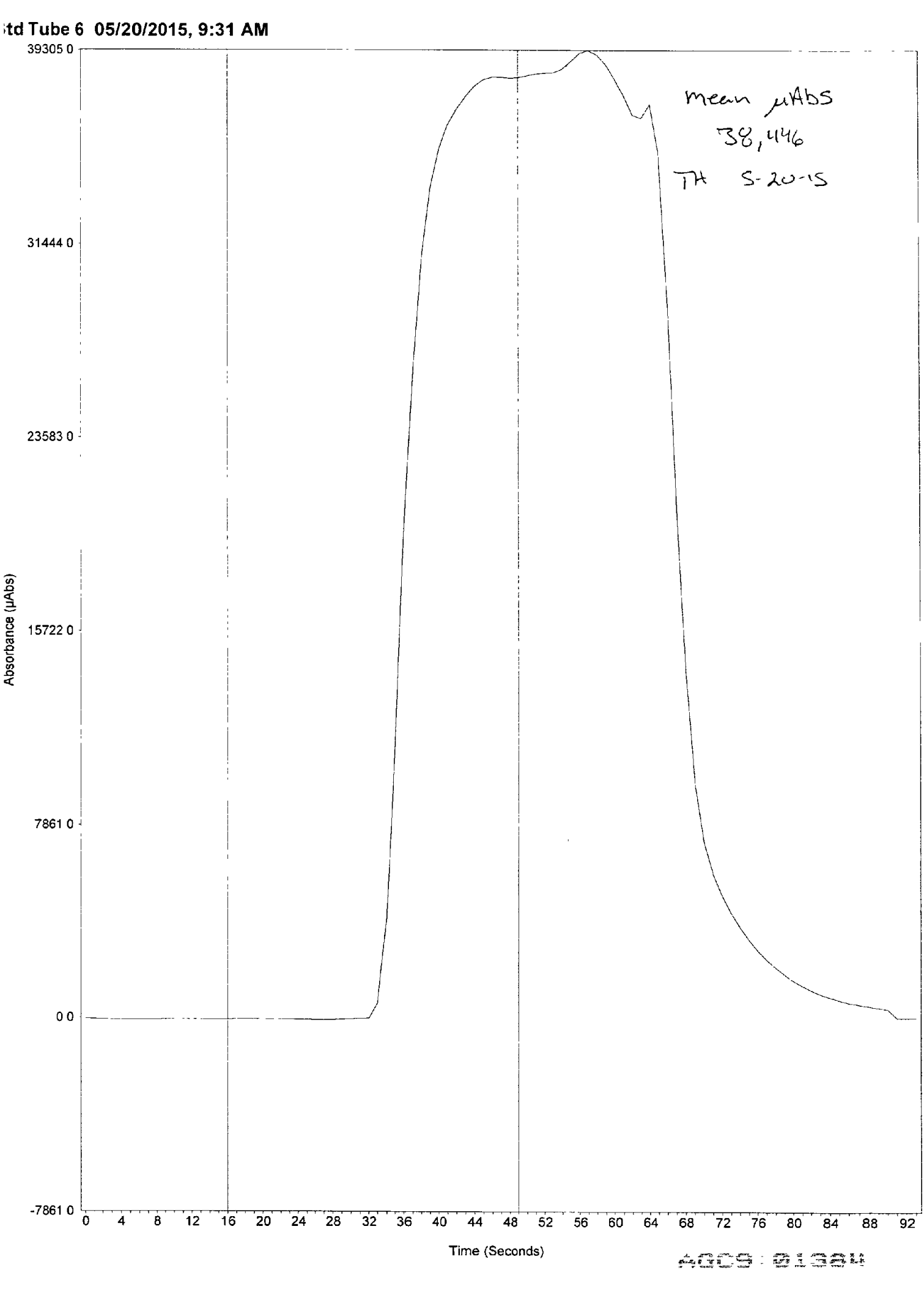
14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-15

ICV/CCV: D0176

ARI 01383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Absorbance (µAbs)
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Time (Seconds)
mean µAbs
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TH 5-20-15

✓ 5-20-15 NS

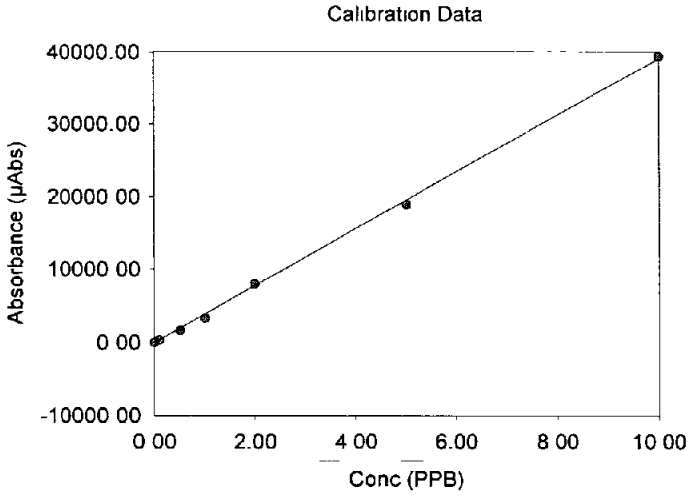
CETAC Hg Analysis Report - 15052000.DB - Wednesday, May 20, 2015, 11:28:32 AM

Analyst
Date Started Wednesday, May 20, 2015, 09:31:17
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Std Tube 6	20-May-2015, 09 31	10 00	0.25	38400 00	1 00	

Information about this calibration could not be retrieved from the Master File

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	20-May-2015, 09:34	0 00	153 00	-8.37	1.00	
Standard #1	20-May-2015, 09:37	0 10	1 25	341.00	1 00	
Standard #2	20-May-2015, 09:39	0 50	0.51	1660.00	1 00	
Standard #3	20-May-2015, 09:41	1 00	0 67	3320 00	1 00	
Standard #4	20-May-2015, 09:42	2 00	1.14	7980.00	1.00	High X
Standard #5	20-May-2015, 09 44	5 00	0 34	18900 00	1 00	
Standard #6	20-May-2015, 09 45	10 00	0 18	39400 00	1.00	



Int	0 000
Slope	3906 691
Correlation	0.99960

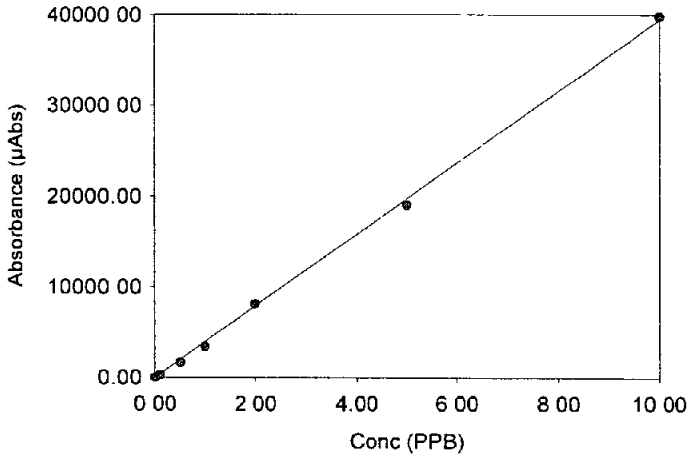
Thm

CETAC Hg Analysis Report - 15052000.DB - Wednesday, May 20, 2015, 11:28:32 AM

Analyst
Date Started Wednesday, May 20, 2015, 09 50 26
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	20-May-2015, 09:50	0 00	12 90	21 00	1 00	
Standard #1	20-May-2015, 09:53	0 10	1 24	290 00	1.00	
Standard #2	20-May-2015, 09:54	0.50	0 80	1660 00	1.00	
Standard #3	20-May-2015, 09:56	1 00	0 33	3400 00	1.00	
Standard #4	20-May-2015, 09:57	2 00	0 31	8150 00	1.00	
Standard #5	20-May-2015, 09.59	5 00	0 37	19100 00	1.00	
Standard #6	20-May-2015, 10.01	10.00	0 13	39900 00	1 00	

Calibration Data



Int.	0 000
Slope	3950 117
Correlation	0 99957

TWM

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	20-May-2015, 10 04	7.74	0 42	30600 00	1 00	Begin CLP
ICB	20-May-2015, 10 07	-0 02	1 87	-85.10	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 10 08	3 93	0 06	15500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 10:10	-0 03	1 49	-99 40	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
CRA	20-May-2015, 10 12	0 07	1 12	278 00	1 00	
AGA8 MB2 TWM	20-May-2015, 10 13	-0 01	9 42	-33.20	1 00	
AGA8 MB2SPK TWM	20-May-2015, 10 15	1.92	0 18	7580 00	1 00	
AGA8 J TWM	20-May-2015, 10 16	-0 01	7 06	-37 80	1 00	
AGA8 JDUP TWM	20-May-2015, 10:18	-0.01	18 90	-55 00	1.00	
AGA8 JSPK TWM	20-May-2015, 10 20	0 99	0 89	3920 00	1 00	
AGC9 MB2 TWM	20-May-2015, 10 21	-0 01	11 50	-35 80	1 00	
AGC9 MB2SPK TWM	20-May-2015, 10 23	1 83	0 33	7240 00	1 00	
AGC9 L TWM	20-May-2015, 10 24	-0 02	12.70	-66 50	1.00	
AGC9 LDUP TWM	20-May-2015, 10.26	-0 01	11 80	-36 40	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 10 28	3 82	0.31	15100 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 10 29	-0 01	4.49	-58 20	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 LSPK TWM	20-May-2015, 10:31	0 99	0 70	3910 00	1 00	
AGB1 MB1 TWM	20-May-2015, 10 33	-0 02	14 70	-65 30	1 00	
AGB1 MB1SPK TWM	20-May-2015, 10.34	1 90	0 43	7490 00	1 00	
AGB1 A TWM	20-May-2015, 10 36	0 06	11 10	228 00	1 00	

AGC9 01388

CETAC Hg Analysis Report - 15052000.DB - Wednesday, May 20, 2015, 11:28:32 AM

Analyst
Date Started Wednesday, May 20, 2015, 10 37.51
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGB1 ADUP TWM	20-May-2015, 10 37	0 01	3 99	36 80	1.00	
AGB1 ASPK TWM	20-May-2015, 10.39	0 82	0 11	3220 00	1 00	
AGB1 B TWM	20-May-2015, 10 41	0 00	3930 00	0 14	1 00	
AGB1 C TWM	20-May-2015, 10 42	-0 00	82.40	-9 55	1 00	
AGB1 D TWM	20-May-2015, 10 44	-0 01	20 00	-33 10	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 10 45	3.80	0 05	15000 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 10 47	-0 02	4 41	-93 80	1 00	End CLP

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGE0 MB TWM	20-May-2015, 10 49	-0 00	28 60	-9 61	1 00	
AGE0 MBSPK TWM	20-May-2015, 10:50	1 86	0 12	7360 00	1 00	
AGE0 B TWM	20-May-2015, 10:52	-0 01	23 00	-44 10	1 00	
AGC6 MB LEM	20-May-2015, 10:54	-0 02	6 14	-93 90	1 00	
AGC6 A LEM	20-May-2015, 10 55	-0 00	39 50	-18.30	1 00	
AGC6 ADUP LEM	20-May-2015, 10.57	-0 01	7 02	-34 70	1 00	
AGC6 A SPK LEM	20-May-2015, 10.58	0 91	0 07	3610 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 11 00	3 78	0 12	14900 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 11:02	-0 02	15.80	-74 70	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGH4 MB LEM	20-May-2015, 11:04	-0 01	27 00	-35 70	1.00	
AGH4 A LEM	20-May-2015, 11 05	-0.01	19 70	-21 20	1.00	
AGH4 ADUP LEM	20-May-2015, 11.07	-0 02	2 61	-61 40	1.00	
AGH4 ASPK LEM	20-May-2015, 11.09	0.96	2 59	3810 00	1.00	
AGF5 MB LEM	20-May-2015, 11 10	-0 01	34 50	-32 40	1.00	
AGF5 A LEM	20-May-2015, 11:12	-0 01	3 83	-55 40	1.00	
AGF5 ADUP LEM	20-May-2015, 11:13	-0 02	14 00	-63 10	1.00	
AGF5 ASPK LEM	20-May-2015, 11 15	0 99	0 08	3890.00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	20-May-2015, 11 17	3 79	0 22	15000 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	20-May-2015, 11 18	-0 02	19 40	-71 30	1.00	

JA 5-20-15

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Standard Prep Log

Prep Code: SmM Instrument: CETAC
Analyst: TH Date: 5-15-16
Bath Temp: 92°C Start Time: 1105 End Time: 1135

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0.00	50.0	0.0	3
STD1	3062-14	0.01		0.1	2
STD2		0.05		0.5	2
STD3		0.10		1.0	2
STD4		0.20		2.0	2
STD5		0.50		5.0	2
STD6		1.00		10.0	2
CRA	↓	0.01		0.1	1
ICB/CCB	—	0.00		0.0	3
ICV/LCS	D0176	0.08	↓	8.0	3
CCV	↓	0.04	50.0	4.0	3

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —

5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

Prep Code: TWM 20.0mL Digested Instrument: CETAC
Analyst: TH Date: 5-19-15
Bath Temp: 91°C Start Time: 1340 End Time: 1540

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0.00	100.0	0.0	1
STD1	3062-15	0.01		0.1	1
STD2		0.05		0.5	1
STD3		0.10		1.0	1
STD4		0.20		2.0	1
STD5		0.50		5.0	1
STD6		1.00		10.0	1
CRA	↓	0.01		0.1	1
ICB/CCB	—	0.00		0.0	1
ICV/LCS	D0176	0.16	↓	8.0	1
CCV	↓	0.08	100.0	4.0	1

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —

5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

ARCS-01388

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: TLOM
Analyst: TH
Bath Temp: 91°C
Start Time: 1020
Matrix: Water
Date: 5-18-15
End Time: 1220

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGAB J	1	✓	20.0	20.0	5/28 1	(Y)	
" JDUP	1	✓			1		
" JSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGCG L	1	✓			5/29 1		
" LDUP	1	✓			1		
" LSPK	1	✓			1		
" MB2	—	—			1		
" MB2SPK	—	—			1		
AGBI A	2	✓			5/24 1		
" ADUP	2	✓			1		
" ASPK	2	✓			1		
" B	1	✓			1		
" C	1	✓			1		
" DUP 5/20	1	✓			1		
" MB1	—	—			1		
" MB1SPK	—	—	20.0	20.0	1	(Y)	
				TH 5-18-15			

Chemical/Reagent ID:

HNO_3: D1439
H_2SO_4: C3708
HCl: —
5% $K_2S_2O_8$: D1432
5% $KMnO_4$: D1835
Digest Tube Lot: 1501179

AGCB 91385

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP ICP-MS GFA CVA

Analysis Date: 5-22-15

	Analyst TH 5-22-15	Peer AG 5-22-15	Comment
Logbook:			
Analyst, Date, Method info	✓	—	
Sample ID's	✓	—	
Standard/QC solution ID's recorded	✓	—	
Prep codes	✓	—	
Dilution factors	✓	—	
Crossouts/Corrections/Deletions	✓	—	
Calibration:			
Blank & Standard intensities	✓	—	
Standard deviations	✓	—	
Curve fit	✓	—	
Calibration Verification:			
ICV/CCV	✓	—	
ICB/CCB	✓	—	
Samples:			
RSD's & SD's	✓	—	
Internal Standards	—	—	
Carry-over	—	—	
Method QC:			
CRI/CRA	✓	—	
ICSA/ICSAB	—	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	—	
Matrix Spikes	✓	—	AGA8
Matrix Duplicates	✓	—	AGC9
Method Blanks	✓	—	
Data Distribution:			
Requested elements/isotope identified	✓	—	
Correct samples identified for distribution	✓	—	
Raw data match distributed data	✓	—	
Data filename correct	✓	—	
Necessary Analysts Notes and CAF's	✓	—	See Cafs

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-22-15

Page: 1 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
STD 0.0	SMM	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				10W X
" 5.0				10W X
" 10.0				
STD 0.0				
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			8.57	ICV Test Y.R=107 ✓
CCV			4.03	CCV Test Y.R=101 ✓
ICV			8.44	Begin CLP Y.R=106 ✓
ICB			0.01	✓
CCV1			4.03	Y.R=101 ✓
CCB1			0.00	✓
CRA			0.09	✓
AGLC9 MB1			0.00	✓
" MB1SPK			2.35	Y.R=118 ✓
" A				
" B				
" C				
" D				
" E				
" F				
" G	↓	↓		

Chemical/Reagent ID:

10% $SnCl_2$: D2203

14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16

ICV/CCV: D0176

5026F

Page 09940

Revision 4

1/26/01

Mercury Analysis Log

Analyst: TH Date: 5-22-15

Instrument: CETAC Page: 2 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
CCV2	5mm	1x	4.02	Y.R=101 ✓
CCB2			0.01	✓
AGC9 H			1.15	
" HDUP			1.87	RPD=48 High X
" HSPK			1.94	Y.R=79 ✓
" I				
" J				
" K				
CCV3			4.04	Y.R=101 ✓
CCB3			-0.00	✓
AGAB MB1			-0.00	✓
" MB1SPK			2.11	Y.R=106 ✓
" A				
" B				
" C				
" D				
" E				
" F			1.65	
" FDUP			1.36	RPD=19 ✓
" FSPK			3.02	Y.R=137 High X
CCV4			4.01	Y.R=100 ✓
CCB4			-0.00	✓
AGAB G				
" H				
" I				
AGBB MB1			0.00	✓
" MB1SPK			2.07	Y.R=104 ✓
" A				
" B				
AGH2 MB1	↓	↓	0.00	✓

Chemical/Reagent ID:

10% $SnCl_2$: D2203 14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16 ICV/CCV: D0176

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 5-22-15

Page: 3 of 4

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
AGG2 MBISPK	5mm	1X	2.13	Y.R=107 ✓
" A	"	"	0.08	
CCV5			4.05	Y.R=101 ✓
CCB5			0.01	✓
AGG2 ADUP			0.08	No RPD; undetected ✓
" ASPK			1.12	Y.R=112 ✓
" B				
" C				
" D				
CCV6			4.05	Y.R=101 ✓
CCB6			0.00	✓
AGF8 MB			-0.01	✓
" MBSPK			2.14	Y.R=107 ✓
" A			0.41	
" ADUP			0.38	✓
" ASPK			1.41	Y.R=100 ✓
" B				
AGF9 A				
" B				
CCV7			4.05	Y.R=101 ✓
CCB7			0.00	✓
AGC9 H			1.18	
" HDUP			1.89	RPD=46 High X
" HSPK			1.91	Y.R=73 low X
AGA8 F			1.65	~~RPD=18~~ TH 5-22-15 ✓
" FDUP			1.37	RPD=18 ✓
" FSPK			3.01	Y.R=136 High X
CCV8			4.06	Y.R=102 ✓
CCB8	↓		-0.00	End CLP ✓
~~STD 0.0~~	TWM		~~5.275~~	

Chemical/Reagent ID:

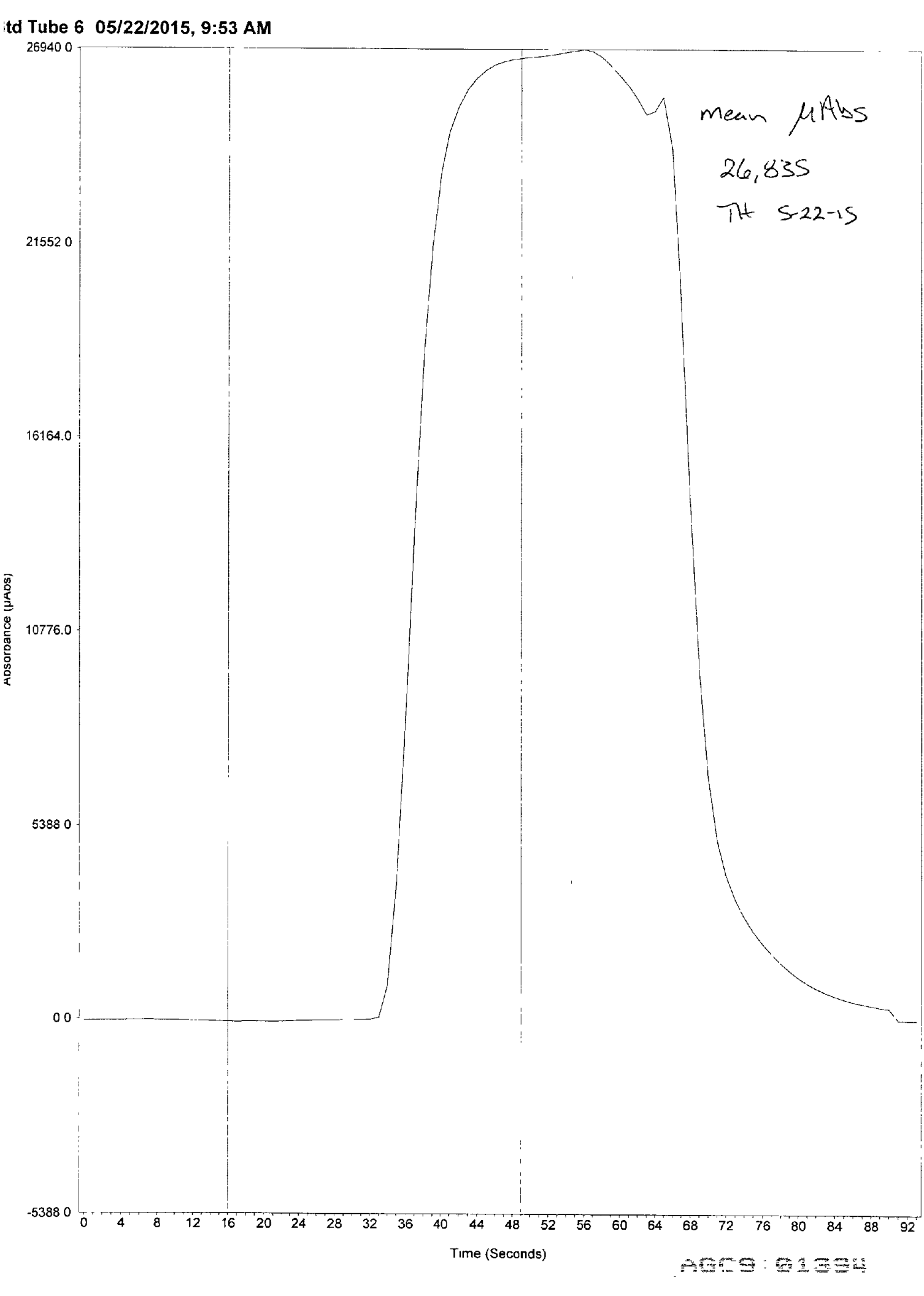
10% $SnCl_2$: D2203

14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3062-16 / 3063-1

ICV/CCV: D0176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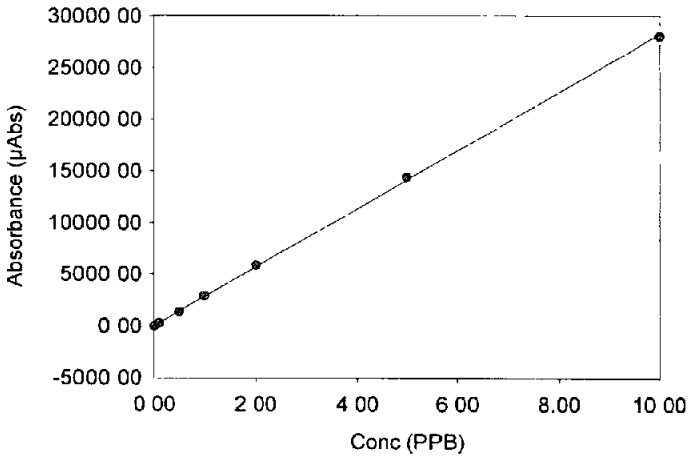
26940 0
21552 0
16164.0
10776.0
5388 0
0 0
-5388 0
Absorbance (µAbs)
0
4
8
12
16
20
24
28
32
36
40
44
48
52
56
60
64
68
72
76
80
84
88
92
Time (Seconds)
mean µAbs
26,835
TH 5-22-15

Analyst
Date Started Friday, May 22, 2015, 10 08 28
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	22-May-2015, 10:08	0 00	29 20	-31.00	1 00	
Standard #1	22-May-2015, 10 10	0 10	1 00	282.00	1.00	
Standard #2	22-May-2015, 10 11	0.50	1 94	1380 00	1 00	
Standard #3	22-May-2015, 10 13	1 00	0 36	2900.00	1.00	
Standard #4	22-May-2015, 10:14	2.00	0 52	5810.00	1 00	
Standard #5	22-May-2015, 10:16	5 00	0 37	14400.00	1 00	
Standard #6	22-May-2015, 10 18	10 00	0 47	28100.00	1 00	

Calibration Data



Int	0 000
Slope	2828 722
Correlation	0 99990

Smm

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	22-May-2015, 10 20	8.57	0 92	24200 00	1 00	Test ICV

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10:22	4 03	0 27	11400 00	1 00	Test CCV

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	22-May-2015, 10 30	8 44	0 53	23900 00	1 00	Begin CLP
ICB	22-May-2015, 10:33	0 01	22 90	27 80	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10:35	4.03	0 55	11400 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 10:36	0 00	42 90	13 20	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
CRA	22-May-2015, 10:38	0 09	7.05	261 00	1 00	
AGC9 MB1 SMM	22-May-2015, 10:40	0 00	175 00	6 08	1 00	
AGC9 MB1SPK SMM	22-May-2015, 10:41	2 35	0 20	6660 00	1 00	
AGC9 A SMM	22-May-2015, 10:43	0 11	1 85	324 00	1 00	
AGC9 B SMM	22-May-2015, 10:44	0 10	2 77	289 00	1 00	
AGC9 C SMM	22-May-2015, 10:46	0 54	1 02	1530 00	1 00	
AGC9 D SMM	22-May-2015, 10:48	0 23	2 37	658.00	1 00	
AGC9 E SMM	22-May-2015, 10:49	0 10	2 05	271 00	1 00	
AGC9 F SMM	22-May-2015, 10:51	0 04	5 25	104.00	1 00	
AGC9 G SMM	22-May-2015, 10:53	0 13	1 29	381 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 10:54	4 02	0 11	11400 00	1 00	

Analyst
Date Started Friday, May 22, 2015, 10 56 21
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 10.56	0 01	26.60	30.40	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 H SMM	22-May-2015, 10:57	1.15	0.40	3260.00	1 00	
AGC9 HDUP SMM	22-May-2015, 10:59	1 87	0.53	5280.00	1.00	RPD High X
AGC9 HSPK SMM	22-May-2015, 11:01	1 94	0.45	5490.00	1 00	
AGC9 I SMM	22-May-2015, 11:02	0 46	0 73	1290.00	1 00	
AGC9 J SMM	22-May-2015, 11:04	0 14	0.37	394 00	1 00	
AGC9 K SMM	22-May-2015, 11:05	0 03	5 61	90 50	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11:07	4.04	0 30	11400 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11.09	-0.00	46 00	-2 60	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGA8 MB1 SMM	22-May-2015, 11:11	-0.00	410.00	-1 96	1.00	
AGA8 MB1SPK SMM	22-May-2015, 11:12	2.11	0 47	5980 00	1.00	
AGA8 A SMM	22-May-2015, 11:14	0.07	1 88	205.00	1 00	
AGA8 B SMM	22-May-2015, 11:16	0.16	0.22	440 00	1 00	
AGA8 C SMM	22-May-2015, 11:17	0.04	8.86	103 00	1 00	
AGA8 D SMM	22-May-2015, 11:19	0.53	0 79	1500 00	1 00	
AGA8 E SMM	22-May-2015, 11:20	1.05	0.14	2980 00	1 00	
AGA8 F SMM	22-May-2015, 11:22	1.65	0.71	4680 00	1 00	
AGA8 FDUP SMM	22-May-2015, 11:24	1.36	0 62	3850 00	1 00	
AGA8 FSPK SMM	22-May-2015, 11:25	3.02	0 20	8550 00	1 00	Y.R High X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11:27	4.01	0.22	11300 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11:29	-0 00	58 30	-10 80	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGA8 G SMM	22-May-2015, 11 30	0.14	1 12	397 00	1.00	
AGA8 H SMM	22-May-2015, 11:32	0.17	3 42	482 00	1 00	
AGA8 I SMM	22-May-2015, 11.33	0.15	0 84	420 00	1 00	
AGB8 MB1 SMM	22-May-2015, 11:35	0 00	37.30	4 90	1 00	
AGB8 MB1SPK SMM	22-May-2015, 11.37	2.07	0 26	5850 00	1 00	
AGB8 A SMM	22-May-2015, 11:38	0 28	1 09	779 00	1 00	
AGB8 B SMM	22-May-2015, 11:40	0 06	4 44	168 00	1 00	
AGG2 MB1 SMM	22-May-2015, 11.41	0 00	22 20	12 20	1.00	
AGG2 MB1SPK SMM	22-May-2015, 11:43	2.13	0 50	6020 00	1 00	
AGG2 A SMM	22-May-2015, 11 45	0.08	3 10	225 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11:46	4 05	0 27	11500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11.48	0 01	22 40	28 60	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGG2 ADUP SMM	22-May-2015, 11:50	0 08	2 59	219 00	1 00	
AGG2 ASPK SMM	22-May-2015, 11:51	1 12	1 75	3180 00	1 00	
AGG2 B SMM	22-May-2015, 11:53	0.03	7 24	88 60	1 00	
AGG2 C SMM	22-May-2015, 11:55	0 14	0 71	397 00	1 00	
AGG2 D SMM	22-May-2015, 11:56	0 17	0 63	474 00	1 00	

AGG2 0156

Analyst
Date Started Friday, May 22, 2015, 11 58 17
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 11 58	4 05	0 29	11400 00	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 11:59	0 00	26 40	13 60	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGF8 MB SMM	22-May-2015, 12 01	-0 01	7.66	-32 60	1 00	
AGF8 MBSPK SMM	22-May-2015, 12:03	2.14	0 50	6050.00	1 00	
AGF8 A SMM	22-May-2015, 12:04	0 41	0.15	1150 00	1.00	
AGF8 ADUP SMM	22-May-2015, 12:06	0 38	1.03	1060 00	1 00	
AGF8 ASPK SMM	22-May-2015, 12:08	1 41	0.51	3990 00	1 00	
AGF8 B SMM	22-May-2015, 12:09	0 23	0 79	649.00	1 00	
AGF9 A SMM	22-May-2015, 12:11	0 15	4.02	416 00	1 00	
AGF9 B SMM	22-May-2015, 12:12	0 13	0 66	366.00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 12:14	4.05	0.31	11500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 12:16	0 00	18 60	7.32	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
AGC9 H SMM	22-May-2015, 12:17	1 18	0 23	3330 00	1 00	
AGC9 HDUP SMM	22-May-2015, 12:19	1 89	0 69	5340 00	1.00	RPD High X
AGC9 HSPK SMM	22-May-2015, 12:21	1 91	0.95	5390 00	1 00	Y,R low X
AGA8 F SMM	22-May-2015, 12:22	1 65	0.53	4670.00	1 00	
AGA8 FDUP SMM	22-May-2015, 12:24	1 37	0 46	3870 00	1 00	
AGA8 FSPK SMM	22-May-2015, 12.26	3 01	0 36	8510.00	1 00	Y,R High X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	22-May-2015, 12.27	4.06	0 39	11500 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	22-May-2015, 12 29	-0 00	20 70	-13 30	1 00	End CLP

Analyst	
Date Created:	Thursday, July 13, 2000
Worksheet	ARI 10ppb CALIB
Comment	
Sip Duration (Sec.):	30
Rinse Duration (Sec.):	60
Read Delay:	49
Integration Time/Replicate:	1.40
# of Replicates:	4
# of Repeats:	1
Baseline Correction Enabled:	True
Baseline Point 1 Start Time:	10
Baseline Point 1 End Time:	16
2-Point Baseline Corr. Enabled:	False
Baseline Point 2 Start Time:	
Baseline Point 2 End Time:	
Gas Flow (ml/min):	180
Calibration Algorithm:	Linear, Zero Intercept
Recalibration Frequency:	0
Reslope Frequency:	0
Reslope Standard:	5
Calibration Standard #1 Conc.:	0 10 PPB
Calibration Standard #2 Conc.:	0 50 PPB
Calibration Standard #3 Conc.:	1.00 PPB
Calibration Standard #4 Conc.:	2 00 PPB
Calibration Standard #5 Conc.:	5 00 PPB
Calibration Standard #6 Conc.:	10 00 PPB
QC Enabled:	True
QC-RSD Enabled:	True
Limit Condition & Error Action:	If %RSD > 5 0%, if µAbs > 1500, Flag and Continue
QC-Std Enabled:	True
Limit Condition & Error Action:	If outside 80% . 120%,Stop
QC-Blank Enabled:	True
Limit Condition & Error Action:	If outside -100 .. 100,Stop

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Standard Prep Log

Prep Code: SMM Instrument: CETAC
Analyst: MB Date: 5/21/15
Bath Temp: 91°C Start Time: 1115 End Time: 1145

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	—	0.00	50.0	0.0	3
STD1	3062-16	0.01	↓	0.1	2
STD2	↓	0.05	↓	0.5	2
STD3	↓	0.10	↓	1.0	2
STD4	↓	0.20	↓	2.0	2
STD5	↓	0.50	↓	5.0	2
STD6	↓	1.00	↓	10.0	2
CRA	↓	0.01	↓	0.1	1
ICB/CCB	—	0.00	↓	0.0	3
ICV/LCS	D0176	0.08	↓	8.0	2
CCV	↓	0.04	50.0	4.0	3

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: —

5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835

Prep Code: _____ Instrument: _____
Analyst: _____ Date: _____
Bath Temp: _____ Start Time: _____ End Time: _____

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0		0.00			
STD1					
STD2		0.05			
STD3		0.10			
STD4		0.20			
STD5		0.50			
STD6		1.00			
CRA					
ICB/CCB		0.00			
ICV/LCS					
CCV					

Chemical/Reagent ID:

HNO_3: _____ H_2SO_4: _____ HCl: _____

5% $K_2S_2O_8$: _____ 5% $KMnO_4$: _____

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Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: SMM Matrix: Soil
Analyst: MB Date: 5/18/15
Bath Temp: 90°C Start Time: 1235 End Time: 1305

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) ~~Volume (mL)~~	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AGC9 A	1	-	0.247	50.0	5/29 1	Y	
" B	1	-	0.211		1		
" C	1	-	0.202		1		
" D	1	-	0.236		1		
" E	1	-	0.270		1		
" F	1	-	0.261		1		
" G	1	-	0.279		1		
" H	1	-	0.213		1		
" HDUP	1	-	0.211		1		
" HSPK	1	-	0.214		1		
" I	1	-	0.283		1		
" J	1	-	0.223		1		
" K	1	-	0.247		1		
" MB1	-	-	-		1		
" MB1SPK	-	-	-	50.0	1	Y	

MB 5/18/15

Chemical/Reagent ID:

HNO_3: D1439 H_2SO_4: C3708 HCl: -
5% $K_2S_2O_8$: D1432 5% $KMnO_4$: D1835 Digest Tube Lot: 1408268

Table of Contents: ARI Job AGF2

Client: Kennedy Jenks Consultants

Project: 1496007.00 POS Sliver

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BC

Signature

May-26-2015

Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 8, 2015

Ryan Hultgren
Kennedy/Jenks Consultants Inc.
32001 32nd Avenue South, Suite 100
Federal Way, WA 98001

RE: Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGF2

Dear Mr. Hultgren:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs com
www.arilabs.com

cc: eFile: AGF2

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Chain of Custody Documentation

ARI Job ID: AGF2

Subject: RE: AGC9 POS Sliver Sample Receipt and COCs
From: Ryan Hultgren <RyanHultgren@kennedyjenks.com>
Date: 5/18/2015 9:08 AM
To: Cheronne Oreiro <cheronneo@arilabs.com>
CC: Ty Schreiner <TySchreiner@KennedyJenks.com>

Cheronne,

Please proceed with the analysis and include in the narrative the discussion below about potential for the sample to be compromised (i.e. volatilization from the sample as well as contamination by other lab chemicals).

Thank you,
Ryan

Ryan Hultgren, P.E. | Project Manager
Kennedy/Jenks Consultants
32001 32nd Ave S Suite 100 | Federal Way, WA 98001
P: 253 835.6400 | Direct 253.835.6432 | Mobile. 253.549 9725
Celebrating 95 years of service to our clients, staff and communities

From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: May 18, 2015 9:04 AM
To: Ryan Hultgren
Cc: Ty Schreiner
Subject: Re: AGC9 POS Sliver Sample Receipt and COCs

Hi Ryan,

I received your message from Friday. Yes, we could run an 8260 scan on those two samples. We will not qualify the data, but I will comment in the narrative that samples were not collected in correct containers and may have been compromised. The sample jars have already been distributed to appropriate departments in the lab so please keep in mind that not only do we not know what kind of volatile loss happened during normal laboratory homogenization, we also would not know if samples had been contaminated with volatiles. For example, our extraction lab (for PAHs, PCBs, and TPHD) often uses methylene chloride as a solvent which is also a volatile compound.
Please let me know if you would like me to move forward with this request.
-Cheronne

I will be out of the office May 20th thru May 29th.

Cheronne Oreiro
Project Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240

cheronneo@arilabs.com
(206)-695-6214

How was your customer experience?
Please take our 5 minute online customer survey.

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If you have received this correspondence in error, please notify sender immediately. Thank you.

On 5/15/2015 4:30 PM, Ryan Hultgren wrote:

> Cheronne,
>
> Thank you for the COCs/Sample Receipts.
>
> Would it be possible to run an 8260 VOCs analysis on two of the samples? Knowing that the sample containers are not correct for this analysis, based on field screening data, we would like to have a VOCs analysis performed.
>
> Field sample names:
>
> SDP-02 (16.0-17.5) = ARI ID = 15-9433-AGC9C
> SDP-06 (12.5-13.5) = ARI ID = 15-9296-AGA8H
>
> Let me know if you have any questions.
>
> Thank you,
> Ryan

Ryan Hultgren, P.E. | Environmental Project Manager
Kennedy/Jenks Consultants
32001 32nd Ave S. Suite 100 | Federal Way, WA 98001
P: 253.835.6400 | Direct: 253.835.6432 | Mobile: 253.549.9725
Celebrating 95 years of service to our clients, staff and communities

From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: May 15, 2015 11:34 AM
To: Ryan Hultgren
Subject: AGC9 POS Sliver Sample Receipt and COCs

Hi Ryan - Please see attached the sample receipt and COCs for ARI job AGC9.
-Cheronne

--
I will be out of the office May 20th thru May 29th.

Cheronne Oreiro
Project Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240
cheronneo@arilabs.com
(206)-695-6214

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGCG	Turn-around Requested: Std	Page: 1 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present? Yes
Client Contact: Ryan Holtgren		No of Coolers: 3	Cooler Temps: 6.5 .7.9
Client Project Name: POS Sliver			
Client Project #: 1496007 00	Samplers: C. Joseph / J. Schwarz		

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Sample ID	Date	Time	Matrix	No Containers	Metals (1)	PAHs 8270c SIM	PCBs 8082	NWTPH-Dx (2)					Notes/Comments
SDP-01 (3.0-4.0)	5/14/15	0835	Soil	1	X	X	X						(1) RCRA, Cu, Zn by 6020 Hg by 7471
SDP-01 (8.0-9.0)		0855			X	X	X						(2) WITHOUT Silica Gel Cleanup
SDP-01 (11.0-12.5)		0905						~~X~~ (3)					HOLD
SDP-01 (22.5-24.0)		0915											HOLD
SDP-02 (7.0-8.5)		0940											HOLD
SDP-02 (12.5-13.5)		0955											HOLD
SDP-02 (16.0-17.5)		1030			X	X	X	X					
SDP-02 (18.5-19.5)		1035			X	X	X	X					
SDP-02 (20.0-21.5)		1043											HOLD
SDP-02 (22.0-23.5)		1045			X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by: (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name	Printed Name
	Company: Kennedy Jenks	Company: ARI	Company	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 2 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present?
Client Contact: Ryan Hultgren		No. of Coolers:	Cooler Temps:
Client Project Name: FOS Slivers			
Client Project #: 1496007.00	Samplers: C. Joseph / J. Schwarz		

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Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals (1)	PAH's 8270 SIM	PCBs 8082	Multi-Anl (2)					Notes/Comments
SDP-03 (2.0-3.5)	5/14/15	1105	Soil	1									HOLD
SDP-03 (6.5-8.0)		1115			X	X	X						
SDP-03 (21.0-22.0)		1205											HOLD
SDP-03 (23.5-24.5)		1210			X	X	X						
SDP-04 (1.5-3.0)		1305			X	X	X	X					
SDP-04 (8.0-9.0)		1310											HOLD
SDP-04 (10.5-12.0)		1320			X	X	X	X					
SDP-04 (16.0-17.0)		1325											HOLD
SDP-04 (18.0-19.5)		1330											HOLD
SDP-04 (1.5-3.0)-MS		1335			X	X	X	X					MS/MSD

(1) RCRA, Cu, Zn by 6020 Hg by 7471
(2) w/ Florisil Gel Cleanup

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name:	Printed Name:
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time:	Date & Time:

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: std	Page: 3 of 3	
ARI Client Company: Kennedy Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present?
Client Contact: Ryan Holtgren		No. of Coolers:	Cooler Temps:
Client Project Name: POS Silver			
Client Project #: 1496007.00	Samplers: C. Joseph/J. Schwarz		

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Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals (1)	PAHs 8270c SIM	PCBs 8082	NWTPH-Dx (2)					Notes/Comments
SDP-05 (1.0-2.5)	5/14/15	1350	Soil	1									HOLD
SDP-05 (6.5-7.5)		1405			X	X	X						
SDP-05 (13.0-14.0)		1410											HOLD
SDP-05 (17.5-19.0)		1420			X	X	X						
WC-051415		1450											HOLD
RB-051415	5/14/15	1340	Water	7	X	X	X	X					

(1) RCRA Cu, Zn by 6020 Hg by 7471
(2) WITHOUT Silica Gel Cleanup

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name:	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company:	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time:	Date & Time

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Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

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Cooler Receipt Form

ARI Client: Kennedy Jenks Project Name Pos Silver

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No ACCC Tracking No. _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? ... YES NO

Were custody papers properly filled out (ink, signed, etc.) .. YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 6.5 7.9 ___ ___ ___ ___

Time 1615

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877752

Cooler Accepted by CA Date 5-14-15 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? ... YES (NO)

What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? ... NA YES (NO)

Were all bottles sealed in individual plastic bags? ... YES (NO)

Did all bottles arrive in good condition (unbroken)? ... (YES) NO

Were all bottle labels complete and legible? ... (YES) NO

Did the number of containers listed on COC match with the number of containers received? ... (YES) NO

Did all bottle labels and tags agree with custody papers? ... (YES) NO

Were all bottles used correct for the requested analyses? ... (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) .. NA (YES) NO

Were all VOC vials free of air bubbles? ... (NA) YES NO

Was sufficient amount of sample sent in each bottle? ... (YES) NO

Date VOC Trip Blank was made at ARI ... (NA) _____

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment _____ Split by _____

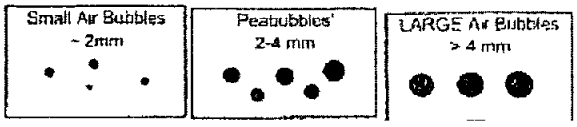
Samples Logged by: AV Date 5/15/15 Time. 0936

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date.



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

AEF2 · 22005

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Cooler Temperature Compliance Form

Cooler#:	Temperature(°C): 4.5 7.9	
Sample ID	Bottle Count	Bottle Type
All samples above 0 °C		

Cooler#:	Temperature(°C):	
Sample ID	Bottle Count	Bottle Type

Cooler#:	Temperature(°C):	
Sample ID	Bottle Count	Bottle Type

Cooler#:	Temperature(°C):	
Sample ID	Bottle Count	Bottle Type

Completed by CA Date 5-14-15 Time 1615

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGAE	Turn-around Requested: std.	Page: 1 of 2	
ARI Client Company: Kennedy/Jenks	Phone: (253)549-9725	Date: 05/13/15	Ice Present?
Client Contact: Ryan Hultgren		No of Coolers:	Cooler Temps:
Client Project Name: POS Slives			
Client Project #: 1496007.00	Samplers: C. Joseph/J. Schwarz		

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Analytical Chemists and Consultants
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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
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Sample ID	Date	Time	Matrix	No Containers	Metals ①	PAHs EPA 8270C SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-10 (2.0-3.5)	5/13/15	0930	Soil	1									HOLD
SDP-10 (7.0-8.0)	5/13/15	0957	Soil	1									HOLD
SDP-10 (13.5-15.0)	5/13/15	1020	Soil	1	X	X	X						
SDP-10 (15.5-16.5)	5/13/15	1045	Soil	1	X	X	X	X					
SDP-10 (16.5-17.5)	5/13/15	1040	Soil	1	X	X	X						
SDP-09 (5.0-6.5)	5/13/15	1120	Soil	1									HOLD
SDP-09 (2.5-4.0)	5/13/15	1130	Soil	1	X	X	X						
SDP-08 (6.0-7.0)	5/13/15	1209	Soil	1									HOLD
SDP-08 (3.5-5.0)	5/13/15	1200	Soil	1									HOLD
SDP-08 (12.0-13.5)	5/13/15	1230	Soil	1	X	X	X	X					

① RCRA and Cu + Zn by 6020 Hg: 7471

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Rich Hultgren	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/13/15 1640	Date & Time: 5/13/15 1640	Date & Time	Date & Time

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Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 2 of 2	
ARI Client Company: Kennedy/Jenks	Phone: (253) 541-4235	Date: 05/13/15	Ice Present?
Client Contact: Ryan Hamilton		No of Coolers	Cooler Temps
Client Project Name: ROS Silver			
Client Project #: 1496007.00	Samplers: C. Joseph / J Schwarz		

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Analytical Chemists and Consultants
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Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals (As, Cu, Pb, Zn)	PAHs 8270D SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-07 (1.5-3.0)	05/13/15	1315	Soil	1	X	X	X	X					@ RCRA, Cu, Zn by 6020 Hg by 7471
SDP-07 (8.5-9.5)		1335			X	X	X						
SDP-07 (12.5-13.5)		1345											HOLD
SDP-07 (19.0-20.0)		1350											HOLD
SDP-07 (1.5-3.0)-MS		1330			X	X	X	X					
SDP-06 (1.5-3.0)		1410											HOLD
SDP-06 (12.5-13.5)		1430			X	X	X	X					
SDP-06 (10.0-11.0)		1435			X	X	X	X					
SDP-06 (17.0-18.0)		1445											HOLD
RB-051315		1510	Water	7	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Kelly Hylton	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/13/15 1638	Date & Time: 5/13/15 1640	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Kennedy Jenks — Project Name PCS Silver

COC No(s). _____ NA — Delivered by Fed-Ex UPS Courier (Hand Delivered) Other _____

Assigned ARI Job No AGAE — Tracking No _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry)	8.8	7.4
Time: 1640		
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#	90277952

Cooler Accepted by _____ Date: 5/13/15 Time 1640

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other _____			
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment: _____ Split by: _____

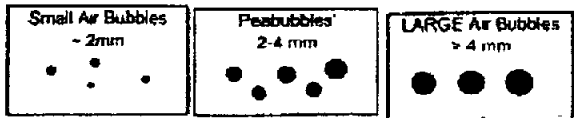
Samples Logged by: AV Date: 5/14/15 Time 0714

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By Date.



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

AGAE:00013

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#: 1+2	Temperature(°C): 8 8 +2.4	
Sample ID	**Bottle Count**	**Bottle Type**
All Samples received above 6°C.		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by _____ Date 5/14/15 Time 844

ACEE.0004

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: AGF2

ANALYTICAL
RESOURCES
INCORPORATED

Case Narrative

Client: Kennedy/Jenks Consultants Inc.
Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AGF2

Sample Receipt

Two soil samples were removed from archive on May 19, 2015 and logged under ARI job AGF2. The samples were analyzed for volatiles per email request. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

Volatiles by SW8260C

The samples were analyzed within the method recommended holding times.

Sample aliquots for analysis were taken from inappropriate sample containers with head space. Samples containers were opened and homogenized in a non-volatiles free room prior to volatile analysis and therefore may be compromised.

Initial calibrations were within method requirements.

The continuing calibration was outside the 20% control limit high for Bromomethane, Chloroethane, Trichlorofluoromethane, Vinyl Acetate, 2-Butanone, 2,2-Dichloropropane, and Toluene. All detected results for these compounds have been flagged with a "Q" qualifier. No further corrective action was taken.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The LCSD percent recovery of 2-Butanone was outside the control limits high for **LCS-051915A**. All other percent recoveries were within control limits. No corrective action was taken.

AGF2 : 0605 15

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AGF2
Client: Kennedy Jenks Consultants
Project Event: 1496007.00
Project Name: POS Sliver

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SDP-02(16.0-17.5)	AGF2A	15-9525	Soil	05/14/15 10:30	05/14/15 16:15
2.	SDP-06(12.5-13.5)	AGF2B	15-9526	Soil	05/13/15 14:30	05/14/15 16:15

AGF2 00017

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

NA The flagged analyte was not analyzed for

NR Spiked compound recovery is not reported due to chromatographic interference

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

X Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**

Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

AGF2 00015

Geotechnical Data

A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.

F Samples were frozen prior to particle size determination

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

AGF2 : 000028

Analytical Method Information

Analyte	DL	LOQ	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
8260C VOA Solid (EPA 8260C) in Solid								
Preservation: NaHSO4, MeOH, Cool <6°C								
Container: VOA Vial, Clear, 40 mL, Na2S2O3			**Minimum Sample Weight:** 15 g			**Hold Time:** 14 days		
Dichlorodifluoromethane	0 207	1 00 ug/kg		30	67 - 142	30	67 - 142	30
Chloromethane	0 263	1 00 ug/kg		30	65 - 129	30	65 - 129	30
Vinyl Chloride	0 235	1 00 ug/kg		30	74 - 134	30	74 - 134	30
Bromomethane	0 187	1 00 ug/kg		30	40 - 172	30	40 - 172	30
Chloroethane	0 462	1 00 ug/kg		30	53 - 154	30	53 - 154	30
Trichlorofluoromethane	0 266	1 00 ug/kg		30	57 - 161	30	57 - 161	30
Acrolein	3 81	50 0 ug/kg		30	60 - 130	30	60 - 130	30
Acetone	0 482	5 00 ug/kg		30	48 - 132	30	48 - 132	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	0 287	2 00 ug/kg		30	72 - 142	30	72 - 142	30
1,1-Dichloroethene	0 336	1 00 ug/kg		30	73 - 138	30	73 - 138	30
Bromoethane	0 440	2 00 ug/kg		30	74 - 132	30	74 - 132	30
Iodomethane	0 215	1 00 ug/kg		30	34 - 181	30	34 - 181	30
Methylene Chloride	0 635	2 00 ug/kg		30	61 - 128	30	61 - 128	30
Carbon Disulfide	0 559	1 00 ug/kg		30	72 - 146	30	72 - 146	30
Acrylonitrile	1 03	5 00 ug/kg		30	59 - 124	30	59 - 124	30
Methyl-tert-butyl ether	0 231	1 00 ug/kg		30	68 - 124	30	68 - 124	30
trans-1,2-Dichloroethene	0 266	1 00 ug/kg		30	73 - 131	30	73 - 131	30
Vinyl Acetate	0 381	5 00 ug/kg		30	54 - 138	30	54 - 138	30
1,1-Dichloroethane	0 203	1 00 ug/kg		30	65 - 139	30	65 - 139	30
2-Butanone	0 513	5 00 ug/kg		30	64 - 120	30	64 - 120	30
2,2-Dichloropropane	0 292	1 00 ug/kg		30	77 - 137	30	77 - 137	30
cis-1,2-Dichloroethene	0 240	1 00 ug/kg		30	75 - 124	30	75 - 124	30
Chloroform	0 234	1 00 ug/kg		30	75 - 126	30	75 - 126	30
Bromochloromethane	0 323	1 00 ug/kg		30	69 - 133	30	69 - 133	30
1,1,1-Trichloroethane	0 226	1 00 ug/kg		30	78 - 133	30	78 - 133	30
1,1-Dichloropropene	0 312	1 00 ug/kg		30	80 - 123	30	80 - 123	30
Carbon tetrachloride	0 213	1 00 ug/kg		30	76 - 136	30	76 - 136	30
1,2-Dichloroethane	0 191	1 00 ug/kg		30	77 - 120	30	77 - 120	30
Benzene	0 296	1 00 ug/kg		30	80 - 120	30	80 - 120	30
Trichloroethene	0 212	1 00 ug/kg		30	80 - 120	30	80 - 120	30
1,2-Dichloropropane	0 162	1 00 ug/kg		30	74 - 120	30	74 - 120	30
Bromodichloromethane	0 254	1 00 ug/kg		30	80 - 122	30	80 - 122	30
Dibromomethane	0 147	1 00 ug/kg		30	80 - 120	30	80 - 120	30
2-Chloroethyl vinyl ether	0 276	5 00 ug/kg		30	20 - 157	30	20 - 157	30
4-Methyl-2-Pentanone	0 420	5 00 ug/kg		30	70 - 124	30	70 - 124	30
cis-1,3-Dichloropropene	0 226	1 00 ug/kg		30	80 - 124	30	80 - 124	30
Toluene	0 151	1 00 ug/kg		30	78 - 120	30	78 - 120	30
trans-1,3-Dichloropropene	0 216	1 00 ug/kg		30	80 - 126	30	80 - 126	30
1,1,2-Trichloroethane	0 286	1 00 ug/kg		30	77 - 120	30	77 - 120	30
1,2-Dibromoethane	0 176	1 00 ug/kg		30	79 - 120	30	79 - 120	30
2-Hexanone	0 439	5 00 ug/kg		30	62 - 128	30	62 - 128	30
1,3-Dichloropropane	0 209	1 00 ug/kg		30	77 - 120	30	77 - 120	30
Tetrachloroethene	0 257	1 00 ug/kg		30	76 - 131	30	76 - 131	30

Analytical Method Information

Analyte	DL	LOQ	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
Dibromochloromethane	0 266	1 00 ug/kg		30	77 - 123	30	77 - 123	30
Chlorobenzene	0 219	1 00 ug/kg		30	80 - 120	30	80 - 120	30
1,1,1,2-Tetrachloroethane	0 233	1 00 ug/kg		30	80 - 120	30	80 - 120	30
Ethylbenzene	0 202	1 00 ug/kg		30	80 - 120	30	80 - 120	30
m,p-Xylene	0 392	1 00 ug/kg		30	80 - 123	30	80 - 123	30
o-Xylene	0 224	1 00 ug/kg		30	80 - 120	30	80 - 120	30
Styrene	0 138	1 00 ug/kg		30	80 - 122	30	80 - 122	30
Bromoform	0 297	1 00 ug/kg		30	63 - 120	30	63 - 120	30
Isopropyl Benzene	0 233	1 00 ug/kg		30	77 - 127	30	77 - 127	30
1,1,2,2-Tetrachloroethane	0 253	1 00 ug/kg		30	71 - 120	30	71 - 120	30
1,2,3-Trichloropropane	0 517	2 00 ug/kg		30	75 - 120	30	75 - 120	30
trans-1,4-Dichloro 2-Butene	0 437	5 00 ug/kg		30	62 - 127	30	62 - 127	30
n-Propylbenzene	0 272	1 00 ug/kg		30	76 - 126	30	76 - 126	30
Bromobenzene	0 153	1 00 ug/kg		30	75 - 120	30	75 - 120	30
1,3,5-Trimethylbenzene	0 254	1 00 ug/kg		30	77 - 126	30	77 - 126	30
2-Chlorotoluene	0 300	1 00 ug/kg		30	76 - 120	30	76 - 120	30
4-Chlorotoluene	0 277	1 00 ug/kg		30	75 - 121	30	75 - 121	30
t-Butylbenzene	0 306	1 00 ug/kg		30	77 - 125	30	77 - 125	30
1,2,4-Trimethylbenzene	0 230	1 00 ug/kg		30	77 - 125	30	77 - 125	30
s-Butylbenzene	0 240	1 00 ug/kg		30	77 - 127	30	77 - 127	30
4-Isopropyl Toluene	0 236	1 00 ug/kg		30	78 - 131	30	78 - 131	30
1,3-Dichlorobenzene	0 227	1 00 ug/kg		30	76 - 120	30	76 - 120	30
1,4-Dichlorobenzene	0 232	1 00 ug/kg		30	75 - 120	30	75 - 120	30
n-Butylbenzene	0 262	1 00 ug/kg		30	75 - 134	30	75 - 134	30
1,2-Dichlorobenzene	0 293	1 00 ug/kg		30	77 - 120	30	77 - 120	30
1,2-Dibromo-3-Chloropropane	0 586	5 00 ug/kg		30	61 - 128	30	61 - 128	30
1,2,4-Trichlorobenzene	0 332	5 00 ug/kg		30	75 - 130	30	75 - 130	30
Hexachloro-1,3-Butadiene	0 410	5 00 ug/kg		30	72 - 135	30	72 - 135	30
Naphthalene	0 429	5 00 ug/kg		30	71 - 122	30	71 - 122	30
1,2,3-Trichlorobenzene	0 305	5 00 ug/kg		30	76 - 122	30	76 - 122	30
surr 1,2-Dichloroethane-d4			80 - 149					
surr 1,2-Dichlorobenzene-d4			80 - 120					
surr Toluene-d8			77 - 120					
surr 4-Bromofluorobenzene			80 - 120					
surr Dibromofluoromethane			80 - 120					
Pentafluorobenzene								
Chlorobenzene-d5								
1,4-Difluorobenzene								
1,4-Dichlorobenzene-d4								

AGF2 · 00022

Volatile Analysis
Report and Summary QC Forms

ARI Job ID: AGF2

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SDP-02(16.0-17.5)**
 SAMPLE

Lab Sample ID: AGF2A
LIMS ID: 15-9525
Matrix: Soil
Data Release Authorized:
Reported: 06/08/15

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Instrument/Analyst: NT15/PKC
Date Analyzed: 05/19/15 14:42

Sample Amount: 4.53 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 14.9%

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.29	1.1	< 1.1 U
74-83-9	Bromomethane	0.21	1.1	< 1.1 U
75-01-4	Vinyl Chloride	0.26	1.1	< 1.1 U
75-00-3	Chloroethane	0.51	1.1	< 1.1 U
75-09-2	**Methylene Chloride**	**0.70**	**2.2**	**150**
67-64-1	**Acetone**	**0.53**	**5.5**	**25**
75-15-0	**Carbon Disulfide**	**0.62**	**1.1**	**5.5**
75-35-4	1,1-Dichloroethene	0.37	1.1	< 1.1 U
75-34-3	1,1-Dichloroethane	0.22	1.1	< 1.1 U
156-60-5	trans-1,2-Dichloroethene	0.29	1.1	< 1.1 U
156-59-2	cis-1,2-Dichloroethene	0.26	1.1	< 1.1 U
67-66-3	Chloroform	0.26	1.1	< 1.1 U
107-06-2	1,2-Dichloroethane	0.21	1.1	< 1.1 U
78-93-3	**2-Butanone**	**0.57**	**5.5**	**3.5 JQ**
71-55-6	1,1,1-Trichloroethane	0.25	1.1	< 1.1 U
56-23-5	Carbon Tetrachloride	0.24	1.1	< 1.1 U
108-05-4	Vinyl Acetate	0.42	5.5	< 5.5 U
75-27-4	Bromodichloromethane	0.28	1.1	< 1.1 U
78-87-5	1,2-Dichloropropane	0.18	1.1	< 1.1 U
10061-01-5	cis-1,3-Dichloropropene	0.25	1.1	< 1.1 U
79-01-6	Trichloroethene	0.23	1.1	< 1.1 U
124-48-1	Dibromochloromethane	0.29	1.1	< 1.1 U
79-00-5	1,1,2-Trichloroethane	0.32	1.1	< 1.1 U
71-43-2	Benzene	0.33	1.1	< 1.1 U
10061-02-6	trans-1,3-Dichloropropene	0.24	1.1	< 1.1 U
110-75-8	2-Chloroethylvinylether	0.30	5.5	< 5.5 U
75-25-2	Bromoform	0.33	1.1	< 1.1 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.46	5.5	< 5.5 U
591-78-6	2-Hexanone	0.48	5.5	< 5.5 U
127-18-4	Tetrachloroethene	0.28	1.1	< 1.1 U
79-34-5	1,1,2,2-Tetrachloroethane	0.28	1.1	< 1.1 U
108-88-3	Toluene	0.17	1.1	< 1.1 U
108-90-7	Chlorobenzene	0.24	1.1	< 1.1 U
100-41-4	Ethylbenzene	0.22	1.1	< 1.1 U
100-42-5	Styrene	0.15	1.1	< 1.1 U
75-69-4	Trichlorofluoromethane	0.29	1.1	< 1.1 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.32	2.2	< 2.2 U
179601-23-1	m,p-Xylene	0.43	1.1	< 1.1 U
95-47-6	o-Xylene	0.25	1.1	< 1.1 U
95-50-1	1,2-Dichlorobenzene	0.32	1.1	< 1.1 U
541-73-1	1,3-Dichlorobenzene	0.25	1.1	< 1.1 U
106-46-7	1,4-Dichlorobenzene	0.26	1.1	< 1.1 U
107-02-8	Acrolein	4.2	55	< 55 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SDP-02(16.0-17.5)**
 SAMPLE

Lab Sample ID: AGF2A
LIMS ID: 15-9525
Matrix: Soil
Date Analyzed: 05/19/15 14:42

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

CAS Number	Analyte	DL	LOQ	Result
74-88-4	Iodomethane	0.24	1.1	< 1.1 U
74-96-4	Bromoethane	0.49	2.2	< 2.2 U
107-13-1	Acrylonitrile	1.1	5.5	< 5.5 U
563-58-6	1,1-Dichloropropene	0.34	1.1	< 1.1 U
74-95-3	Dibromomethane	0.16	1.1	< 1.1 U
630-20-6	1,1,1,2-Tetrachloroethane	0.26	1.1	< 1.1 U
96-12-8	1,2-Dibromo-3-chloropropane	0.65	5.5	< 5.5 U
96-18-4	1,2,3-Trichloropropane	0.57	2.2	< 2.2 U
110-57-6	trans-1,4-Dichloro-2-butene	0.48	5.5	< 5.5 U
108-67-8	1,3,5-Trimethylbenzene	0.28	1.1	< 1.1 U
95-63-6	1,2,4-Trimethylbenzene	0.25	1.1	< 1.1 U
87-68-3	Hexachlorobutadiene	0.45	5.5	< 5.5 U
106-93-4	1,2-Dibromoethane	0.19	1.1	< 1.1 U
74-97-5	Bromochloromethane	0.36	1.1	< 1.1 U
594-20-7	2,2-Dichloropropane	0.32	1.1	< 1.1 U
142-28-9	1,3-Dichloropropane	0.23	1.1	< 1.1 U
98-82-8	Isopropylbenzene	0.26	1.1	< 1.1 U
103-65-1	n-Propylbenzene	0.30	1.1	< 1.1 U
108-86-1	Bromobenzene	0.17	1.1	< 1.1 U
95-49-8	2-Chlorotoluene	0.33	1.1	< 1.1 U
106-43-4	4-Chlorotoluene	0.31	1.1	< 1.1 U
98-06-6	tert-Butylbenzene	0.34	1.1	< 1.1 U
135-98-8	sec-Butylbenzene	0.26	1.1	< 1.1 U
99-87-6	4-Isopropyltoluene	0.26	1.1	< 1.1 U
104-51-8	n-Butylbenzene	0.29	1.1	< 1.1 U
120-82-1	1,2,4-Trichlorobenzene	0.37	5.5	< 5.5 U
91-20-3	Naphthalene	0.47	5.5	< 5.5 U
87-61-6	1,2,3-Trichlorobenzene	0.34	5.5	< 5.5 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	121%
d8-Toluene	100%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	98.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SDP-06(12.5-13.5)**
Page 1 of 2 **SAMPLE**

Lab Sample ID: AGF2B
LIMS ID: 15-9526
Matrix: Soil
Data Release Authorized:
Reported: 05/22/15

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/14/15

Instrument/Analyst: NT15/PKC
Date Analyzed: 05/19/15 15:10

Sample Amount: 3.96 g-dry-wt
Purge Volume: 5.0 mL
Moisture: 26.4%

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.33	1.3	< 1.3 U
74-83-9	Bromomethane	0.24	1.3	< 1.3 U
75-01-4	Vinyl Chloride	0.30	1.3	< 1.3 U
75-00-3	Chloroethane	0.58	1.3	< 1.3 U
75-09-2	**Methylene Chloride**	**0.80**	**2.5**	**97**
67-64-1	**Acetone**	**0.61**	**6.3**	**180**
75-15-0	Carbon Disulfide	0.71	1.3	< 1.3 U
75-35-4	1,1-Dichloroethene	0.42	1.3	< 1.3 U
75-34-3	1,1-Dichloroethane	0.26	1.3	< 1.3 U
156-60-5	trans-1,2-Dichloroethene	0.34	1.3	< 1.3 U
156-59-2	cis-1,2-Dichloroethene	0.30	1.3	< 1.3 U
67-66-3	Chloroform	0.30	1.3	< 1.3 U
107-06-2	1,2-Dichloroethane	0.24	1.3	< 1.3 U
78-93-3	**2-Butanone**	**0.65**	**6.3**	**19 Q**
71-55-6	1,1,1-Trichloroethane	0.29	1.3	< 1.3 U
56-23-5	Carbon Tetrachloride	0.27	1.3	< 1.3 U
108-05-4	Vinyl Acetate	0.48	6.3	< 6.3 U
75-27-4	Bromodichloromethane	0.32	1.3	< 1.3 U
78-87-5	1,2-Dichloropropane	0.20	1.3	< 1.3 U
10061-01-5	cis-1,3-Dichloropropene	0.29	1.3	< 1.3 U
79-01-6	Trichloroethene	0.27	1.3	< 1.3 U
124-48-1	Dibromochloromethane	0.34	1.3	< 1.3 U
79-00-5	1,1,2-Trichloroethane	0.36	1.3	< 1.3 U
71-43-2	Benzene	0.37	1.3	< 1.3 U
10061-02-6	trans-1,3-Dichloropropene	0.27	1.3	< 1.3 U
110-75-8	2-Chloroethylvinylether	0.35	6.3	< 6.3 U
75-25-2	Bromoform	0.38	1.3	< 1.3 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.53	6.3	< 6.3 U
591-78-6	2-Hexanone	0.55	6.3	< 6.3 U
127-18-4	Tetrachloroethene	0.32	1.3	< 1.3 U
79-34-5	1,1,2,2-Tetrachloroethane	0.32	1.3	< 1.3 U
108-88-3	Toluene	0.19	1.3	< 1.3 U
108-90-7	Chlorobenzene	0.28	1.3	< 1.3 U
100-41-4	Ethylbenzene	0.26	1.3	< 1.3 U
100-42-5	Styrene	0.17	1.3	< 1.3 U
75-69-4	Trichlorofluoromethane	0.34	1.3	< 1.3 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.36	2.5	< 2.5 U
179601-23-1	m,p-Xylene	0.49	1.3	< 1.3 U
95-47-6	o-Xylene	0.28	1.3	< 1.3 U
95-50-1	1,2-Dichlorobenzene	0.37	1.3	< 1.3 U
541-73-1	1,3-Dichlorobenzene	0.29	1.3	< 1.3 U
106-46-7	1,4-Dichlorobenzene	0.29	1.3	< 1.3 U
107-02-8	Acrolein	4.8	63	< 63 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: SDP-06(12.5-13.5)**
 SAMPLE

Lab Sample ID: AGF2B
LIMS ID: 15-9526
Matrix: Soil
Date Analyzed: 05/19/15 15:10

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

CAS Number	Analyte	DL	LOQ	Result
74-88-4	Iodomethane	0.27	1.3	< 1.3 U
74-96-4	Bromoethane	0.56	2.5	< 2.5 U
107-13-1	Acrylonitrile	1.3	6.3	< 6.3 U
563-58-6	1,1-Dichloropropene	0.39	1.3	< 1.3 U
74-95-3	Dibromomethane	0.19	1.3	< 1.3 U
630-20-6	1,1,1,2-Tetrachloroethane	0.29	1.3	< 1.3 U
96-12-8	1,2-Dibromo-3-chloropropane	0.74	6.3	< 6.3 U
96-18-4	1,2,3-Trichloropropane	0.65	2.5	< 2.5 U
110-57-6	trans-1,4-Dichloro-2-butene	0.55	6.3	< 6.3 U
108-67-8	1,3,5-Trimethylbenzene	0.32	1.3	< 1.3 U
95-63-6	1,2,4-Trimethylbenzene	0.29	1.3	< 1.3 U
87-68-3	Hexachlorobutadiene	0.52	6.3	< 6.3 U
106-93-4	1,2-Dibromoethane	0.22	1.3	< 1.3 U
74-97-5	Bromochloromethane	0.41	1.3	< 1.3 U
594-20-7	2,2-Dichloropropane	0.37	1.3	< 1.3 U
142-28-9	1,3-Dichloropropane	0.26	1.3	< 1.3 U
98-82-8	Isopropylbenzene	0.29	1.3	< 1.3 U
103-65-1	n-Propylbenzene	0.34	1.3	< 1.3 U
108-86-1	Bromobenzene	0.19	1.3	< 1.3 U
95-49-8	2-Chlorotoluene	0.38	1.3	< 1.3 U
106-43-4	4-Chlorotoluene	0.35	1.3	< 1.3 U
98-06-6	tert-Butylbenzene	0.39	1.3	< 1.3 U
135-98-8	sec-Butylbenzene	0.30	1.3	< 1.3 U
99-87-6	4-Isopropyltoluene	0.30	1.3	< 1.3 U
104-51-8	n-Butylbenzene	0.33	1.3	< 1.3 U
120-82-1	1,2,4-Trichlorobenzene	0.42	6.3	< 6.3 U
91-20-3	Naphthalene	0.54	6.3	< 6.3 U
87-61-6	1,2,3-Trichlorobenzene	0.39	6.3	< 6.3 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	117%
d8-Toluene	102%
Bromofluorobenzene	106%
d4-1,2-Dichlorobenzene	104%

ANALYTICAL RESOURCES INCORPORATED

VOA SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

ARI ID	Client ID	Level	DCE	TOL	BFB	DCB	TOT OUT
MB-051915A	Method Blank	Low	103%	100%	100%	102%	0
LCS-051915A	Lab Control	Low	106%	102%	99.4%	100%	0
LCSD-051915A	Lab Control Dup	Low	107%	102%	103%	100%	0
AGF2A	SDP-02(16.0-17.5)	Low	121%	100%	103%	98.6%	0
AGF2B	SDP-06(12.5-13.5)	Low	117%	102%	106%	104%	0

	LCS/MB LIMITS		QC LIMITS	
SW8260C	Low	Med	Low	Med
(DCE) = d4-1,2-Dichloroethane	80-149	80-124	80-149	80-124
(TOL) = d8-Toluene	77-120	80-120	77-120	80-120
(BFB) = Bromofluorobenzene	80-120	80-120	80-120	80-120
(DCB) = d4-1,2-Dichlorobenzene	80-120	80-120	80-120	80-120

Log Number Range: 15-9525 to 15-9526

AGF2 00028

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-051915A**

LAB CONTROL SAMPLE

ANALYTICAL RESOURCES INCORPORATED

Lab Sample ID: LCS-051915A
LIMS ID: 15-9525
Matrix: Soil
Data Release Authorized:
Reported: 05/22/15

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst LCS: NT15/PKC
LCSD: NT15/PKC
Date Analyzed LCS: 05/19/15 11:06
LCSD: 05/19/15 11:33

Sample Amount LCS: 5.00 g-dry-wt
LCSD: 5.00 g-dry-wt
Purge Volume LCS: 5.0 mL
LCSD: 5.0 mL
Moisture: NA

Analyte	LCS		Spike Added-LCS	LCS Recovery	LCSD		Spike Added-LCSD	LCSD Recovery	RPD
Chloromethane	55.6		50.0	111%	53.2		50.0	106%	4.4%
Bromomethane	65.8	Q	50.0	132%	63.8	Q	50.0	128%	3.1%
Vinyl Chloride	55.8		50.0	112%	53.1		50.0	106%	5.0%
Chloroethane	60.4	Q	50.0	121%	57.1	Q	50.0	114%	5.6%
Methylene Chloride	54.1		50.0	108%	54.2		50.0	108%	0.2%
Acetone	221		250	88.4%	259		250	104%	15.8%
Carbon Disulfide	53.1		50.0	106%	51.2		50.0	102%	3.6%
1,1-Dichloroethene	52.2		50.0	104%	50.3		50.0	101%	3.7%
1,1-Dichloroethane	55.7		50.0	111%	54.2		50.0	108%	2.7%
trans-1,2-Dichloroethene	53.0		50.0	106%	51.3		50.0	103%	3.3%
cis-1,2-Dichloroethene	55.6		50.0	111%	54.8		50.0	110%	1.4%
Chloroform	54.6		50.0	109%	53.6		50.0	107%	1.8%
1,2-Dichloroethane	53.4		50.0	107%	54.3		50.0	109%	1.7%
2-Butanone	287	Q	250	115%	322	Q	250	129%	11.5%
1,1,1-Trichloroethane	55.5		50.0	111%	54.3		50.0	109%	2.2%
Carbon Tetrachloride	56.1		50.0	112%	54.5		50.0	109%	2.9%
Vinyl Acetate	65.1	Q	50.0	130%	68.2	Q	50.0	136%	4.7%
Bromodichloromethane	55.4		50.0	111%	55.9		50.0	112%	0.9%
1,2-Dichloropropane	52.9		50.0	106%	53.5		50.0	107%	1.1%
cis-1,3-Dichloropropene	55.6		50.0	111%	56.4		50.0	113%	1.4%
Trichloroethene	53.0		50.0	106%	50.2		50.0	100%	5.4%
Dibromochloromethane	57.8		50.0	116%	60.3		50.0	121%	4.2%
1,1,2-Trichloroethane	53.0		50.0	106%	55.2		50.0	110%	4.1%
Benzene	53.3		50.0	107%	52.3		50.0	105%	1.9%
trans-1,3-Dichloropropene	55.1		50.0	110%	56.6		50.0	113%	2.7%
2-Chloroethylvinylether	49.5		50.0	99.0%	52.9		50.0	106%	6.6%
Bromoform	56.8		50.0	114%	59.9		50.0	120%	5.3%
4-Methyl-2-Pentanone (MIBK)	255		250	102%	282		250	113%	10.1%
2-Hexanone	239		250	95.6%	274		250	110%	13.6%
Tetrachloroethene	50.8		50.0	102%	49.6		50.0	99.2%	2.4%
1,1,2,2-Tetrachloroethane	50.6		50.0	101%	53.2		50.0	106%	5.0%
Toluene	55.3	Q	50.0	111%	53.5	Q	50.0	107%	3.3%
Chlorobenzene	50.0		50.0	100%	49.7		50.0	99.4%	0.6%
Ethylbenzene	49.4		50.0	98.8%	49.3		50.0	98.6%	0.2%
Styrene	50.5		50.0	101%	51.1		50.0	102%	1.2%
Trichlorofluoromethane	60.8	Q	50.0	122%	58.0	Q	50.0	116%	4.7%
1,1,2-Trichloro-1,2,2-trifluoroetha	53.5		50.0	107%	51.2		50.0	102%	4.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: LCS-051915A**

LAB CONTROL SAMPLE

Lab Sample ID: LCS-051915A
LIMS ID: 15-9525
Matrix: Soil

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
m,p-Xylene	98.8	100	98.8%	99.1	100	99.1%	0.3%
o-Xylene	50.6	50.0	101%	50.1	50.0	100%	1.0%
1,2-Dichlorobenzene	48.7	50.0	97.4%	48.0	50.0	96.0%	1.4%
1,3-Dichlorobenzene	47.7	50.0	95.4%	46.2	50.0	92.4%	3.2%
1,4-Dichlorobenzene	46.9	50.0	93.8%	46.2	50.0	92.4%	1.5%
Acrolein	241	250	96.4%	269	250	108%	11.0%
Iodomethane	47.1	50.0	94.2%	44.6	50.0	89.2%	5.5%
Bromoethane	56.4	50.0	113%	54.8	50.0	110%	2.9%
Acrylonitrile	54.7	50.0	109%	60.4	50.0	121%	9.9%
1,1-Dichloropropene	54.0	50.0	108%	52.0	50.0	104%	3.8%
Dibromomethane	54.5	50.0	109%	57.3	50.0	115%	5.0%
1,1,1,2-Tetrachloroethane	52.8	50.0	106%	53.6	50.0	107%	1.5%
1,2-Dibromo-3-chloropropane	54.3	50.0	109%	58.4	50.0	117%	7.3%
1,2,3-Trichloropropane	50.6	50.0	101%	54.4	50.0	109%	7.2%
trans-1,4-Dichloro-2-butene	52.5	50.0	105%	54.6	50.0	109%	3.9%
1,3,5-Trimethylbenzene	50.9	50.0	102%	47.8	50.0	95.6%	6.3%
1,2,4-Trimethylbenzene	50.4	50.0	101%	48.2	50.0	96.4%	4.5%
Hexachlorobutadiene	55.0	50.0	110%	50.4	50.0	101%	8.7%
1,2-Dibromoethane	53.6	50.0	107%	56.7	50.0	113%	5.6%
Bromochloromethane	57.0	50.0	114%	57.4	50.0	115%	0.7%
2,2-Dichloropropane	61.1 Q	50.0	122%	59.2 Q	50.0	118%	3.2%
1,3-Dichloropropane	50.4	50.0	101%	53.2	50.0	106%	5.4%
Isopropylbenzene	50.6	50.0	101%	47.8	50.0	95.6%	5.7%
n-Propylbenzene	51.2	50.0	102%	48.4	50.0	96.8%	5.6%
Bromobenzene	50.0	50.0	100%	49.8	50.0	99.6%	0.4%
2-Chlorotoluene	49.9	50.0	99.8%	47.9	50.0	95.8%	4.1%
4-Chlorotoluene	49.9	50.0	99.8%	48.1	50.0	96.2%	3.7%
tert-Butylbenzene	50.7	50.0	101%	47.9	50.0	95.8%	5.7%
sec-Butylbenzene	51.4	50.0	103%	47.9	50.0	95.8%	7.0%
4-Isopropyltoluene	51.9	50.0	104%	49.2	50.0	98.4%	5.3%
n-Butylbenzene	52.4	50.0	105%	48.3	50.0	96.6%	8.1%
1,2,4-Trichlorobenzene	56.4	50.0	113%	53.8	50.0	108%	4.7%
Naphthalene	54.8	50.0	110%	56.2	50.0	112%	2.5%
1,2,3-Trichlorobenzene	55.6	50.0	111%	54.6	50.0	109%	1.8%

Reported in µg/kg (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	106%	107%
d8-Toluene	102%	102%
Bromofluorobenzene	99.4%	103%
d4-1,2-Dichlorobenzene	100%	100%

4A
VOLATILE METHOD BLANK SUMMARY

Method Blank ID.

MB0519

Lab Name: ANALYTICAL RESOURCES INC

Client: KENNEDY JENKS

ARI Job No: AGF2

Project: POS SILVER

Lab File ID: MB0519

Lab Sample ID: MB0519

Date Analyzed: 05/19/15

Time Analyzed: 1200

Instrument ID: NT15

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS0519	LCS0519	LCS0519	1106
02	LCS0519	LCS0519	LCS0519A	1133
03	SDP-02(16.0-	AGF2A	AGF2A	1442
04	SDP-06(12.5-	AGF2B	AGF2B	1510
05				
06				
07				
08				
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COMMENTS:

AGF2 - 05021

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-051915A**
 METHOD BLANK

Lab Sample ID: MB-051915A
LIMS ID: 15-9525
Matrix: Soil
Data Release Authorized:
Reported: 05/22/15

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT15/PKC
Date Analyzed: 05/19/15 12:00

Sample Amount: 5.00 g-dry-wt
Purge Volume: 5.0 mL
Moisture: NA

CAS Number	Analyte	DL	LOQ	Result
74-87-3	Chloromethane	0.26	1.0	< 1.0 U
74-83-9	Bromomethane	0.19	1.0	< 1.0 U
75-01-4	Vinyl Chloride	0.24	1.0	< 1.0 U
75-00-3	Chloroethane	0.46	1.0	< 1.0 U
75-09-2	Methylene Chloride	0.64	2.0	< 2.0 U
67-64-1	Acetone	0.48	5.0	< 5.0 U
75-15-0	Carbon Disulfide	0.56	1.0	< 1.0 U
75-35-4	1,1-Dichloroethene	0.34	1.0	< 1.0 U
75-34-3	1,1-Dichloroethane	0.20	1.0	< 1.0 U
156-60-5	trans-1,2-Dichloroethene	0.27	1.0	< 1.0 U
156-59-2	cis-1,2-Dichloroethene	0.24	1.0	< 1.0 U
67-66-3	Chloroform	0.23	1.0	< 1.0 U
107-06-2	1,2-Dichloroethane	0.19	1.0	< 1.0 U
78-93-3	2-Butanone	0.51	5.0	< 5.0 U
71-55-6	1,1,1-Trichloroethane	0.23	1.0	< 1.0 U
56-23-5	Carbon Tetrachloride	0.21	1.0	< 1.0 U
108-05-4	Vinyl Acetate	0.38	5.0	< 5.0 U
75-27-4	Bromodichloromethane	0.25	1.0	< 1.0 U
78-87-5	1,2-Dichloropropane	0.16	1.0	< 1.0 U
10061-01-5	cis-1,3-Dichloropropene	0.23	1.0	< 1.0 U
79-01-6	Trichloroethene	0.21	1.0	< 1.0 U
124-48-1	Dibromochloromethane	0.27	1.0	< 1.0 U
79-00-5	1,1,2-Trichloroethane	0.29	1.0	< 1.0 U
71-43-2	Benzene	0.30	1.0	< 1.0 U
10061-02-6	trans-1,3-Dichloropropene	0.22	1.0	< 1.0 U
110-75-8	2-Chloroethylvinylether	0.28	5.0	< 5.0 U
75-25-2	Bromoform	0.30	1.0	< 1.0 U
108-10-1	4-Methyl-2-Pentanone (MIBK)	0.42	5.0	< 5.0 U
591-78-6	2-Hexanone	0.44	5.0	< 5.0 U
127-18-4	Tetrachloroethene	0.26	1.0	< 1.0 U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1.0	< 1.0 U
108-88-3	Toluene	0.15	1.0	< 1.0 U
108-90-7	Chlorobenzene	0.22	1.0	< 1.0 U
100-41-4	Ethylbenzene	0.20	1.0	< 1.0 U
100-42-5	Styrene	0.14	1.0	< 1.0 U
75-69-4	Trichlorofluoromethane	0.27	1.0	< 1.0 U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroe	0.29	2.0	< 2.0 U
179601-23-1	m,p-Xylene	0.39	1.0	< 1.0 U
95-47-6	o-Xylene	0.22	1.0	< 1.0 U
95-50-1	1,2-Dichlorobenzene	0.29	1.0	< 1.0 U
541-73-1	1,3-Dichlorobenzene	0.23	1.0	< 1.0 U
106-46-7	1,4-Dichlorobenzene	0.23	1.0	< 1.0 U
107-02-8	Acrolein	3.8	50	< 50 U

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Volatiles by Purge & Trap GC/MS-Method SW8260C **Sample ID: MB-051915A**
 METHOD BLANK

Lab Sample ID: MB-051915A
LIMS ID: 15-9525
Matrix: Soil
Date Analyzed: 05/19/15 12:00

QC Report No: AGF2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00

CAS Number	Analyte	DL	LOQ	Result
74-88-4	Iodomethane	0.22	1.0	< 1.0 U
74-96-4	Bromoethane	0.44	2.0	< 2.0 U
107-13-1	Acrylonitrile	1.0	5.0	< 5.0 U
563-58-6	1,1-Dichloropropene	0.31	1.0	< 1.0 U
74-95-3	Dibromomethane	0.15	1.0	< 1.0 U
630-20-6	1,1,1,2-Tetrachloroethane	0.23	1.0	< 1.0 U
96-12-8	1,2-Dibromo-3-chloropropane	0.59	5.0	< 5.0 U
96-18-4	1,2,3-Trichloropropane	0.52	2.0	< 2.0 U
110-57-6	trans-1,4-Dichloro-2-butene	0.44	5.0	< 5.0 U
108-67-8	1,3,5-Trimethylbenzene	0.25	1.0	< 1.0 U
95-63-6	1,2,4-Trimethylbenzene	0.23	1.0	< 1.0 U
87-68-3	Hexachlorobutadiene	0.41	5.0	< 5.0 U
106-93-4	1,2-Dibromoethane	0.18	1.0	< 1.0 U
74-97-5	Bromochloromethane	0.32	1.0	< 1.0 U
594-20-7	2,2-Dichloropropane	0.29	1.0	< 1.0 U
142-28-9	1,3-Dichloropropane	0.21	1.0	< 1.0 U
98-82-8	Isopropylbenzene	0.23	1.0	< 1.0 U
103-65-1	n-Propylbenzene	0.27	1.0	< 1.0 U
108-86-1	Bromobenzene	0.15	1.0	< 1.0 U
95-49-8	2-Chlorotoluene	0.30	1.0	< 1.0 U
106-43-4	4-Chlorotoluene	0.28	1.0	< 1.0 U
98-06-6	tert-Butylbenzene	0.31	1.0	< 1.0 U
135-98-8	sec-Butylbenzene	0.24	1.0	< 1.0 U
99-87-6	4-Isopropyltoluene	0.24	1.0	< 1.0 U
104-51-8	n-Butylbenzene	0.26	1.0	< 1.0 U
120-82-1	1,2,4-Trichlorobenzene	0.33	5.0	< 5.0 U
91-20-3	Naphthalene	0.43	5.0	< 5.0 U
87-61-6	1,2,3-Trichlorobenzene	0.30	5.0	< 5.0 U

Reported in µg/kg (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	100%
Bromofluorobenzene	100%
d4-1,2-Dichlorobenzene	102%

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: KENNEDY JENKS

Lab Code: ARI Case No.: POS SILVER SDG No.: AGF2

Lab File ID: BFB051515 BFB Injection Date: 05/15/15

Instrument ID: NT15 BFB Injection Time: 1301

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	52.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 100.0% of mass 95	69.4
175	5.0 - 9.0% of mass 174	4.9 (7.0)1
176	95.0 - 101.0% of mass 174	67.4 (97.2)1
177	5.0 - 9.0% of mass 176	4.3 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	SDE0043-CAL1	001051515	05/15/15	1402
02	VSTD002	SDE0043-CAL2	002051515	05/15/15	1430
03	VSTD005	SDE0043-CAL3	005051515	05/15/15	1457
04	VSTD010	SDE0043-CAL4	010051515	05/15/15	1525
05	VSTD050	SDE0043-CAL5	050051515	05/15/15	1552
06	VSTD100	SDE0043-CAL6	100051515	05/15/15	1620
07	VSTD150	SDE0043-CAL7	150051515	05/15/15	1647
08	VSTD200	SDE0043-CAL8	200051515	05/15/15	1715
09	PENT500	SDE0043-CAL9	500051515	05/15/15	1743
10	SCV100	SDE0043-SCV1	SCV051515	05/15/15	1810
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: ANALYTICAL RESOURCES INC Contract: KENNEDY JENKS

Lab Code: ARI Case No.: POS SILVER SDG No.: AGF2

Lab File ID: BFB051915 BFB Injection Date: 05/19/15

Instrument ID: NT15 BFB Injection Time: 0954

GC Column: RTXVMS ID: 0.18 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.5
75	30.0 - 60.0% of mass 95	51.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 100.0% of mass 95	69.9
175	5.0 - 9.0% of mass 174	4.9 (6.9)1
176	95.0 - 101.0% of mass 174	67.6 (96.6)1
177	5.0 - 9.0% of mass 176	4.6 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CC0519	CC0519	CC0519	05/19/15	1039
02	LCS0519	LCS0519	LCS0519	05/19/15	1106
03	LCS0519	LCS0519	LCS0519A	05/19/15	1133
04	MB0519	MB0519	MB0519	05/19/15	1200
05	SDP-02(16.0-17.5	AGF2A	AGF2A	05/19/15	1442
06	SDP-06(12.5-13.5	AGF2B	AGF2B	05/19/15	1510
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

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PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF1: 001051515 RF2: 002051515 RF5: 005051515
RF10: 010051515 RF50: 050051515

COMPOUND	RF1	RF2	RF5	RF10	RF50
Chloromethane	1.222	0.749	0.633	0.592	0.519
Vinyl Chloride	0.706	0.602	0.644	0.663	0.637
Bromomethane	0.585	0.388	0.279	0.269	0.229
Chloroethane	0.269	0.234	0.239	0.235	0.217
Trichlorofluoromethane	0.321	0.259	0.272	0.277	0.261
Acrolein	0.084	0.073	0.081	0.080	0.080
112Trichloro122Trifluoroetha	0.536	0.463	0.470	0.482	0.462
Acetone	0.349	0.198	0.176	0.149	0.147
1,1-Dichloroethene	0.666	0.554	0.572	0.600	0.576
Bromoethane	0.311	0.295	0.320	0.336	0.320
Iodomethane	0.306	0.399	0.424	0.465	0.487
Methylene Chloride		0.606	0.610	0.594	0.578
Acrylonitrile	0.144	0.140	0.158	0.160	0.166
Carbon Disulfide	2.778	1.892	1.767	1.740	1.653
Trans-1,2-Dichloroethene	0.772	0.650	0.636	0.639	0.609
Vinyl Acetate	0.564	0.736	0.804	0.877	0.908
1,1-Dichloroethane	1.018	0.920	0.945	0.980	0.964
2-Butanone	0.066	0.057	0.064	0.061	0.065
2,2-Dichloropropane	0.752	0.645	0.662	0.701	0.761
Cis-1,2-Dichloroethene	0.607	0.540	0.574	0.576	0.561
Chloroform	1.002	1.074	0.946	1.007	0.968
Bromochloromethane	0.234	0.200	0.219	0.227	0.226
1,1,1-Trichloroethane	0.869	0.742	0.775	0.811	0.808
1,1-Dichloropropene	0.521	0.470	0.473	0.478	0.463
Carbon Tetrachloride	0.312	0.328	0.315	0.337	0.360
1,2-Dichloroethane	0.517	0.424	0.467	0.479	0.466
Benzene	1.499	1.393	1.312	1.357	1.316
Trichloroethene	0.418	0.333	0.327	0.344	0.325
1,2-Dichloropropane	0.356	0.329	0.317	0.328	0.318
Bromodichloromethane	0.414	0.430	0.377	0.405	0.426
Dibromomethane	0.154	0.160	0.155	0.160	0.161
2-Chloroethyl Vinyl Ether	0.184	0.178	0.172	0.184	0.189
4-Methyl-2-Pentanone	0.118	0.120	0.128	0.126	0.132
Cis 1,3-dichloropropene	0.492	0.470	0.442	0.472	0.497
Toluene	0.826	0.564	0.576	0.567	0.549
Trans 1,3-Dichloropropene	0.446	0.389	0.393	0.412	0.451
2-Hexanone	0.262	0.241	0.265	0.250	0.274

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF1: 001051515 RF2: 002051515 RF5: 005051515
RF10: 010051515 RF50: 050051515

COMPOUND	RF1	RF2	RF5	RF10	RF50
1,1,2-Trichloroethane	0.257	0.250	0.245	0.248	0.251
1,3-Dichloropropane	0.572	0.518	0.502	0.508	0.516
Tetrachloroethene	0.395	0.358	0.336	0.336	0.328
Chlorodibromomethane	0.231	0.224	0.225	0.276	0.313
1,2-Dibromoethane	0.244	0.232	0.231	0.239	0.243
Chlorobenzene	1.159	1.036	0.980	0.984	0.960
Ethyl Benzene	2.151	1.913	1.800	1.809	1.778
1,1,1,2-Tetrachloroethane	0.270	0.260	0.265	0.278	0.297
m,p-xylene	0.811	0.716	0.685	0.693	0.701
o-Xylene	0.873	0.770	0.702	0.726	0.749
Styrene	1.222	1.110	1.090	1.098	1.135
Bromoform	0.276	0.222	0.258	0.263	0.332
1,1,2,2-Tetrachloroethane	0.780	0.736	0.728	0.725	0.771
1,2,3-Trichloropropane	0.202	0.208	0.214	0.220	0.236
Trans-1,4-Dichloro 2-Butene	0.215	0.212	0.214	0.226	0.242
N-Propyl Benzene	5.090	4.464	4.195	4.187	4.138
Bromobenzene	0.812	0.757	0.712	0.720	0.710
Isopropyl Benzene	4.174	3.624	3.420	3.457	3.371
2-Chloro Toluene	2.875	2.570	2.430	2.442	2.375
4-Chloro Toluene	3.007	2.699	2.520	2.575	2.456
T-Butyl Benzene	2.881	2.535	2.420	2.478	2.434
1,3,5-Trimethyl Benzene	3.298	2.959	2.817	2.919	2.859
1,2,4-Trimethylbenzene	3.250	2.924	2.776	2.895	2.820
S-Butyl Benzene	4.429	3.939	3.798	3.838	3.771
4-Isopropyl Toluene	3.530	3.156	3.048	3.085	3.024
1,3-Dichlorobenzene	2.158	1.709	1.517	1.490	1.448
1,4-Dichlorobenzene	2.243	1.796	1.532	1.522	1.476
N-Butyl Benzene	3.740	3.163	3.016	3.083	2.959
1,2-Dichlorobenzene	1.893	1.554	1.419	1.403	1.376
1,2-Dibromo 3-Chloropropane			0.123	0.128	0.144
1,2,4-Trichlorobenzene			0.911	0.886	0.840
Hexachloro 1,3-Butadiene			0.446	0.447	0.446
Naphthalene			2.212	2.250	2.286
1,2,3-Trichlorobenzene			0.827	0.810	0.768
Dichlorodifluoromethane	0.551	0.479	0.501	0.535	0.507
Methyl tert butyl ether	1.730	1.531	1.626	1.685	1.651
2 pentanone	0.102	0.074	0.084	0.083	0.086

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PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF1: 001051515 RF2: 002051515 RF5: 005051515
RF10: 010051515 RF50: 050051515

COMPOUND	RF1	RF2	RF5	RF10	RF50
d4-1,2-Dichloroethane	0.570	0.550	0.578	0.598	0.588
d8-Toluene	1.386	1.381	1.384	1.366	1.380
4-Bromofluorobenzene	0.489	0.502	0.499	0.497	0.499
d4-1,2-Dichlorobenzene	0.885	0.883	0.891	0.884	0.879
Dibromofluoromethane	0.435	0.416	0.443	0.459	0.468

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF100: 100051515 RF150: 150051515 RF200: 200051515
RF150: 500051515

COMPOUND	RF100	RF150	RF200	RF150
Chloromethane	0.531	0.498	0.528	
Vinyl Chloride	0.661	0.631	0.644	
Bromomethane	0.276	0.292	0.307	
Chloroethane	0.224	0.206	0.200	
Trichlorofluoromethane	0.271	0.237	0.243	
Acrolein	0.079	0.075	0.077	
112Trichloro122Trifluoroetha	0.474	0.433		
Acetone	0.134	0.117	0.103	
1,1-Dichloroethene	0.591			
Bromoethane	0.328	0.312	0.323	
Iodomethane	0.475	0.516	0.536	
Methylene Chloride	0.589	0.560	0.572	
Acrylonitrile	0.158	0.143	0.156	
Carbon Disulfide	1.709			
Trans-1,2-Dichloroethene	0.632	0.594	0.609	
Vinyl Acetate	0.907	0.895	0.862	
1,1-Dichloroethane	0.998	0.946	0.967	
2-Butanone	0.060	0.055	0.056	
2,2-Dichloropropane	0.813	0.772	0.801	
Cis-1,2-Dichloroethene	0.579	0.551	0.569	
Chloroform	0.958	0.887	0.884	
Bromochloromethane	0.231	0.219	0.227	
1,1,1-Trichloroethane	0.835	0.784	0.815	
1,1-Dichloropropene	0.478	0.442	0.461	
Carbon Tetrachloride	0.385	0.363	0.383	
1,2-Dichloroethane	0.464	0.435	0.441	
Benzene	1.336	1.274	1.294	
Trichloroethene	0.330	0.313	0.324	
1,2-Dichloropropane	0.326	0.310	0.319	
Bromodichloromethane	0.435	0.398	0.399	
Dibromomethane	0.164	0.156	0.159	
2-Chloroethyl Vinyl Ether	0.188	0.174	0.177	
4-Methyl-2-Pentanone	0.128	0.118	0.118	
Cis 1,3-dichloropropene	0.512	0.489	0.506	
Toluene	0.613	0.622	0.673	
Trans 1,3-Dichloropropene	0.468	0.455	0.474	
2-Hexanone	0.255	0.223	0.201	

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF100: 100051515 RF150: 150051515 RF200: 200051515
RF150: 500051515

COMPOUND	RF100	RF150	RF200	RF150
1,1,2-Trichloroethane	0.250	0.239	0.246	
1,3-Dichloropropane	0.513	0.473	0.470	
Tetrachloroethene	0.339	0.310	0.321	
Chlorodibromomethane	0.326	0.307	0.305	
1,2-Dibromoethane	0.245	0.230	0.239	
Chlorobenzene	0.994	0.919	0.937	
Ethyl Benzene	1.821	1.662	1.719	
1,1,1,2-Tetrachloroethane	0.312	0.297	0.308	
m,p-xylene	0.736	0.683	0.687	
o-Xylene	0.780	0.741	0.764	
Styrene	1.176	1.100	1.119	
Bromoform	0.348	0.332		
1,1,2,2-Tetrachloroethane	0.747	0.660	0.633	
1,2,3-Trichloropropane	0.228	0.209	0.206	
Trans-1,4-Dichloro 2-Butene	0.239	0.210	0.201	
N-Propyl Benzene	4.158	3.726	4.138	
Bromobenzene	0.727	0.687	0.739	
Isopropyl Benzene	3.491	3.172	3.523	
2-Chloro Toluene	2.396	2.210	2.401	
4-Chloro Toluene	2.474	2.250	2.412	
T-Butyl Benzene	2.538	2.302	2.569	
1,3,5-Trimethyl Benzene	2.992	2.706	3.013	
1,2,4-Trimethylbenzene	2.917	2.657	2.889	
S-Butyl Benzene	3.885	3.449	3.831	
4-Isopropyl Toluene	3.166	2.827	3.106	
1,3-Dichlorobenzene	1.492	1.381	1.420	
1,4-Dichlorobenzene	1.492	1.384	1.404	
N-Butyl Benzene	3.029	2.627	2.818	
1,2-Dichlorobenzene	1.397	1.269	1.264	
1,2-Dibromo 3-Chloropropane	0.140	0.118	0.114	
1,2,4-Trichlorobenzene	0.877	0.717	0.738	
Hexachloro 1,3-Butadiene	0.471	0.371	0.404	
Naphthalene	2.280	1.883	1.928	
1,2,3-Trichlorobenzene	0.816	0.646	0.693	
Dichlorodifluoromethane	0.522	0.480	0.494	
Methyl tert butyl ether	1.660	1.578	1.730	
2 pentanone	0.083	0.075	0.077	0.081

AGF2 - 8DMLS

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

LAB FILE ID: RF100: 100051515 RF150: 150051515 RF200: 200051515
RF150: 500051515

COMPOUND	RF100	RF150	RF200	RF150
d4-1,2-Dichloroethane	0.582	0.583	0.589	
d8-Toluene	1.383	1.393	1.395	
4-Bromofluorobenzene	0.498	0.485	0.479	
d4-1,2-Dichlorobenzene	0.872	0.861	0.840	
Dibromofluoromethane	0.475	0.475	0.485	

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
Chloromethane	LINR		0.9986
Vinyl Chloride	AVRG	0.648	4.6
Bromomethane	LINR		0.9944
Chloroethane	AVRG	0.228	9.4
Trichlorofluoromethane	AVRG	0.268	9.6
Acrolein	AVRG	0.079	4.7
112Trichloro122Trifluoroetha	AVRG	0.474	6.6
Acetone	2ORDR		0.9986
1,1-Dichloroethene	AVRG	0.593	6.6
Bromoethane	AVRG	0.318	3.9
Iodomethane	AVRG	0.451	16.4
Methylene Chloride	AVRG	0.587	3.1
Acrylonitrile	AVRG	0.153	6.2
Carbon Disulfide	LINR		0.9996
Trans-1,2-Dichloroethene	AVRG	0.643	8.6
Vinyl Acetate	AVRG	0.819	14.5
1,1-Dichloroethane	AVRG	0.967	3.2
2-Butanone	AVRG	0.060	7.2
2,2-Dichloropropane	AVRG	0.738	8.4
Cis-1,2-Dichloroethene	AVRG	0.570	3.5
Chloroform	AVRG	0.966	6.6
Bromochloromethane	AVRG	0.223	4.8
1,1,1-Trichloroethane	AVRG	0.805	4.8
1,1-Dichloropropene	AVRG	0.473	4.8
Carbon Tetrachloride	AVRG	0.348	8.3
1,2-Dichloroethane	AVRG	0.462	6.4
Benzene	AVRG	1.348	5.3
Trichloroethene	AVRG	0.339	9.7
1,2-Dichloropropane	AVRG	0.325	4.3
Bromodichloromethane	AVRG	0.410	4.8
Dibromomethane	AVRG	0.158	2.2
2-Chloroethyl Vinyl Ether	AVRG	0.181	3.6
4-Methyl-2-Pentanone	AVRG	0.124	4.6
Cis 1,3-dichloropropene	AVRG	0.485	4.7
Toluene	AVRG	0.624	14.6
Trans 1,3-Dichloropropene	AVRG	0.436	7.7
2-Hexanone	AVRG	0.246	9.8

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

FORM VI VOA

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
1,1,2-Trichloroethane	AVRG	0.248	2.1
1,3-Dichloropropane	AVRG	0.509	6.2
Tetrachloroethene	AVRG	0.340	7.7
Chlorodibromomethane	AVRG	0.276	15.6
1,2-Dibromoethane	AVRG	0.238	2.6
Chlorobenzene	AVRG	0.996	7.5
Ethyl Benzene	AVRG	1.832	8.1
1,1,1,2-Tetrachloroethane	AVRG	0.286	7.0
m,p-xylene	AVRG	0.714	6.0
o-Xylene	AVRG	0.763	6.7
Styrene	AVRG	1.131	4.0
Bromoform	AVRG	0.290	16.4
1,1,2,2-Tetrachloroethane	AVRG	0.722	7.1
1,2,3-Trichloropropane	AVRG	0.216	5.4
Trans-1,4-Dichloro 2-Butene	AVRG	0.220	6.6
N-Propyl Benzene	AVRG	4.262	9.2
Bromobenzene	AVRG	0.733	5.2
Isopropyl Benzene	AVRG	3.529	8.3
2-Chloro Toluene	AVRG	2.462	7.9
4-Chloro Toluene	AVRG	2.549	8.8
T-Butyl Benzene	AVRG	2.520	6.7
1,3,5-Trimethyl Benzene	AVRG	2.945	5.9
1,2,4-Trimethylbenzene	AVRG	2.891	5.9
S-Butyl Benzene	AVRG	3.867	7.0
4-Isopropyl Toluene	AVRG	3.118	6.3
1,3-Dichlorobenzene	AVRG	1.577	16.1
1,4-Dichlorobenzene	AVRG	1.606	17.8
N-Butyl Benzene	AVRG	3.054	10.6
1,2-Dichlorobenzene	AVRG	1.447	14.0
1,2-Dibromo 3-Chloropropane	AVRG	0.128	9.4
1,2,4-Trichlorobenzene	AVRG	0.828	9.8
Hexachloro 1,3-Butadiene	AVRG	0.431	8.5
Naphthalene	AVRG	2.140	8.6
1,2,3-Trichlorobenzene	AVRG	0.760	9.8
Dichlorodifluoromethane	AVRG	0.509	5.0
Methyl tert butyl ether	AVRG	1.649	4.2
2 pentanone	AVRG	0.083	10.0

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

AGF2 : 08613

PK FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Calibration Date: 05/15/15

COMPOUND	CURVE TYPE	AVE RF	%RSD OR R^2
d4-1,2-Dichloroethane	AVRG	0.580	2.5
d8-Toluene	AVRG	1.384	0.6
4-Bromofluorobenzene	AVRG	0.494	1.7
d4-1,2-Dichlorobenzene	AVRG	0.874	1.9
Dibromofluoromethane	AVRG	0.457	5.2

<- Indicates value outside QC limits:
(%RSD < 20% or R^2 > 0.990)

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Cont. Calib. Date: 05/19/15

Init. Calib. Date: 05/15/15 Cont. Calib. Time: 1039

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift	
Chloromethane	50.000	55.957	0.100	LINR	11.9	
Vinyl Chloride	0.648	0.7214	0.010	AVRG	11.3	
Bromomethane	50.000	64.779	0.010	LINR	29.6	<-
Chloroethane	0.228	0.2797	0.010	AVRG	22.7	<-
Trichlorofluoromethane	0.268	0.3406	0.010	AVRG	27.1	<-
Acrolein	0.079	0.0749	0.010	AVRG	-5.2	
112Trichloro122Trifluoroetha	0.474	0.5264	0.010	AVRG	11.0	
Acetone	250.00	283.19	0.010	2ORDR	13.3	
1,1-Dichloroethene	0.593	0.6332	0.010	AVRG	6.8	
Bromoethane	0.318	0.3644	0.010	AVRG	14.6	
Iodomethane	0.451	0.4361	0.010	AVRG	-3.3	
Methylene Chloride	0.587	0.6489	0.010	AVRG	10.5	
Acrylonitrile	0.153	0.1772	0.010	AVRG	15.8	
Carbon Disulfide	50.000	54.378	0.010	LINR	8.8	
Trans-1,2-Dichloroethene	0.643	0.6863	0.010	AVRG	6.7	
Vinyl Acetate	0.819	1.1272	0.010	AVRG	37.6	<-
1,1-Dichloroethane	0.967	1.0997	0.100	AVRG	13.7	
2-Butanone	0.060	0.0757	0.010	AVRG	26.2	<-
2,2-Dichloropropane	0.738	0.9412	0.010	AVRG	27.5	<-
Cis-1,2-Dichloroethene	0.570	0.6417	0.010	AVRG	12.6	
Chloroform	0.966	0.9906	0.010	AVRG	2.5	
Bromochloromethane	0.223	0.2596	0.010	AVRG	16.4	
1,1,1-Trichloroethane	0.805	0.9150	0.010	AVRG	13.7	
1,1-Dichloropropene	0.473	0.5093	0.010	AVRG	7.7	
Carbon Tetrachloride	0.348	0.3906	0.010	AVRG	12.2	
1,2-Dichloroethane	0.462	0.5111	0.010	AVRG	10.6	
Benzene	1.348	1.4389	0.010	AVRG	6.7	
Trichloroethene	0.339	0.3571	0.010	AVRG	5.3	
1,2-Dichloropropane	0.325	0.3479	0.010	AVRG	7.0	
Bromodichloromethane	0.410	0.4394	0.010	AVRG	7.2	
Dibromomethane	0.159	0.1762	0.010	AVRG	10.8	
2-Chloroethyl Vinyl Ether	0.181	0.1872	0.010	AVRG	3.4	
4-Methyl-2-Pentanone	0.124	0.1298	0.010	AVRG	4.7	
Cis 1,3-dichloropropene	0.485	0.5526	0.010	AVRG	13.9	
Toluene	0.624	0.7835	0.010	AVRG	25.6	<-
Trans 1,3-Dichloropropene	0.436	0.4934	0.010	AVRG	13.2	
2-Hexanone	0.246	0.2455	0.010	AVRG	-0.2	

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII VOA

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Cont. Calib. Date: 05/19/15

Init. Calib. Date: 05/15/15 Cont. Calib. Time: 1039

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
1,1,2-Trichloroethane	0.248	0.2686	0.010	AVRG	8.3
1,3-Dichloropropane	0.509	0.5237	0.010	AVRG	2.9
Tetrachloroethene	0.340	0.3502	0.010	AVRG	3.0
Chlorodibromomethane	0.276	0.3264	0.010	AVRG	18.3
1,2-Dibromoethane	0.238	0.2608	0.010	AVRG	9.6
Chlorobenzene	0.996	0.9995	0.300	AVRG	0.4
Ethyl Benzene	1.832	1.8255	0.010	AVRG	-0.4
1,1,1,2-Tetrachloroethane	0.286	0.3057	0.010	AVRG	6.9
m,p-xylene	0.714	0.7197	0.010	AVRG	0.8
o-Xylene	0.763	0.7967	0.010	AVRG	4.4
Styrene	1.131	1.1655	0.010	AVRG	3.0
Bromoform	0.290	0.3313	0.100	AVRG	14.2
1,1,2,2-Tetrachloroethane	0.722	0.7231	0.300	AVRG	0.2
1,2,3-Trichloropropane	0.215	0.2195	0.010	AVRG	2.1
Trans-1,4-Dichloro 2-Butene	0.220	0.2351	0.010	AVRG	6.9
N-Propyl Benzene	4.262	4.2756	0.010	AVRG	0.3
Bromobenzene	0.733	0.7298	0.010	AVRG	-0.4
Isopropyl Benzene	3.529	3.4514	0.010	AVRG	-2.2
2-Chloro Toluene	2.462	2.3918	0.010	AVRG	-2.8
4-Chloro Toluene	2.549	2.5191	0.010	AVRG	-1.2
T-Butyl Benzene	2.520	2.4851	0.010	AVRG	-1.4
1,3,5-Trimethyl Benzene	2.945	2.9236	0.010	AVRG	-0.7
1,2,4-Trimethylbenzene	2.891	2.8831	0.010	AVRG	-0.3
S-Butyl Benzene	3.868	3.8775	0.010	AVRG	0.2
4-Isopropyl Toluene	3.118	3.1671	0.010	AVRG	1.6
1,3-Dichlorobenzene	1.577	1.4879	0.010	AVRG	-5.6
1,4-Dichlorobenzene	1.606	1.5084	0.010	AVRG	-6.1
N-Butyl Benzene	3.054	3.1834	0.010	AVRG	4.2
1,2-Dichlorobenzene	1.447	1.3933	0.010	AVRG	-3.7
1,2-Dibromo 3-Chloropropane	0.128	0.1429	0.010	AVRG	11.6
1,2,4-Trichlorobenzene	0.828	0.9312	0.010	AVRG	12.5
Hexachloro 1,3-Butadiene	0.431	0.4511	0.010	AVRG	4.7
Naphthalene	2.140	2.2789	0.010	AVRG	6.5
1,2,3-Trichlorobenzene	0.760	0.8316	0.010	AVRG	9.4
Dichlorodifluoromethane	0.509	0.5634	0.010	AVRG	10.7
Methyl tert butyl ether	1.649	1.6848	0.010	AVRG	2.2
2 pentanone	0.083	0.0912	0.010	AVRG	9.9

<- Exceeds QC limit of 20% D

* RF less than minimum RF

FORM VII VOA

AGF2 8015

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Instrument ID: NT15 Cont. Calib. Date: 05/19/15

Init. Calib. Date: 05/15/15 Cont. Calib. Time: 1039

COMPOUND	CalAmt or ARF	CC Amt or RF	MIN RRF	CURVE TYPE	%D or Drift
d4-1,2-Dichloroethane	0.580	0.6439	0.010	AVRG	11.0
d8-Toluene	1.384	1.4061	0.010	AVRG	1.6
4-Bromofluorobenzene	0.494	0.5060	0.010	AVRG	2.4
d4-1,2-Dichlorobenzene	0.874	0.8798	0.010	AVRG	0.7
Dibromofluoromethane	0.457	0.5030	0.010	AVRG	10.1

<- Exceeds QC limit of 20% D
* RF less than minimum RF

FORM VII VOA

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Ical Midpoint ID: 010051515 Ical Date: 05/15/15

Instrument ID: NT15 Project Run Date: 05/15/15

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	156999	5.67	270221	6.12	245383	8.58
	UPPER LIMIT	313998	6.17	540442	6.62	490766	9.08
	LOWER LIMIT	78500	5.17	135110	5.62	122692	8.08
	Sample ID						
01	SCV100	155255	5.67	261791	6.12	233321	8.58
02							
03							
04							
05							
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20							
21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Ical Midpoint ID: 010051515 Ical Date: 05/15/15

Instrument ID: NT15 Project Run Date: 05/15/15

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	123982	10.67				
	UPPER LIMIT	247964	11.17				
	LOWER LIMIT	61991	10.17				
	Sample ID						
01	SCV100	120582	10.67				
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
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16							
17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Ical Midpoint ID: 010051515 Ical Date: 05/15/15

Instrument ID: NT15 Project Run Date: 05/19/15

		IS1(PFB) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CLB) AREA #	RT #
	ICAL MIDPT	156999	5.67	270221	6.12	245383	8.58
	UPPER LIMIT	313998	6.17	540442	6.62	490766	9.08
	LOWER LIMIT	78500	5.17	135110	5.62	122692	8.08
	Sample ID						
01	LCS0519	135350	5.68	237897	6.12	226627	8.58
02	LCS0519	138714	5.68	241693	6.12	227125	8.58
03	MB0519	127981	5.68	221340	6.12	199939	8.58
04	SDP-02(16.0-	137586	5.67	251619	6.12	243038	8.58
05	SDP-06(12.5-	133469	5.68	236487	6.12	224356	8.58
06							
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21							
22							

IS1 (PFB) = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CLB) = d5-Chlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ANALYTICAL RESOURCES INC Client: KENNEDY JENKS

ARI Job No: AGF2 Project: POS SILVER

Ical Midpoint ID: 010051515 Ical Date: 05/15/15

Instrument ID: NT15 Project Run Date: 05/19/15

		IS4(DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	ICAL MIDPT	123982	10.67				
	UPPER LIMIT	247964	11.17				
	LOWER LIMIT	61991	10.17				
	Sample ID						
01	LCS0519	113749	10.67				
02	LCS0519	118799	10.67				
03	MB0519	99105	10.67				
04	SDP-02(16.0-	113923	10.67				
05	SDP-06(12.5-	116486	10.67				
06							
07							
08							
09							
10							
11							
12							
13							
14							
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17							
18							
19							
20							
21							
22							

IS4 (DCB) = d4-1,4-Dichlorobenzene

AREA UPPER LIMIT = +100% of internal standard area from Ical midpoint
AREA LOWER LIMIT = - 50% of internal standard area from Ical midpoint
RT UPPER LIMIT = + 0.50 minutes of internal standard RT from Ical midpoint
RT LOWER LIMIT = - 0.50 minutes of internal standard RT from Ical midpoint

* Values outside of QC limits.

Total Solids

ARI Job ID: AGF2

Volatiles Total Solids-voats
Data By: Paul K. Campbell
Created: 5/21/15

Worklist: 5561
Analyst: PKC
Coruments:

Oven ID:_____

Balance ID:_____

Samples In: Date:_____ Time:_____ Temp:_____ Analyst:_____

Samples Out: Date:_____ Time:_____ Temp:_____ Analyst:_____

ARI ID	Tare Wt (g)	Wet Wt (g)	Dry Wt (g)	% Solids
1. AGF2A 15-9525	0.00	10.00	8.51	85.10
2. AGF2B 15-9526	0.00	10.00	7.36	73.60

Worklist ID: 5561 Page: 1
* - VOA TS Copied From BETX TS
% - VOA TS Copied From Metals TS
$ - VOA TS Copied From Extraction TS
$D - VOA TS Copied From Extraction TS/Decanted

Volatile Raw Data
Preparation Log

ARI Job ID: AGF2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, 8021B, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

ARI Project No. | Client ID | Prep/Extraction Date: 5/16/15 | MeOH Lot No. | Analyst: JL

	Lab ID	Vial No.	Preservative			Method 5035 Sample Weight					Comments
			$NaHSO_3$	CH_3OH	Lot #	Vial Weight (g)	Tare (from vial) (g)	Sample Weight (g)	Extract Volume (mL)	MeOH Spilt Volume (µL)	
1	AFU7K	3	X			43.25	34.74	10.51	5		RT
2	AGI86A							1.06			RT
3	AGI87A							1.07			RT
4	AGI2A							5.32			
5	B							5.38			
6	AFX8A							5.18			
7	B							5.16			
8	C							5.20			
9	D							5.18			
10	E							5.48			
11	AFU9A2							0.61	5		RT
12	AFU9A3			MeD				5.58	5	10	RT 2
13	AGH5A			MeD				0.50	5	10	
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
					Balance ID.						

5966.2 - 1/1

Volatile Raw Data
Initial Calibration Notes and Raw Data

ARI Job ID: AGF2

Analysis	Matrix	Method
8260C VOA Solid	Solid	EPA 8260C

Checklist: Initial Calibration Checklist-VOA

#	Checklist Item	Response	Analyst Initials	Date
1	Element Calibration Code	YES	PKC	05/18/2015
	Comments: *YE00018*			
2	BFB Tune met Criteria	YES	PKC	05/18/2015
3	ICal meets 20% RSD, LR COD, and QR COD limits	YES	PKC	05/18/2015
4	NO ICAL Q Flag applied	YES	PKC	05/18/2015
5	Manual integrations include before/after pictures	YES	PKC	05/18/2015
6	Internal Standard areas within 50-200% from reference	YES	PKC	05/18/2015
7	Spectral Library updated	NA	PKC	05/18/2015
8	Minimum response factors met	YES	PKC	05/18/2015
9	All SCV within +/- 20% (DOD)	NO	PKC	05/18/2015
	Comments: *Bromomethane 121,78%, 2 butanone 120.20%, 2 hexanone 120.20%, bromoform 120.92%. 2-Pentanone spiked above linear range, but still falls within 80-120%.*			
10	All SCV within +/- 30%	NO	PKC	05/18/2015
	Comments: *Dichlorodifluoromethane 130.38%,acrylonitrile 151.10%, vinyl acetate 64.573%.*			
11	NO Linear or Quadratic Fits Used	NO	PKC	05/18/2015
	Comments: *Chloromethane bromomethane, carbon disulfide linear, acetone quadratic.*			
12	NO Calibration points dropped	NO	PKC	05/18/2015
	Comments: *Calibration levels below RL removed for last four compounds.*			
13	Additional Notes	YES	PKC	05/18/2015
	Comments: *2 pentanone added to soil import.*			
14	Reviewer Approval (Reviewer)	YES	BB	05/18/2015

* = Indicates Automated Response from Element DataSyst

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
FILENAME:	001051415	002051415	005051415	010051415	050051415	100051415	150051415	200051415	400051415	scv051415
INJ.DATE:	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015	14-MAY-2015
INJ.TIME:	12:20	12:48	13:15	13:43	14:10	14:38	15:06	15:34	16:01	16:40

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
1 Dichlorodifluoromethan	1.548	1.547	1.547	1.547	1.534	1.548	1.541	1.541	+++++	1.547
2 Chloromethane	1.729	1.729	1.735	1.736	1.722	1.729	1.722	1.722	1.742	1.729
3 Vinyl Chloride	1.807	1.807	1.807	1.807	1.794	1.800	1.794	1.800	0.000	1.800
4 Bromomethane	2.118	2.111	2.111	2.112	2.098	2.112	2.105	2.105	2.125	2.112
5 Chloroethane	2.222	2.222	2.222	2.222	2.209	2.222	2.215	2.215	0.000	2.222
6 Trichlorofluoromethane	2.339	2.338	2.338	2 339	2.325	2.339	2.326	2.332	+++++	2.339
7 1,1-Dichloroethene	2.858	2.851	2.851	2.851	2.845	2.832	2.806	2.819	0.000	2.858
8 Carbon Disulfide	2.865	2.858	2.858	2.858	2.845	2.832	2.806	2.793	0.000	2.864
9 112Trichlorol22Trifluo	2.916	2.910	2.910	2.903	2.903	2.884	2.845	2.845	+++++	2.916
10 Iodomethane	+++++	3.013	2.994	3.014	2.994	2.981	2.949	2.949	3.027	3.014
11 Bromoethane	3.153	3.146	3.146	3.146	3.139	3.133	3.100	3.100	0.000	3.153
12 Acrolein	3.298	3.291	3.291	3.285	3.278	3.298	3.298	3.298	0.000	3.291
13 Methylene Chloride	3.523	3.516	3.516	3.516	3.509	3.510	3.490	3.496	0.000	3.523
14 Acetone	3.642	3.641	3.635	3.635	3.628	3.655	3.714	3.714	0.000	3.635
15 Trans-1,2-Dichloroethe	3.682	3.675	3.675	3.675	3.668	3.668	3.648	3.648	0.000	3.681
16 Methyl tert butyl ethe	3.867	3.860	3.860	3.860	3.846	3.867	3.886	3.893	0.000	3.853
17 1,1-Dichloroethane	4.309	4.309	4.309	4.309	4.302	4.303	4.289	4.296	0.000	4.309

Reviewer 1 _____ Date: 5/15/15
Reviewer 2 _____ Date: 5/18/15

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
	18 Acrylonitrile	4.402	4.401	4.395	4.395	4.388	4.408	4.415	4.421	+++++	4.395
	19 Vinyl Acetate	4.600	4.599	4.599	4.593	4.593	4.600	4.600	4.606	0.000	4.600
	20 Cis-1,2-Dichloroethene	4.825	4.824	4.824	4.818	4.817	4.818	4.811	4.818	0.000	4.824
	21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	22 2,2-Dichloropropane	4.917	4.917	4.910	4.910	4.910	4.910	4.904	4.904	+++++	4.917
	23 Bromochloromethane	5.003	5.003	5.003	4.996	4.996	5.003	4.996	4.996	+++++	5.003
	24 Chloroform	5.089	5.082	5.082	5.082	5.075	5.082	5.082	5.089	0.000	5.082
	25 Carbon Tetrachloride	5.176	5.175	5.175	5.176	5.168	5.169	5.162	5.162	+++++	5.176
	26 1,1,1-Trichloroethane	5.249	5.242	5.242	5.242	5.235	5.243	5.229	5.236	+++++	5.242
$	27 Dibromofluoromethane	5.249	5.242	5.242	5.242	5.235	5.243	5.249	5.249	5.242	5.249
	28 1,1-Dichloropropene	5.356	5.349	5.349	5.349	5.349	5.350	5.343	5.343	+++++	5.356
	29 2-Butanone	5.390	5.389	5.389	5.390	5.383	5.396	5.410	5.416	5.390	5.390
	30 Benzene	5.577	5.577	5.577	5.570	5.570	5.570	5 570	5.570	0.000	5 577
*	31 Pentafluorobenzene	5.677	5.670	5.670	5.671	5.670	5.671	5.671	5.670	5.671	5.677
$	32 d4-1,2-Dichloroethane	5.704	5.704	5.704	5.697	5.697	5.704	5.697	5.704	5.697	5.704
	33 1,2-Dichloroethane	5.764	5.757	5.757	5.758	5.757	5.758	5.758	5.764	0.000	5.764
	34 Trichloroethene	6.080	6.079	6.080	6.073	6.073	6.073	6.073	6.073	0.000	6.080
*	35 1,4-Difluorobenzene	6.127	6.120	6.120	6.120	6.120	6.120	6.120	6.120	6.120	6.120
	36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 Dibromomethane	6.436	6.435	6.435	6.436	6.435	6.436	6.436	6.442	+++++	6.436
	38 1,2-Dichloropropane	6.523	6.523	6.523	6.523	6.523	6.523	6.523	6.529	+++++	6.530
	39 Bromodichloromethane	6.584	6.583	6.583	6.583	6.583	6.584	6.590	6.590	+++++	6.583

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
	40 2-Chloroethyl Vinyl Et	7.082	7.075	7.075	7.076	7.075	7.082	7 082	7.082	0.000	7.082
	172 2 pentanone	6.873	6.866	6.872	6.866	6.866	6.873	6.879	6.885	6.866	6.866
	41 Cis 1,3-dichloropropen	7.115	7.115	7.115	7.115	7.115	7.115	7.115	7.121	0.000	7.115
$	42 d8-Toluene	7.273	7.266	7.266	7.266	7.265	7.266	7.266	7.266	7.266	7.272
	43 Toluene	7.312	7.311	7.312	7.312	7.311	7.312	7.312	7.312	0.000	7.312
	44 Tetrachloroethene	7.630	7.623	7.623	7.623	7.623	7.623	7.623	7.623	0.000	7.630
	45 4-Methyl-2-Pentanone	7.266	7.649	7.649	7.649	7.649	7.656	7.663	7.669	0.000	7.649
	46 Trans 1,3-Dichloroprop	7.669	7.669	7.669	7.669	7.669	7.669	7.669	7.669	0.000	7.669
	47 1,1,2-Trichloroethane	7.808	7.801	7.801	7.802	7.801	7.802	7.808	7.808	0.000	7.802
	48 Chlorodibromomethane	7.948	7.947	7.947	7.947	7.947	7.947	7.954	7.954	+++++	7.947
	49 1,3-Dichloropropane	8.034	8.033	8.033	8.034	8.033	8.034	8.033	8.033	+++++	8.034
	50 1,2-Dibromoethane	8.146	8.139	8.139	8.146	8.139	8.146	8.146	8.146	0.000	8.146
	51 2-Hexanone	8.359	8.358	8.358	8.358	8.358	8.365	8.372	8.378	8.358	8.358
*	52 d5-Chlorobenzene	8.584	8.584	8.584	8.584	8.584	8.584	8 584	8.584	8.584	8.584
	53 Chlorobenzene	8.597	8.597	8.597	8.597	8.597	8.597	8.597	8.604	0.000	8.597
	54 Ethyl Benzene	8.624	8.623	8.623	8.624	8.623	8.624	8.630	8.630	0.000	8.624
	55 1,1,1,2-Tetrachloroeth	8.657	8.656	8.657	8.657	8 656	8.657	8.663	8.663	+++++	8.657
	56 m,p-xylene	8.750	8.749	8.749	8.750	8.749	8.756	8.756	8.756	0.000	8.756
	57 o-Xylene	9.128	9.127	9.127	9.121	9.127	9.128	9.128	9.127	0.000	9.128
	58 Styrene	9.174	9.174	9.174	9.174	9.174	9.174	9.174	9.181	0 000	9.174
	59 Bromoform	9.194	9.194	9.187	9.188	9.194	9.194	9.194	9.201	+++++	9 194
	60 Isopropyl Benzene	9.408	9.407	9.407	9.401	9.400	9.401	9.407	9.407	0.000	9.407
	61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	62 4-Bromofluorobenzene	9.654	9.654	9.654	9.654	9.654	9.654	9.654	9.661	9.654	9.654

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
63 Bromobenzene	9.747	9.747	9.740	9.741	9.740	9.747	9.747	9.747	0.000	9.747
64 N-Propyl Benzene	9.774	9.774	9.774	9.774	9.780	9.781	9.781	9.780	0.000	9.781
65 1,1,2,2-Tetrachloroeth	9.847	9.847	9.847	9.847	9.847	9.847	9.854	9.854	+++++	9.847
66 2-Chloro Toluene	9.914	9.914	9.914	9.914	9.914	9.914	9.914	9.920	0.000	9.914
67 1,3,5-Trimethyl Benzen	9.961	9.954	9.960	9.954	9.960	9.961	9.960	9.967	0.000	9.961
68 1,2,3-Trichloropropane	9.967	9.967	9.967	9.967	9.967	9.967	9.974	9.974	+++++	9.967
69 Trans-1,4-Dichloro 2-B	10.007	10.007	10.007	10.007	10.007	10.007	10.014	10.014	+++++	10.007
70 4-Chloro Toluene	10.061	10.067	10.067	10.067	10.067	10.067	10.067	10.074	0.000	10.067
71 T-Butyl Benzene	10.247	10.247	10.247	10.240	10.247	10.247	10.247	10.247	0.000	10.247
72 1,2,4-Trimethylbenzene	10 307	10.307	10.307	10.307	10.313	10.314	10.314	10.314	0.000	10.314
73 S-Butyl Benzene	10.407	10.407	10.407	10.407	10.407	10.407	10.414	10.413	0.000	10.407
74 4-Isopropyl Toluene	10.540	10.547	10.540	10.540	10.540	10.547	10.547	10.547	0.000	10.547
75 1,3-Dichlorobenzene	10.600	10 600	10.600	10.600	10.600	10.600	10.607	10.607	0.000	10.600
* 76 d4-1,4-Dichlorobenzene	10.667	10.667	10.667	10.667	10.673	10.674	10.673	10.680	10.667	10.673
77 1,4-Dichlorobenzene	10.680	10.680	10.680	10.680	10.686	10.687	10.687	10.693	0.000	10.687
78 N-Butyl Benzene	10.934	10.933	10.933	10.933	10.933	10.933	10.940	10.940	0.000	10.940
$ 79 d4-1,2-Dichlorobenzene	11.067	11.066	11.066	11.067	11.066	11.067	11.073	11.073	11.067	11.067
80 1,2-Dichlorobenzene	11.073	11.073	11.073	11.073	11.073	11.073	11.080	11.080	0.000	11.073
81 1,2-Dibromo 3-Chloropr	11.840	11.839	11.839	11.840	11.839	11 840	11.839	11.839	0.000	11.839
82 Hexachloro 1,3-Butadie	12.466	12.472	12.472	12.466	12.465	12.466	12.472	12.472	0.000	12.473
83 1,2,4-Trichlorobenzene	12.493	12.492	12.492	12.493	12.492	12.493	12.492	12.492	12.492	12.492
84 Naphthalene	12.813	12.812	12.812	12.812	12.812	12.812	12.812	12.812	12.812	12.812
85 1,2,3-Trichlorobenzene	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.986	12.992

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

ID: RT11
FILENAME: scv051415b
INJ.DATE: 14-MAY-2015
INJ.TIME: 17:08

Compound	RT11	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	+++++	1.534	1.420-1 648	1.544	0.005
2 Chloromethane	1.729	1.722	1.608-1.836	1.730	0.006
3 Vinyl Chloride	+++++	1.794	1.679-1.908	1.622	0.570
4 Bromomethane	2.112	2.098	1.984-2.212	2.111	0.007
5 Chloroethane	2.449	2.209	2.095-2.323	2.038	0.680
6 Trichlorofluoromethane	+++++	2.325	2.211-2.439	2.335	0.006
7 1,1-Dichloroethene	+++++	2.845	2.715-2.942	2.557	0 899
8 Carbon Disulfide	2.845	2.845	2.715-2.942	2.584	0.857
9 112Trichloro122Trifluo	+++++	2.903	2.773-3.000	2.892	0.029
10 Iodomethane	3.014	2.994	2.863-3.090	2.995	0.028
11 Bromoethane	+++++	3.139	3.025-3.253	2.821	0.992
12 Acrolein	3.748	3.278	3 146-3.372	3.034	1.016
13 Methylene Chloride	3.503	3 509	3.376-3.602	3.191	1.058
14 Acetone	3.629	3.628	3.494-3.721	3.321	1.102
15 Trans-1,2-Dichloroethe	+++++	3.668	3.533-3.760	3.302	1.160
16 Methyl tert butyl ethe	+++++	3.846	3.711-3.938	3.479	1.223
17 1,1-Dichloroethane	+++++	4.302	4.164-4.391	3.873	1.361
18 Acrylonitrile	+++++	4.388	4.249-4.476	4.402	0.011
19 Vinyl Acetate	4.587	4.593	4.453-4.680	4.180	1.386
20 Cis-1,2-Dichloroethene	+++++	4.817	4.676-4.903	4.338	1.524

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

	Compound	RT11	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	21 Allyl Chloride	+++++	4.560	4.458-4.662	+++++	+++++
	22 2,2-Dichloropropane	+++++	4.910	4.768-4.995	4.911	0.005
	23 Bromochloromethane	+++++	4.996	4.854-5.081	5.000	0.004
	24 Chloroform	+++++	5.075	4.933-5.159	4.575	1.607
	25 Carbon Tetrachloride	+++++	5.168	5.020-5.264	5.171	0.006
	26 1,1,1-Trichloroethane	+++++	5.235	5.092-5.319	5.240	0.006
$	27 Dibromofluoromethane	5.236	5.235	5.092-5.319	5.244	0.005
	28 1,1-Dichloropropene	+++++	5.349	5.199-5.444	5.349	0.005
	29 2-Butanone	+++++	5.383	5.238-5.465	5.394	0.011
	30 Benzene	+++++	5.570	5.419-5.664	5.016	1.762
*	31 Pentafluorobenzene	5.664	5.670	5.557-5.783	5.671	0.004
$	32 d4-1,2-Dichloroethane	5.697	5.697	5.583-5.810	5.701	0.004
	33 1,2-Dichloroethane	+++++	5.757	5.606-5.850	5.184	1.821
	34 Trichloroethene	6.113	6.073	5.919-6.164	5.527	1.833
*	35 1,4-Difluorobenzene	6.113	6.120	5.998-6.242	6.120	0.003
	36 Methyl Methacrylate	+++++	5.693	5.582-5.804	+++++	+++++
	37 Dibromomethane	+++++	6.435	6.313-6.558	6.436	0.002
	38 1,2-Dichloropropane	+++++	6.523	6.401-6.645	6.524	0.003
	39 Bromodichloromethane	+++++	6.583	6.461-6.706	6.585	0.003
	40 2-Chloroethyl Vinyl Et	+++++	7.075	6.953-7.198	6.371	2.239
	172 2 pentanone	6.866	6.866	6.752-6.979	6.871	0.007
	41 Cis 1,3-dichloropropen	+++++	7.115	6.993-7.237	6.404	2.250
$	42 d8-Toluene	7.266	7.265	7.143-7.388	7.267	0.003

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

	Compound	RT11	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	43 Toluene	+++++	7.311	7.189-7.434	6.580	2.312
	44 Tetrachloroethene	+++++	7.623	7.430-7.773	6.862	2.411
	45 4-Methyl-2-Pentanone	7.266	7.649	7.527-7.772	6.888	2.290
	46 Trans 1,3-Dichloroprop	+++++	7.669	7.547-7.792	6.902	2.425
	47 1,1,2-Trichloroethane	7.266	7.801	7.679-7.924	7.045	2.342
	48 Chlorodibromomethane	+++++	7.947	7.775-8.119	7.949	0.003
	49 1,3-Dichloropropane	+++++	8.033	7.839-8.183	8.033	0.000
	50 1,2-Dibromoethane	+++++	8.139	8.017-8.262	7.330	2.575
	51 2-Hexanone	+++++	8.358	8.163-8.507	8.362	0.007
*	52 d5-Chlorobenzene	8.577	8.584	8.412-8.756	8.583	0.002
	53 Chlorobenzene	+++++	8.597	8.425-8.769	7.738	2.719
	54 Ethyl Benzene	+++++	8.623	8 452-8.795	7.763	2.727
	55 1,1,1,2-Tetrachloroeth	+++++	8.656	8.485-8.828	8.658	0.003
	56 m,p-xylene	+++++	8.749	8.578-8.921	7.877	2.768
	57 o-Xylene	+++++	9.127	8.956-9.299	8.214	2.886
	58 Styrene	+++++	9.174	9.003-9.346	8.257	2.901
	59 Bromoform	+++++	9.194	8.958-9.385	9.193	0.004
	60 Isopropyl Benzene	+++++	9.400	9.164-9.591	8.465	2.974
	61 Cyclohexanone	+++++	8.568	8.409-8.727	+++++	+++++
$	62 4-Bromofluorobenzene	9.654	9.654	9.482-9.826	9.655	0.002
	63 Bromobenzene	+++++	9.740	9.503-9.930	8.770	3.082
	64 N-Propyl Benzene	+++++	9.780	9.543-9.970	8.800	3.092
	65 1,1,2,2-Tetrachloroeth	+++++	9.847	9.610-10.036	9.849	0.003
	66 2-Chloro Toluene	+++++	9 914	9.676-10.103	8.923	3.135

Report Date : 15-May-2015 13:01

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150514.b/VO051415S.m
Batch File: /chem1/nt15.i/20150514.b
Inst ID: nt15.i

	Compound	RT11	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	67 1,3,5-Trimethyl Benzen	+++++	9.960	9.722-10.149	8.964	3.150
	68 1,2,3-Trichloropropane	+++++	9.967	9.729-10.156	9.969	0.003
	69 Trans-1,4-Dichloro 2-B	+++++	10.007	9.769-10.196	10.009	0.003
	70 4-Chloro Toluene	+++++	10.067	9.829-10.256	9.060	3.183
	71 T-Butyl Benzene	+++++	10.247	10.008-10.435	9.222	3.240
	72 1,2,4-Trimethylbenzene	+++++	10.313	10.075-10.502	9.280	3.261
	73 S-Butyl Benzene	+++++	10.407	10.168-10.595	9.368	3.291
	74 4-Isopropyl Toluene	+++++	10.540	10.301-10.728	9.489	3.334
	75 1,3-Dichlorobenzene	10.600	10.600	10.361-10.787	9.638	3.196
*	76 d4-1,4-Dichlorobenzene	10.667	10.673	10.460-10.886	10.670	0.005
	77 1,4-Dichlorobenzene	10.680	10.686	10.473-10.900	9.713	3.221
	78 N-Butyl Benzene	10.933	10.933	10.719-11.146	9.941	3.297
$	79 d4-1,2-Dichlorobenzene	11.067	11.066	10.852-11.279	11.068	0.003
	80 1,2-Dichlorobenzene	11.073	11.073	10.859-11.286	10.068	3.339
	81 1,2-Dibromo 3-Chloropr	+++++	11.839	11.626-12.052	10.655	3.744
	82 Hexachloro 1,3-Butadie	+++++	12.465	12.252-12.679	11.223	3.943
	83 1,2,4-Trichlorobenzene	12.493	12.492	12.279-12.705	12.492	0.000
	84 Naphthalene	12.812	12.812	12.598-13.025	12.812	0.000
	85 1,2,3-Trichlorobenzene	12.992	12.992	12.778-13.205	12.992	0.002

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt15.i/20150514.b

ARI Job No.: VSTD Method: VO051415S.m Instrument: nt15.i Date: 14-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1220	001051415.d	VSTD001	VSTD001	1	1,1,1-Trichloroethane, 1,2-Dichloropropane, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, Trans-1,4-Dichloro 2-Butene,
1248	002051415 d	VSTD002	VSTD002	1	Iodomethane, 1,1,1-Trichloroethane, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane,
1315	005051415.d	VSTD005	VSTD005	1	4-Methyl-2-Pentanone,
1343	010051415.d	VSTD010	VSTD010	1	4-Methyl-2-Pentanone,
1410	050051415.d	VSTD050	VSTD050	1	NO MANUAL INTEGRATION
1438	100051415.d	VSTD100	VSTD100	1	NO MANUAL INTEGRATION
1506	150051415.d	VSTD150	VSTD150	1	1,1-Dichloroethene, Carbon Disulfide,
1534	200051415.d	VSTD200		1	1,1-Dichloroethene, Carbon Disulfide,
1601	400051415.d	PENT400	PENT400	1	NO MANUAL INTEGRATION
1640	scv051415.d	SCV1		1	1,2-Dichloroethane,
1708	scv051415b.d	VASCV		1	NO MANUAL INTEGRATION

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2015 12:20
End Cal Date : 14-MAY-2015 16:01
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150514.b/V0051415S.m
Cal Date : 15-May-2015 13:03 paul

Calibration File Names:
Level 1: /chem1/nt15.i/20150514.b/001051415.d
Level 2: /chem1/nt15.i/20150514.b/002051415.d
Level 3: /chem1/nt15.i/20150514.b/005051415.d
Level 4: /chem1/nt15.i/20150514.b/010051415.d
Level 5: /chem1/nt15.i/20150514.b/050051415.d
Level 6: /chem1/nt15.i/20150514.b/100051415.d
Level 7: /chem1/nt15.i/20150514.b/150051415.d
Level 8: /chem1/nt15.i/20150514.b/200051415.d
Level 9: /chem1/nt15.i/20150514.b/400051415.d

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
1 Dichlorodifluoromethane	0.62078	0.54662	0.52974	0.52445	0.50123	0.47022					
	0.49729	0.49190	+++++				AVRG		0.52278		8.87073
2 Chloromethane	0.92043	0.74370	0.66886	0.63617	0.59372	0.54115					
	0.61508	0.59972	+++++				AVRG		0.66485		17.92849
3 Vinyl Chloride	0.74613	0.73020	0.69064	0.67717	0 65509	0.61016					
	0.65490	0.63383	+++++				AVRG		0.67476		6.87309

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 14-MAY-2015 12:20
End Cal Date : 14-MAY-2015 16:01
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150514.b/VO051415S.m
Cal Date : 15-May-2015 13:03 paul

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	150 Level 7	200 Level 8	150 Level 9									
4 Bromomethane	1.09508	0.76319	0.58463	0.46631	0.38667	0 33475						
	0.34442	0.34308	+++++				AVRG		0.53976		49.90961	<-
5 Chloroethane	0.30000	0.26015	0.26115	0.26514	0.25516	0.21528						
	0 21419	0.20471	+++++				AVRG		0.24697		13.20891	
6 Trichlorofluoromethane	0.36197	0.34544	0.31718	0.30997	0.30494	0.25154						
	0.25410	0 25856	+++++				AVRG		0.30046		14.06216	
7 1,1-Dichloroethene	0.65317	0.62285	0.58852	0.57867	0.56637	0.54439						
	+++++	+++++	+++++				AVRG		0.59233		6.67120	
8 Carbon Disulfide	10628	14096	28331	54161	249482	499204						
	+++++	+++++	+++++				LINR	0.000e+00	1.60850		0.99887	
9 112Trichloro122Trifluoroethan	0.52395	0.48970	0.48344	0.48199	0.46192	0.44379						
	0.46651	+++++	+++++				AVRG		0.47876		5.29133	
10 Iodomethane	+++++	+++++	2094	6718	51551	131016						
	238765	306973	+++++				QUAD	0.000e+00	2.54272	-0.25032	0.99188	

Analytical Resources, Inc.

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Cal Date : 15-May-2015 13:03 paul

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
11 Bromoethane	0.33592	0.32339	0.32790	0.33122	0.32129	0.30057					
	0.31628	0.30452	+++++				AVRG		0.32014		3.89000
12 Acrolein	0.08972	0.08410	0.09409	0.08955	0.09004	0.09746					
	0.09941	0.09723	+++++				AVRG		0.09270		5.62094
13 Methylene Chloride	+++++	7262	12418	22491	91197	181647					
	280922	382422	+++++				LINR	0.000e+00	0.58212		0.99923
14 Acetone	4797	6319	14599	25225	107543	242117					
	+++++	+++++	+++++				LINR	0.000e+00	0.15249		0.99819
15 Trans-1,2-Dichloroethene	0.75634	0.71533	0.64561	0.64553	0.61756	0.58678					
	0.61455	0.60300	+++++				AVRG		0.64809		9.05381
16 Methyl tert butyl ether	1 56339	1.39442	1.47424	1.47363	1.43753	1.45519					
	1.45727	1.48232	+++++				AVRG		1.46725		3.25773
17 1,1-Dichloroethane	1.03768	0.96727	0.98483	0.98390	0.98036	0.92757					
	0.97043	0 95460	+++++				AVRG		0.97583		3.21146

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Cal Date : 15-May-2015 13:03 paul

Compound	1 Level 1 150 Level 7	2 Level 2 200 Level 8	5 Level 3 150 Level 9	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2	
18 Acrylonitrile	0.16092 0.16991	0.15161 0.16315	0.17377 +++++	0.15936	0.15917	0.16935	AVRG		0.16340		4.41662	
19 Vinyl Acetate	0.92747 1.01767	0.99941 1.04514	1.09501 +++++	1.06433	1.03747	1.06811	AVRG		1.03183		5.01118	
20 Cis-1,2-Dichloroethene	0.63662 0.56065	0.58696 0.55940	0.56955 +++++	0.56510	0.56104	0 53199	AVRG		0.57141		5.31620	
21 Allyl Chloride	+++++ +++++	+++++ +++++	+++++ +++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00	<-
22 2,2-Dichloropropane	0 78205 0.82436	0.78182 0.80690	0.77146 +++++	0 76673	0.80404	0.77396	AVRG		0.78891		2.59176	
23 Bromochloromethane	0.22782 0.22160	0.22186 0.24262	0 21733 +++++	0.22410	0.22242	0.21603	AVRG		0.22422		3.69960	
24 Chloroform	1.01022 0.93187	0.97035 0.89564	0.95850 +++++	0.99317	0.99201	0.89726	AVRG		0.95613		4.59403	

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
25 Carbon Tetrachloride	0.30880	0.33331	0.31907	0.33943	0.36009	0.34754					
	0.38135	0.38079	+++++				AVRG		0.34630		7.69740
26 1,1,1-Trichloroethane	0.84296	0.78900	0.78192	0.80735	0.79998	0.75898					
	0.81096	0.79150	+++++				AVRG		0.79783		3.06470
28 1,1-Dichloropropene	0.48955	0.46458	0.47233	0.47663	0.46734	0.43923					
	0.46749	0.46242	+++++				AVRG		0.46745		3.05368
29 2-Butanone	0.07472	0.06369	0.07350	0 06859	0.06634	0.06585					
	0.06576	0.06233	+++++				AVRG		0.06760		6.55986
30 Benzene	1.54482	1.36484	1.36731	1.36428	1.32717	1.25250					
	1.32622	1.29659	+++++				AVRG		1.35547		6.35168
33 1,2-Dichloroethane	0.52917	0.40286	0.41439	0.47818	0.46212	0.45928					
	0.45462	0.45837	+++++				AVRG		0.45737		8.44424
34 Trichloroethene	0.45667	0.37636	0.34328	0.34424	0.32585	0 30723					
	0.32670	0.32703	+++++				AVRG		0.35092		13.46419

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2	
	150 Level 7	200 Level 8	150 Level 9									
36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++	+++++	+++++				AVRG		0.000e+00		0.000e+00	<-
37 Dibromomethane	0.16175	0 15576	0.16050	0.16306	0.15892	0.16251						
	0.16459	0.16574	+++++				AVRG		0.16160		1.97833	
38 1,2-Dichloropropane	0.32984	0.31685	0.31754	0.33020	0.32388	0.31344						
	0.32586	0.32316	+++++				AVRG		0.32259		1.90878	
39 Bromodichloromethane	0.45095	0.41691	0.40681	0.42904	0.43865	0.42178						
	0.41299	0.40557	+++++				AVRG		0.42284		3.75738	
40 2-Chloroethyl Vinyl Ether	0.14358	0.12967	0.13766	0.13782	0.14366	0.14562						
	0.15162	0.15358	+++++				AVRG		0.14290		5.46557	
172 2 pentanone	0.08556	0.07555	0.08316	0.07952	0.07977	0.08615						
	0.08784	0.08414	0.07972				AVRG		0.08238		4.83141	
41 Cis 1,3-dichloropropene	0.51548	0.47703	0.46196	0.48638	0.49897	0.49051						
	0.51445	0.51692	+++++				AVRG		0.49521		4.04107	

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
43 Toluene	5825	7358	16501	34232	139944	290518					
	475483	703207	+++++				LINR	0.000e+00	0.60728		0.99518
44 Tetrachloroethene	0.41551	0.38648	0.34119	0.34147	0.33332	0.30335					
	0.32858	0.32992	+++++				AVRG		0.34748		10.34131
45 4-Methyl-2-Pentanone	0.12822	0.11975	0.13580	0.12518	0.12208	0.13382					
	0.13504	0.13084	+++++				AVRG		0.12884		4.70929
46 Trans 1,3-Dichloropropene	0.47096	0.39162	0.40177	0.41283	0.44440	0.45839					
	0.48678	0.50024	+++++				AVRG		0.44587		9.04971
47 1,1,2-Trichloroethane	0.26509	0.24609	0.25004	0.24694	0.24405	0.24858					
	0.24962	0.25564	+++++				AVRG		0.25076		2.68460
48 Chlorodibromomethane	0.24008	0.23844	0.23912	0 24633	0.31867	0 31364					
	0.31693	0.32170	+++++				AVRG		0.27936		14.72919
49 1,3-Dichloropropane	0.55165	0.50616	0.51789	0.51855	0.51908	0 49461					
	0.50120	0.49144	+++++				AVRG		0.51257		3.74069

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Cal Date : 15-May-2015 13:03 paul

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
50 1,2-Dibromoethane	0.24610	0.21799	0.22964	0.23500	0.23268	0.23663					
	0.24029	0.24552	+++++				AVRG		0.23548		3.88619
51 2-Hexanone	0.28151	0.24707	0.27712	0.25253	0.25417	0.26633					
	0.24838	0.22781	+++++				AVRG		0.25687		6.81504
53 Chlorobenzene	1.21955	1.08395	0.99826	0.99683	0.97152	0.92324					
	0.96959	0.95715	+++++				AVRG		1.01501		9.34102
54 Ethyl Benzene	2.37684	2.03026	1.85560	1.84414	1.80172	1.66932					
	1.77202	1.75284	+++++				AVRG		1.88784		11.83023
55 1,1,1,2-Tetrachloroethane	0.28364	0.27985	0.27459	0.28332	0.30165	0 29142					
	0.31041	0.31386	+++++				AVRG		0.29234		5.01565
56 m,p-xylene	0 91567	0.75213	0 69655	0.70448	0.70219	0.67573					
	0.71832	0.70124	+++++				AVRG		0.73329		10.47851
57 o-Xylene	1.03583	0.83385	0.73927	0.75262	0.77627	0.72130					
	0.77992	0.79221	+++++				AVRG		0.80391		12.42055

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2	
	150 Level 7	200 Level 8	150 Level 9									
58 Styrene	1.24465	1.12595	1.08055	1.10691	1.13880	1.08981						
	1.13875	1.13712	+++++				AVRG		1.13282		4.46348	
59 Bromoform	0.28175	0.26047	0.28229	0.28415	0.32914	0.34481						
	0.36720	+++++	+++++				AVRG		0.30712		12.94134	
60 Isopropyl Benzene	4.30948	3 90193	3.45485	3.52314	3.49608	3.17510						
	3.67546	3.59282	+++++				AVRG		3.64111		9.31394	
61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++	+++++	+++++				AVRG		0.000e+00		0.000e+00	<-
63 Bromobenzene	0.80862	0.78799	0.74133	0.73394	0.70843	0.67176						
	0.76247	0.75781	+++++				AVRG		0 74654		5.81286	
64 N-Propyl Benzene	5.04333	4.65289	4.29539	4.35885	4.25787	3.83572						
	4.37896	4.31906	+++++				AVRG		4.39276		7.86548	
65 1,1,2,2-Tetrachloroethane	0.81604	0.77239	0.78608	0.74275	0 74096	0.73780						
	0.70677	0.68361	+++++				AVRG		0.74830		5.69224	

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
66 2-Chloro Toluene	2.77792	2.65343	2.45895	2.46260	2.40127	2.19431					
	2.49285	2.46486	+++++				AVRG		2.48827		6.91498
67 1,3,5-Trimethyl Benzene	3.38747	3.14148	2 84170	2.91056	2.93731	2.76679					
	3.16157	3.15983	+++++				AVRG		3.03834		6.82966
68 1,2,3-Trichloropropane	0.23075	0.22295	0.22970	0.21446	0.22367	0.23003					
	0.22798	0.22375	+++++				AVRG		0.22541		2.41123
69 Trans-1,4-Dichloro 2-Butene	0.22580	0.23099	0 22703	0.22998	0.22718	0.22825					
	0.22405	0.21513	+++++				AVRG		0.22605		2.18109
70 4-Chloro Toluene	2.82842	2.71093	2.49461	2.57461	2 47019	2.24031					
	2.53493	2.51913	+++++				AVRG		2.54664		6.80878
71 T-Butyl Benzene	2.68334	2.70241	2.44148	2.51104	2.49944	2.34029					
	2.70955	2.66282	+++++				AVRG		2.56879		5.43004
72 1,2,4-Trimethylbenzene	3.71973	3.02038	2 82565	2.88024	2.88899	2.66088					
	3.04768	3.03991	+++++				AVRG		3.01043		10.45545

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
73 S-Butyl Benzene	4.38871	4.14169	3.85168	3.92356	3.88005	3.57404					
	4.08974	4.00647	+++++				AVRG		3.98199		6.00578
74 4-Isopropyl Toluene	3.30181	3.32154	3.04956	3.18281	3.16160	2.97017					
	3.33578	3.29626	+++++				AVRG		3.20244		4.25566
75 1,3-Dichlorobenzene	2.28274	1.79356	1.52572	1.48600	1.45753	1.36267					
	1.50115	1.49492	+++++				AVRG		1.61304		18.42335
77 1,4-Dichlorobenzene	2.36989	1.82280	1.58401	1.56149	1.48877	1.38603					
	1.46974	1.46590	+++++				AVRG		1.64358		19.54055
78 N-Butyl Benzene	3.53256	3.16974	3.03280	3.15844	3.10084	2.76336					
	3.08256	3.08411	+++++				AVRG		3.11555		6.77464
80 1,2-Dichlorobenzene	1.90641	1.59961	1.42998	1.39662	1.35184	1.31469					
	1.32793	1.31331	+++++				AVRG		1.45505		14.11518
81 1,2-Dibromo 3-Chloropropane	+++++	+++++	0.14057	0.13230	0.14353	0.14927					
	0.14194	0.13463	+++++				AVRG		0.14037		4.38885

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
82 Hexachloro 1,3-Butadiene	+++++	+++++	0.44505	0.47467	0.46057	0.42641					
	0.44697	0.46084	+++++				AVRG		0.45242		3.68954
83 1,2,4-Trichlorobenzene	+++++	+++++	0.97290	0.94912	0.87933	0.83184					
	0.79673	0.82822	+++++				AVRG		0.87636		8.11113
84 Naphthalene	+++++	+++++	2 32695	2.32397	2.36503	2.32143					
	2.15237	2.16029	+++++				AVRG		2.27500		4.10250
85 1,2,3-Trichlorobenzene	+++++	+++++	0.90062	0.86739	0.82344	0.78554					
	0.74272	0.77151	+++++				AVRG		0.81520		7.38646
$ 27 Dibromofluoromethane	0.44095	0.43860	0.44798	0.44961	0.45527	0.46692					
	0.46061	0.46353	+++++				AVRG		0.45293		2.29555
$ 32 d4-1,2-Dichloroethane	0.58381	0.57907	0.59560	0.58635	0.59364	0.60066					
	0.57814	0.58521	+++++				AVRG		0.58781		1.37099
$ 42 d8-Toluene	1.36894	1.36927	1.39036	1.38197	1.35126	1.38629					
	1.35576	1.37632	+++++				AVRG		1.37252		1.01854

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Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
$ 62 4-Bromofluorobenzene	0.48587	0.48574	0.49826	0.49728	0.49582	0.49189					
	0.47997	0.47871	+++++				AVRG		0.48919		1.57723
$ 79 d4-1,2-Dichlorobenzene	0.86486	0.86688	0.86411	0.86549	0.85662	0.87466					
	0.84547	0.84679	+++++				AVRG		0.86061		1.18406

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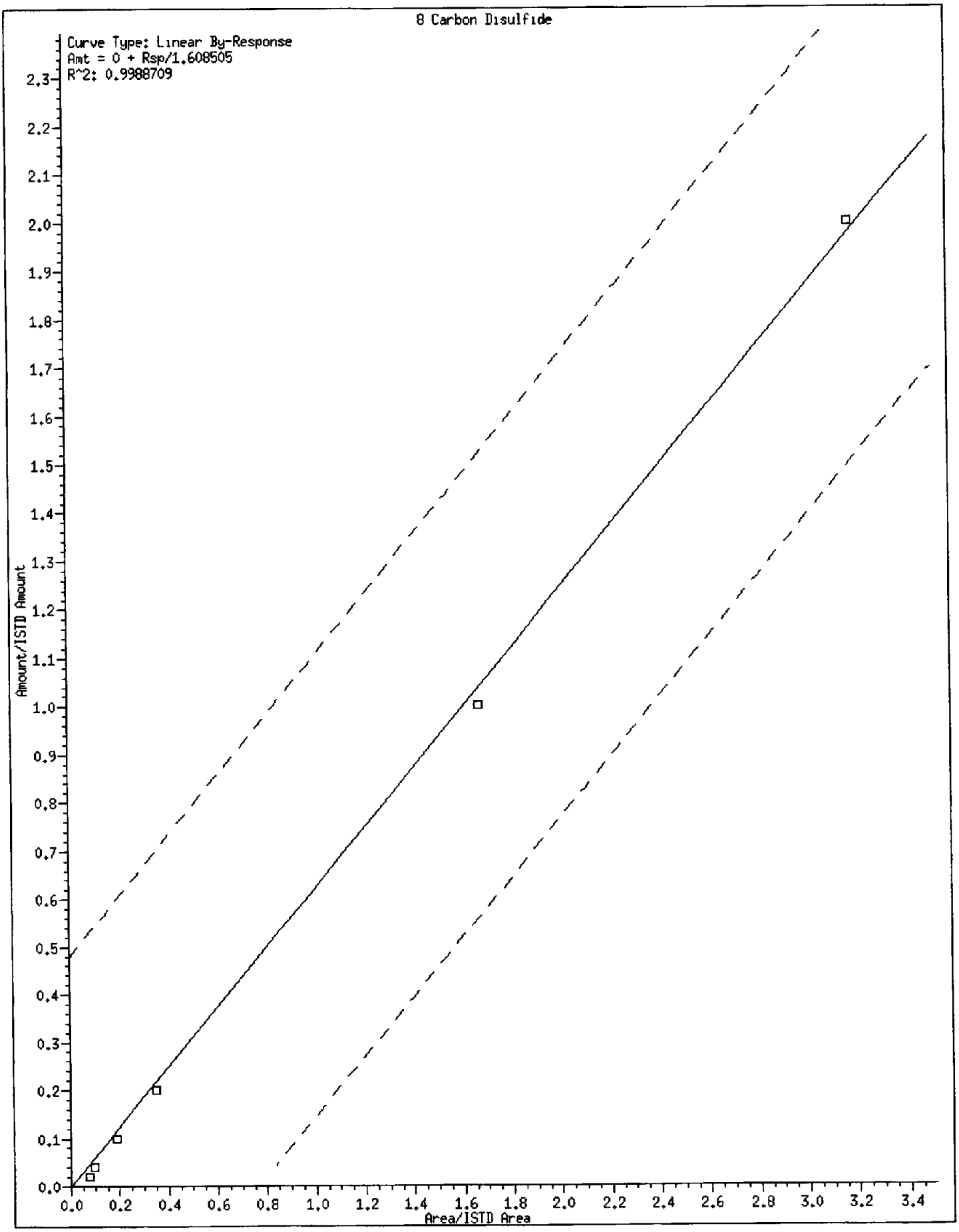
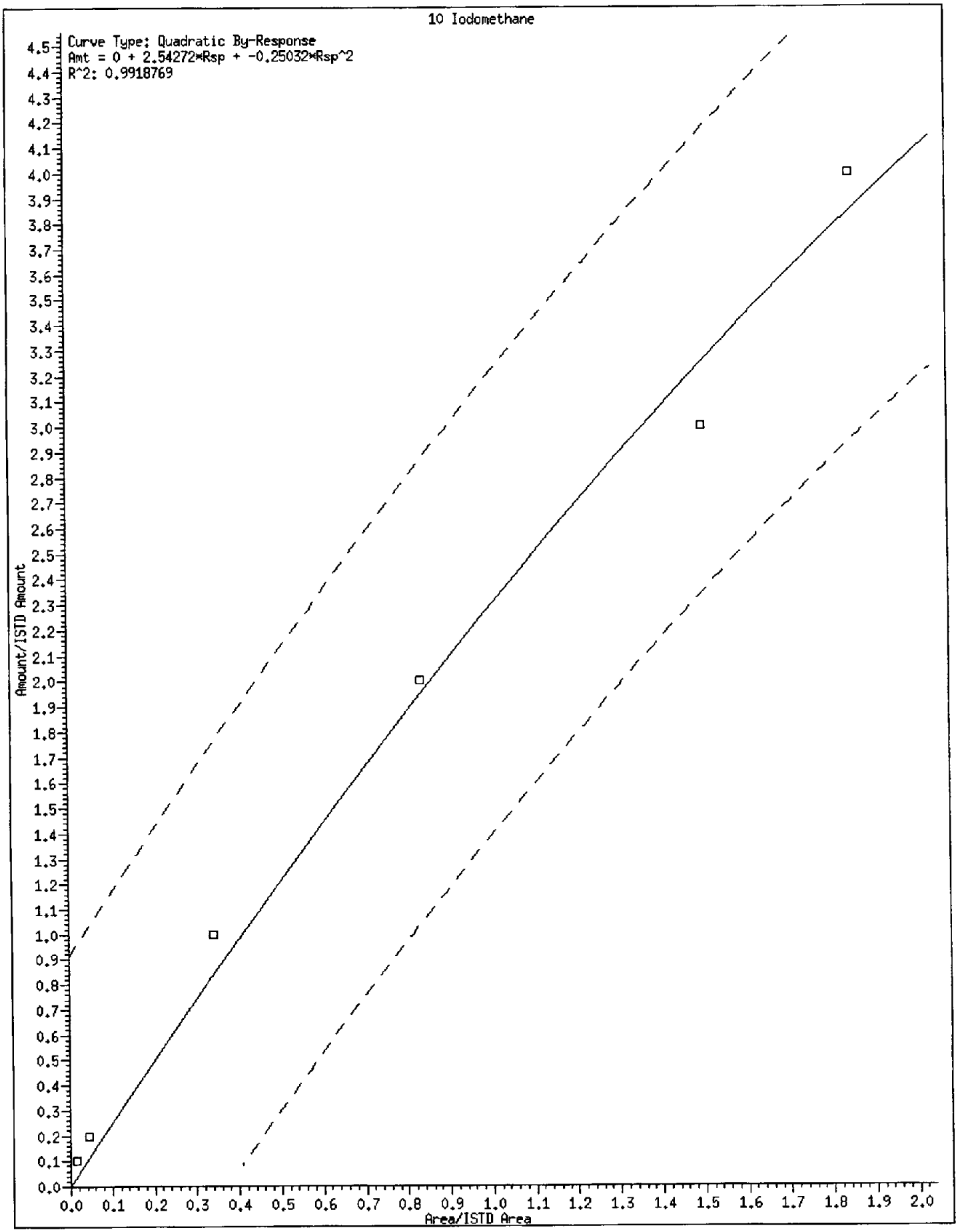
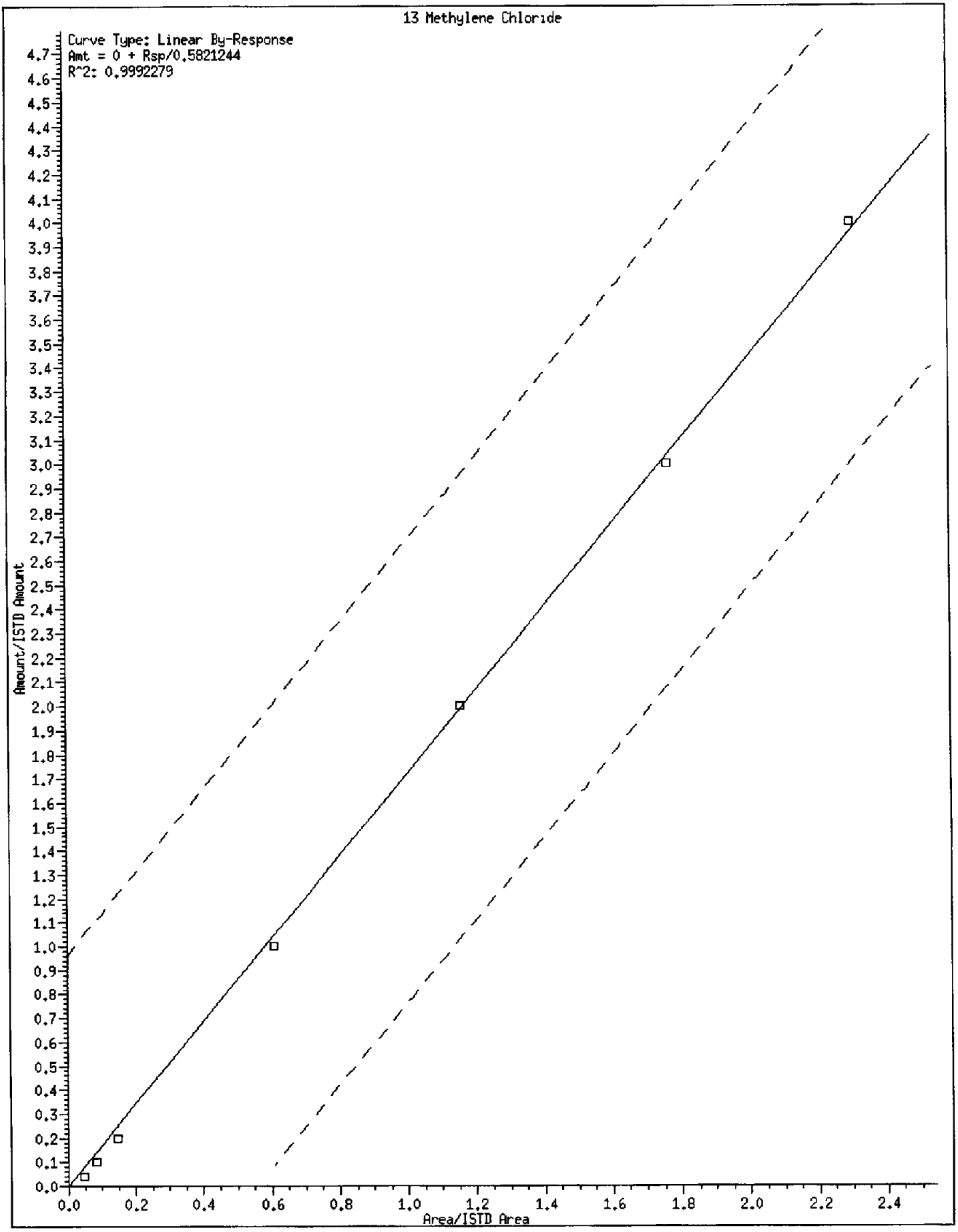
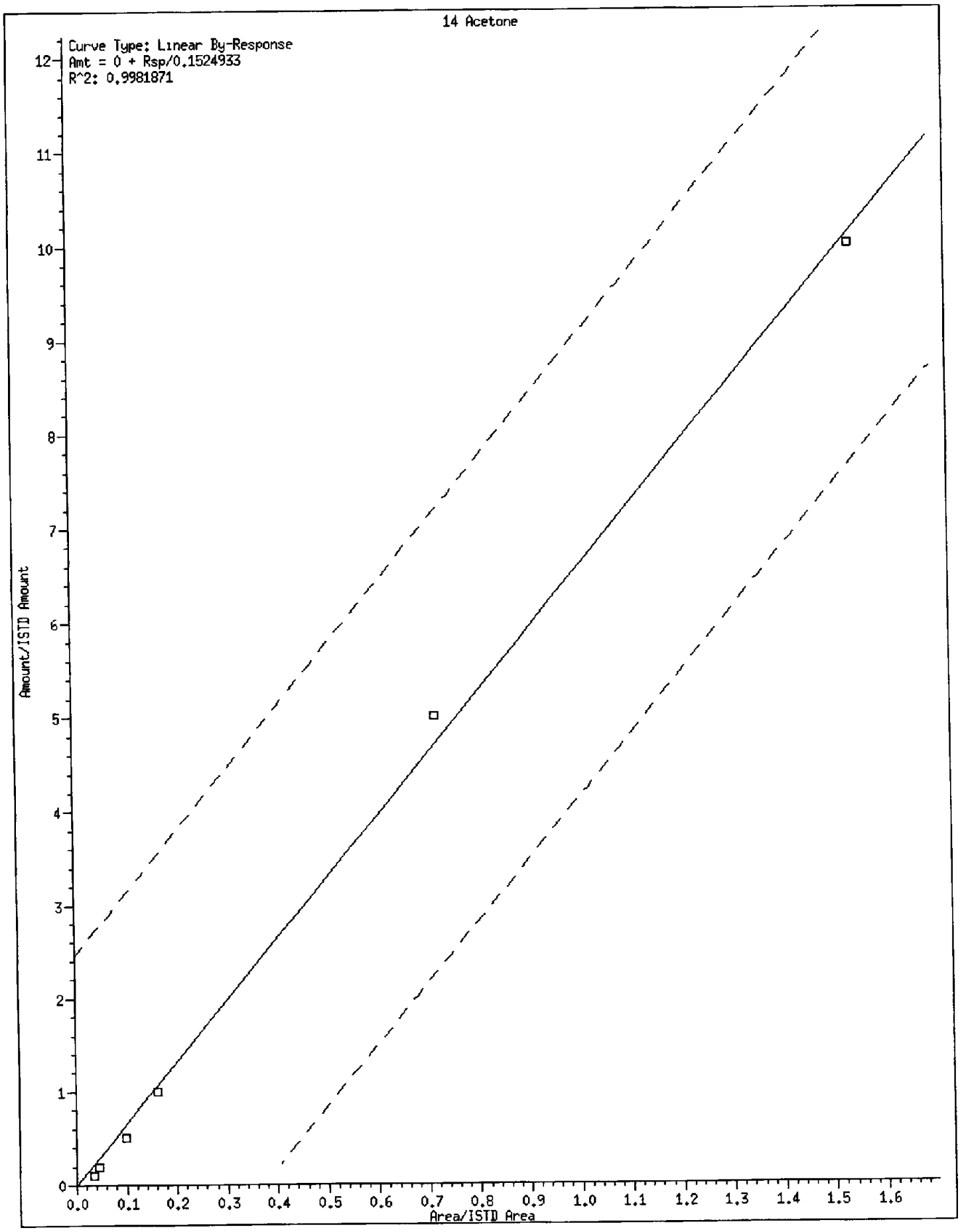
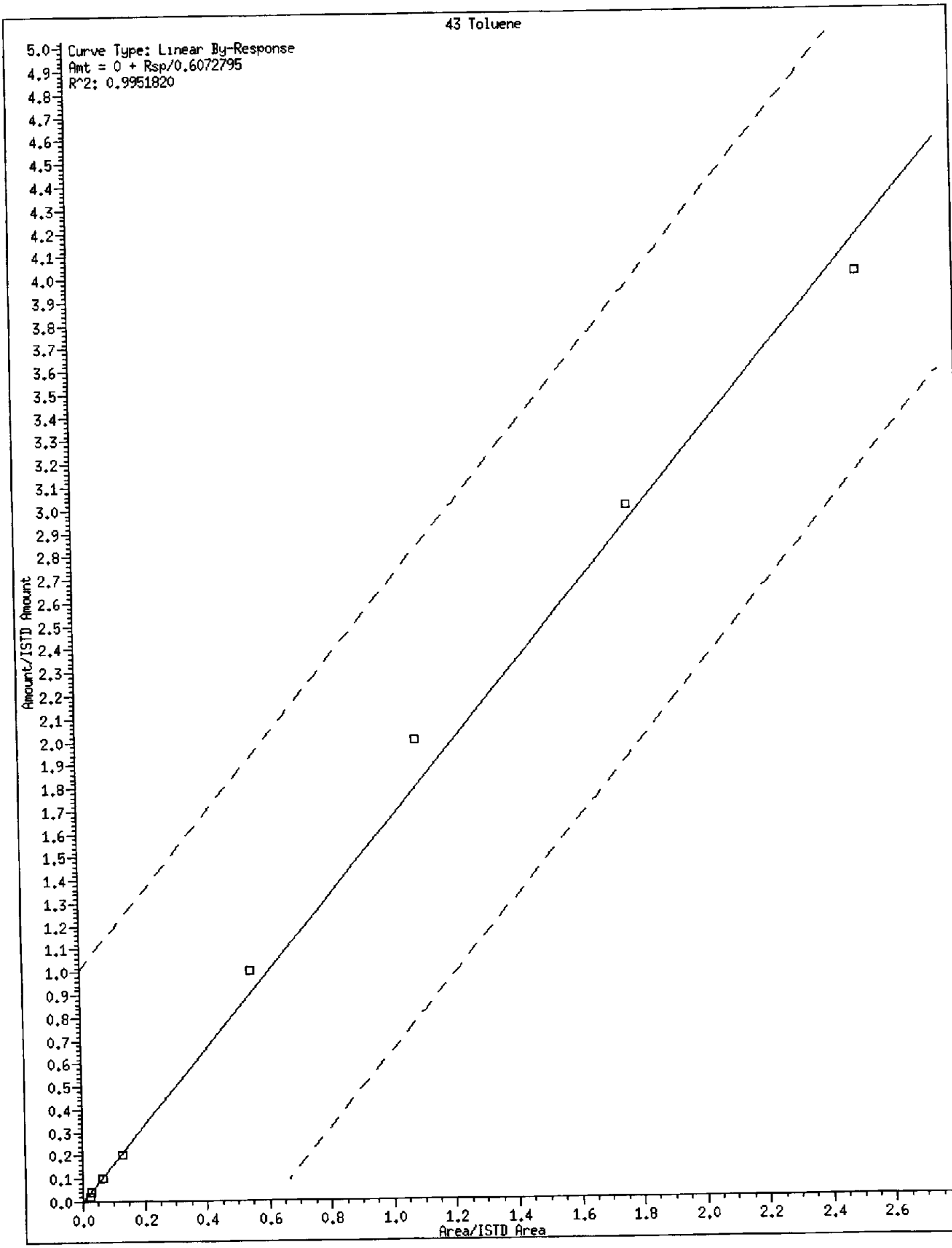
Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response


8 Carbon Disulfide
Curve Type: Linear By-Response
Amt = 0 + Rsp/1.608505
R^2: 0.9988709
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4


10 Iodomethane
Curve Type: Quadratic By-Response
Amt = 0 + 2.54272*Rsp + -0.25032*Rsp^2
R^2: 0.9918769
Amount/ISTD Amount
Area/ISTD Area


13 Methylene Chloride
Curve Type: Linear By-Response
Amt = 0 + Rsp/0.5821244
R^2: 0.9992279
Amount/ISTD Amount
Area/ISTD Area


14 Acetone
Curve Type: Linear By-Response
Amt = 0 + Rsp/0.1524933
R^2: 0.9981871
Amount/ISTD Amount
Area/ISTD Area
0
1
2
3
4
5
6
7
8
9
10
11
12
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6


43 Toluene
Curve Type: Linear By-Response
Amt = 0 + Rsp/0.6072795
R^2: 0.9951820
Amount/ISTD Amount
Area/ISTD Area

PC 5/18/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/scv051515.d
Lab Smp Id: SCV100
Inj Date : 15-MAY-2015 18:10
Operator : PC Inst ID: nt15.i
Smp Info : SCV100,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 11:36 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	205937	130.379	130.38(R)
2 Chloromethane	50	1.742	1.742	(0.307)	172493	106.877	106.88
3 Vinyl Chloride	62	1.807	1.807	(0.319)	235657	117.041	117.04
4 Bromomethane	94	2.118	2.118	(0.374)	112146	121.776	121.78(R)
5 Chloroethane	64	2.222	2.222	(0.392)	63136	89.1659	89.166
6 Trichlorofluoromethane	101	2.339	2.339	(0.412)	79797	96.0115	96.011
7 1,1-Dichloroethene	96	2.825	2.826	(0.498)	176055	95.5393	95.539
8 Carbon Disulfide	76	2.825	2.826	(0.498)	521845	98.9345	98.935
9 112Trichloro122Trifluoroethane	101	2.877	2.884	(0.507)	165106	112.142	112.14
10 Iodomethane	142	2.981	2.981	(0.526)	137288	98.0168	98.017
11 Bromoethane	108	3.126	3.126	(0.551)	113905	115.283	115.28
12 Acrolein	56	3.298	3.292	(0.582)	27125	111.052	111.05
13 Methylene Chloride	84	3.510	3.510	(0.619)	177690	97.5019	97.502
14 Acetone	43	3.662	3.655	(0.646)	54408	91.7831	91.783
15 Trans-1,2-Dichloroethene	96	3.668	3.668	(0.647)	186699	93.5502	93.550

ANALYSIS SEQUENCE

SDE0043

Printed: 5/18/2015 11:57:01AM

Instrument: NT15
Calibration ID: UNASSIGNED

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SDE0043-TUN1	MS Tune	QC		1	D001953		
SDE0043-CAL1	NT15 Soil 1	QC		2	D002100	D002110	
SDE0043-CAL2	NT15 Soil 2	QC		3	D002101	D002110	
SDE0043-CAL3	NT15 Soil 5	QC		4	D002102	D002110	
SDE0043-CAL4	NT15 Soil 10	QC		5	D002103	D002110	
SDE0043-CAL5	NT15 Soil 50	QC		6	D002104	D002110	
SDE0043-CAL6	NT15 Soil 100	QC		7	D002105	D002110	
SDE0043-CAL7	NT15 Soil 150	QC		8	D002106	D002110	
SDE0043-CAL8	NT15 Soil 200	QC		9	D002107	D002110	
SDE0043-CAL9	NT15 Soil 2-pent. 500	QC		10	D002108	D002110	
SDE0043-SCV1	Secondary Cal Check	QC		11	D002109	D002110	

Samples Loaded By _____ Date _____

Data Processed By _____ Date _____

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Batch File: /chem1/nt15.i/20150515.b
Inst ID: nt15.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09
FILENAME:	001051515	002051515	005051515	010051515	050051515	100051515	150051515	200051515	500051515
INJ.DATE:	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015	15-MAY-2015
INJ.TIME:	14:02	14:30	14:57	15:25	15:52	16:20	16:47	17:15	17:43

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	1.554	1.534	1.548	1.548	1.554	1.554	1.547	1.547	+++++	1.554	1.441-1.668	1.548	0.007
2 Chloromethane	1.736	1.722	1.736	1.742	1.742	1.742	1.742	1.742	1.742	1.742	1.629-1.856	1.738	0.007
3 Vinyl Chloride	1.800	1.787	1.800	1.807	1.807	1.807	1.807	1.807	+++++	1.807	1.694-1.920	1.803	0.007
4 Bromomethane	2.125	2.098	2.118	2.112	2.118	2 118	2.118	2.112	2.125	2.118	2.005-2.232	2.116	0.008
5 Chloroethane	2.228	2.209	2.222	2.222	2.222	2.228	2.222	2.222	1.742	2.222	2.109-2.336	2.169	0.160
6 Trichlorofluoromethane	2.345	2.319	2.339	2.339	2.339	2.339	2.338	2.339	+++++	2.339	2.226-2.453	2.337	0.008
7 1,1-Dichloroethene	2.845	2.819	2.826	2.832	2.826	2.838	2.819	2 806	2.858	2.826	2.713-2.939	2.830	0.016
8 Carbon Disulfide	2.845	2 819	2.826	2.832	2 826	2.838	2.819	2.799	2.858	2.826	2.713-2.939	2.829	0.017
9 112Trichloro122Trifluo	2.897	2.871	2.884	2.884	2.884	2.890	2.871	2.858	+++++	2.884	2.771-2.997	2.880	0.013
10 Iodomethane	2.994	2.974	2.988	2.988	2.981	2.988	2.974	2.962	3.020	2.981	2 868-3.095	2.986	0.016
11 Bromoethane	3.139	3.119	3.133	3 133	3.126	3.139	3.126	3.106	+++++	3.126	3.013-3.240	3.128	0.011
12 Acrolein	3.305	3.285	3.292	3.292	3.292	3.298	3.298	3.305	3.761	3.292	3.179-3.405	3.347	0.155
13 Methylene Chloride	3.523	3.496	3.510	3.510	3.510	3.516	3 509	3.503	3.761	3.510	3.397-3.624	3.537	0.084
14 Acetone	3.662	3.642	3.655	3.655	3.655	3.655	3.668	3.688	3.761	3.655	3.542-3.769	3.671	0.036
15 Trans-1,2-Dichloroethe	3.681	3.661	3.668	3.668	3.668	3.668	3.661	3.655	3.675	3.668	3.555-3.782	3.667	0.008
16 Methyl tert butyl ethe	3.880	3.860	3.873	3.867	3.867	3.866	3.879	3.893	3.754	3.867	3.754-3.981	3.860	0.041
17 1,1-Dichloroethane	4.309	4.289	4.303	4.303	4.303	4.302	4 302	4.296	3.761	4.303	4.190-4.417	4.241	0.160

Reviewer 1 PC Date: 5/18/15
Reviewer 2 _____ Date: _____

Report Date : 18-May-2015 10:18

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Batch File: /chem1/nt15.i/20150515.b
Inst ID: nt15.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 Acrylonitrile	4.408	4.395	4.402	4.402	4.402	4.408	4.414	4.421	4.349	4.402	4.289-4.516	4.400	0.021
19 Vinyl Acetate	4.606	4.593	4.600	4.600	4 600	4.599	4.606	4.606	4.349	4.600	4.487-4.714	4.573	0.084
20 Cis-1,2-Dichloroethene	4.824	4.811	4.818	4.818	4.818	4.818	4.818	4.818	4 818	4.818	4.705-4 932	4.818	0.003
21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.560	4.458-4.662	+++++	+++++
22 2,2-Dichloropropane	4.917	4.903	4.910	4.910	4.910	4.910	4.910	4.904	+++++	4.910	4.798-5.025	4.909	0.004
23 Bromochloromethane	5.003	4.989	4.996	4.996	4.996	5.003	5.003	5.003	+++++	4.996	4.884-5.110	4.999	0.005
24 Chloroform	5.089	5.075	5.082	5.082	5.082	5.082	5.089	5.089	5.082	5.082	4.970-5.196	5 084	0.004
25 Carbon Tetrachloride	5.176	5.162	5.169	5.169	5.169	5.169	5.169	5.162	+++++	5.169	5.047-5.291	5.168	0.004
26 1,1,1-Trichloroethane	5.242	5.229	5.236	5.236	5.236	5.242	5.236	5.236	+++++	5.236	5.123-5.350	5.237	0.004
$ 27 Dibromofluoromethane	5.249	5.236	5.243	5.243	5 243	5.242	5.249	5.249	5.242	5.243	5.130-5.357	5.244	0.004
28 1,1-Dichloropropene	5.356	5.343	5.343	5.350	5.350	5.349	5.349	5.343	+++++	5.350	5 227-5.472	5.348	0.005
29 2-Butanone	5.403	5.389	5.396	5.396	5.396	5.396	5.409	5.416	5.390	5.396	5.284-5.511	5.399	0.009
30 Benzene	5.577	5.563	5.570	5.570	5.570	5.570	5.570	5.570	5.577	5.570	5.448-5.693	5.571	0.004
* 31 Pentafluorobenzene	5.677	5.664	5.671	5.671	5.671	5.670	5.670	5.671	5.671	5.671	5.558-5.784	5.671	0.003
$ 32 d4-1,2-Dichloroethane	5.704	5.697	5.698	5.698	5.698	5.704	5.704	5.704	5.697	5.698	5.584-5.811	5.700	0.003
33 1,2-Dichloroethane	5.764	5.757	5.758	5.758	5.758	5.757	5.764	5.764	5.671	5.758	5.635-5.880	5.750	0.030
34 Trichloroethene	6.080	6.073	6.073	6.073	6.073	6.080	6.080	6.080	6.120	6.073	5.951-6.196	6.081	0.015
* 35 1,4-Difluorobenzene	6.120	6.113	6.120	6.120	6.120	6.120	6 120	6.120	6.120	6.120	5.998-6.242	6.119	0.002
36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.693	5.582-5.804	+++++	+++++
37 Dibromomethane	6.442	6.429	6.436	6.436	6.436	6.436	6.442	6 442	+++++	6.436	6.313-6.558	6.437	0.005
38 1,2-Dichloropropane	6.530	6.523	6.523	6.523	6.523	6.523	6.529	6.530	+++++	6.523	6.400-6.645	6.525	0.003
39 Bromodichloromethane	6.590	6.583	6.584	6.584	6.584	6.583	6.590	6 590	+++++	6.584	6.461-6.706	6.586	0.003

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Batch File: /chem1/nt15.i/20150515.b
Inst ID: nt15.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	40 2-Chloroethyl Vinyl Et	7.082	7.075	7.076	7.076	7.076	7.082	7.082	7.082	6.866	7.076	6.953-7.198	7.055	0.071
	172 2 pentanone	6.879	6.872	6.873	6.873	6.873	6.872	6 879	6.886	6.866	6.873	6.759-6.986	6.875	0 006
	41 Cis 1,3-dichloropropen	7.115	7.115	7.115	7.115	7.115	7.115	7.121	7.122	7.669	7.115	6.992-7.237	7.178	0.184
$	42 d8-Toluene	7.272	7 266	7.266	7.266	7.266	7.266	7.266	7.272	7.266	7.266	7.143-7.388	7.267	0.003
	43 Toluene	7.312	7.311	7.312	7.312	7.312	7.312	7.311	7.312	7.312	7.312	7.189-7.434	7.312	0.000
	44 Tetrachloroethene	7.623	7.623	7.623	7.623	7.623	7.623	7.623	7.623	7.623	7.623	7.451-7.795	7.623	0.000
	45 4-Methyl-2-Pentanone	7.656	7.649	7.656	7.656	7.656	7.656	7.662	7.669	7.266	7.656	7.533-7.778	7.614	0.131
	46 Trans 1,3-Dichloroprop	7.669	7.669	7.669	7.669	7.669	7.669	7.669	7.676	7.669	7.669	7.547-7.791	7.670	0.002
	47 1,1,2-Trichloroethane	7.808	7.801	7.802	7.802	7.802	7.802	7.808	7.808	7.272	7.802	7.679-7.924	7.745	0.177
	48 Chlorodibromomethane	7.947	7.947	7.948	7.948	7.948	7.947	7.954	7.954	+++++	7.948	7.776-8.119	7.949	0.003
	49 1,3-Dichloropropane	8.034	8.027	8.027	8.034	8 034	8.033	8.033	8.034	8.584	8.034	7 862-8.205	8.093	0.184
	50 1,2-Dibromoethane	8.146	8.139	8.140	8.140	8.140	8.146	8.146	8.146	8.146	8.140	8.017-8.262	8.143	0.003
	51 2-Hexanone	8.365	8.358	8.365	8.359	8.359	8.365	8.371	8.372	8.358	8.359	8.187-8.530	8.364	0.005
*	52 d5-Chlorobenzene	8.584	8.577	8.577	8.584	8.584	8.584	8.584	8.584	8.584	8.584	8 412-8.756	8.582	0.003
	53 Chlorobenzene	8.597	8.597	8.597	8.597	8 597	8.597	8.597	8.604	8.597	8.597	8.425-8.769	8.598	0.002
	54 Ethyl Benzene	8.624	8.623	8.624	8.624	8.624	8.624	8.630	8.630	8.624	8.624	8.452-8.795	8.625	0.003
	55 1,1,1,2-Tetrachloroeth	8.657	8.650	8.650	8.657	8.657	8.657	8.663	8.663	+++++	8.657	8.485-8.828	8.657	0.005
	56 m,p-xylene	8.750	8.749	8.750	8.750	8.750	8.756	8.756	8.756	8.750	8.750	8.578-8.921	8.752	0.003
	57 o-Xylene	9.128	9.121	9.121	9.121	9.128	9.127	9.127	9.128	9.121	9.128	8.956-9.299	9.125	0.003
	58 Styrene	9.174	9.174	9.174	9.174	9.174	9.174	9.174	9.181	9.174	9.174	9 003-9.346	9.175	0.002
	59 Bromoform	9.188	9.187	9.188	9.188	9.188	9.194	9.194	9.201	+++++	9.188	8.969-9.396	9.191	0.005
	60 Isopropyl Benzene	9.401	9.401	9.401	9.401	9 401	9.407	9.407	9.407	9.401	9.401	9.182-9.609	9.403	0.003
	61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.568	8.409-8.727	+++++	+++++
$	62 4-Bromofluorobenzene	9 654	9.654	9 654	9.654	9.654	9.654	9.654	9.661	9.654	9.654	9.482-9.826	9.655	0.002

Analytical Resources, Inc.
RETENTION TIME SUMMARY REPORT

Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Batch File: /chem1/nt15.i/20150515.b
Inst ID: nt15.i

	Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
	63 Bromobenzene	9.741	9.740	9.741	9.741	9.741	9.741	9.747	9.747	9.747	9.741	9.522-9.949	9.743	0.003
	64 N-Propyl Benzene	9.774	9.774	9.774	9.774	9.774	9.780	9.780	9.781	9.774	9.774	9.555-9.982	9.776	0.003
	65 1,1,2,2-Tetrachloroeth	9.847	9.847	9.847	9.847	9.847	9.847	9.854	9.854	+++++	9.847	9.628-10.055	9.849	0.003
	66 2-Chloro Toluene	9.914	9.914	9.914	9.914	9.914	9.914	9.914	9.921	9.914	9.914	9 695-10.122	9.915	0.002
	67 1,3,5-Trimethyl Benzen	9.961	9.954	9.954	9.954	9.961	9.960	9.967	9.967	9.960	9.961	9.742-10.168	9.960	0.005
	68 1,2,3-Trichloropropane	9.967	9.967	9.961	9.967	9.967	9.967	9.974	9.974	+++++	9.967	9.748-10.175	9.968	0.004
	69 Trans-1,4-Dichloro 2-B	10.007	10.007	10.007	10.007	10.007	10.007	10.014	10.014	+++++	10.007	9.788-10.215	10.009	0.003
	70 4-Chloro Toluene	10.067	10.060	10.061	10.061	10.067	10.067	10.067	10.074	10.060	10.067	9.848-10.275	10.065	0.005
	71 T-Butyl Benzene	10.240	10.240	10.241	10.241	10.241	10.247	10.247	10.247	10.247	10.241	10.021-10.448	10.243	0.003
	72 1,2,4-Trimethylbenzene	10.314	10.307	10.307	10.307	10.307	10.314	10.313	10.314	10.307	10.307	10.088-10.515	10.310	0.003
	73 S-Butyl Benzene	10.407	10.407	10.407	10.407	10.407	10.407	10.413	10.414	10.407	10.407	10.188-10.615	10 408	0.003
	74 4-Isopropyl Toluene	10.540	10.540	10.540	10.540	10.540	10.547	10.547	10.547	10.540	10.540	10.321-10.748	10.542	0.003
	75 1,3-Dichlorobenzene	10.600	10.600	10.600	10.600	10.600	10.600	10.607	10 607	10.600	10.600	10.381-10.808	10 602	0.003
*	76 d4-1,4-Dichlorobenzene	10.674	10.667	10.667	10.667	10.667	10.673	10 673	10.680	10.667	10.667	10.454-10.880	10.671	0.005
	77 1,4-Dichlorobenzene	10.687	10.687	10.680	10.680	10.680	10.687	10 687	10.693	10.680	10.680	10.467-10.893	10.685	0.005
	78 N-Butyl Benzene	10.933	10.933	10.934	10.934	10.934	10.933	10.940	10.940	10.933	10.934	10.720-11.147	10.935	0 003
$	79 d4-1,2-Dichlorobenzene	11.067	11.066	11.067	11.067	11.067	11.066	11.073	11.073	11.067	11.067	10.853-11.280	11.068	0.003
	80 1,2-Dichlorobenzene	11.073	11.073	11.073	11.073	11.073	11.073	11.080	11.080	11.073	11.073	10.860-11.287	11.075	0.003
	81 1,2-Dibromo 3-Chloropr	11.840	11.839	11.840	11.840	11.840	11.839	11.839	11.839	11.839	11.840	11.626-12.053	11.840	0.000
	82 Hexachloro 1,3-Butadie	12.466	12.466	12.466	12.466	12.466	12.472	12.472	12.473	12.466	12.466	12.253-12.679	12.468	0.003
	83 1,2,4-Trichlorobenzene	12.493	12.492	12.493	12.493	12.493	12.492	12.492	12.499	12.492	12.493	12.279-12.706	12.493	0.002
	84 Naphthalene	12.812	12.812	12.812	12.812	12 813	12.812	12.812	12 819	12.812	12.813	12.599-13.026	12.813	0.002
	85 1,2,3-Trichlorobenzene	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.992	12.779-13 206	12.992	0.000

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt15.i/20150515.b

ARI Job No.: VSTD Method: VO051415S.m Instrument: nt15.i Date: 15-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1402	001051515.d	VSTD001		1	Iodomethane, 1,1,1-Trichloroethane, 1,2-Dichloropropane, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane, Bromoform, 1,2,3-Trichloropropane, Trans-1,4-Dichloro 2-Butene,
1430	002051515.d	VSTD002		1	1,1,1-Trichloroethane, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane,
1457	005051515.d	VSTD005		1	4-Methyl-2-Pentanone,
1525	010051515.d	VSTD010		1	4-Methyl-2-Pentanone,
1552	050051515.d	VSTD050		1	NO MANUAL INTEGRATION
1620	100051515.d	VSTD100		1	NO MANUAL INTEGRATION
1647	150051515.d	VSTD150		1	NO MANUAL INTEGRATION
1715	200051515.d	VSTD200		1	NO MANUAL INTEGRATION
1743	500051515.d	PENT500		1	NO MANUAL INTEGRATION
1810	scv051515.d	SCV100		1	2-Chloroethyl Vinyl Ether,
1837	scv051515a.d	VASCV		1	NO MANUAL INTEGRATION

Report Date : 18-May-2015 09:29

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:35 paul

Calibration File Names:
Level 1: /chem1/nt15.i/20150515.b/001051515.d
Level 2: /chem1/nt15.i/20150515.b/002051515.d
Level 3: /chem1/nt15.i/20150515.b/005051515.d
Level 4: /chem1/nt15.i/20150515.b/010051515.d
Level 5: /chem1/nt15.i/20150515.b/050051515.d
Level 6: /chem1/nt15.i/20150515.b/100051515.d
Level 7: /chem1/nt15.i/20150515.b/150051515.d
Level 8: /chem1/nt15.i/20150515.b/200051515.d
Level 9: /chem1/nt15.i/20150515.b/500051515.d

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
1 Dichlorodifluoromethane	0.55123	0.47936	0.50122	0.53462	0.50661	0.52229					
	0.47989	0.49428	+++++				AVRG		0.50869		5.05275
2 Chloromethane	3509	4882	9806	18592	81874	166320					
	240323	346444	+++++				LINR	0.000e+00	0.51977		0.99855
3 Vinyl Chloride	0 70584	0.60158	0.64426	0.66303	0.63666	0.66063					
	0.63136	0.64414	+++++				AVRG		0.64844		4.63352

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:35 paul

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
4 Bromomethane	1679	2528	4315	8458	36066	86357					
	141010	201272	+++++				LINR	0.000e+00	0.29658		0.99438
5 Chloroethane	0.26883	0.23431	0.23879	0.23471	0.21729	0.22394					
	0 20608	0.20032	+++++				AVRG		0.22804		9.44334
6 Trichlorofluoromethane	0.32106	0.25885	0.27153	0.27707	0.26147	0.27132					
	0.23701	0.24298	+++++				AVRG		0.26766		9.61127
7 1,1-Dichloroethene	0.66649	0.55450	0.57251	0.60023	0.57583	0.59119					
	+++++	+++++	+++++				AVRG		0.59346		6.59206
8 Carbon Disulfide	7977	12337	27360	54621	260714	534768					
	+++++	+++++	+++++				LINR	0.000e+00	1.69871		0.99966
9 112Trichloro122Trifluoroethan	0.53626	0.46265	0.46952	0.48160	0.46167	0.47400					
	0.43337	+++++	+++++				AVRG		0.47415		6.60547
10 Iodomethane	0.30574	0.39886	0.42425	0.46535	0.48672	0.47511					
	0.51620	0.53643	+++++				AVRG		0 45108		16.36573

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/V0051415S.m
Cal Date : 16-May-2015 10:35 paul

Compound	1 Level 1	2 Level 2	5 Level 3	10 Level 4	50 Level 5	100 Level 6	Curve	Coefficients b	 m1	 m2	%RSD or R^2
	150 Level 7	200 Level 8	150 Level 9								
11 Bromoethane	0.31096	0.29473	0.32029	0.33628	0.31968	0.32808					
	0.31229	0.32331	+++++				AVRG		0.31820		3.93060
12 Acrolein	0.08399	0.07269	0.08117	0.08028	0.08049	0.07920					
	0.07472	0.07677	+++++				AVRG		0.07866		4.70251
13 Methylene Chloride	+++++	0.60557	0.61022	0.59367	0.57844	0.58920					
	0.55961	0.57169	+++++				AVRG		0.58691		3.10403
14 Acetone	5008	6466	13591	23455	116199	209831					
	281557	338589	+++++				QUAD	0.000e+00	4.35959	2.50691	0 99864
15 Trans-1,2-Dichloroethene	0.77235	0.64988	0.63625	0.63870	0.60898	0.63204					
	0.59412	0.60943	+++++				AVRG		0.64272		8.65015
16 Methyl tert butyl ether	1.72961	1.53148	1.62610	1.68539	1.65069	1.66047					
	1.57826	1.73007	+++++				AVRG		1.64901		4.21830
17 1,1-Dichloroethane	1 01785	0.92008	0.94517	0.98052	0.96442	0.99851					
	0.94631	0.96706	+++++				AVRG		0.96749		3.23854

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Force
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:35 paul

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response
Quad	Amt = b + m1*Rsp + m2*Rsp^2	Response

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Calibration File Names:
Level 1: /chem1/nt15.i/20150515.b/001051515.d
Level 2: /chem1/nt15.i/20150515.b/002051515.d
Level 3: /chem1/nt15.i/20150515.b/005051515.d
Level 4: /chem1/nt15.i/20150515.b/010051515.d
Level 5: /chem1/nt15.i/20150515.b/050051515.d
Level 6: /chem1/nt15.i/20150515.b/100051515.d
Level 7: /chem1/nt15.i/20150515.b/150051515.d
Level 8: /chem1/nt15.i/20150515.b/200051515.d
Level 9: /chem1/nt15.i/20150515.b/500051515.d

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD	
	150.000 Level 7	200.000 Level 8	150.000 Level 9						
1 Dichlorodifluoromethane	0.55123	0.47936	0.50122	0.53462	0.50661	0.52229			
	0.47989	0.49428	+++++				0.50869	5.053	
2 Chloromethane	1.22191	0.74864	0.63321	0.59211	0.51910	0.53149			
	0.49806	0.52802	+++++				0.65907	36.673	<-
3 Vinyl Chloride	0.70584	0.60158	0.64426	0.66303	0.63666	0.66063			
	0.63136	0.64414	+++++				0.64844	4.634	
4 Bromomethane	0.58466	0.38766	0.27864	0.26936	0.22867	0.27596			
	0.29224	0.30676	+++++				0.32799	34.496	<-
5 Chloroethane	0.26883	0.23431	0.23879	0.23471	0.21729	0 22394			
	0.20608	0.20032	+++++				0.22804	9.443	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150.000 Level 9					
6 Trichlorofluoromethane	0.32106	0.25885	0.27153	0.27707	0.26147	0.27132		
	0.23701	0.24298	+++++				0.26766	9.611
7 1,1-Dichloroethene	0.66649	0.55450	0.57251	0.60023	0.57583	0.59119		
	+++++	+++++	+++++				0.59346	6.592
8 Carbon Disulfide	2.77776	1.89184	1.76675	1.73953	1.65300	1.70891		
	+++++	+++++	+++++				1.92296	22.166 <-
9 112Trichloro122Trifluoroethan	0.53626	0.46265	0.46952	0.48160	0.46167	0.47400		
	0.43337	+++++	+++++				0.47415	6.605
10 Iodomethane	0.30574	0.39886	0.42425	0.46535	0.48672	0.47511		
	0.51620	0.53643	+++++				0.45108	16.366
11 Bromoethane	0.31096	0.29473	0.32029	0.33628	0.31968	0 32808		
	0.31229	0.32331	+++++				0.31820	3.931
12 Acrolein	0.08399	0.07269	0.08117	0.08028	0.08049	0.07920		
	0.07472	0.07677	+++++				0.07866	4.703
13 Methylene Chloride	+++++	0.60557	0.61022	0.59367	0.57844	0.58920		
	0.55961	0.57169	+++++				0.58691	3.104
14 Acetone	0.34878	0.19831	0.17553	0.14940	0.14735	0.13411		
	0.11670	0.10321	+++++				0.17167	45.281 <-

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD	
	150.000 Level 7	200.000 Level 8	150.000 Level 9						
15 Trans-1,2-Dichloroethene	0.77235	0.64988	0.63625	0.63870	0.60898	0 63204			
	0.59412	0.60943	+++++				0.64272	8.650	
16 Methyl tert butyl ether	1.72961	1.53148	1.62610	1.68539	1.65069	1.66047			
	1.57826	1.73007	+++++				1 64901	4.218	
17 1,1-Dichloroethane	1.01785	0.92008	0.94517	0.98052	0.96442	0.99851			
	0.94631	0.96706	+++++				0.96749	3.239	
18 Acrylonitrile	0.14416	0.13985	0.15788	0.15952	0.16618	0.15848			
	0.14298	0.15557	+++++				0.15308	6.187	
19 Vinyl Acetate	0.56377	0.73607	0.80421	0.87692	0.90765	0.90684			
	0.89535	0.86185	+++++				0.81908	14.507	
20 Cis-1,2-Dichloroethene	0.60695	0.54039	0.57439	0.57555	0 56122	0.57885			
	0.55106	0.56949	+++++				0.56974	3.514	
21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
22 2,2-Dichloropropane	0.75251	0.64482	0.66253	0.70077	0.76121	0.81342			
	0.77178	0.80106	+++++				0.73851	8.459	
23 Bromochloromethane	0.23400	0.19966	0.21910	0.22739	0.22648	0.23136			
	0.21883	0.22688	+++++				0.22296	4.839	

Analytical Resources, Inc.

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Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD	
	150.000 Level 7	200.000 Level 8	150.000 Level 9						
24 Chloroform	1.00218	1.07404	0 94614	1.00717	0.96765	0.95786			
	0.88732	0.88359	+++++				0.96574	6 563	
25 Carbon Tetrachloride	0.31172	0.32834	0.31479	0.33719	0.36025	0.38516			
	0.36273	0.38265	+++++				0.34785	8.326	
26 1,1,1-Trichloroethane	0.86916	0.74220	0.77482	0.81061	0.80798	0.83484			
	0.78393	0.81469	+++++				0.80478	4.798	
28 1,1-Dichloropropene	0.52147	0.47016	0.47307	0.47791	0.46311	0.47812			
	0.44239	0.46084	+++++				0.47338	4.784	
29 2-Butanone	0.06651	0.05711	0.06397	0.06117	0.06487	0.06049			
	0.05479	0.05580	+++++				0.06059	7.218	
30 Benzene	1.49926	1.39329	1.31165	1.35733	1.31642	1.33568			
	1.27413	1.29380	+++++				1.34770	5.312	
33 1,2-Dichloroethane	0 51745	0.42375	0.46663	0.47922	0.46567	0.46379			
	0.43492	0.44078	+++++				0.46153	6.372	
34 Trichloroethene	0.41770	0.33264	0.32724	0.34364	0.32468	0.32974			
	0.31326	0.32454	+++++				0.33918	9.687	
36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-

Analytical Resources, Inc.

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Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150.000 Level 9					
37 Dibromomethane	0.15365	0.16006	0.15476	0.15996	0.16068	0.16379		
	0.15580	0.15917	+++++				0.15849	2.168
38 1,2-Dichloropropane	0.35576	0.32929	0.31709	0.32790	0.31801	0.32553		
	0.30990	0.31866	+++++				0.32527	4.273
39 Bromodichloromethane	0.41448	0.43043	0.37710	0.40472	0.42558	0.43515		
	0.39800	0.39868	+++++				0.41052	4.778
40 2-Chloroethyl Vinyl Ether	0.18422	0.17783	0.17191	0.18409	0.18861	0.18807		
	0.17383	0.17682	+++++				0.18067	3.553
172 2 pentanone	0.10203	0.07453	0.08420	0.08261	0.08639	0.08311		
	0.07508	0.07739	0.08095				0.08292	9.958
41 Cis 1,3-dichloropropene	0.49211	0.47016	0.44172	0.47202	0.49688	0.51200		
	0.48897	0.50597	+++++				0.48498	4.700
43 Toluene	0.82615	0.56423	0.57589	0.56683	0.54919	0.61338		
	0.62187	0.67349	+++++				0.62388	14.614
44 Tetrachloroethene	0.39519	0.35792	0.33618	0.33572	0.32826	0.33893		
	0.30993	0.32068	+++++				0.34035	7.707
45 4-Methyl-2-Pentanone	0.11821	0.11995	0.12792	0.12581	0.13260	0.12829		
	0.11849	0.11757	+++++				0.12360	4.651

Analytical Resources, Inc.

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Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150.000 Level 9					
46 Trans 1,3-Dichloropropene	0.44626	0.38898	0.39285	0.41185	0.45138	0.46763		
	0.45524	0.47434	+++++				0.43607	7.674
47 1,1,2-Trichloroethane	0.25661	0.24974	0.24471	0.24846	0.25140	0.25044		
	0.23890	0.24645	+++++				0.24834	2.098
48 Chlorodibromomethane	0.23113	0.22449	0.22479	0.27571	0.31304	0.32597		
	0.30695	0.30482	+++++				0.27586	15.590
49 1,3-Dichloropropane	0.57217	0.51813	0.50202	0.50859	0.51558	0.51309		
	0.47280	0.47058	+++++				0.50912	6.197
50 1,2-Dibromoethane	0.24394	0.23169	0.23112	0.23934	0.24326	0.24496		
	0.23036	0.23868	+++++				0.23792	2.557
51 2-Hexanone	0.26256	0.24142	0.26524	0.24950	0.27366	0.25541		
	0.22333	0.20064	+++++				0.24647	9.820
53 Chlorobenzene	1.15862	1.03648	0.98012	0.98456	0.96000	0.99454		
	0.91905	0.93726	+++++				0.99633	7.505
54 Ethyl Benzene	2.15133	1.91275	1.80000	1.80891	1.77769	1.82074		
	1.66159	1.71906	+++++				1.83151	8.123
55 1,1,1,2-Tetrachloroethane	0.27007	0.26039	0.26490	0.27799	0.29708	0.31225		
	0.29727	0.30828	+++++				0.28603	7.059

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50 000 Level 5	100.000 Level 6	RRF	% RSD	
	150 000 Level 7	200.000 Level 8	150.000 Level 9						
56 m,p-xylene	0.81090	0.71553	0.68471	0.69266	0.70066	0.73622			
	0.68302	0.68714	+++++				0.71386	6.050	
57 o-Xylene	0.87311	0.77013	0.70246	0.72591	0.74875	0.77993			
	0.74137	0.76377	+++++				0.76318	6.677	
58 Styrene	1.22199	1.11010	1.08971	1.09847	1.13549	1.17644			
	1.10058	1.11919	+++++				1.13150	4.040	
59 Bromoform	0.27563	0.22157	0.25760	0.26343	0.33237	0.34791			
	0.33206	+++++	+++++				0.29008	16.390	
60 Isopropyl Benzene	4.17389	3.62389	3.42046	3.45671	3.37140	3.49066			
	3.17218	3.52336	+++++				3.52907	8.265	
61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++				+++++	+++++	<-
63 Bromobenzene	0.81164	0.75707	0.71191	0.71990	0.70990	0.72743			
	0.68707	0.73918	+++++				0.73301	5.180	
64 N-Propyl Benzene	5.09026	4.46391	4.19469	4.18742	4.13833	4.15769			
	3.72598	4.13853	+++++				4.26210	9.154	
65 1,1,2,2-Tetrachloroethane	0.77975	0.73553	0.72837	0.72470	0.77122	0.74685			
	0.65992	0.63280	+++++				0.72239	7.100	

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150 000 Level 9					
66 2-Chloro Toluene	2 87478	2.57040	2.43004	2 44181	2.37479	2.39564		
	2.20979	2.40117	+++++				2.46230	7.870
67 1,3,5-Trimethyl Benzene	3.29750	2.95938	2.81690	2.91897	2.85935	2.99172		
	2.70551	3.01311	+++++				2.94531	5.923
68 1,2,3-Trichloropropane	0.20232	0.20857	0.21451	0.22011	0 23624	0.22822		
	0.20944	0.20607	+++++				0.21568	5.433
69 Trans-1,4-Dichloro 2-Butene	0.21517	0.21155	0.21418	0.22600	0.24238	0.23904		
	0.21020	0.20143	+++++				0.21999	6.584
70 4-Chloro Toluene	3.00665	2.69942	2.51957	2.57513	2.45571	2.47377		
	2.24996	2.41178	+++++				2.54900	8.850
71 T-Butyl Benzene	2.88097	2.53521	2.42054	2.47762	2.43363	2.53857		
	2.30233	2.56924	+++++				2.51977	6.705
72 1,2,4-Trimethylbenzene	3.25038	2.92376	2.77558	2.89482	2.82045	2.91669		
	2.65665	2.88882	+++++				2.89089	5 907
73 S-Butyl Benzene	4.42904	3.93909	3.79758	3.83790	3.77084	3.88508		
	3.44887	3.83142	+++++				3.86748	6.996
74 4-Isopropyl Toluene	3.53029	3.15600	3.04829	3.08464	3.02449	3.16639		
	2.82688	3.10554	+++++				3.11782	6.338

Analytical Resources, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

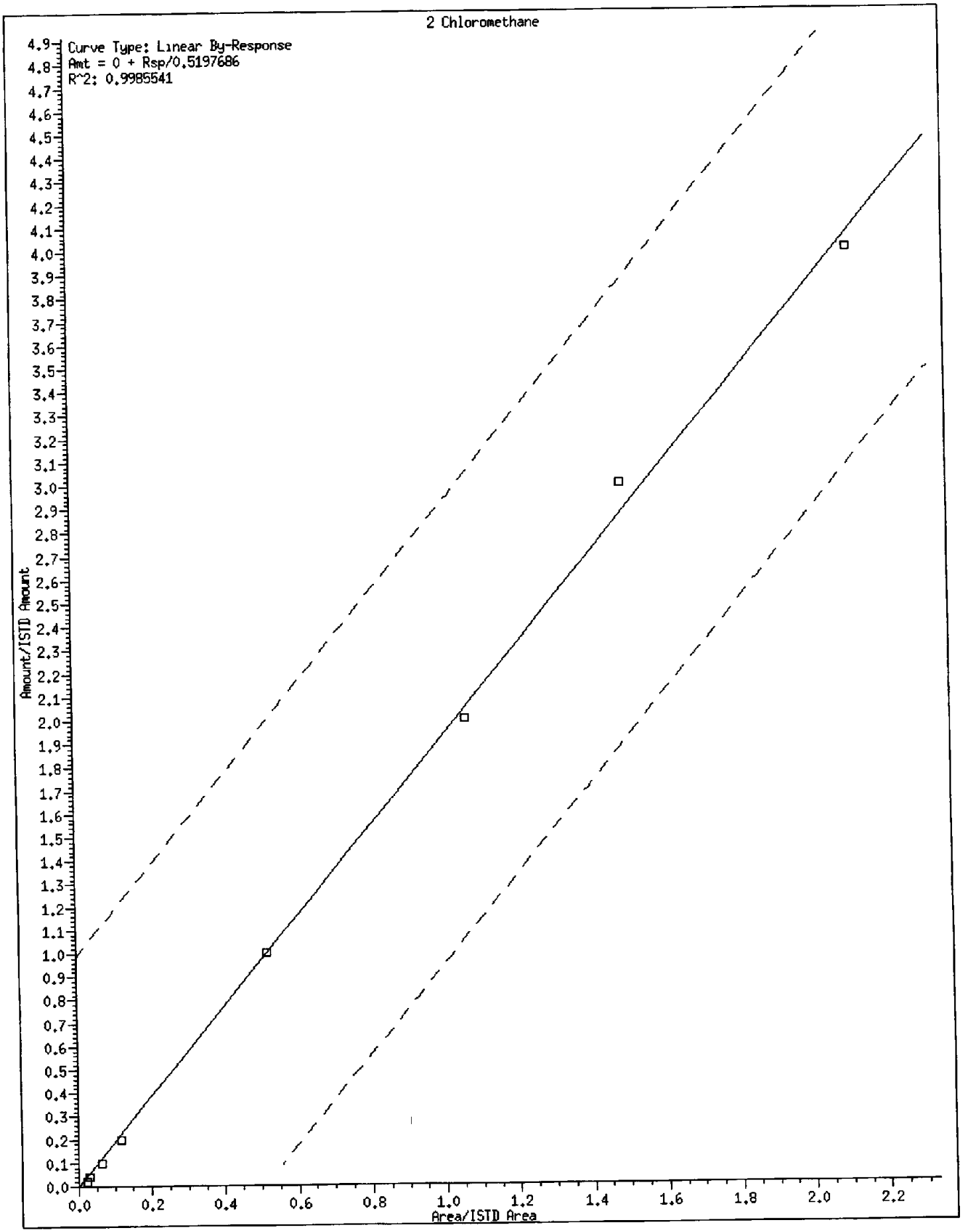
Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150.000 Level 9					
75 1,3-Dichlorobenzene	2.15787	1.70883	1.51705	1.48953	1.44840	1.49187		
	1.38116	1.42041	+++++				1.57689	16.127
77 1,4-Dichlorobenzene	2.24308	1.79584	1.53234	1.52252	1.47612	1.49235		
	1.38400	1.40380	+++++				1.60626	17.832
78 N-Butyl Benzene	3.73974	3.16304	3.01613	3.08295	2.95945	3.02900		
	2.62685	2.81765	+++++				3.05435	10.589
80 1,2-Dichlorobenzene	1.89320	1.55380	1.41870	1.40347	1.37612	1.39670		
	1.26944	1.26358	+++++				1 44687	13.968
81 1,2-Dibromo 3-Chloropropane	+++++	+++++	0.12288	0.12804	0.14406	0.14045		
	0.11819	0.11416	+++++				0.12796	9.421
82 Hexachloro 1,3-Butadiene	+++++	+++++	0.44566	0.44748	0.44566	0.47118		
	0.37090	0.40389	+++++				0.43080	8.474
83 1,2,4-Trichlorobenzene	+++++	+++++	0.91072	0.88585	0.84010	0.87740		
	0.71750	0.73812	+++++				0.82828	9.818
84 Naphthalene	+++++	+++++	2.21183	2.24972	2.28589	2.28001		
	1.88285	1.92810	+++++				2.13973	8.595
85 1,2,3-Trichlorobenzene	+++++	+++++	0.82706	0.81004	0.76817	0.81572		
	0.64607	0.69308	+++++				0.76002	9.781

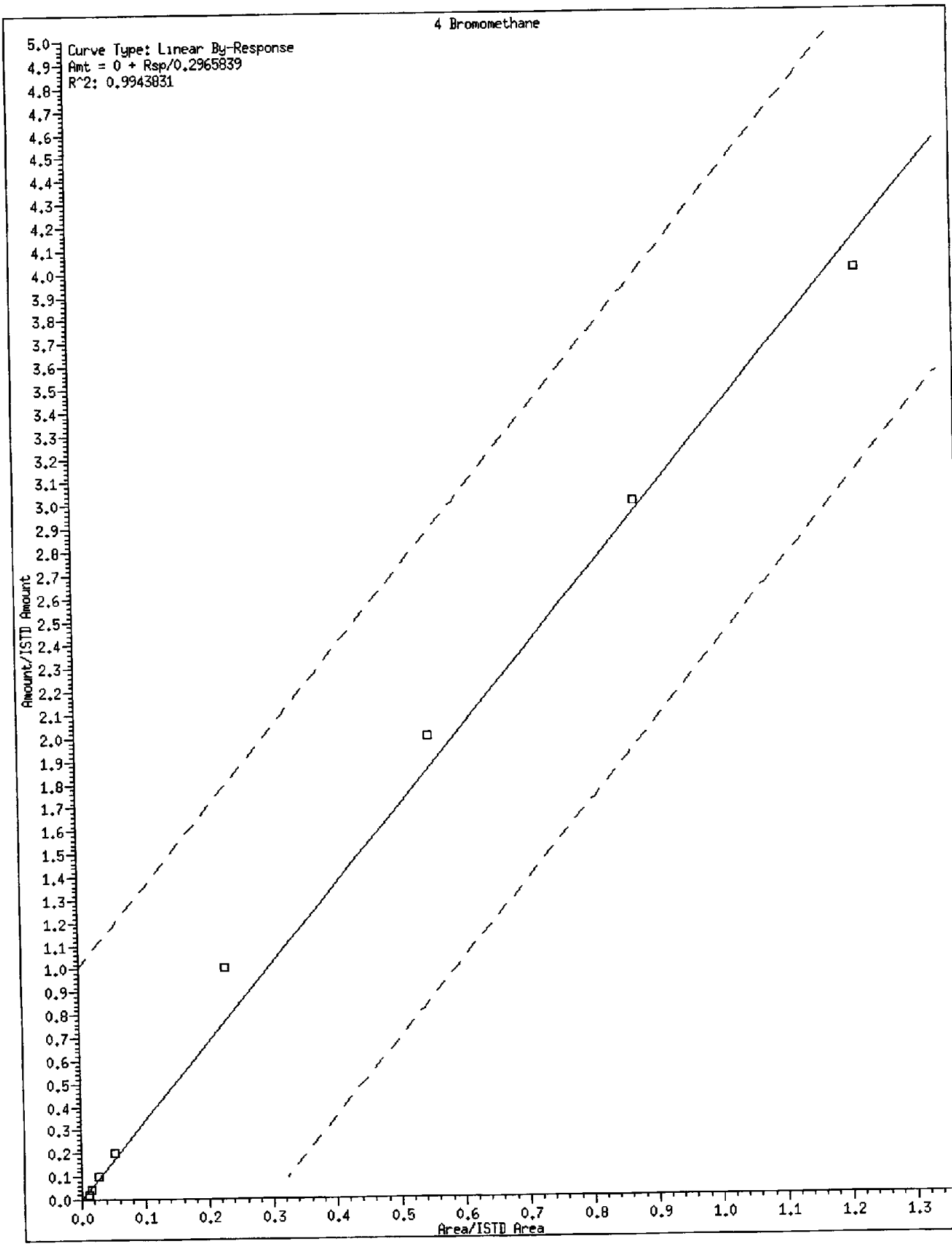
Analytical Resources, Inc.

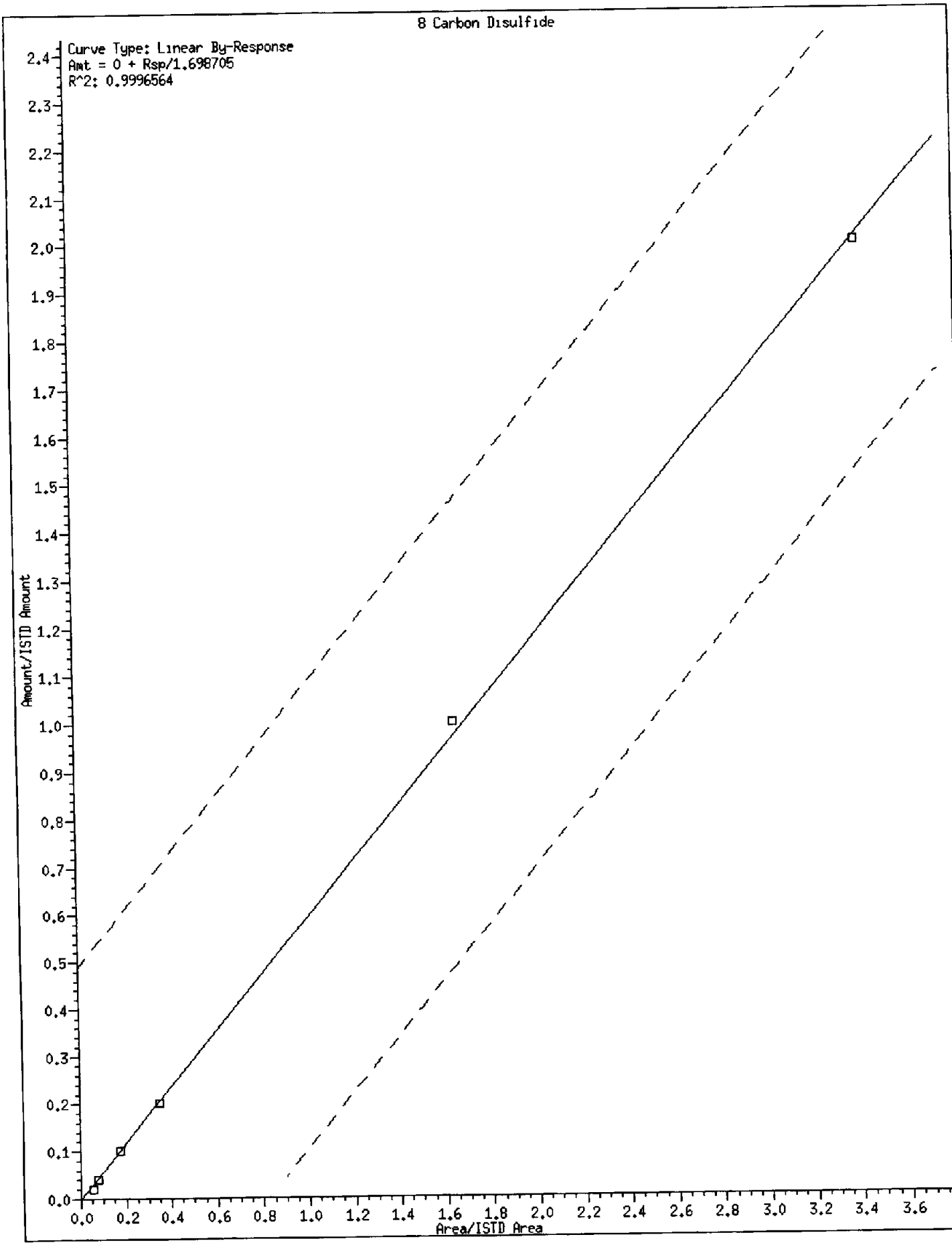
INITIAL CALIBRATION DATA

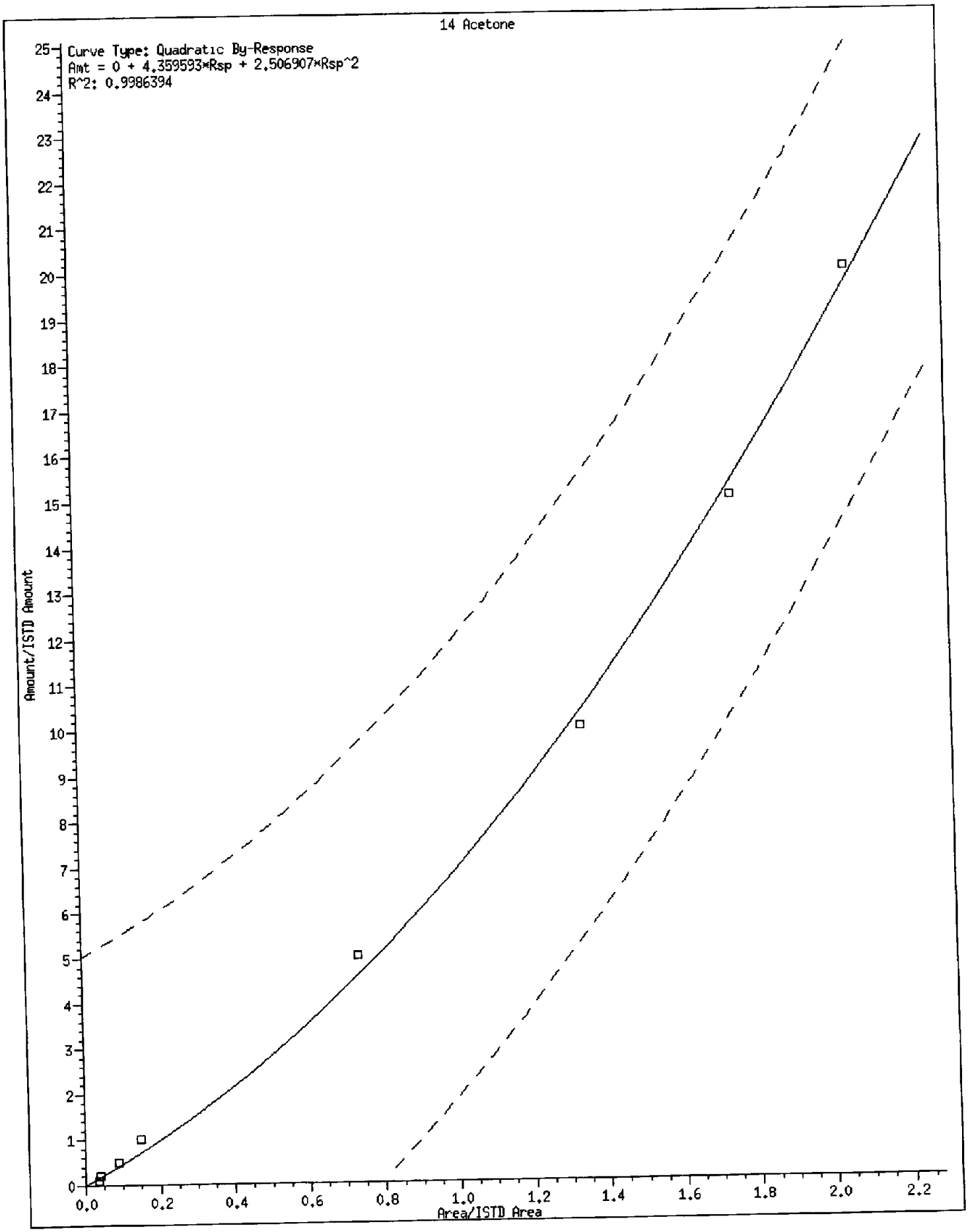
Start Cal Date : 15-MAY-2015 14:02
End Cal Date : 15-MAY-2015 17:43
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem1/nt15.i/20150515.b/VO051415S.m
Cal Date : 16-May-2015 10:23 paul
Curve Type : Average

Compound	1.000 Level 1	2.000 Level 2	5.000 Level 3	10.000 Level 4	50.000 Level 5	100.000 Level 6	RRF	% RSD
	150.000 Level 7	200.000 Level 8	150.000 Level 9					
$ 27 Dibromofluoromethane	0.43479	0.41642	0.44344	0.45889	0.46829	0.47482		
	0.47519	0.48544	+++++				0.45716	5.171
$ 32 d4-1,2-Dichloroethane	0.56993	0.54969	0.57790	0.59756	0.58791	0.58248		
	0.58312	0.58879	+++++				0.57967	2 515
$ 42 d8-Toluene	1.38616	1.38127	1.38352	1.36623	1.37951	1.38346		
	1.39345	1.39550	+++++				1.38364	0.652
$ 62 4-Bromofluorobenzene	0.48886	0.50233	0.49928	0.49709	0.49949	0.49814		
	0.48549	0.47867	+++++				0.49367	1.690
$ 79 d4-1,2-Dichlorobenzene	0.88487	0.88278	0.89085	0.88410	0.87936	0.87167		
	0.86067	0.84060	+++++				0.87436	1.888


2 Chloromethane
Curve Type: Linear By-Response
Amt = 0 + Rsp/0.5197686
R^2: 0.9985541
Amount/ISTD Amount
Area/ISTD Area


4 Bromomethane
Curve Type: Linear By-Response
Amt = 0 + Rsp/0.2965839
R^2: 0.9943831
Amount/ISTD Amount
Area/ISTD Area


8 Carbon Disulfide
Curve Type: Linear By-Response
Amt = 0 + Rsp/1.698705
R^2: 0.9996564
Amount/ISTD Amount
Area/ISTD Area
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.1
2.2
2.3
2.4
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6


14 Acetone
Curve Type: Quadratic By-Response
Amt = 0 + 4.359593*Rsp + 2.506907*Rsp^2
R^2: 0.9986394
Amount/ISTD Amount
Area/ISTD Area
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2

PC 5/18/15

Data File: /chem1/nt15.i/20150515.b/bfb051515.d

Date : 15-MAY-2015 13:01

Client ID: BFB0515

Instrument: nt15.i

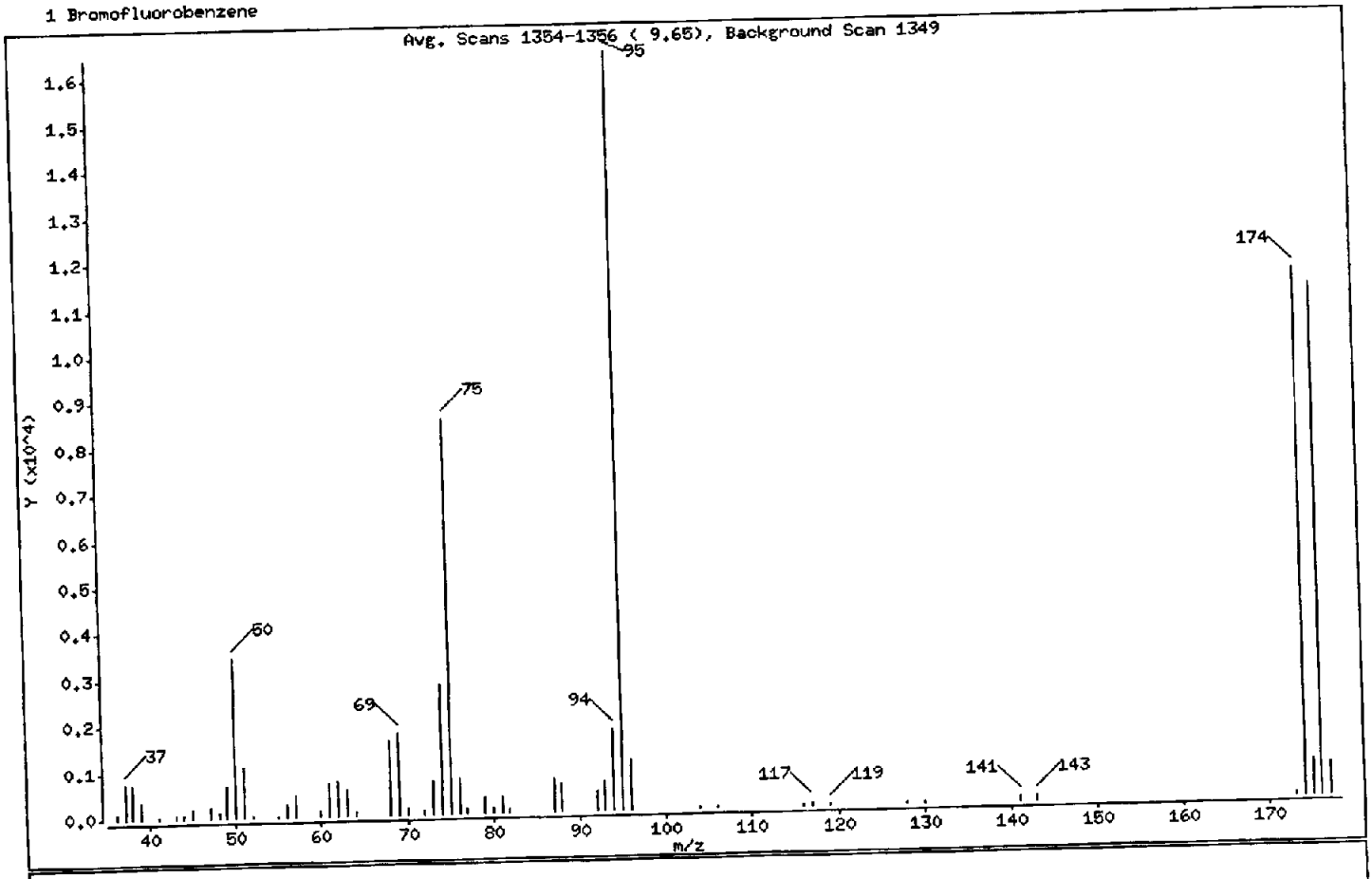
Sample Info: BRB0515,BFB0515,,1,051515

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.97
75	30.00 - 60.00% of mass 95	51.96
96	5.00 - 9.00% of mass 95	6.70
173	Less than 2.00% of mass 174	0.41 (0.59)
174	50.00 - 100.00% of mass 95	69.38
175	5.00 - 9.00% of mass 174	4.88 (7.04)
176	95.00 - 101.00% of mass 174	67.39 (97.16)
177	5.00 - 9.00% of mass 176	4.26 (6.32)

Data File: /chem1/nt15.i/20150515.b/bfb051515.d

Date : 15-MAY-2015 13:01

Client ID: BFB0515

Instrument: nt15.i

Sample Info: BRB0515,BFB0515,,1,051515

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb051515.d

Spectrum: Avg. Scans 1354-1356 (9.65), Background Scan 1349

Location of Maximum: 95.00

Number of points: 57

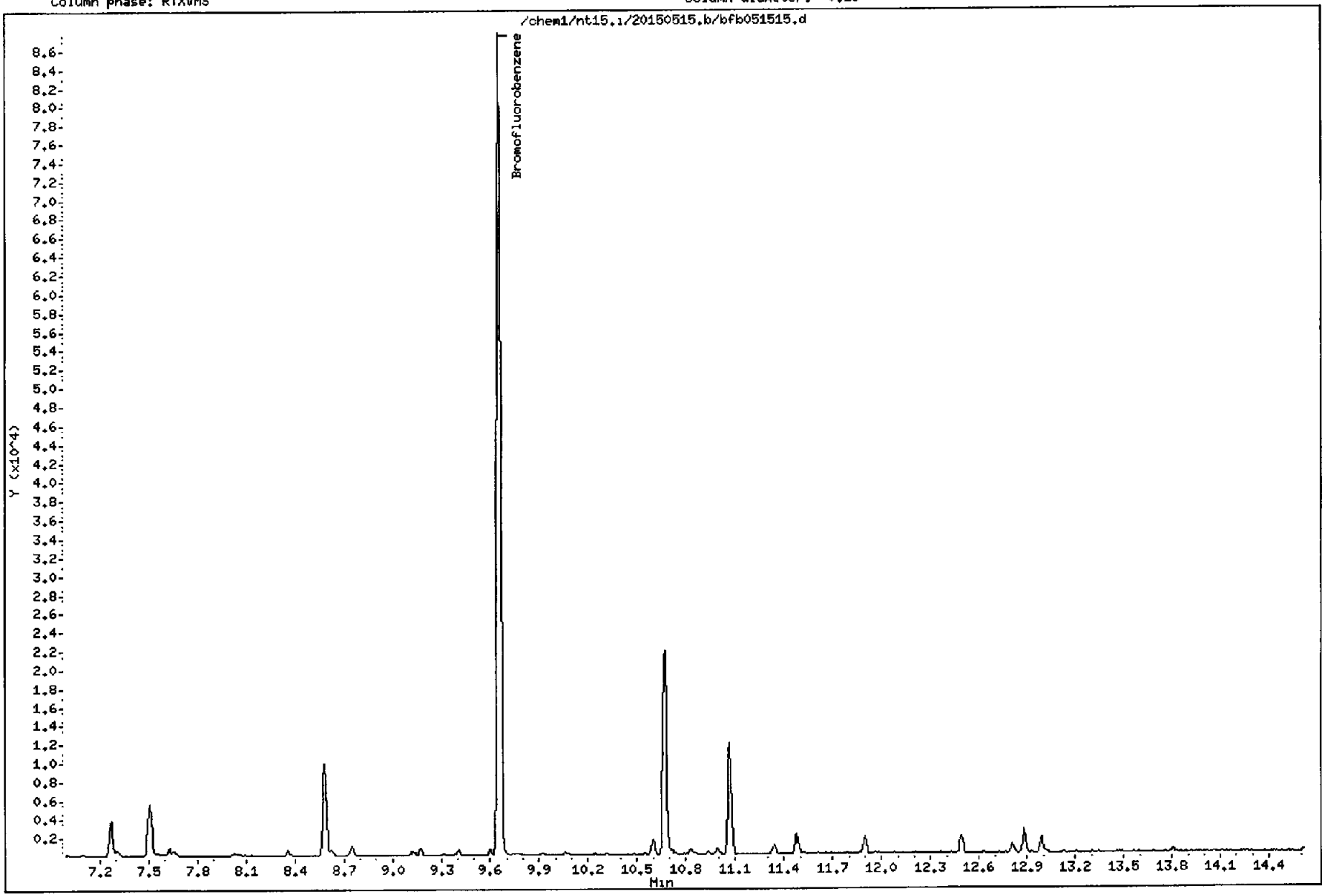
m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	124	56.00	271	77.00	97	116.00	19
37.00	775	57.00	452	79.00	345	117.00	77
38.00	703	60.00	128	80.00	112	119.00	46
39.00	328	61.00	728	81.00	322	128.00	19
41.00	34	62.00	765	82.00	74	130.00	23
43.00	67	63.00	583	87.00	726	141.00	118
44.00	73	64.00	91	88.00	623	143.00	113
45.00	173	68.00	1641	91.00	17	173.00	67
47.00	214	69.00	1766	92.00	420	174.00	11424
48.00	105	70.00	162	93.00	644	175.00	804
49.00	686	72.00	86	94.00	1778	176.00	11100
50.00	3455	73.00	704	95.00	16472	177.00	701
51.00	1090	74.00	2809	96.00	1103		
52.00	42	75.00	8559	104.00	38		
55.00	18	76.00	743	106.00	35		

Data File: /chem1/nt15.i/20150515.b/bfb051515.d
Date : 15-MAY-2015 13:01
Client ID: BFB0515
Sample Info: BRB0515,BFB0515,,1,051515

Instrument: nt15.i

Operator: PB
Column diameter: 0.18

Column phase: RTXVMS



5/18/15

Data File: /chem1/nt15.i/20150515.b/001051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/001051515.d
Lab Smp Id: VSTD001
Inj Date : 15-MAY-2015 14:02 Inst ID: nt15.i
Operator : PC
Smp Info : VSTD001,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	1583	1.00000	1.084
2 Chloromethane	50	1.736	1.742	(0.306)	3509	1.00000	2.351
3 Vinyl Chloride	62	1.800	1.807	(0.317)	2027	1.00000	1.089
4 Bromomethane	94	2.125	2.118	(0.374)	1679	1.00000	1.971(Q)
5 Chloroethane	64	2.228	2.222	(0.393)	772	1.00000	1.179(Q)
6 Trichlorofluoromethane	101	2.345	2.339	(0.413)	922	1.00000	1.199
7 1,1-Dichloroethene	96	2.845	2.826	(0.501)	1914	1.00000	1.123
8 Carbon Disulfide	76	2.845	2.826	(0.501)	7977	1.00000	1.635(TQ)
9 112Trichloro122Trifluoroethane	101	2.897	2.884	(0.510)	1540	1.00000	1.131
10 Iodomethane	142	2.994	2.981	(0.527)	878	1.00000	0.6778(M)
11 Bromoethane	108	3.139	3.126	(0.553)	893	1.00000	0.9772
12 Acrolein	56	3.305	3.292	(0.582)	1206	5.00000	5.339
13 Methylene Chloride	84	3.523	3.510	(0.620)	2129	1.00000	1.263
14 Acetone	43	3.662	3.655	(0.645)	5008	5.00000	7.755

Data File: /chem1/nt15.i/20150515.b/001051515.d
Report Date: 18-May-2015 10:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.681	3.668	(0.648)	2218	1.00000	1.202
	16 Methyl tert butyl ether	73	3.880	3.867	(0.683)	4967	1.00000	1.049
	17 1,1-Dichloroethane	63	4.309	4.303	(0.759)	2923	1.00000	1.052
	18 Acrylonitrile	53	4.408	4.402	(0.776)	414	1.00000	0.9418(T)
	19 Vinyl Acetate	43	4.606	4.600	(0.811)	1619	1.00000	0.6883
	20 Cis-1,2-Dichloroethene	96	4.824	4.818	(0.850)	1743	1.00000	1.065
	22 2,2-Dichloropropane	77	4.917	4.910	(0.866)	2161	1.00000	1.019
	23 Bromochloromethane	128	5.003	4.996	(0.881)	672	1.00000	1.050
	24 Chloroform	83	5.089	5.082	(0.896)	2878	1.00000	1 038
	25 Carbon Tetrachloride	117	5.176	5.169	(0.846)	1550	1.00000	0.8961
$	27 Dibromofluoromethane	111	5.249	5.243	(0.925)	62430	50.0000	47.553
	26 1,1,1-Trichloroethane	97	5.242	5.236	(0.923)	2496	1.00000	1.080(M)
	28 1,1-Dichloropropene	75	5.356	5.350	(0.875)	2593	1.00000	1.102
	29 2-Butanone	72	5.403	5.396	(0.952)	955	5.00000	5.489(Q)
	30 Benzene	78	5.577	5.570	(0.911)	7455	1.00000	1.112
*	31 Pentafluorobenzene	168	5.677	5.671	(1.000)	143587	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.698	(1.005)	81835	50.0000	49.160
	33 1,2-Dichloroethane	62	5.764	5 758	(0.942)	2573	1.00000	1.121
	34 Trichloroethene	95	6.080	6.073	(0.993)	2077	1.00000	1.232
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	248622	50.0000	
	37 Dibromomethane	93	6.442	6.436	(1.053)	764	1.00000	0.9695
	38 1,2-Dichloropropane	63	6.530	6.523	(1.067)	1769	1.00000	1.094(M)
	39 Bromodichloromethane	83	6.590	6.584	(1.077)	2061	1.00000	1.010
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.076	(1.157)	916	1.00000	1.020
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	2447	1.00000	1.015
$	42 d8-Toluene	98	7.272	7.266	(1.188)	344630	50.0000	50.091
	43 Toluene	92	7.312	7.312	(1.195)	4108	1.00000	1.324
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	1715	1.00000	1.161
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	2939	5.00000	4.782(M)
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	2219	1.00000	1.023
	47 1,1,2-Trichloroethane	97	7.808	7.802	(1.276)	1276	1.00000	1.033(M)
	48 Chlorodibromomethane	129	7.947	7.948	(0.926)	1003	1 00000	0.8378
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	2483	1.00000	1.124
	50 1,2-Dibromoethane	107	8.146	8.140	(1.331)	1213	1.00000	1.025
	51 2-Hexanone	43	8.365	8.359	(0.974)	5697	5.00000	5.326
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	216982	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	5028	1.00000	1.163(Q)
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	9336	1.00000	1 175
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	1172	1.00000	0.9442
	56 m,p-xylene	106	8.750	8.750	(1.019)	7038	2.00000	2.272
	57 o-Xylene	106	9.128	9.128	(1.063)	3789	1.00000	1.144
	58 Styrene	104	9 174	9.174	(1.069)	5303	1.00000	1.080
	59 Bromoform	173	9.188	9.188	(0.861)	579	1.00000	0.9502(M)
	60 Isopropyl Benzene	105	9.401	9.401	(0.881)	8768	1.00000	1.183
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	106074	50.0000	49.513
	63 Bromobenzene	156	9.741	9.741	(0.913)	1705	1.00000	1.107
	64 N-Propyl Benzene	91	9.774	9.774	(0.916)	10693	1.00000	1.194

Data File: /chem1/nt15.i/20150515.b/001051515.d
Report Date: 18-May-2015 10:23

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65 1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	1638	1.00000	1.079
66 2-Chloro Toluene	91	9.914	9.914	(0.929)	6039	1.00000	1.168
67 1,3,5-Trimethyl Benzene	105	9.961	9.961	(0.933)	6927	1.00000	1.120
68 1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	425	1.00000	0.9380(QM)
69 Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	452	1.00000	0.9781(QM)
70 4-Chloro Toluene	91	10.067	10.067	(0.943)	6316	1.00000	1.180
71 T-Butyl Benzene	119	10.240	10.241	(0.959)	6052	1.00000	1.143
72 1,2,4-Trimethylbenzene	105	10.314	10.307	(0.966)	6828	1.00000	1.124
73 S-Butyl Benzene	105	10.407	10.407	(0.975)	9304	1.00000	1.145
74 4-Isopropyl Toluene	119	10.540	10.540	(0.988)	7416	1.00000	1.132
75 1,3-Dichlorobenzene	146	10.600	10.600	(0.993)	4533	1.00000	1.368
* 76 d4-1,4-Dichlorobenzene	152	10.674	10.667	(1.000)	105034	50.0000	
77 1,4-Dichlorobenzene	146	10.687	10.680	(1.001)	4712	1.00000	1.396(Q)
78 N-Butyl Benzene	91	10.933	10.934	(1.024)	7856	1.00000	1.224
$ 79 d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	92941	50.0000	50.601
80 1,2-Dichlorobenzene	146	11.073	11.073	(1.037)	3977	1.00000	1.308(Q)
81 1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.109)	271	1.00000	1.008
82 Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.168)	1162	1.00000	1.284
83 1,2,4-Trichlorobenzene	180	12.493	12.493	(1.170)	2768	1.00000	1.591
84 Naphthalene	128	12.812	12.813	(1.200)	5479	1.00000	1.219
85 1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	2442	1.00000	1 530
172 2 pentanone	86	6.879	6.873	(1.212)	293	1.00000	1.230

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: /chem1/nt15.i/20150515.b/001051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 001051515.d
Lab Smp Id: VSTD001
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	143587	-8.96
35 1,4-Difluorobenze	269036	134518	538072	248622	-7.59
52 d5-Chlorobenzene	241232	120616	482464	216982	-10.05
76 d4-1,4-Dichlorobe	124854	62427	249708	105034	-15.87

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.68	0.12
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.06

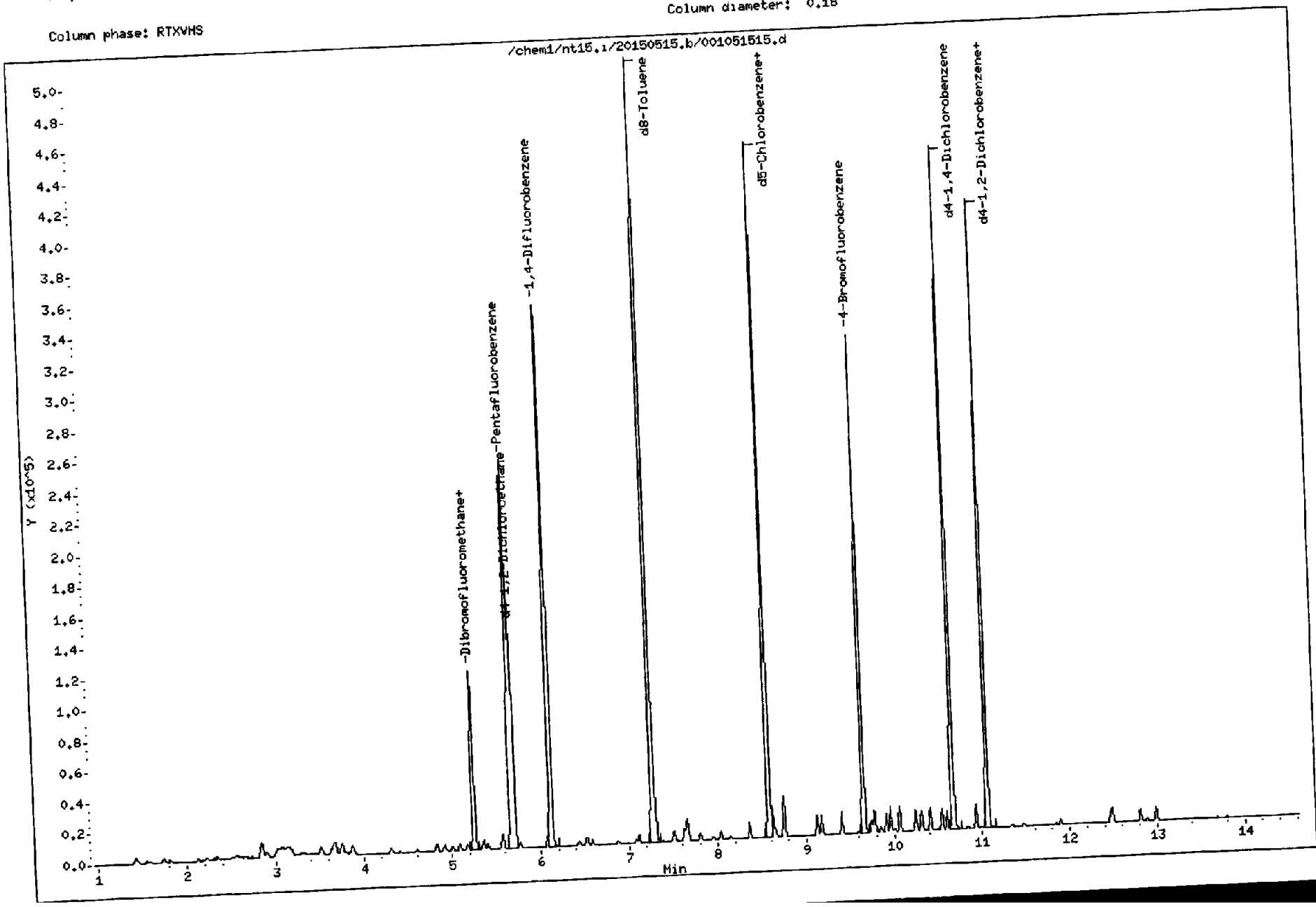
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.1/20150515.b/001051515.d
Date : 15-MAY-2015 14:02
Client ID:
Sample Info: VSTD001,5,5,0,,

Instrument: nt15.1

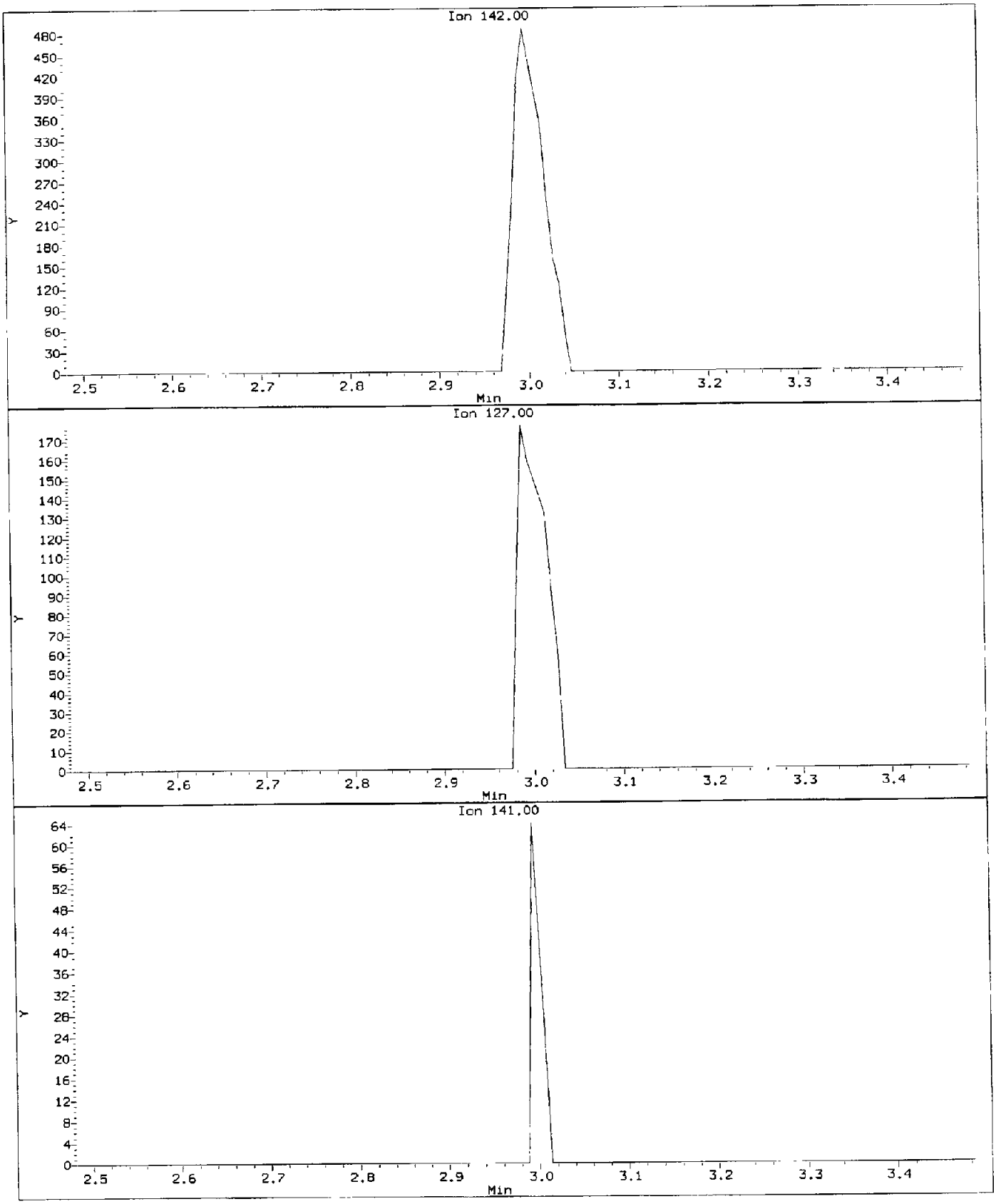
Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



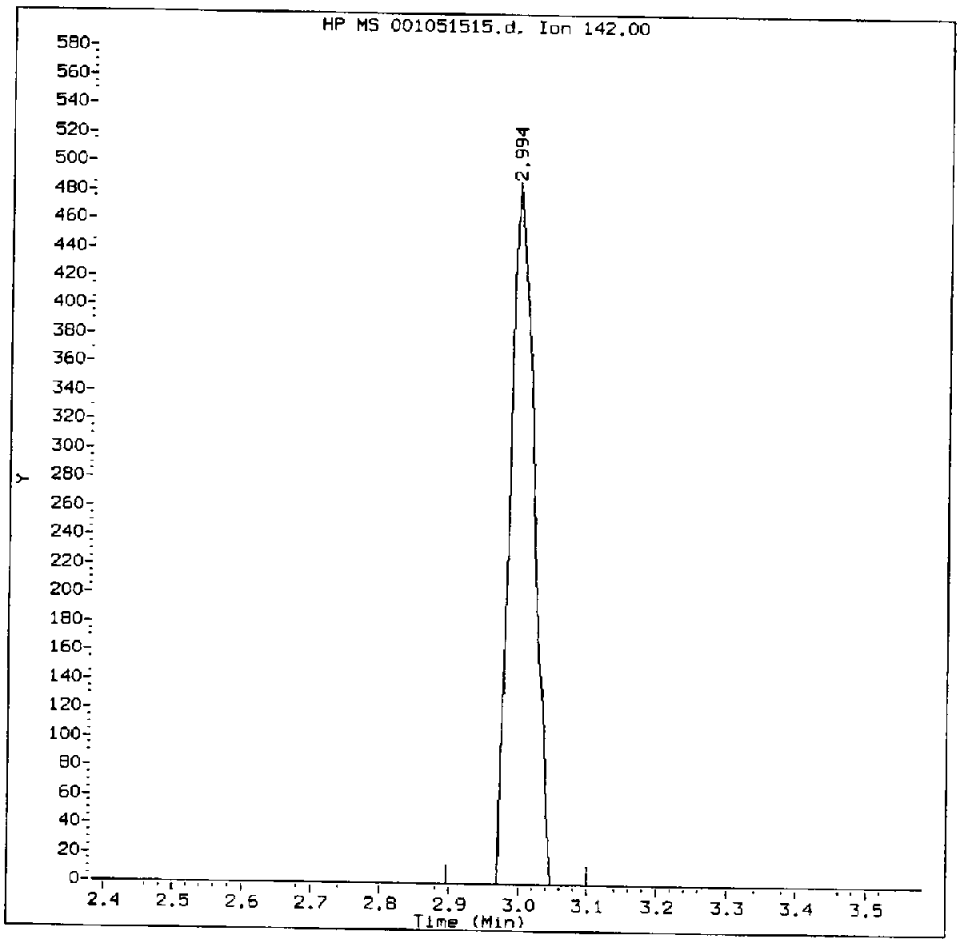
Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: Iodomethane
CAS Number:



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

Iodomethane Amount: 0.68 Area: 878



MANUAL INTEGRATION for Iodomethane

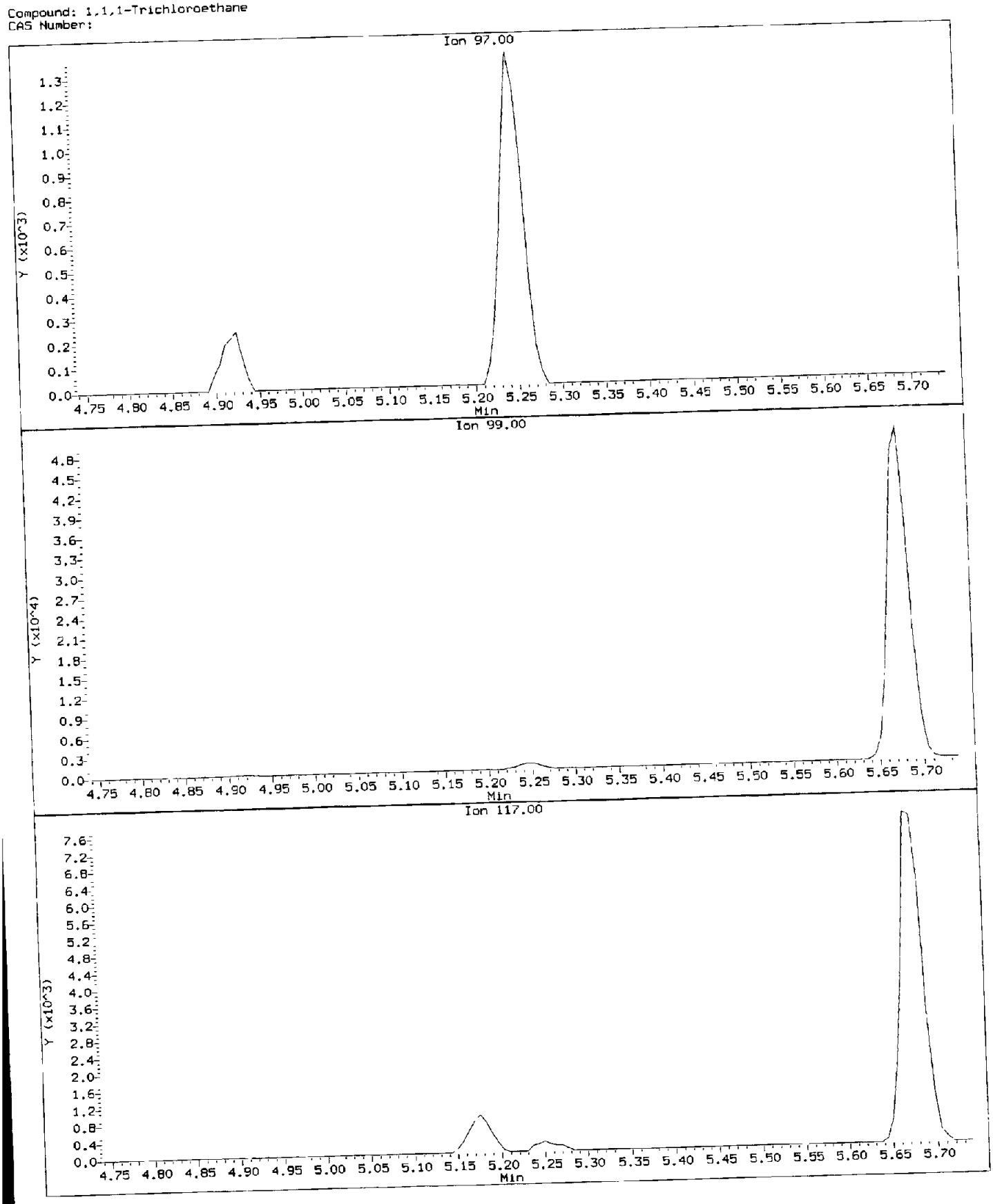
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: NC Date: 5/15/15

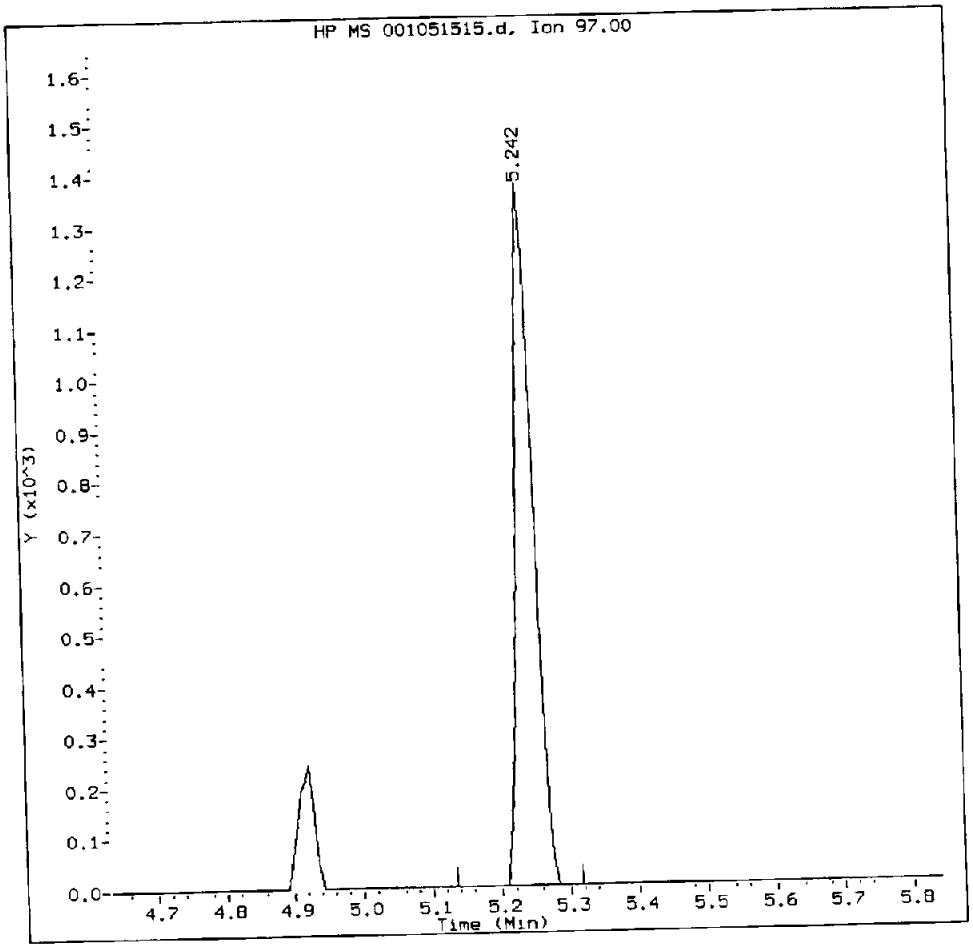
Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: 1,1,1-Trichloroethane
CAS Number:



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

1,1,1-Trichloroethane Amount: 1.08 Area: 2496



MANUAL INTEGRATION for 1,1,1-Trichloroethane

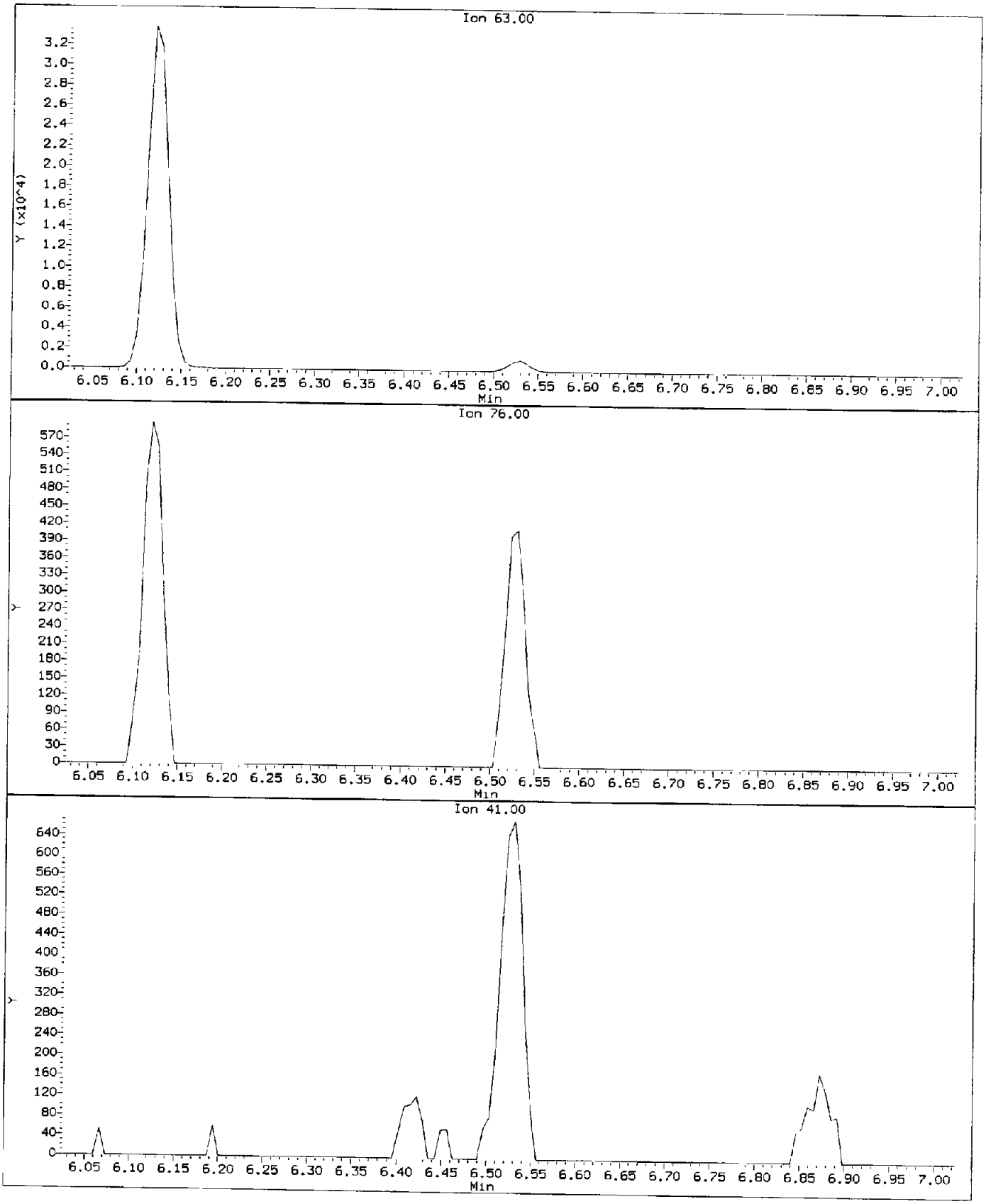
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MC Date: 5/18/15

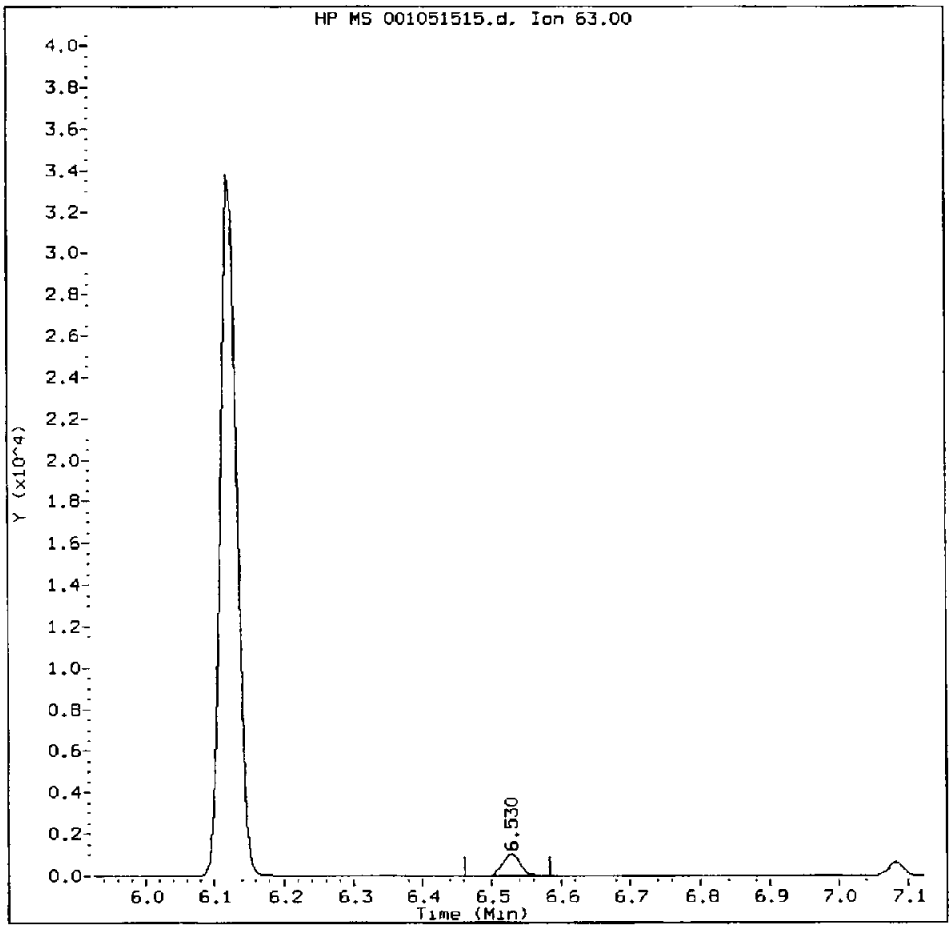
Data File: /chem1/nt15.1/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.1
Client Sample ID:

Compound: 1,2-Dichloropropane
CAS Number:



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

1,2-Dichloropropane Amount: 1.09 Area: 1769



MANUAL INTEGRATION for 1,2-Dichloropropane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

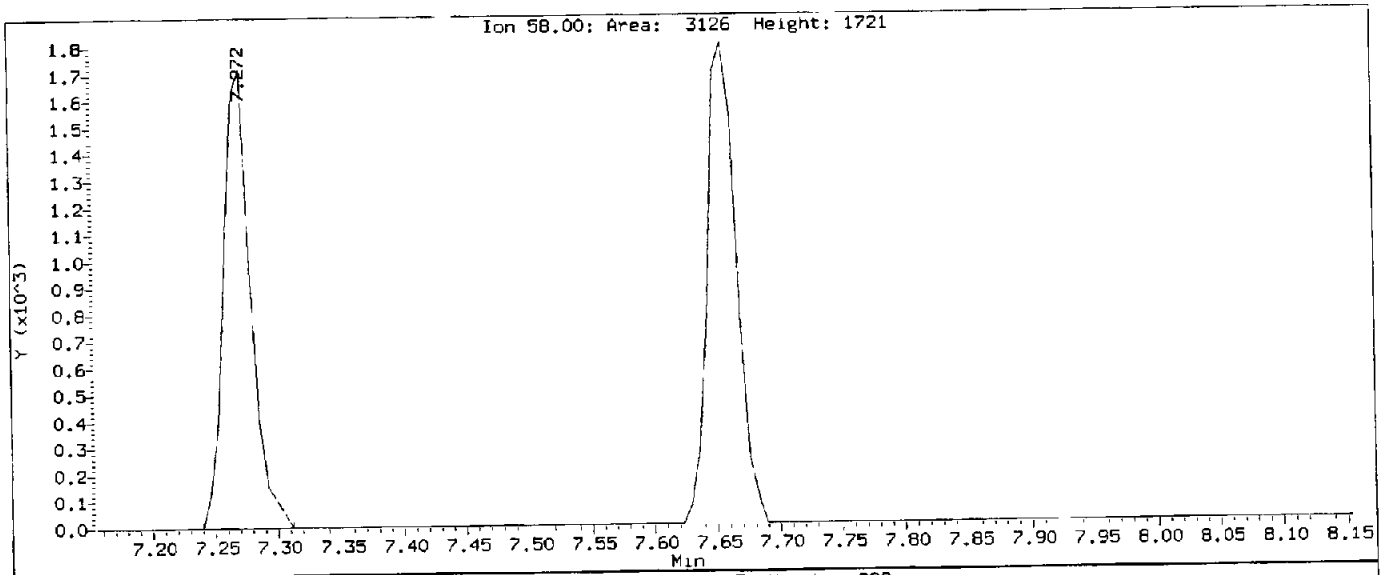
5. Other _____

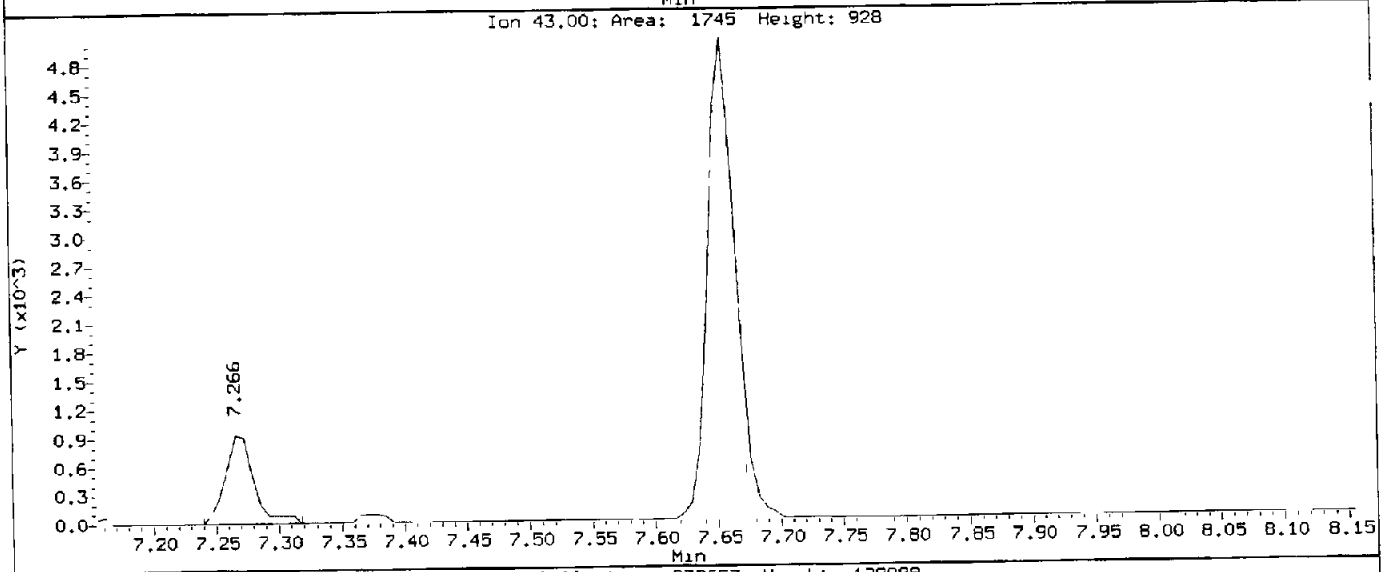
Analyst: RC Date: 5/18/15

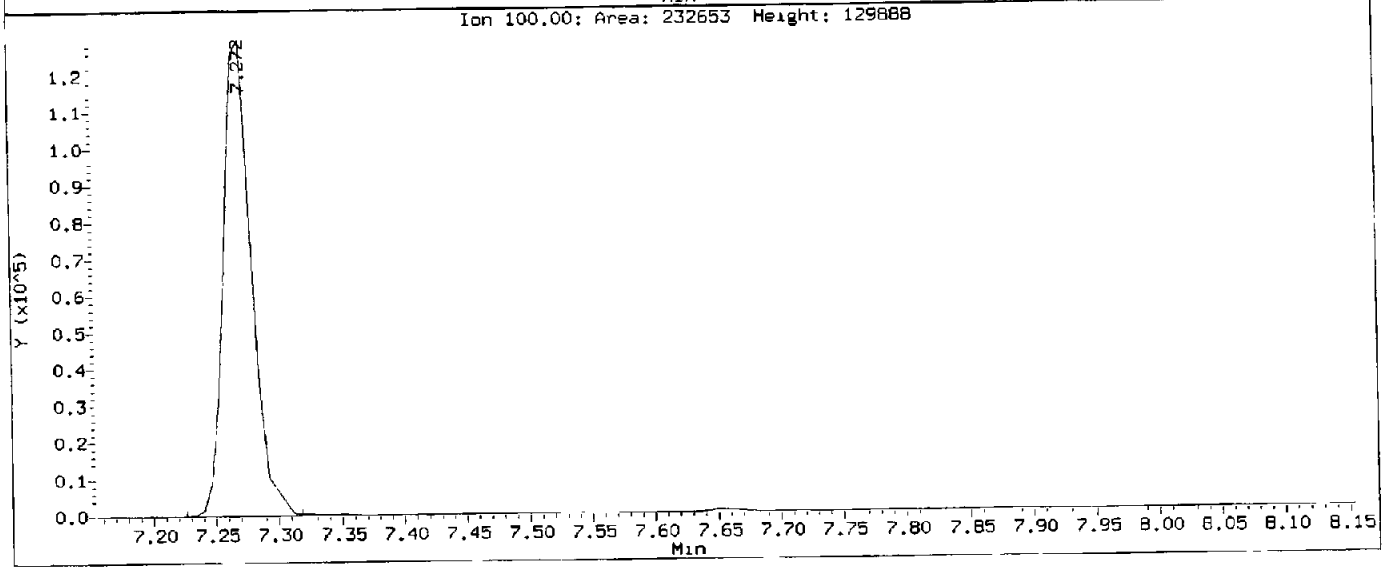
AFS2 0012U

Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: 4-Methyl-2-Pentanone
CAS Number:

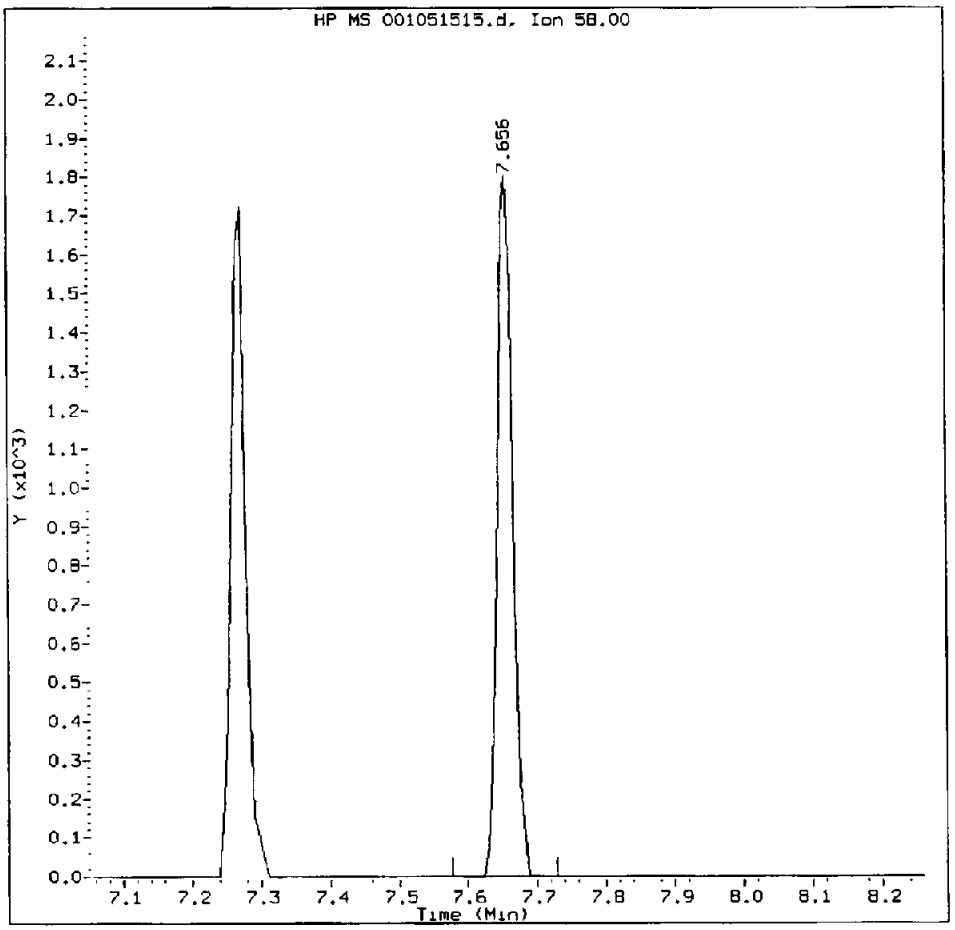






VSTD001, /chem1/nt15.i/20150515.b/001051515.d

4-Methyl-2-Pentanone Amount: 4.78 Area: 2939



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

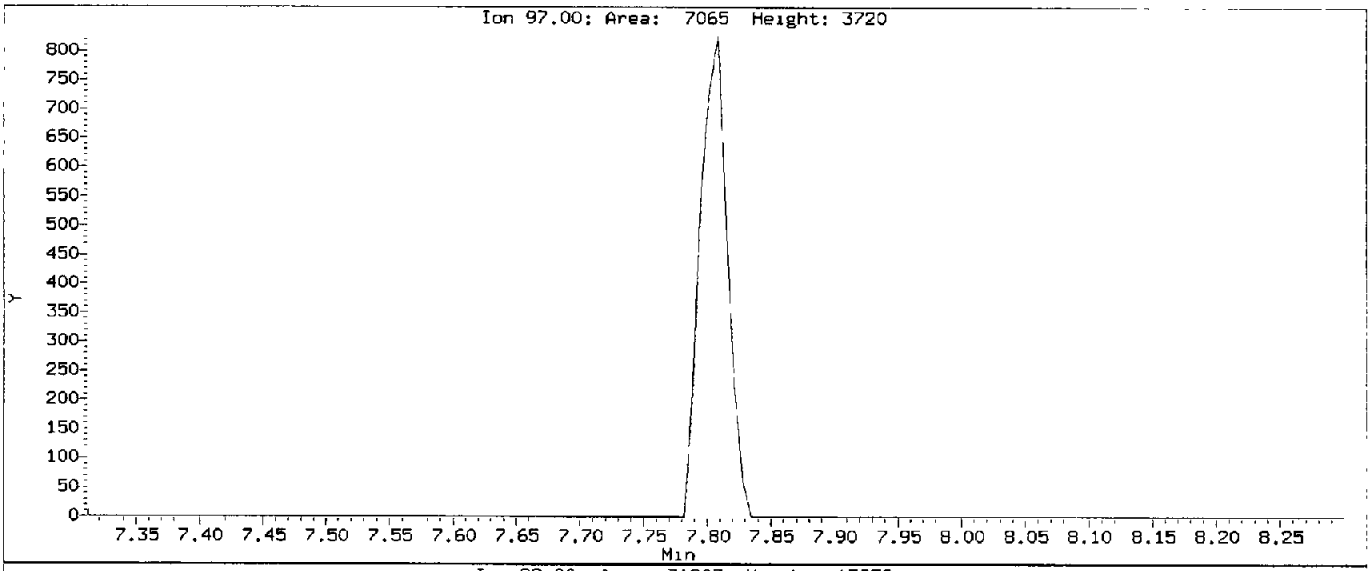
5. Other _____

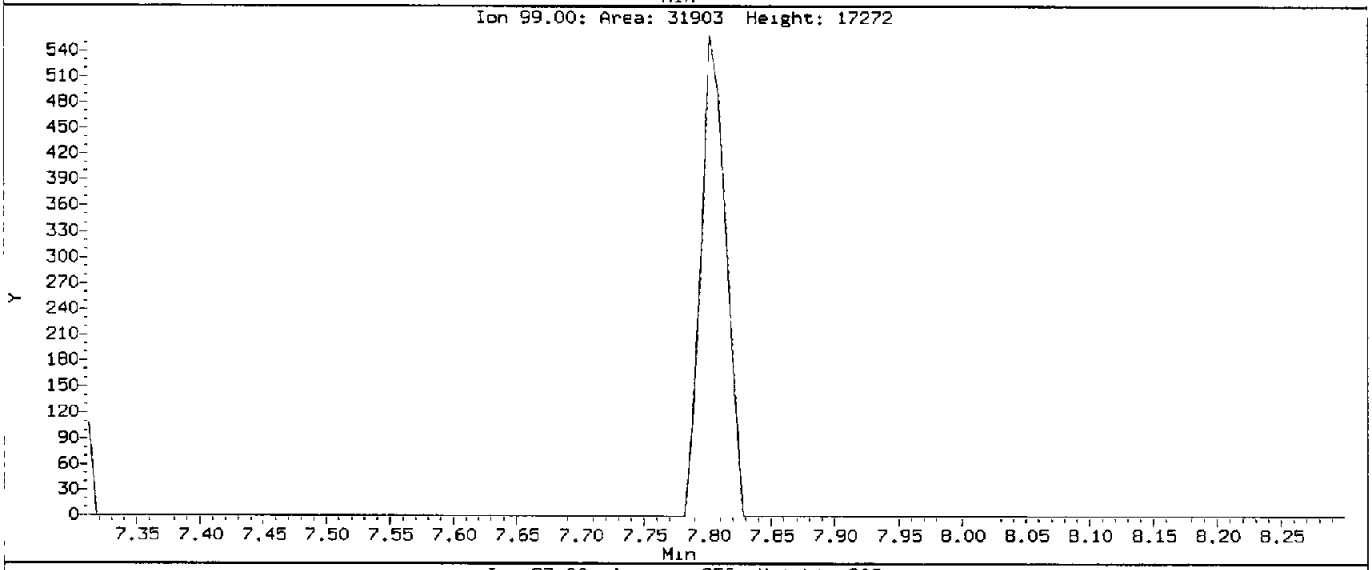
Analyst: MC Date: 5/18/15

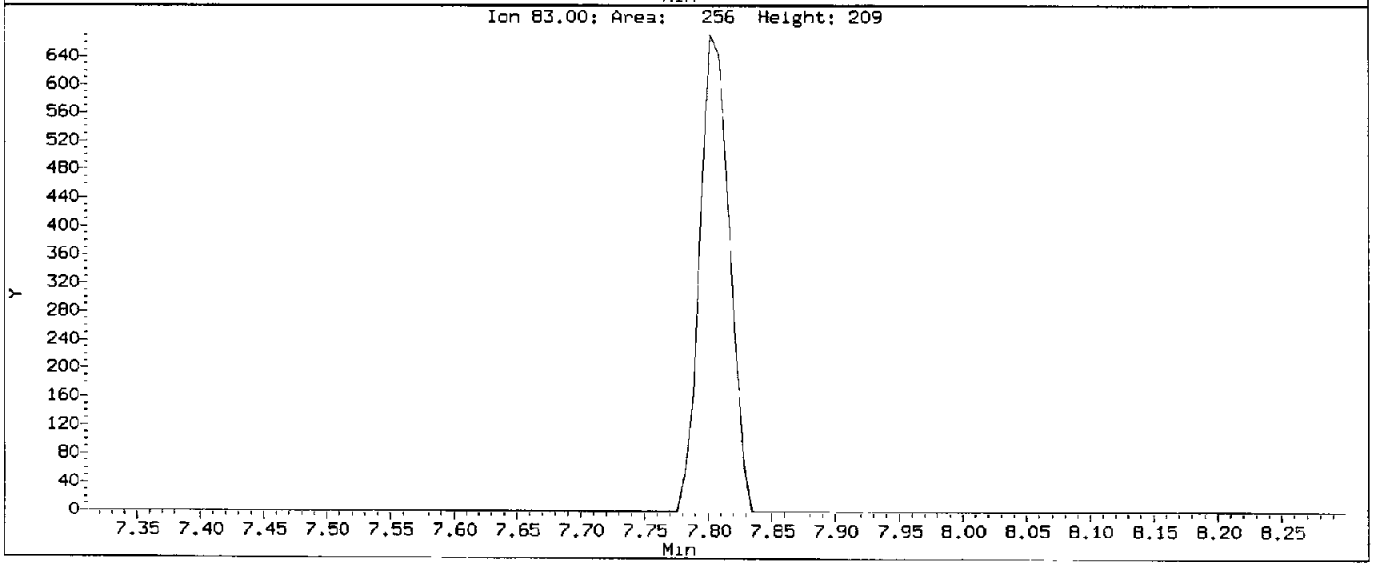
Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: 1,1,2-Trichloroethane
CAS Number:

IC
5/18/15

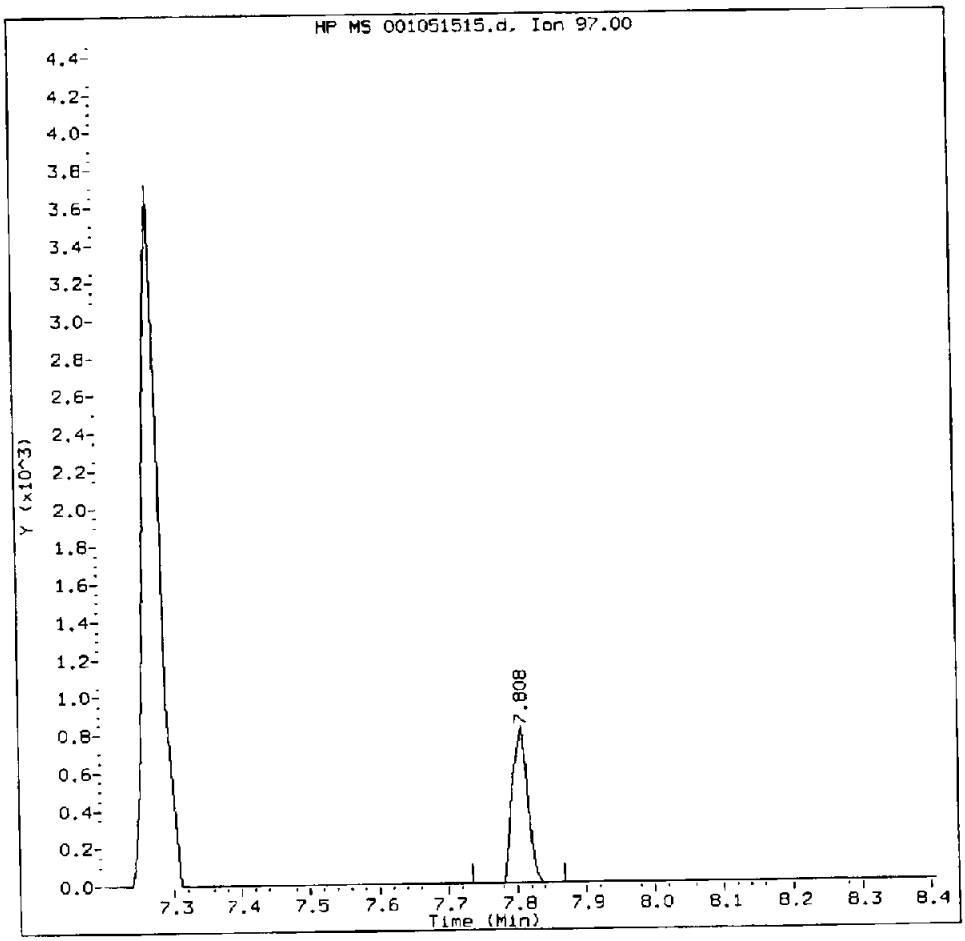






VSTD001, /chem1/nt15.i/20150515.b/001051515.d

1,1,2-Trichloroethane Amount: 1.03 Area: 1276



MANUAL INTEGRATION for 1,1,2-Trichloroethane

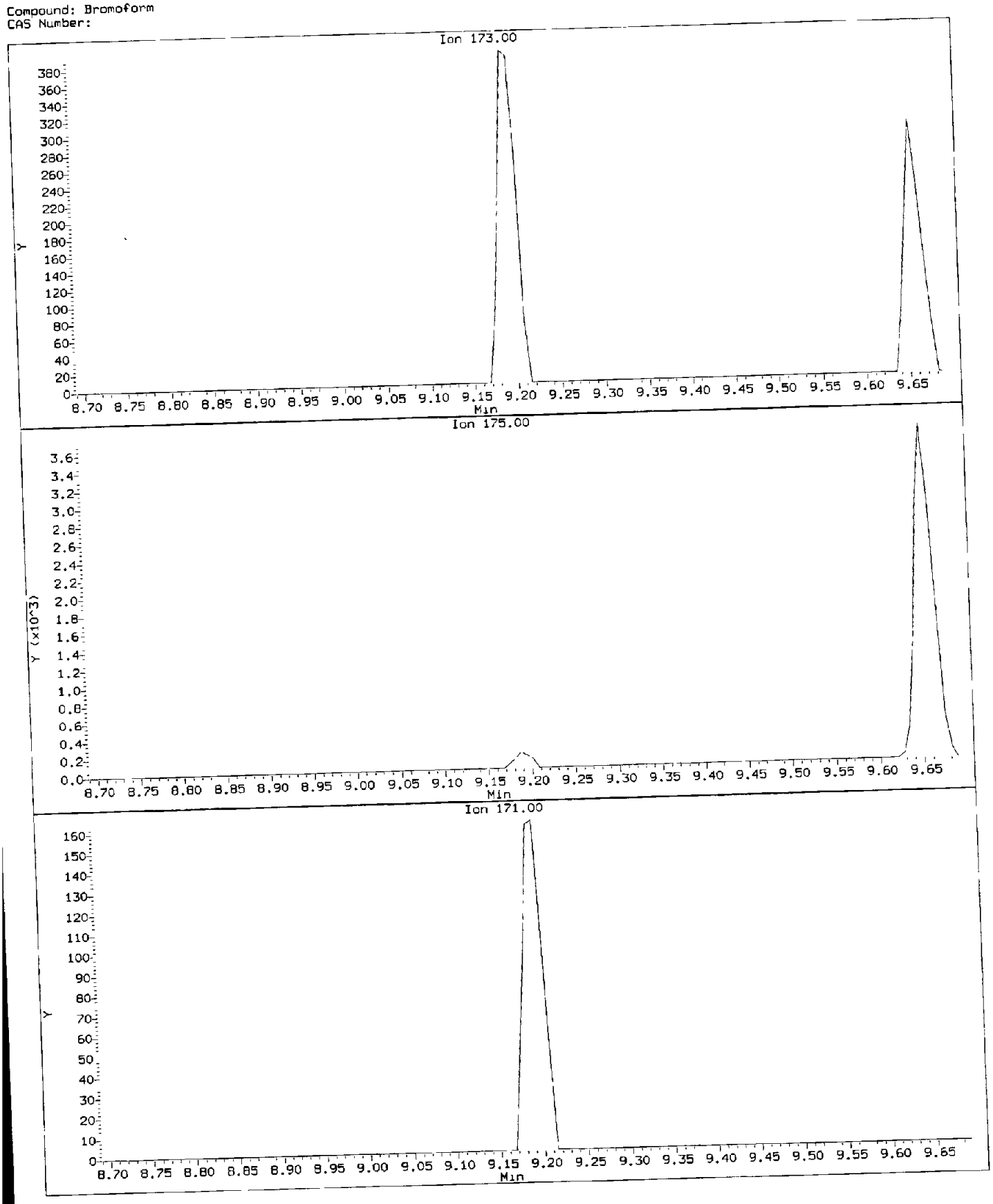
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: NC Date: 5/18/15

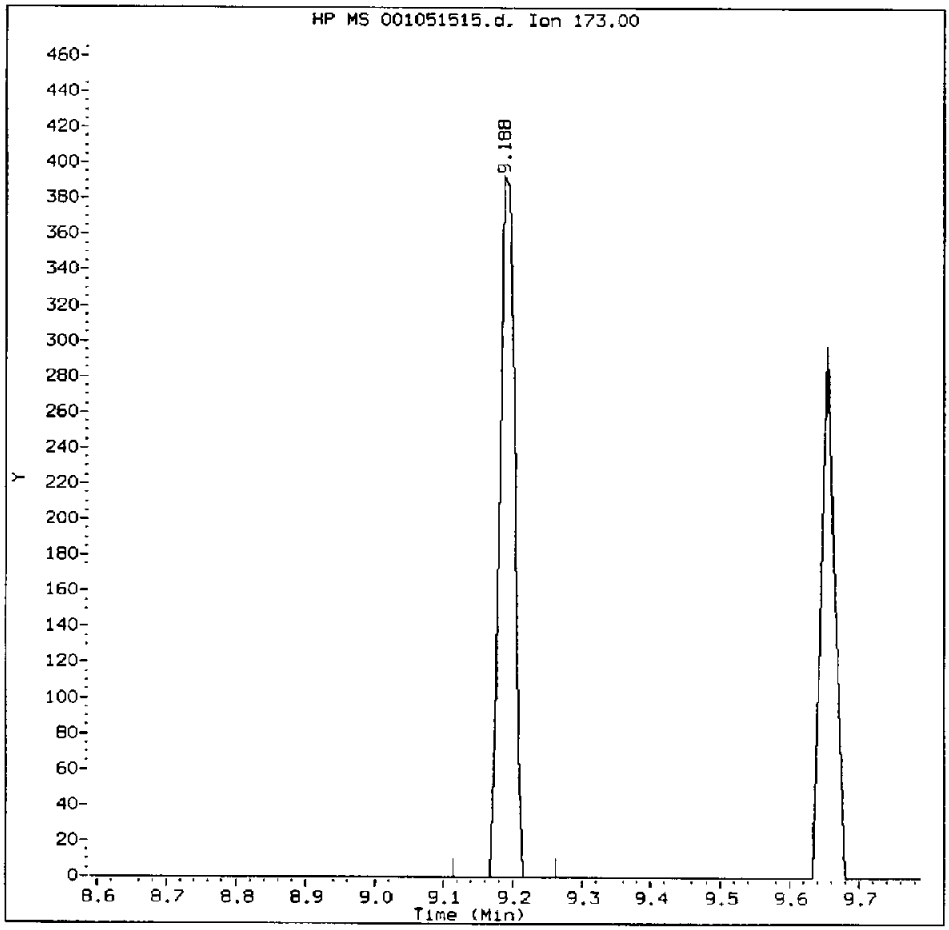
Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: Bromoform
CAS Number:



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

Bromoform Amount: 0.95 Area: 579



MANUAL INTEGRATION for Bromoform

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

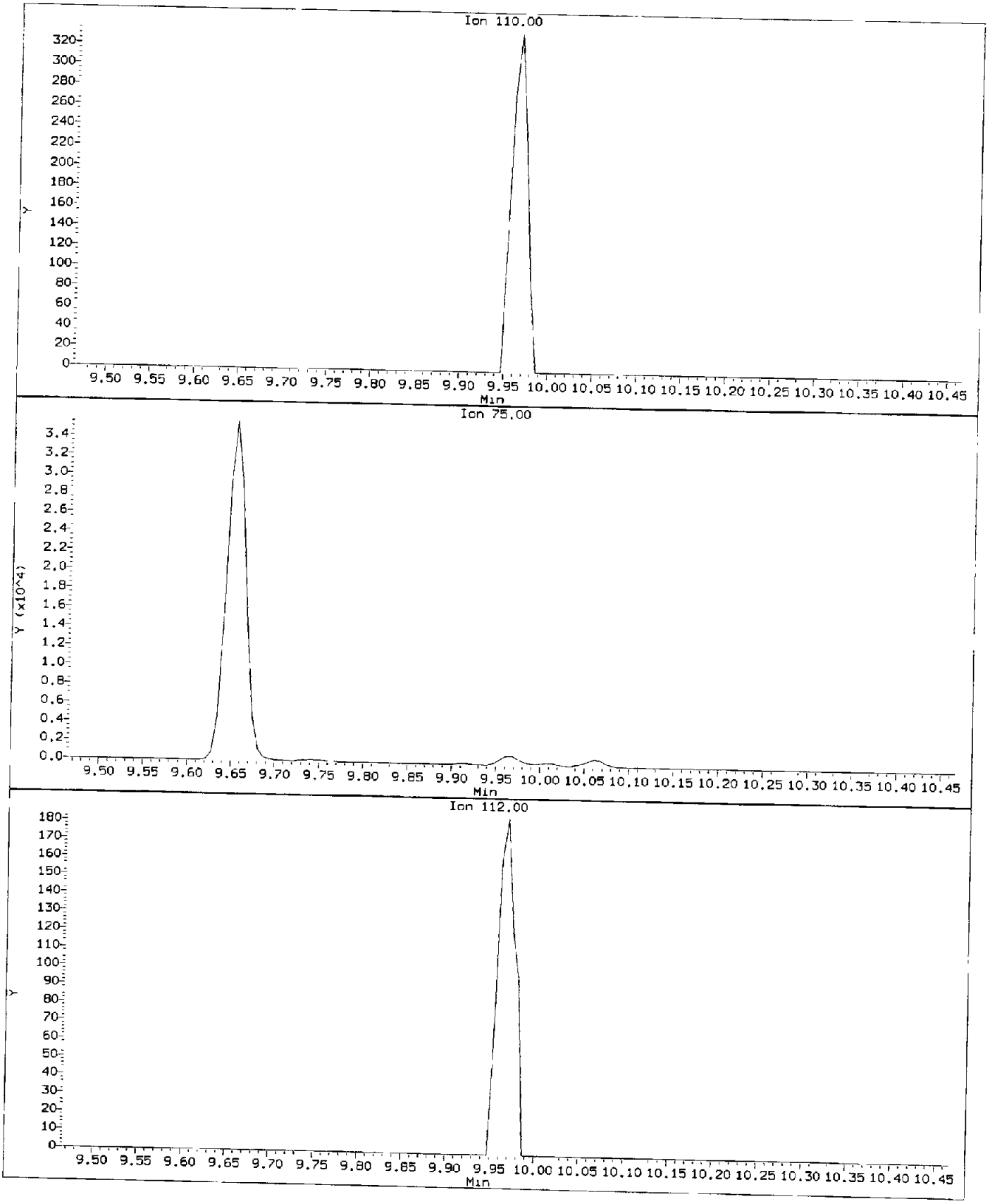
5. Other _____

Analyst: PC Date: 5/18/15

Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

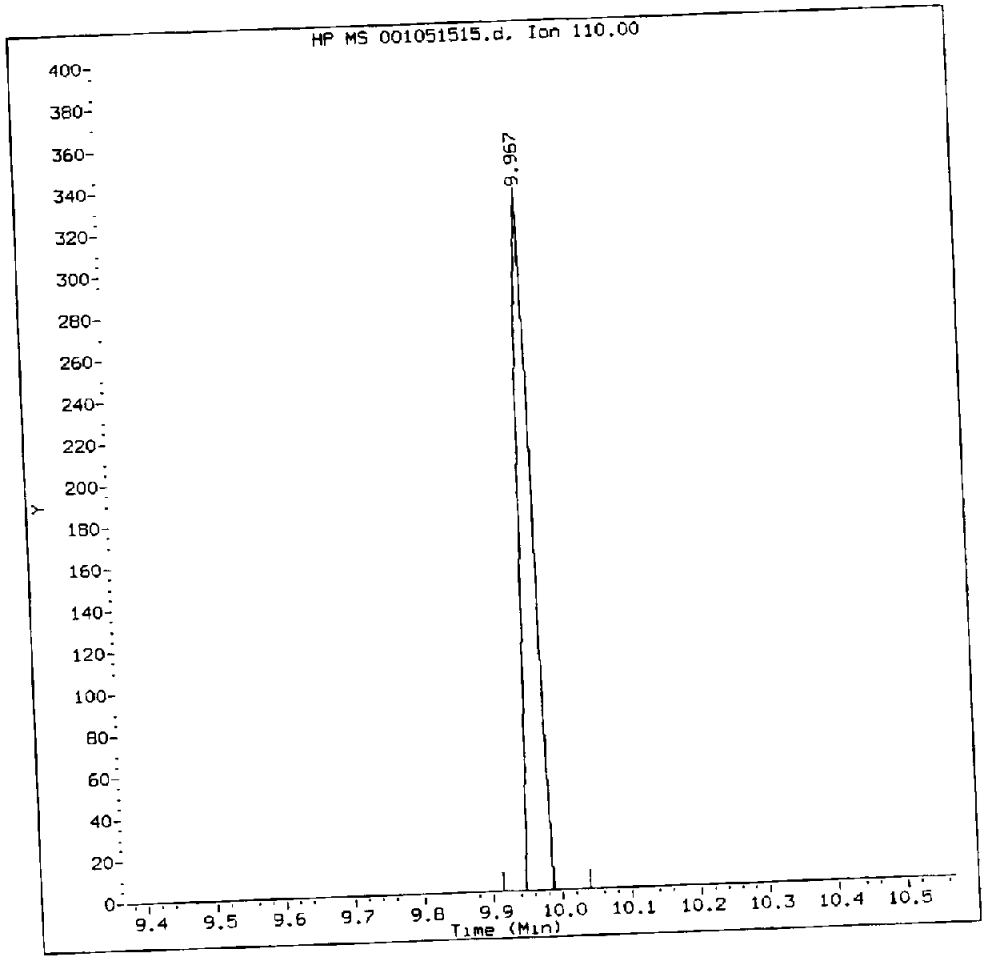
Compound: 1,2,3-Trichloropropane
CAS Number:

MC
5/18/15



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

1,2,3-Trichloropropane Amount: 0.94 Area: 425



MANUAL INTEGRATION for 1,2,3-Trichloropropane

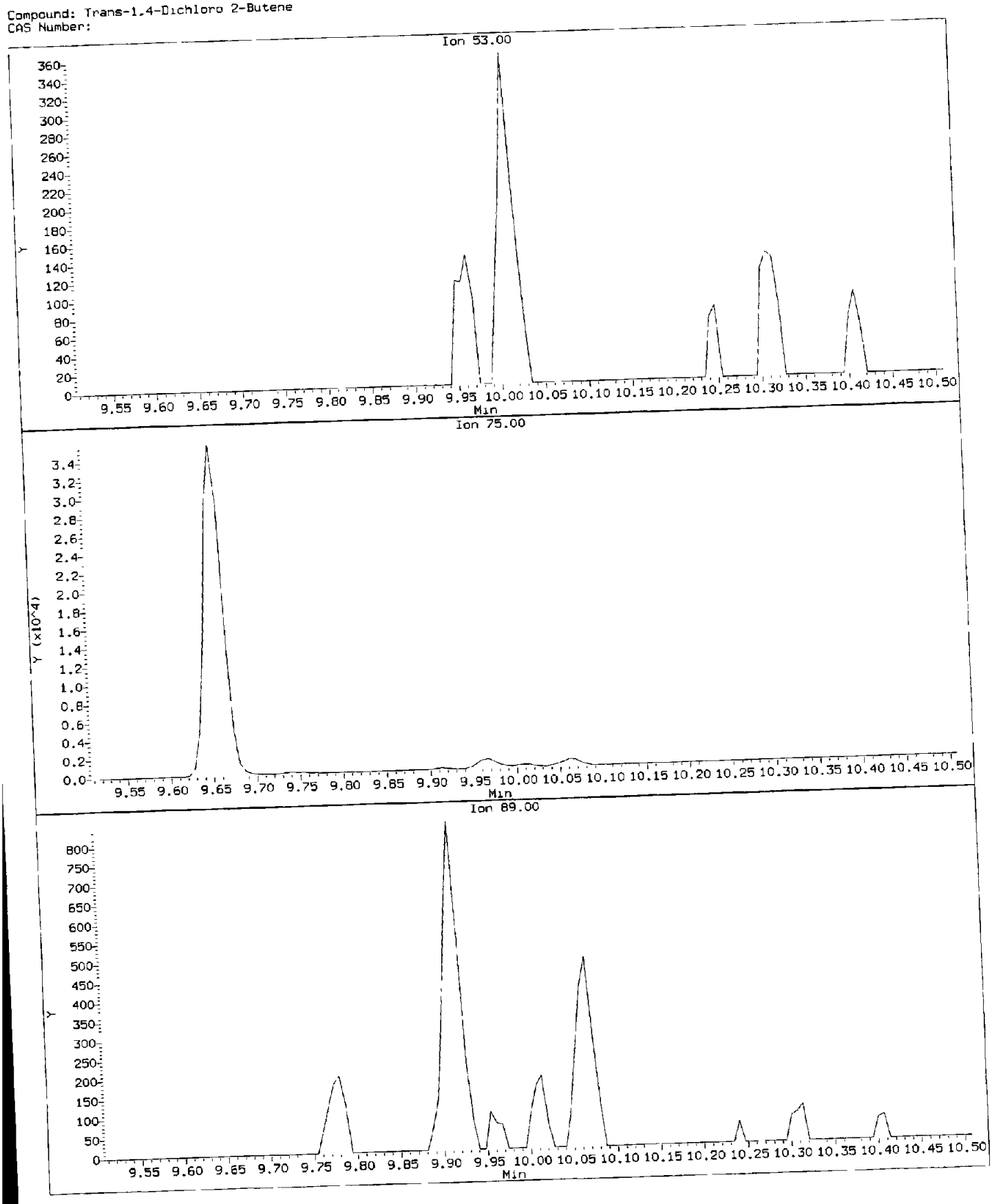
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MC Date: 5/18/15

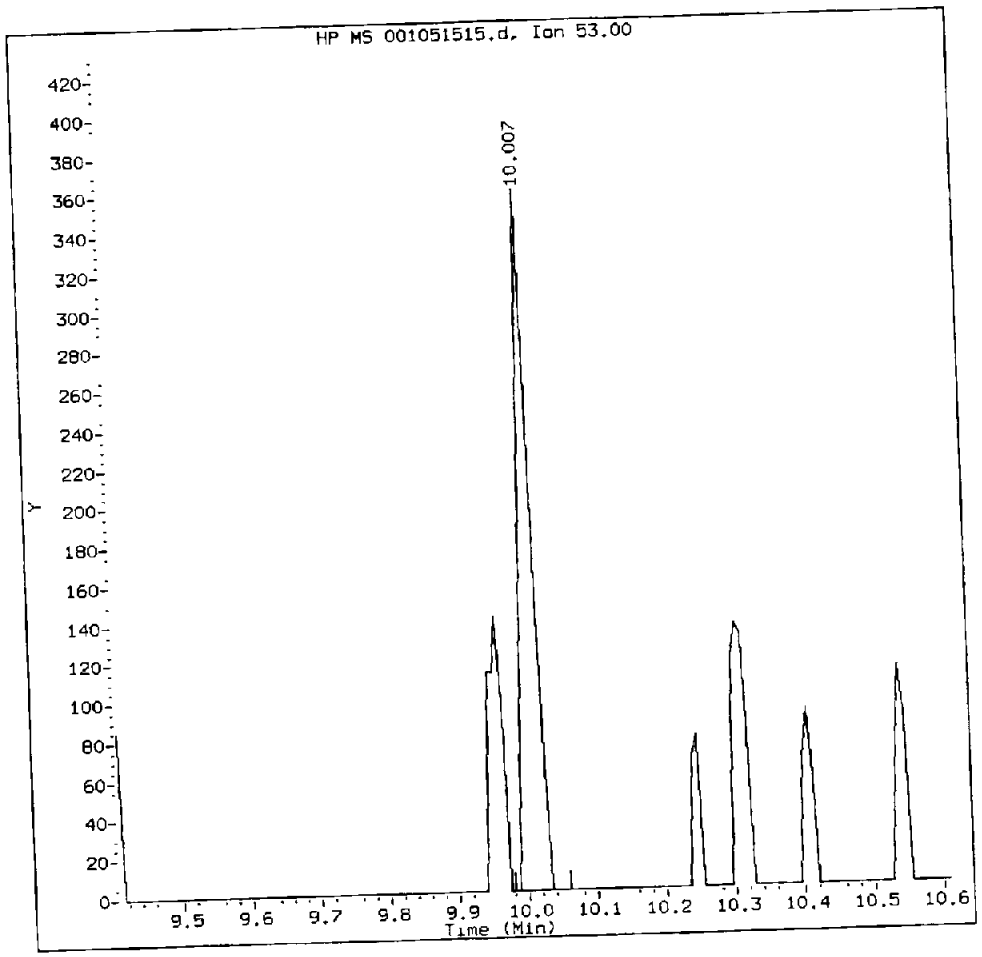
Data File: /chem1/nt15.i/20150515.b/001051515.d
Injection Date: 15-MAY-2015 14:02
Instrument: nt15.i
Client Sample ID:

Compound: Trans-1.4-Dichloro 2-Butene
CAS Number:



VSTD001, /chem1/nt15.i/20150515.b/001051515.d

Trans-1,4-Dichloro 2-Butene Amount: 0.98 Area: 452



MANUAL INTEGRATION for Trans-1,4-Dichloro 2-Butene

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: ML Date: 5/18/15

CO-ELUTION SUMMARY FOR FILE - 001051515.d

Lab ID: VSTD001, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AC. 5/18/15

Data File: /chem1/nt15.i/20150515.b/002051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/002051515.d
Lab Smp Id: VSTD002
Inj Date : 15-MAY-2015 14:30
Operator : PC Inst ID: nt15.i
Smp Info : VSTD002,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/V0051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.534	1.554	(0.271)	3126	2.00000	1.885
2 Chloromethane	50	1 722	1.742	(0.304)	4682	2.00000	2.881
3 Vinyl Chloride	62	1.787	1.807	(0.316)	3923	2.00000	1.855
4 Bromomethane	94	2.098	2.118	(0.370)	2528	2.00000	2.614(Q)
5 Chloroethane	64	2.209	2.222	(0.390)	1528	2.00000	2.055(Q)
6 Trichlorofluoromethane	101	2.319	2.339	(0.409)	1688	2.00000	1.934
7 1,1-Dichloroethene	96	2.819	2.826	(0.498)	3616	2.00000	1.869
8 Carbon Disulfide	76	2.819	2.826	(0.498)	12337	2 00000	2.227(TQ)
9 112Trichloro122Trifluoroethane	101	2.871	2.884	(0.507)	3017	2.00000	1.951
10 Iodomethane	142	2.974	2.981	(0.525)	2601	2.00000	1.768
11 Bromoethane	108	3.119	3.126	(0.551)	1922	2.00000	1.852
12 Acrolein	56	3.285	3.292	(0.580)	2370	10.0000	9.240
13 Methylene Chloride	84	3.496	3.510	(0.617)	3949	2.00000	2 064
14 Acetone	43	3.642	3.655	(0.643)	6466	10.0000	8.843

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.661	3.668	(0.646)	4238	2.00000	2.022
	16 Methyl tert butyl ether	73	3.860	3.867	(0.681)	9987	2.00000	1.857
	17 1,1-Dichloroethane	63	4.289	4.303	(0 757)	6000	2.00000	1.902
	18 Acrylonitrile	53	4.395	4.402	(0.776)	912	2.00000	1.827(T)
	19 Vinyl Acetate	43	4.593	4.600	(0.811)	4800	2 00000	1.797
	20 Cis-1,2-Dichloroethene	96	4.811	4.818	(0.849)	3524	2.00000	1.897
	22 2,2-Dichloropropane	77	4.903	4.910	(0.866)	4205	2.00000	1.746
	23 Bromochloromethane	128	4.989	4.996	(0.881)	1302	2.00000	1.791
	24 Chloroform	83	5.075	5.082	(0 896)	7004	2.00000	2.224
	25 Carbon Tetrachloride	117	5.162	5.169	(0.844)	3438	2.00000	1.888
$	27 Dibromofluoromethane	111	5.236	5.243	(0.924)	67888	50.0000	45.544
	26 1,1,1-Trichloroethane	97	5.229	5.236	(0.923)	4840	2.00000	1.844(M)
	28 1,1-Dichloropropene	75	5.343	5.350	(0.874)	4923	2.00000	1.986
	29 2-Butanone	72	5.389	5.396	(0.952)	1862	10.0000	9.425
	30 Benzene	78	5.563	5.570	(0.910)	14589	2.00000	2.068
*	31 Pentafluorobenzene	168	5.664	5.671	(1.000)	163029	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.697	5.698	(1.006)	89616	50.0000	47.414
	33 1,2-Dichloroethane	62	5.757	5.758	(0.942)	4437	2.00000	1.836
	34 Trichloroethene	95	6.073	6.073	(0.993)	3483	2.00000	1.961
*	35 1,4-Difluorobenzene	114	6.113	6.120	(1.000)	261773	50.0000	
	37 Dibromomethane	93	6.429	6.436	(1.052)	1676	2.00000	2.020
	38 1,2-Dichloropropane	63	6.523	6.523	(1.067)	3448	2.00000	2 025
	39 Bromodichloromethane	83	6.583	6.584	(1.077)	4507	2.00000	2.097
	40 2-Chloroethyl Vinyl Ether	63	7.075	7.076	(1 157)	1862	2.00000	1.969
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.164)	4923	2.00000	1.939
$	42 d8-Toluene	98	7.266	7.266	(1.189)	361579	50.0000	49.914
	43 Toluene	92	7.311	7.312	(1.196)	5908	2.00000	1.809
	44 Tetrachloroethene	166	7.623	7.623	(0.889)	3369	2.00000	2.103
	45 4-Methyl-2-Pentanone	58	7.649	7.656	(1.251)	6280	10.0000	9.704(M)
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.255)	4073	2.00000	1.784
	47 1,1,2-Trichloroethane	97	7.801	7.802	(1.276)	2615	2.00000	2.011(M)
	48 Chlorodibromomethane	129	7.947	7 948	(0.927)	2113	2.00000	1.628
	49 1,3-Dichloropropane	76	8.027	8.034	(0.936)	4877	2.00000	2.035
	50 1,2-Dibromoethane	107	8.139	8.140	(1.331)	2426	2.00000	1 948
	51 2-Hexanone	43	8.358	8 359	(0.974)	11362	10.0000	9 795
*	52 d5-Chlorobenzene	117	8.577	8.584	(1.000)	235316	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	9756	2.00000	2.081(Q)
	54 Ethyl Benzene	91	8.623	8.624	(1.005)	18004	2.00000	2.089
	55 1,1,1,2-Tetrachloroethane	131	8.650	8.657	(1.008)	2451	2.00000	1.821
	56 m,p-xylene	106	8.749	8.750	(1 020)	13470	4.00000	4.009
	57 o-Xylene	106	9.121	9.128	(1.063)	7249	2.00000	2.018
	58 Styrene	104	9.174	9.174	(1.070)	10449	2.00000	1.962
	59 Bromoform	173	9.187	9.188	(0.861)	1039	2.00000	1.528
	60 Isopropyl Benzene	105	9.401	9.401	(0.881)	16993	2.00000	2.054
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.126)	118207	50.0000	50.878
	63 Bromobenzene	156	9.740	9.741	(0.913)	3550	2.00000	2.066
	64 N-Propyl Benzene	91	9.774	9.774	(0.916)	20932	2.00000	2.095

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	3449	2.00000	2.036
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	12053	2.00000	2.088
67	1,3,5-Trimethyl Benzene	105	9.954	9.961	(0.933)	13877	2.00000	2.010
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	978	2.00000	1.934(Q)
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	992	2.00000	1.923(Q)
70	4-Chloro Toluene	91	10.060	10.067	(0 943)	12658	2.00000	2.118
71	T-Butyl Benzene	119	10.240	10.241	(0.960)	11888	2.00000	2.012
72	1,2,4-Trimethylbenzene	105	10.307	10.307	(0.966)	13710	2.00000	2.023
73	S-Butyl Benzene	105	10.407	10.407	(0.976)	18471	2.00000	2.037
74	4-Isopropyl Toluene	119	10.540	10.540	(0.988)	14799	2.00000	2.024
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.994)	8013	2.00000	2.167
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.667	(1.000)	117229	50 0000	
77	1,4-Dichlorobenzene	146	10.687	10.680	(1.002)	8421	2.00000	2.236(Q)
78	N-Butyl Benzene	91	10.933	10.934	(1.025)	14832	2.00000	2.071
$ 79	d4-1,2-Dichlorobenzene	152	11.066	11.067	(1.037)	103487	50.0000	50.481
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	7286	2.00000	2.148
81	1,2-Dibromo 3-Chloropropane	75	11.839	11.840	(1.110)	546	2.00000	1.820
82	Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.169)	2202	2.00000	2.180
83	1,2,4-Trichlorobenzene	180	12.492	12.493	(1.171)	5053	2.00000	2.602
84	Naphthalene	128	12.812	12.813	(1.201)	10444	2.00000	2.082
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	4219	2.00000	2.368
172	2 pentanone	86	6.872	6.873	(1.213)	486	2.00000	1.798(Q)

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 002051515.d
Lab Smp Id: VSTD002
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	163029	3.36
35 1,4-Difluorobenze	269036	134518	538072	261773	-2.70
52 d5-Chlorobenzene	241232	120616	482464	235316	-2.45
76 d4-1,4-Dichlorobe	124854	62427	249708	117229	-6.11

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.66	-0.13
35 1,4-Difluorobenze	6.12	5.62	6.62	6.11	-0.12
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	-0.08
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

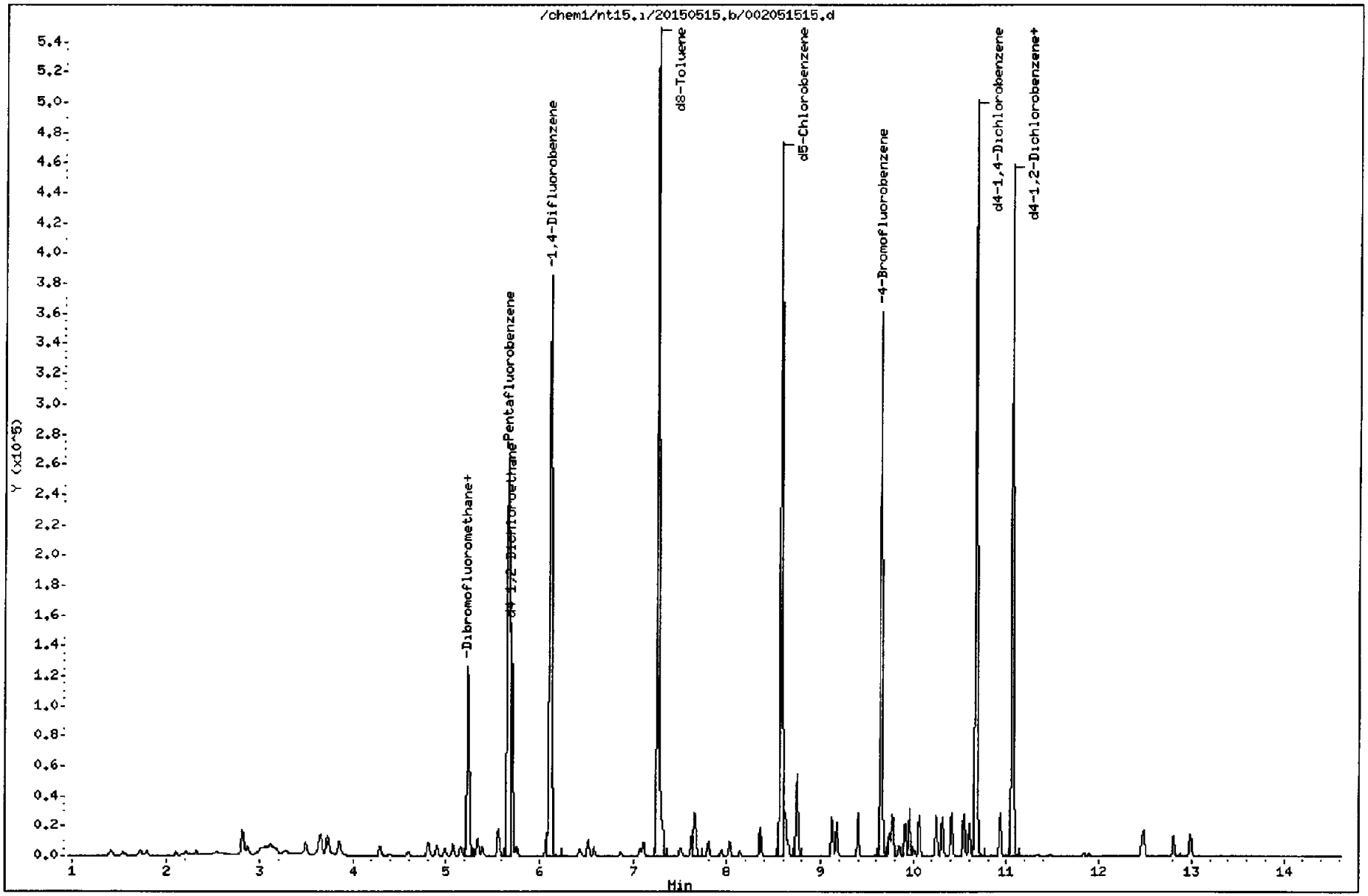
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150515.b/002051515.d
Date : 15-MAY-2015 14:30
Client ID:
Sample Info: VSTD002,5,5,0,,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

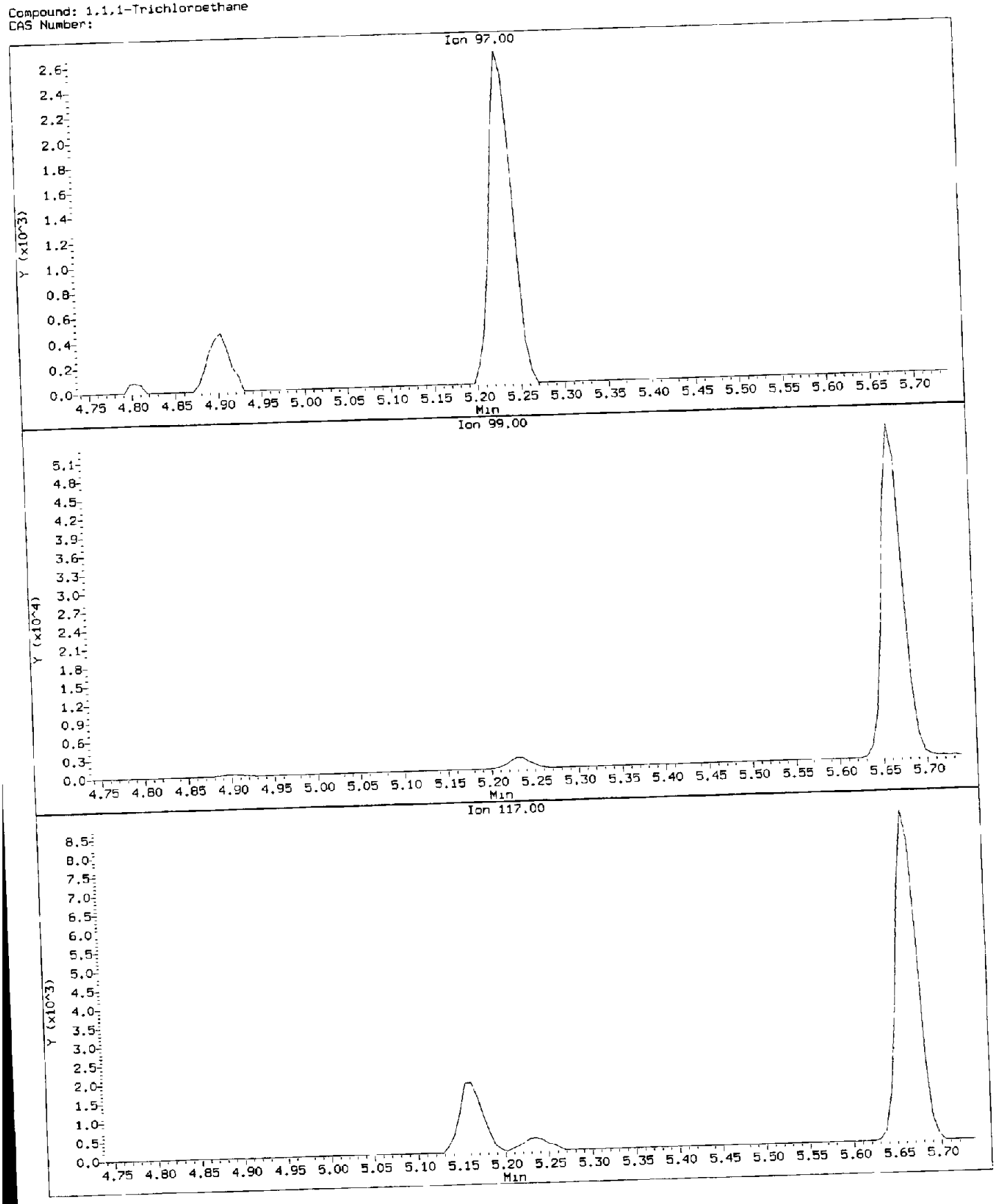
Column phase: RTXVMS



MC
5/18/15

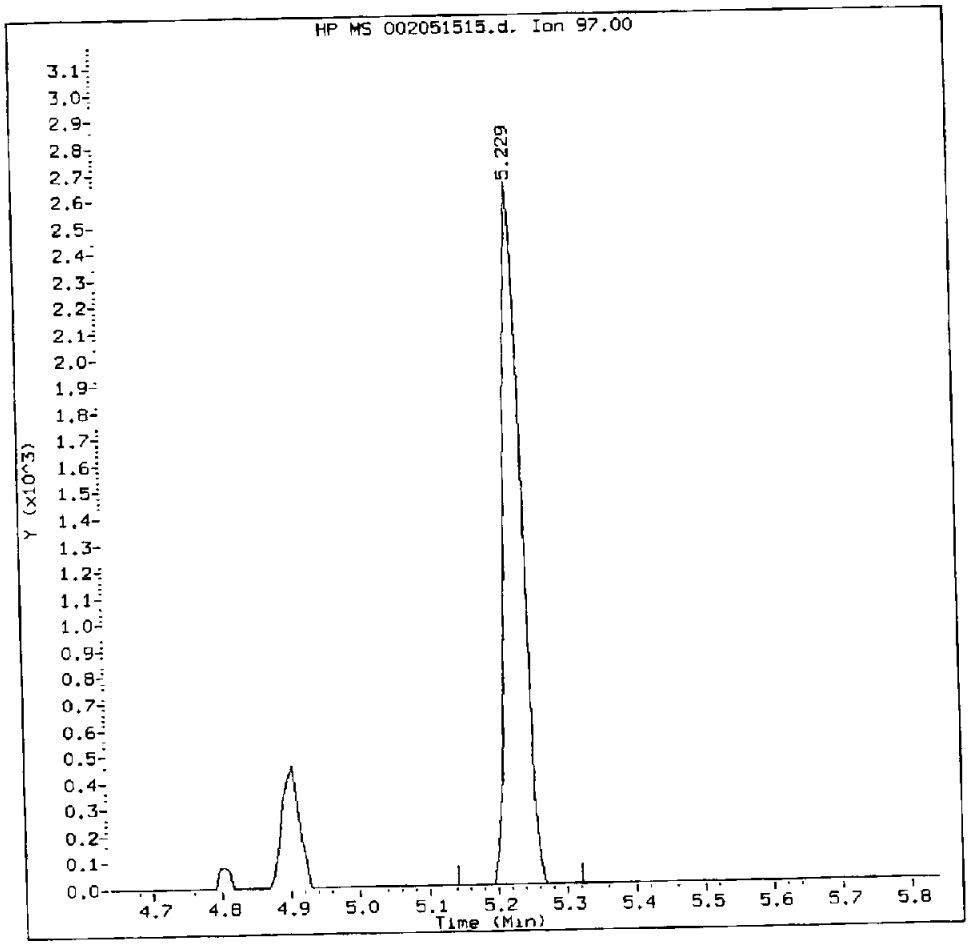
Data File: /chem1/nt15.i/20150515.b/002051515.d
Injection Date: 15-MAY-2015 14:30
Instrument: nt15.i
Client Sample ID:

Compound: 1,1,1-Trichloroethane
CAS Number:



VSTD002, /chem1/nt15.i/20150515.b/002051515.d

1,1,1-Trichloroethane Amount: 1.84 Area: 4840



MANUAL INTEGRATION for 1,1,1-Trichloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

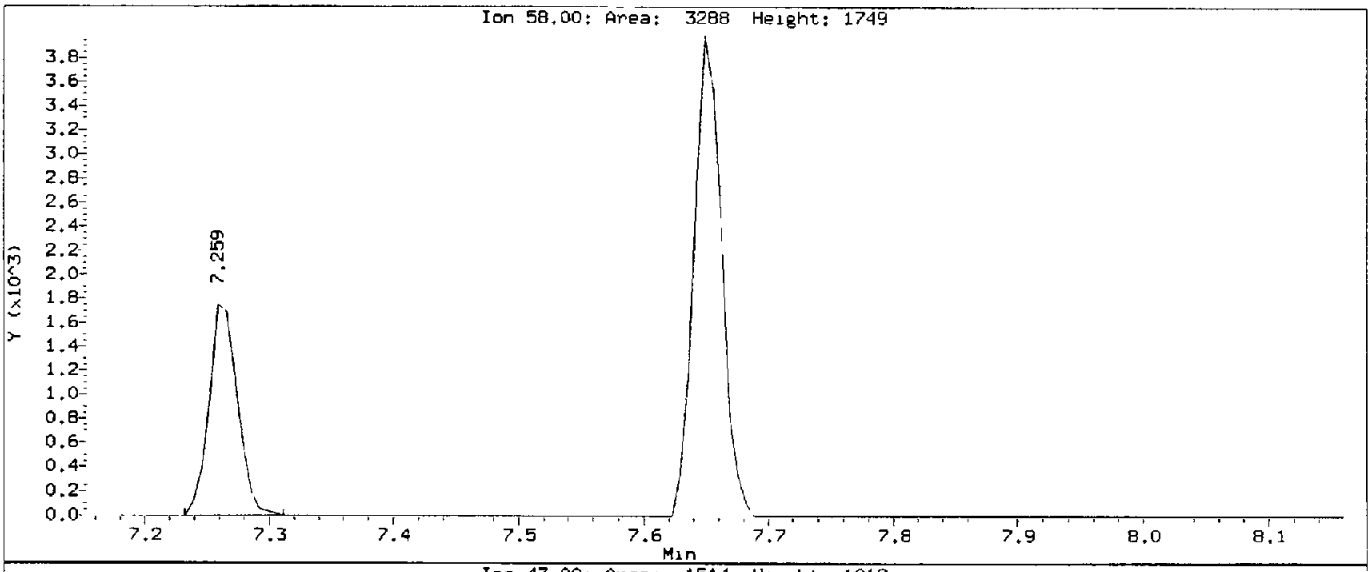
5. Other _____

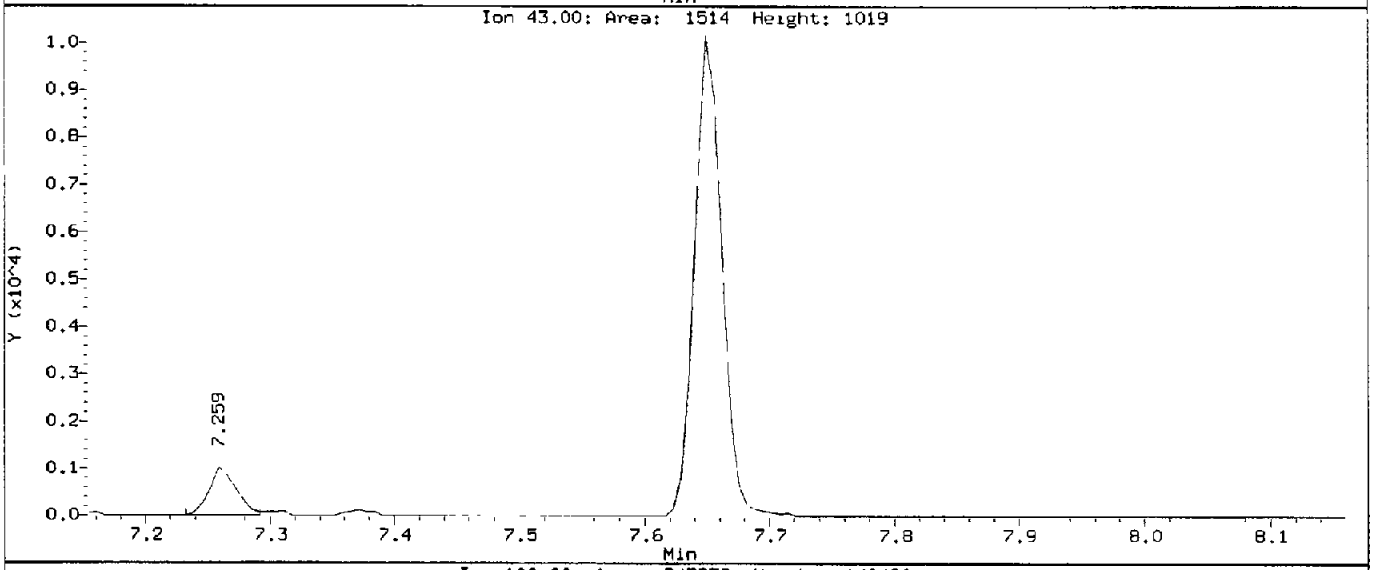
Analyst: MC Date: 5/18/15

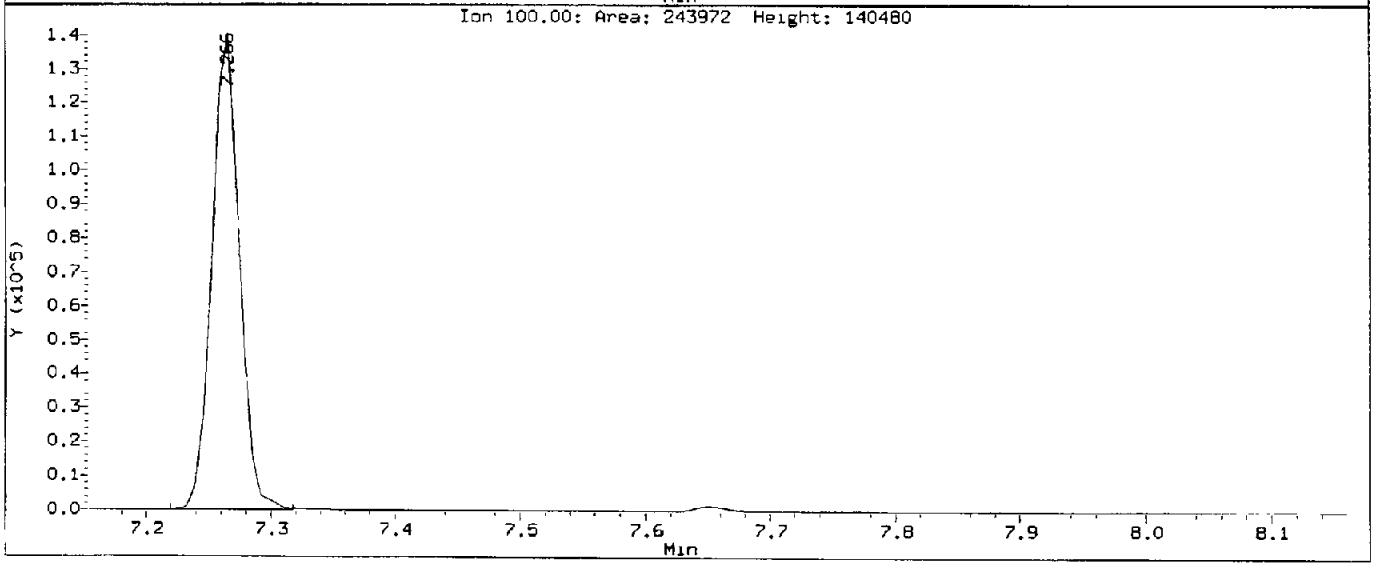
Data File: /chem1/nt15.i/20150515.b/002051515.d
Injection Date: 15-MAY-2015 14:30
Instrument: nt15.i
Client Sample ID:

Compound: 4-Methyl-2-Pentanone
CAS Number:

PC 5/18/15

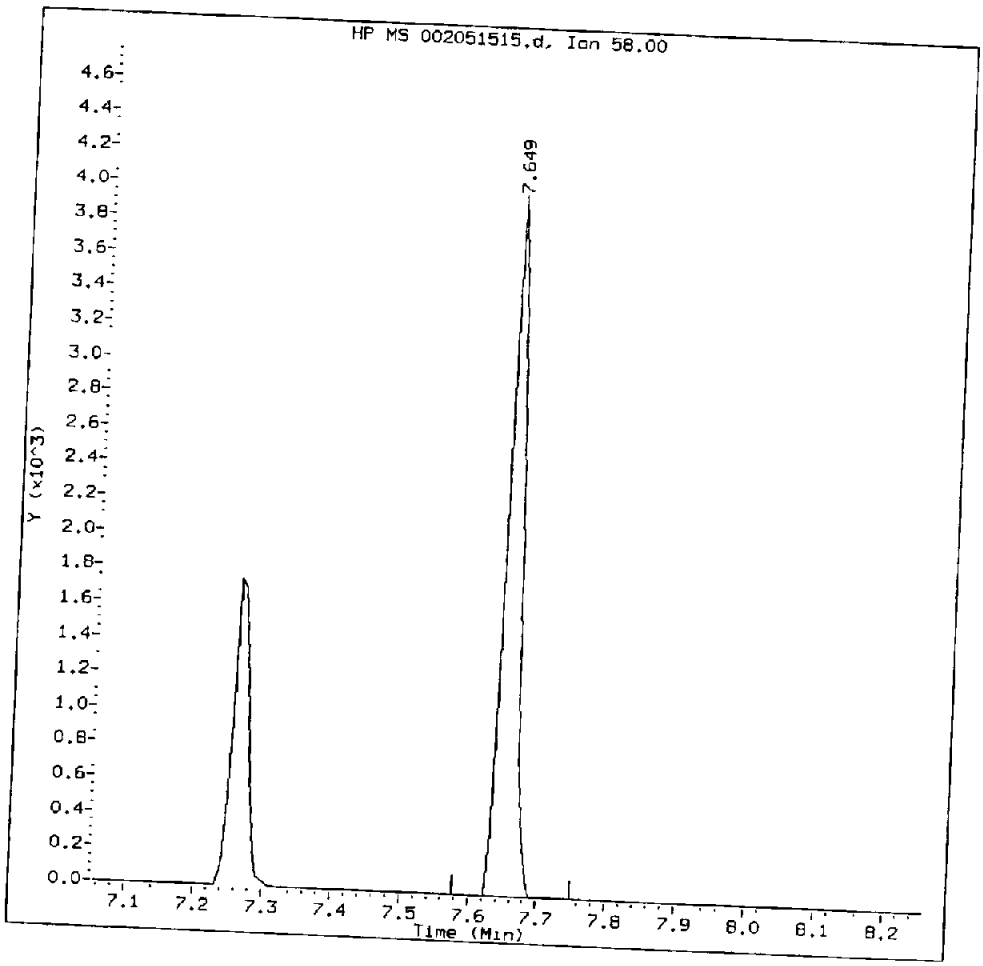






VSTD002, /chem1/nt15.i/20150515.b/002051515.d

4-Methyl-2-Pentanone Amount: 9.70 Area: 6280



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

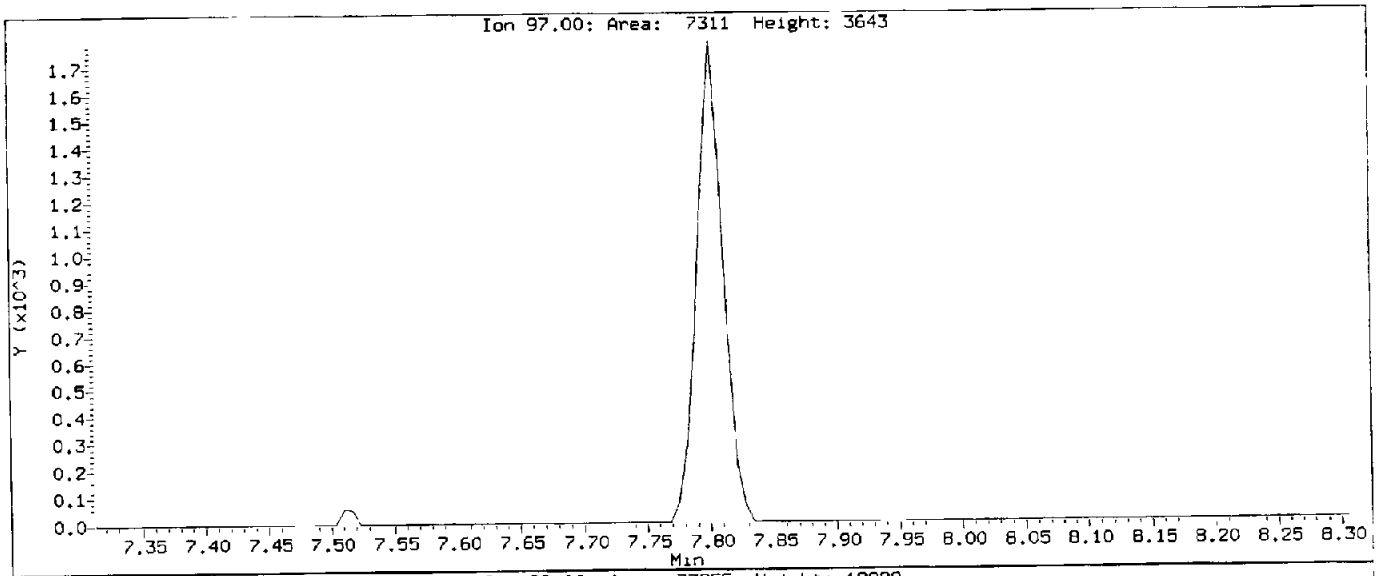
1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

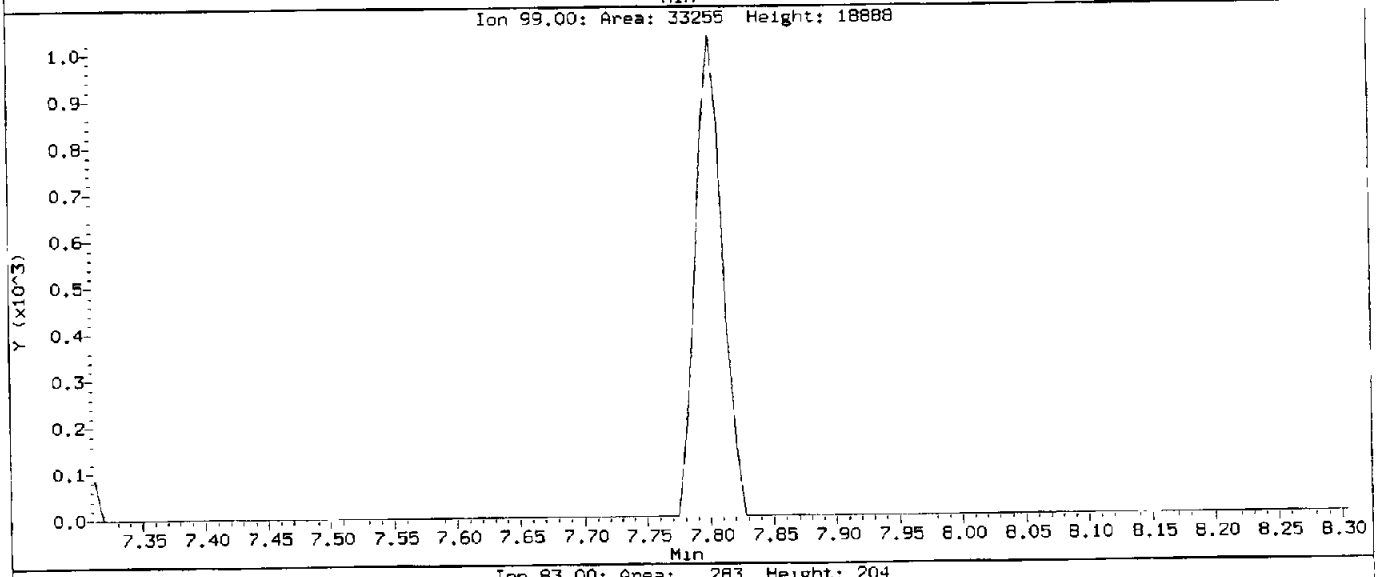
5. Other _____

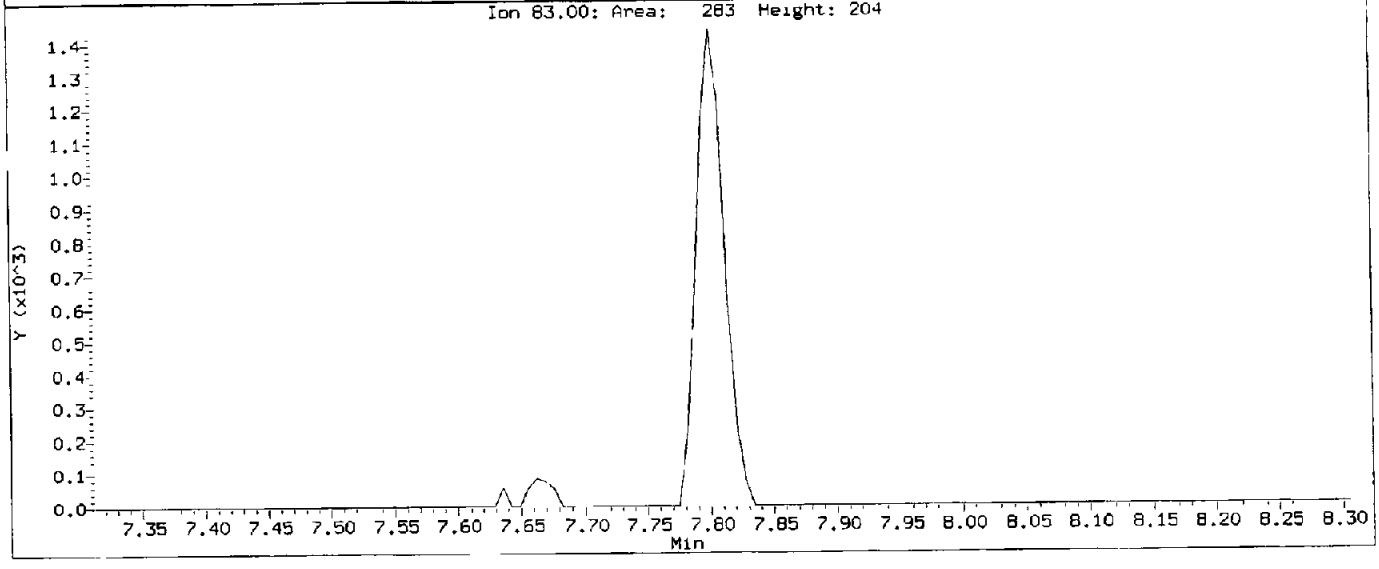
Analyst: KC Date: 5/18/15

Data File: /chem1/nt15.i/20150515.b/002051515.d
Injection Date: 15-MAY-2015 14:30
Instrument: nt15.i
Client Sample ID:

Compound: 1,1,2-Trichloroethane
CAS Number:

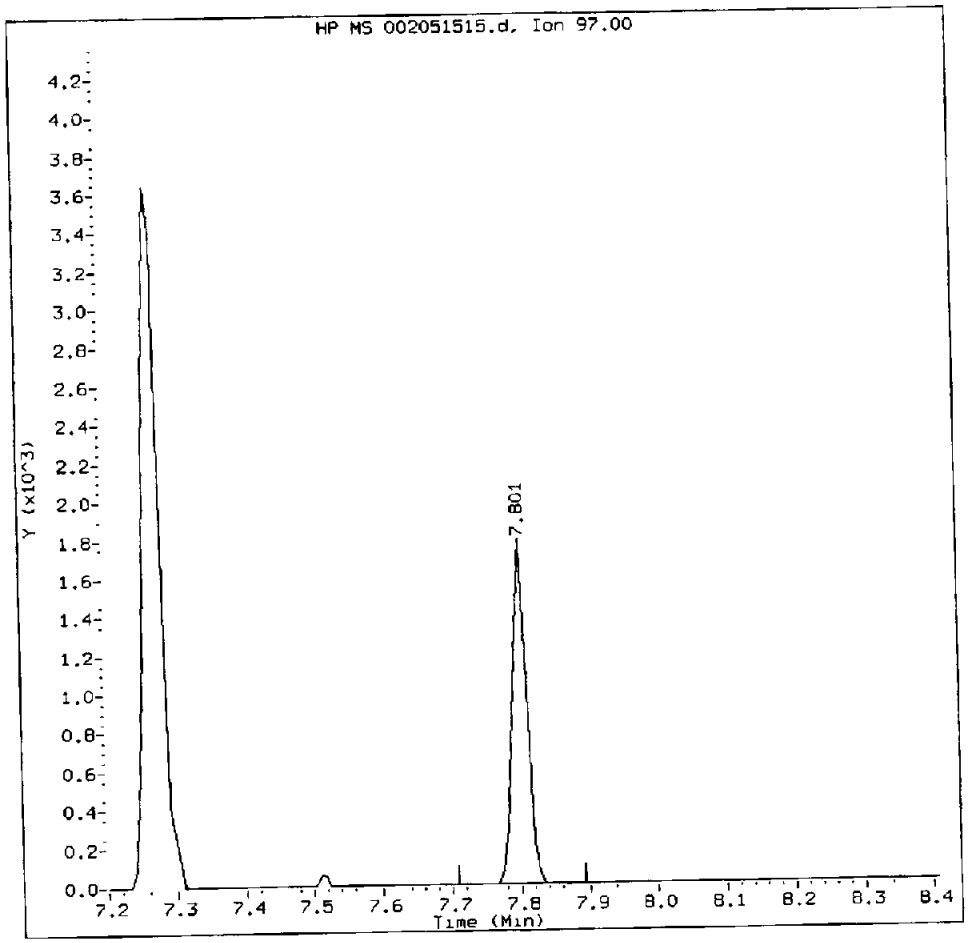






VSTD002, /chem1/nt15.i/20150515.b/002051515.d

1,1,2-Trichloroethane Amount: 2.01 Area: 2615



MANUAL INTEGRATION for 1,1,2-Trichloroethane

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: MC Date: 5/18/15

CO-ELUTION SUMMARY FOR FILE - 002051515.d

Lab ID: VSTD002, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/18/15

Data File: /chem1/nt15.i/20150515.b/005051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/005051515.d
Lab Smp Id: VSTD005
Inj Date : 15-MAY-2015 14:57
Operator : PC Inst ID: nt15.i
Smp Info : VSTD005,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.548	1.554	(0.273)	7762	5.00000	4.927
2 Chloromethane	50	1.736	1.742	(0.306)	9806	5.00000	6.091
3 Vinyl Chloride	62	1.800	1.807	(0.318)	9977	5.00000	4.968
4 Bromomethane	94	2.118	2.118	(0.374)	4315	5.00000	4.697
5 Chloroethane	64	2.222	2.222	(0.392)	3698	5.00000	5.236
6 Trichlorofluoromethane	101	2.339	2.339	(0.412)	4205	5.00000	5.072
7 1,1-Dichloroethene	96	2.826	2.826	(0.498)	8866	5.00000	4.824
8 Carbon Disulfide	76	2.826	2.826	(0.498)	27360	5.00000	5.200(T)
9 112Trichloro122Trifluoroethane	101	2.884	2.884	(0.509)	7271	5.00000	4.951
10 Iodomethane	142	2.988	2.981	(0.527)	6570	5.00000	4.703
11 Bromoethane	108	3.133	3.126	(0.552)	4960	5.00000	5.033
12 Acrolein	56	3.292	3.292	(0.580)	6285	25.0000	25.797
13 Methylene Chloride	84	3.510	3.510	(0.619)	9450	5.00000	5.199
14 Acetone	43	3.655	3.655	(0.645)	13591	25 0000	20.096

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.668	3.668	(0.647)	9853	5.00000	4.950
	16 Methyl tert butyl ether	73	3.873	3.867	(0.683)	25182	5.00000	4.931
	17 1,1-Dichloroethane	63	4.303	4.303	(0.759)	14637	5.00000	4.885
	18 Acrylonitrile	53	4.402	4.402	(0.776)	2445	5.00000	5.157(T)
	19 Vinyl Acetate	43	4.600	4.600	(0.811)	12454	5.00000	4.909
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	8895	5.00000	5.041
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	10260	5.00000	4.486
	23 Bromochloromethane	128	4.996	4.996	(0.881)	3393	5 00000	4.913
	24 Chloroform	83	5.082	5.082	(0.896)	14652	5.00000	4.898
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	8315	5.00000	4.525
$	27 Dibromofluoromethane	111	5.243	5.243	(0.924)	68672	50.0000	48.500
	26 1,1,1-Trichloroethane	97	5.236	5.236	(0.923)	11999	5.00000	4.814
	28 1,1-Dichloropropene	75	5.343	5.350	(0.873)	12496	5.00000	4.997
	29 2-Butanone	72	5.396	5.396	(0.952)	4953	25.0000	26.394
	30 Benzene	78	5.570	5.570	(0.910)	34647	5.00000	4.866
*	31 Pentafluorobenzene	168	5.671	5.671	(1.000)	154861	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.698	5.698	(1.005)	89494	50.0000	49.847
	33 1,2-Dichloroethane	62	5.758	5.758	(0.941)	12326	5.00000	5.055
	34 Trichloroethene	95	6.073	6.073	(0.992)	8644	5.00000	4.824
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	264148	50.0000	
	37 Dibromomethane	93	6.436	6.436	(1.052)	4088	5.00000	4.883
	38 1,2-Dichloropropane	63	6.523	6.523	(1.066)	8376	5.00000	4.874
	39 Bromodichloromethane	83	6.584	6.584	(1.076)	9961	5.00000	4.593
	40 2-Chloroethyl Vinyl Ether	63	7.076	7.076	(1.156)	4541	5 00000	4.758
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	11668	5.00000	4.554
$	42 d8-Toluene	98	7.266	7.266	(1.187)	365455	50.0000	49.996
	43 Toluene	92	7.312	7.312	(1.195)	15212	5.00000	4.615
	44 Tetrachloroethene	166	7.623	7.623	(0.889)	7853	5.00000	4.939
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	16895	25.0000	25.873(M)
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	10377	5.00000	4.504
	47 1,1,2-Trichloroethane	97	7.802	7.802	(1.275)	6464	5.00000	4.927
	48 Chlorodibromomethane	129	7.948	7.948	(0.927)	5251	5.00000	4 074
	49 1,3-Dichloropropane	76	8.027	8.034	(0.936)	11727	5.00000	4.930
	50 1,2-Dibromoethane	107	8.140	8.140	(1.330)	6105	5.00000	4.857
	51 2-Hexanone	43	8.365	8.359	(0.975)	30979	25.0000	26.904
*	52 d5-Chlorobenzene	117	8.577	8.584	(1.000)	233594	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	22895	5.00000	4.919
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	42047	5.00000	4.914
	55 1,1,1,2-Tetrachloroethane	131	8.650	8.657	(1.008)	6188	5.00000	4.631
	56 m,p-xylene	106	8.750	8.750	(1.020)	31989	10.0000	9.592
	57 o-Xylene	106	9.121	9.128	(1.063)	16409	5.00000	4.602
	58 Styrene	104	9.174	9.174	(1.070)	25455	5.00000	4.815
	59 Bromoform	173	9.188	9.188	(0.861)	3067	5.00000	4.440
	60 Isopropyl Benzene	105	9.401	9.401	(0.881)	40724	5.00000	4.846
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.126)	116629	50.0000	50.568
	63 Bromobenzene	156	9.741	9.741	(0.913)	8476	5.00000	4.856
	64 N-Propyl Benzene	91	9.774	9.774	(0.916)	49942	5.00000	4.921

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	8672	5.00000	5.041
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	28932	5.00000	4.934
67	1,3,5-Trimethyl Benzene	105	9.954	9.961	(0.933)	33538	5.00000	4.782
68	1,2,3-Trichloropropane	110	9.961	9.967	(0.934)	2554	5.00000	4.973
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	2550	5.00000	4.868(Q)
70	4-Chloro Toluene	91	10.061	10.067	(0.943)	29998	5.00000	4.942
71	T-Butyl Benzene	119	10.241	10.241	(0.960)	28819	5.00000	4.803
72	1,2,4-Trimethylbenzene	105	10.307	10.307	(0.966)	33046	5.00000	4.801
73	S-Butyl Benzene	105	10.407	10.407	(0.976)	45214	5.00000	4.910
74	4-Isopropyl Toluene	119	10.540	10.540	(0.988)	36293	5.00000	4.889
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.994)	18062	5.00000	4.810
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.667	(1.000)	119060	50.0000	
77	1,4-Dichlorobenzene	146	10.680	10.680	(1.001)	18244	5.00000	4.770(Q)
78	N-Butyl Benzene	91	10.934	10.934	(1.025)	35910	5.00000	4.937
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	106065	50.0000	50.943
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	16891	5.00000	4.903
81	1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.110)	1463	5.00000	4.801
82	Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.169)	5306	5.00000	5.172
83	1,2,4-Trichlorobenzene	180	12.493	12.493	(1.171)	10843	5.00000	5.498
84	Naphthalene	128	12.812	12.813	(1.201)	26334	5.00000	5.168
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	9847	5.00000	5.441
172	2 pentanone	86	6.873	6.873	(1.212)	1304	5.00000	5.077(Q)

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 005051515.d
Lab Smp Id: VSTD005
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	154861	-1.81
35 1,4-Difluorobenze	269036	134518	538072	264148	-1.82
52 d5-Chlorobenzene	241232	120616	482464	233594	-3.17
76 d4-1,4-Dichlorobe	124854	62427	249708	119060	-4.64

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	-0.08
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

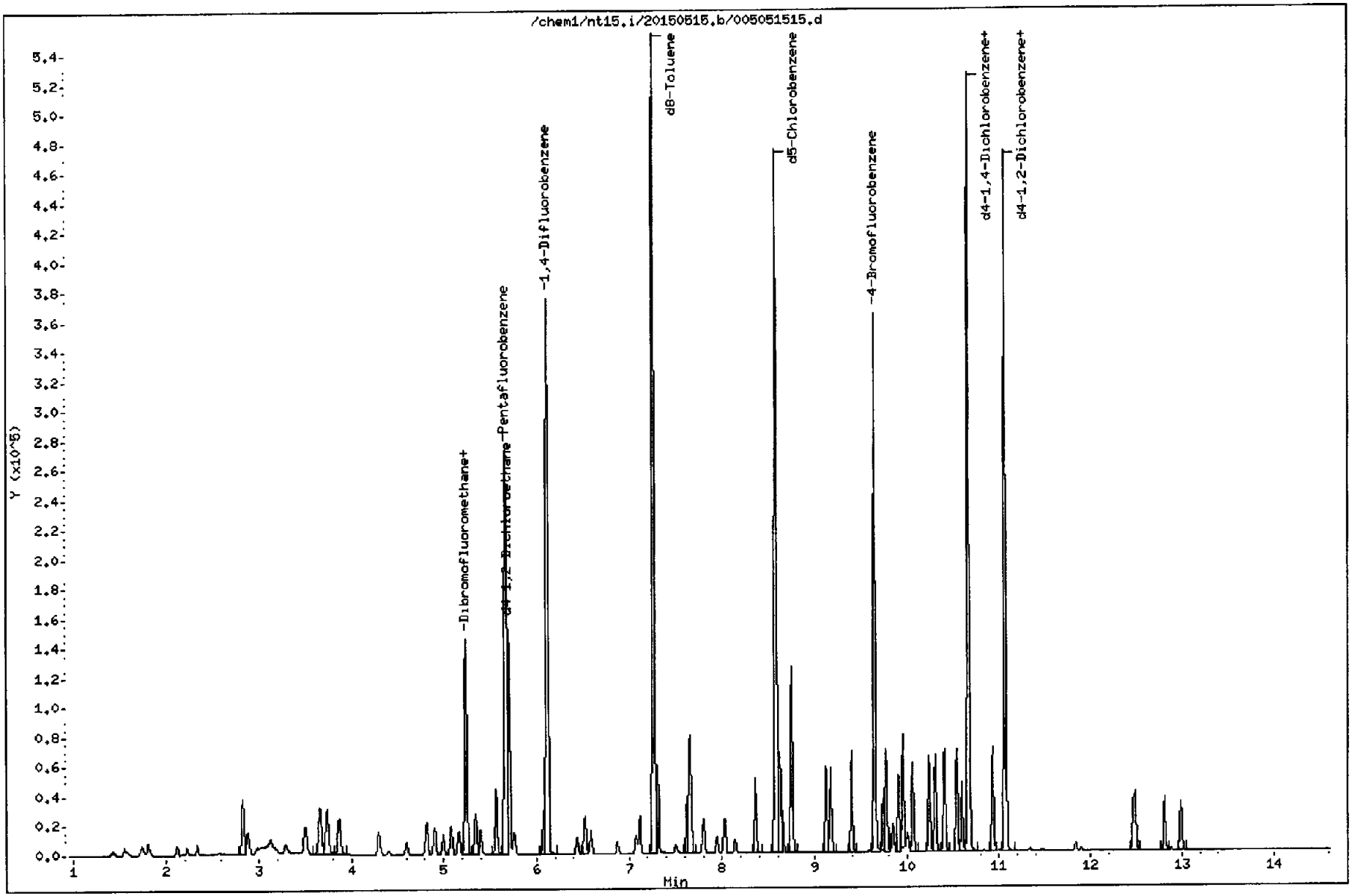
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150515.b/005051515.d
Date : 15-MAY-2015 14:57
Client ID:
Sample Info: VSTD005,5,5,0,,

Column phase: RTXVMS

Instrument: nt15.i

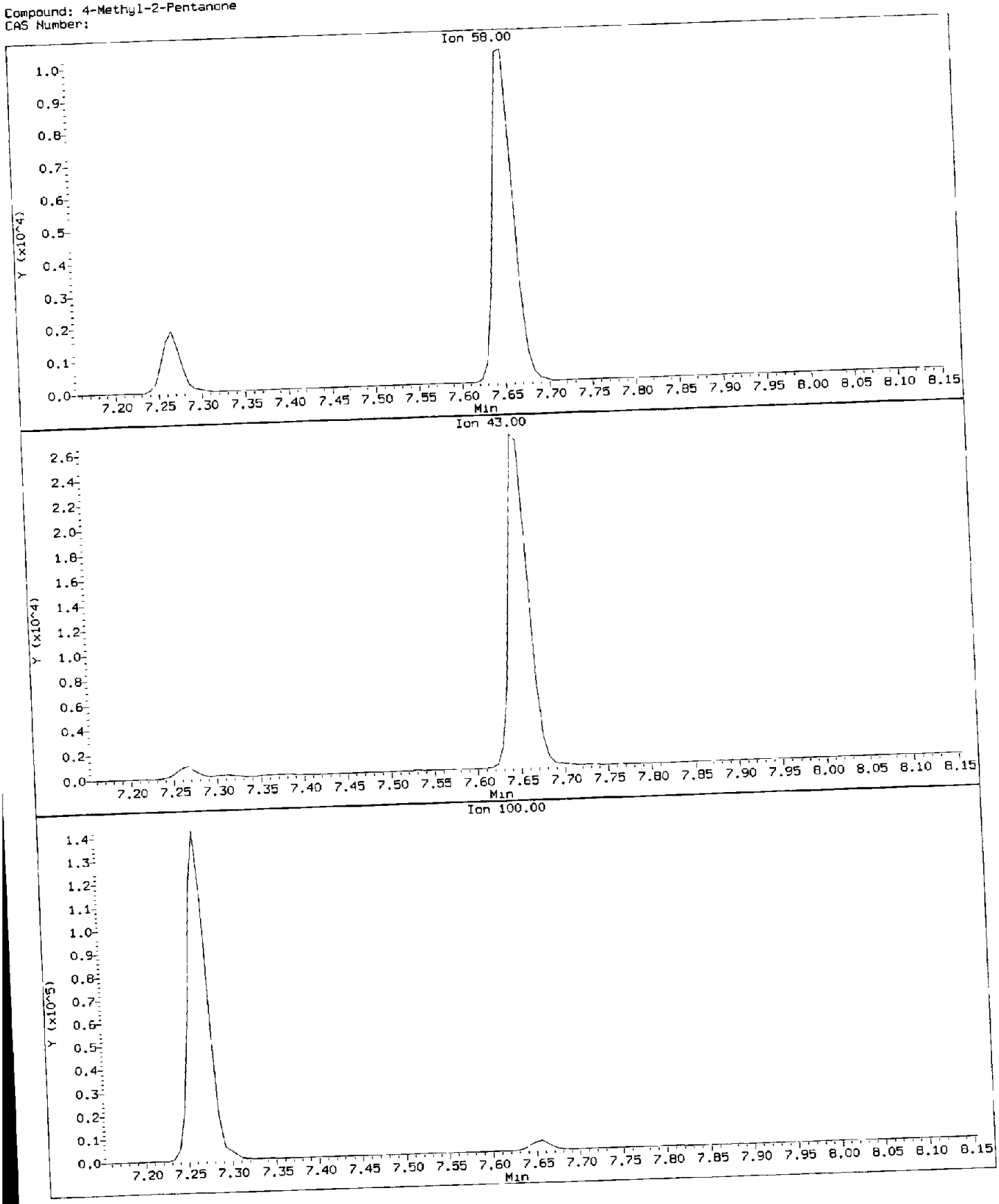
Operator: PC
Column diameter: 0.18



MG 5/18/15

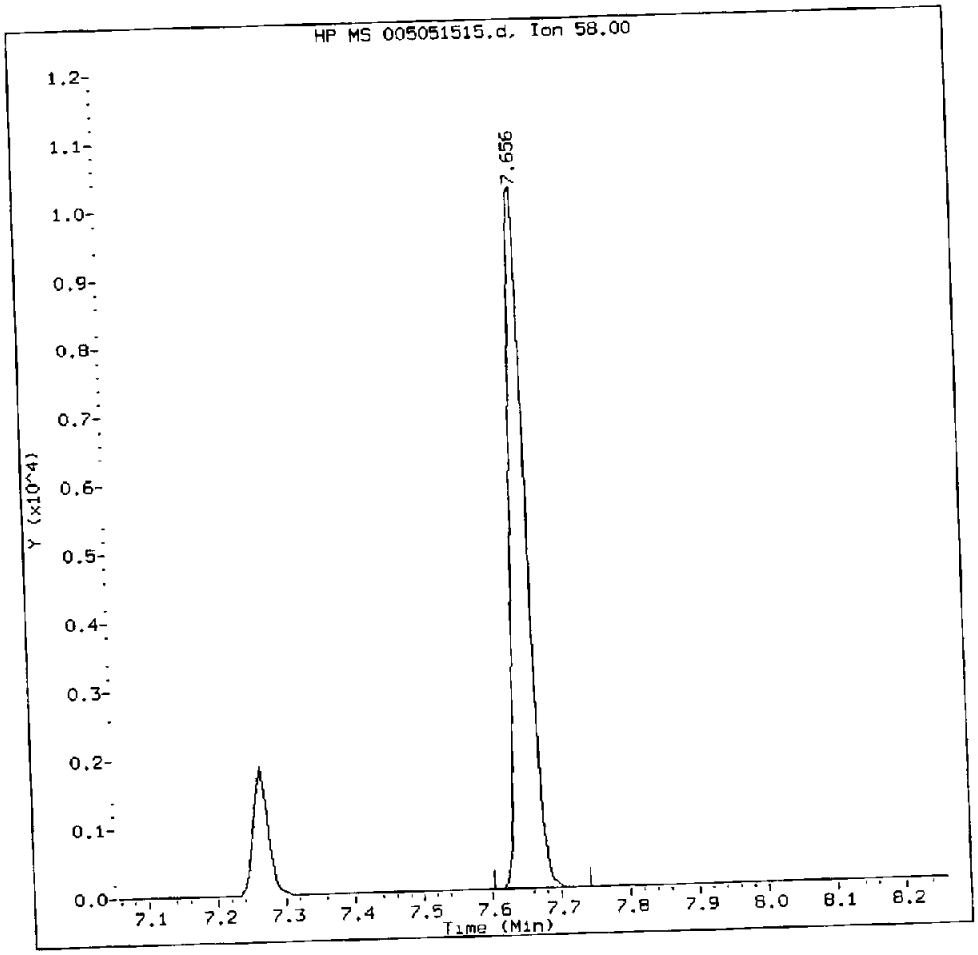
Data File: /chem1/nt15.i/20150515.b/005051515.d
Injection Date: 15-MAY-2015 14:57
Instrument: nt15.i
Client Sample ID:

Compound: 4-Methyl-2-Pentanone
CAS Number:



VSTD005, /chem1/nt15.i/20150515.b/005051515.d

4-Methyl-2-Pentanone Amount: 25.87 Area: 16895



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: M Date: 5/18/15

CO-ELUTION SUMMARY FOR FILE - 005051515.d

Lab ID: VSTD005, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/18/15

Data File: /chem1/nt15.i/20150515.b/010051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/010051515.d
Lab Smp Id: VSTD010
Inj Date : 15-MAY-2015 15:25
Operator : PC Inst ID: nt15.i
Smp Info : VSTD010,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.548	1.554	(0.273)	16787	10.0000	10.510
2 Chloromethane	50	1.742	1 742	(0.307)	18592	10.0000	11.392
3 Vinyl Chloride	62	1.807	1.807	(0.319)	20819	10.0000	10 225
4 Bromomethane	94	2.112	2.118	(0.372)	8458	10.0000	9.082
5 Chloroethane	64	2.222	2.222	(0.392)	7370	10.0000	10.293
6 Trichlorofluoromethane	101	2.339	2.339	(0.412)	8700	10.0000	10.352
7 1,1-Dichloroethene	96	2.832	2.826	(0.499)	18847	10.0000	10.114
8 Carbon Disulfide	76	2.832	2.826	(0.499)	54621	10.0000	10.240(T)
9 112Trichloro122Trifluoroethane	101	2.884	2.884	(0.509)	15122	10.0000	10.157
10 Iodomethane	142	2.988	2.981	(0.527)	14612	10.0000	10 316
11 Bromoethane	108	3.133	3.126	(0.552)	10559	10.0000	10.568
12 Acrolein	56	3.292	3.292	(0.580)	12604	50.0000	51.029
13 Methylene Chloride	84	3.510	3.510	(0.619)	18641	10.0000	10.115
14 Acetone	43	3.655	3.655	(0.645)	23455	50.0000	35.363

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.668	3.668	(0.647)	20055	10.0000	9.937
	16 Methyl tert butyl ether	73	3.867	3.867	(0.682)	52921	10.0000	10 221
	17 1,1-Dichloroethane	63	4.303	4.303	(0.759)	30788	10.0000	10.135
	18 Acrylonitrile	53	4.402	4.402	(0.776)	5009	10.0000	10.421
	19 Vinyl Acetate	43	4.600	4.600	(0.811)	27535	10.0000	10.706
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	18072	10.0000	10.102
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	22004	10.0000	9.489
	23 Bromochloromethane	128	4.996	4.996	(0.881)	7140	10.0000	10.199
	24 Chloroform	83	5.082	5.082	(0.896)	31625	10.0000	10.429
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	18223	10.0000	9.693
$	27 Dibromofluoromethane	111	5.243	5.243	(0.924)	72046	50.0000	50.190
	26 1,1,1-Trichloroethane	97	5.236	5.236	(0.923)	25453	10.0000	10.072
	28 1,1-Dichloropropene	75	5.350	5.350	(0.874)	25828	10.0000	10.096
	29 2-Butanone	72	5.396	5.396	(0.952)	9603	50.0000	50.477
	30 Benzene	78	5.570	5.570	(0 910)	73356	10.0000	10.072
*	31 Pentafluorobenzene	168	5.671	5.671	(1.000)	156999	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.698	5.698	(1.005)	93816	50.0000	51.543
	33 1,2-Dichloroethane	62	5.758	5.758	(0.941)	25899	10.0000	10.383
	34 Trichloroethene	95	6.073	6.073	(0.992)	18572	10.0000	10.132
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	270221	50.0000	
	37 Dibromomethane	93	6.436	6.436	(1.052)	8645	10.0000	10 093
	38 1,2-Dichloropropane	63	6.523	6.523	(1.066)	17721	10.0000	10.081
	39 Bromodichloromethane	83	6.584	6.584	(1.076)	21873	10.0000	9.859
	40 2-Chloroethyl Vinyl Ether	63	7.076	7.076	(1.156)	9949	10.0000	10.189
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	25510	10.0000	9.733
$	42 d8-Toluene	98	7.266	7.266	(1.187)	369183	50.0000	49.371
	43 Toluene	92	7.312	7.312	(1.195)	30634	10.0000	9.086
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	16476	10.0000	9.864
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	33996	50.0000	50.892(M)
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	22258	10.0000	9.445
	47 1,1,2-Trichloroethane	97	7.802	7.802	(1.275)	13428	10.0000	10.005
	48 Chlorodibromomethane	129	7.948	7.948	(0.926)	13531	10.0000	9.995
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	24960	10.0000	9.990
	50 1,2-Dibromoethane	107	8 140	8.140	(1.330)	12935	10.0000	10 060
	51 2-Hexanone	43	8.359	8.359	(0.974)	61224	50.0000	50 616
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	245383	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	48319	10.0000	9.882
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	88775	10.0000	9.877
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	13643	10.0000	9.719
	56 m,p-xylene	106	8.750	8.750	(1.019)	67987	20.0000	19.406
	57 o-Xylene	106	9.121	9.128	(1.063)	35625	10.0000	9.512
	58 Styrene	104	9.174	9.174	(1.069)	53909	10.0000	9.708
	59 Bromoform	173	9.188	9.188	(0 861)	6532	10.0000	9.081
	60 Isopropyl Benzene	105	9.401	9.401	(0.881)	85714	10.0000	9.795
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	121977	50.0000	50.346
	63 Bromobenzene	156	9.741	9.741	(0.913)	17851	10.0000	9.821
	64 N-Propyl Benzene	91	9.774	9.774	(0.916)	103833	10.0000	9.825

Data File: /chem1/nt15.i/20150515.b/010051515.d
Report Date: 18-May-2015 10:23

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	17970	10.0000	10.032
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	60548	10.0000	9.917
67	1,3,5-Trimethyl Benzene	105	9.954	9.961	(0.933)	72380	10.0000	9.911
68	1,2,3-Trichloropropane	110	9 967	9.967	(0.934)	5458	10.0000	10.205
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	5604	10.0000	10.273
70	4-Chloro Toluene	91	10.061	10.067	(0.943)	63854	10.0000	10.103
71	T-Butyl Benzene	119	10.241	10.241	(0.960)	61436	10.0000	9.833
72	1,2,4-Trimethylbenzene	105	10.307	10.307	(0.966)	71781	10.0000	10.014
73	S-Butyl Benzene	105	10.407	10.407	(0.976)	95166	10.0000	9.924
74	4-Isopropyl Toluene	119	10.540	10.540	(0.988)	76488	10.0000	9.894
75	1,3-Dichlorobenzene	146	10 600	10.600	(0 994)	36935	10.0000	9.446
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.667	(1.000)	123982	50.0000	
77	1,4-Dichlorobenzene	146	10.680	10.680	(1.001)	37753	10.0000	9.479
78	N-Butyl Benzene	91	10.934	10.934	(1.025)	76446	10.0000	10.094
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	109612	50.0000	50.557
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	34801	10.0000	9.700
81	1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.110)	3175	10.0000	10.006
82	Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.169)	11096	10.0000	10.387
83	1,2,4-Trichlorobenzene	180	12.493	12.493	(1.171)	21966	10.0000	10.695
84	Naphthalene	128	12.812	12.813	(1.201)	55785	10.0000	10.514
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	20086	10.0000	10.658
172	2 pentanone	86	6.873	6.873	(1.212)	2594	10.0000	9.963

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 010051515.d
Lab Smp Id: VSTD010
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	156999	-0.46
35 1,4-Difluorobenze	269036	134518	538072	270221	0.44
52 d5-Chlorobenzene	241232	120616	482464	245383	1.72
76 d4-1,4-Dichlorobe	124854	62427	249708	123982	-0.70

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

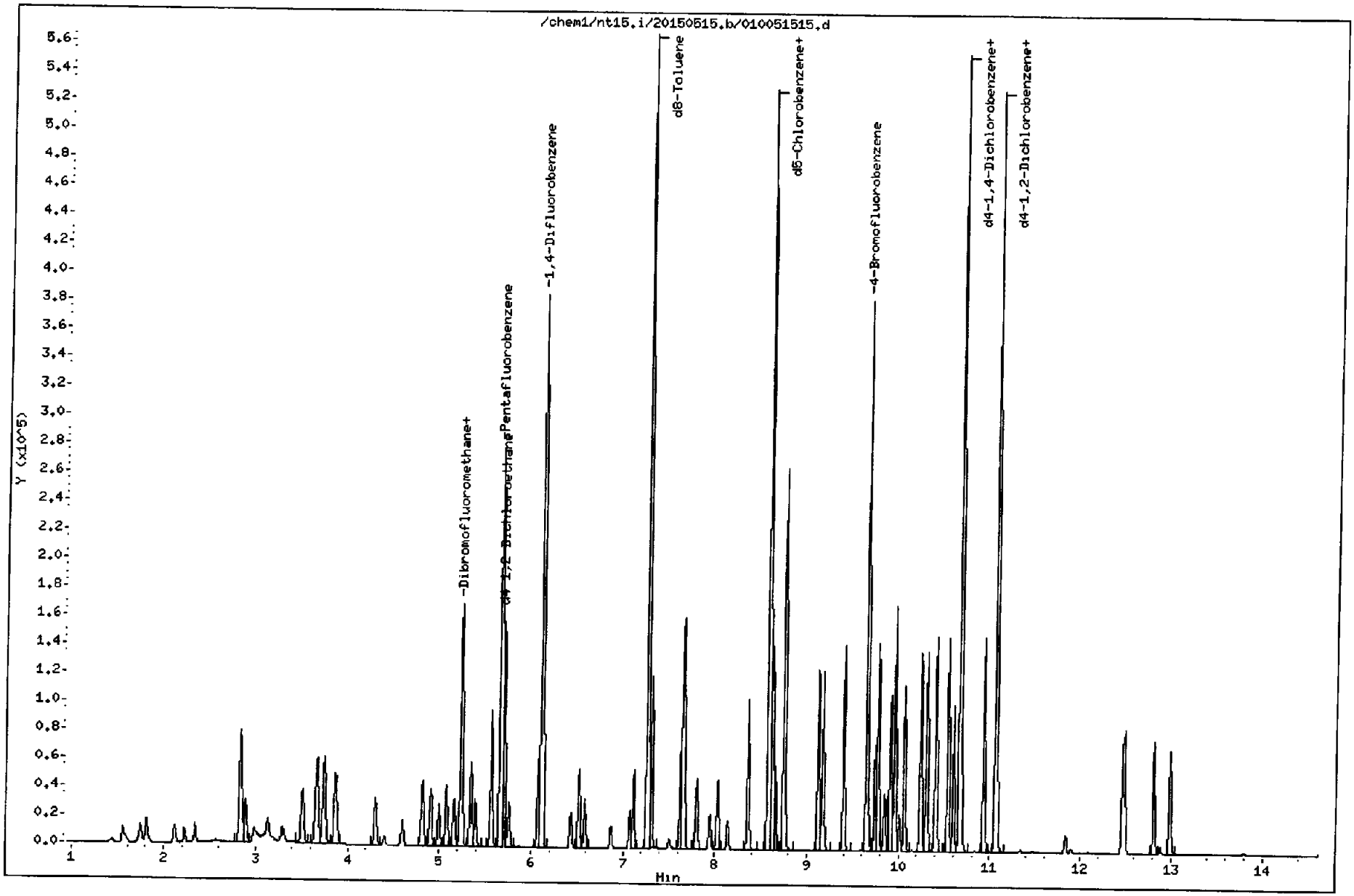
ARF2:0815B

Data File: /chem1/nt15.i/20150515.b/010051515.d
Date : 15-MAY-2015 15:25
Client ID:
Sample Info: VSTD010,5,5,0,,

Column phase: RTXVMS

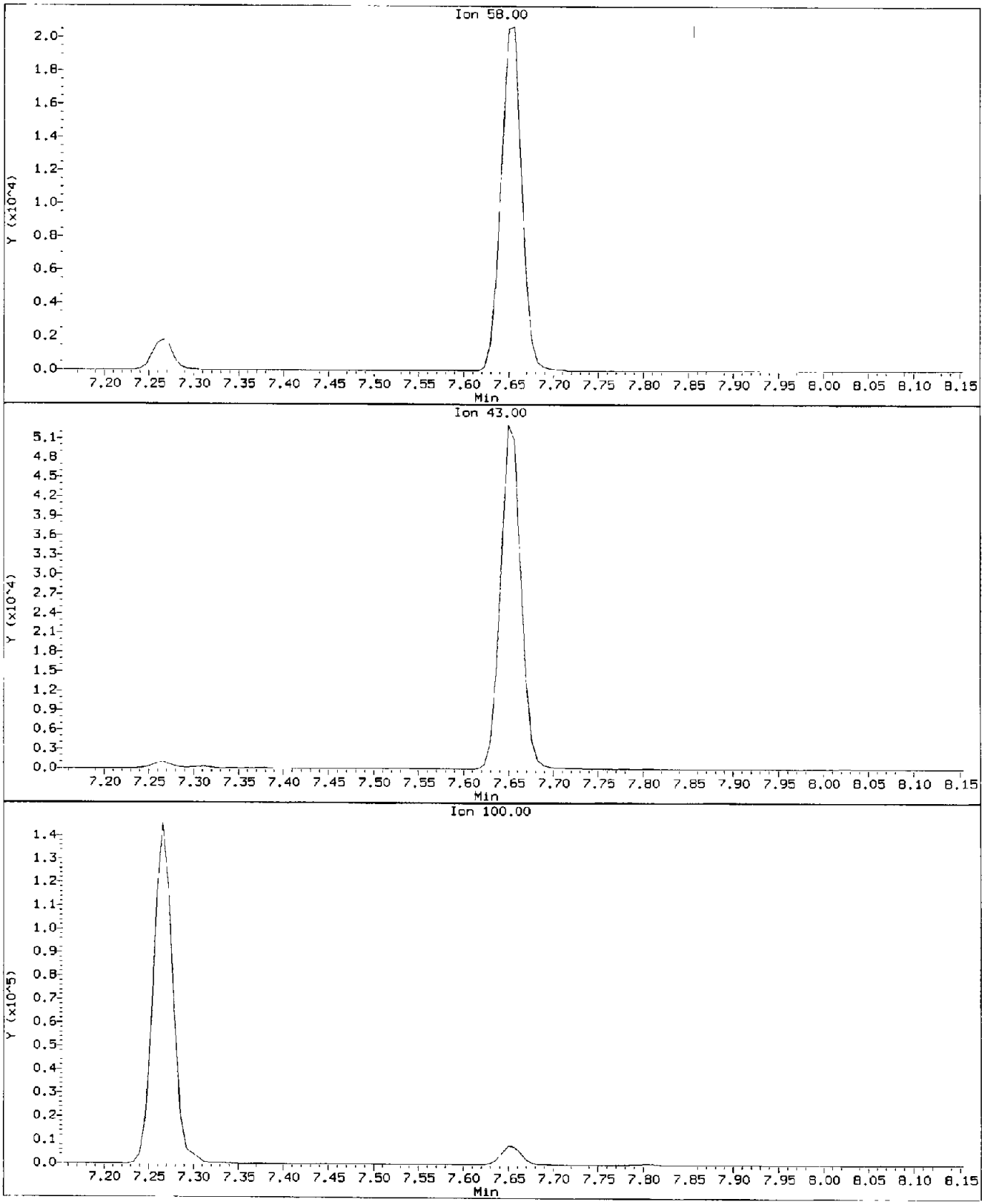
Instrument: nt15.i

Operator: PC
Column diameter: 0.18



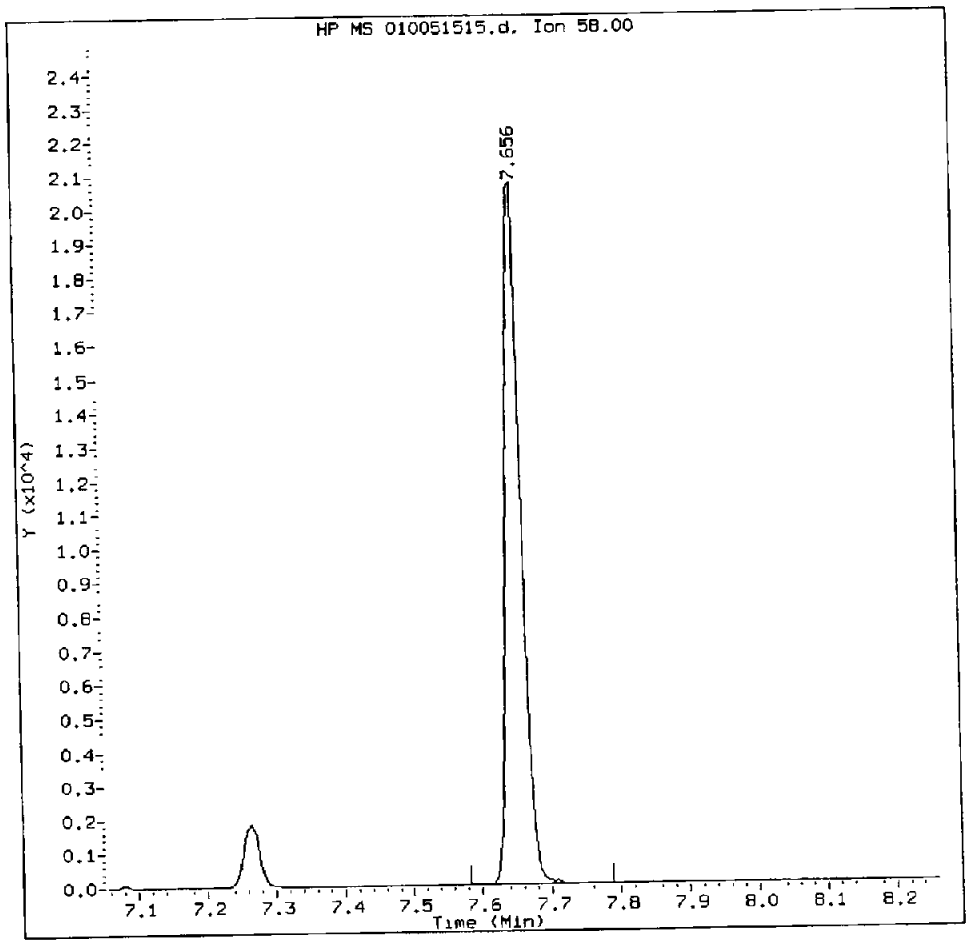
Data File: /chem1/nt15.i/20150515.b/010051515.d
Injection Date: 15-MAY-2015 15:25
Instrument: nt15.i
Client Sample ID:

Compound: 4-Methyl-2-Pentanone
CAS Number:



VSTD010, /chem1/nt15.i/20150515.b/010051515.d

4-Methyl-2-Pentanone Amount: 50.89 Area: 33996



MANUAL INTEGRATION for 4-Methyl-2-Pentanone

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: NL Date: 5/18/15

CO-ELUTION SUMMARY FOR FILE - 010051515.d

Lab ID: VSTD010, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/18/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/050051515.d
Lab Smp Id: VSTD050
Inj Date : 15-MAY-2015 15:52
Operator : PC Inst ID: nt15.i
Smp Info : VSTD050,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	79904	50.0000	49.796
2 Chloromethane	50	1.742	1.742	(0.307)	81874	50.0000	49.936
3 Vinyl Chloride	62	1.807	1.807	(0.319)	100415	50.0000	49.092
4 Bromomethane	94	2.118	2.118	(0.374)	36066	50.0000	38.550
5 Chloroethane	64	2.222	2.222	(0.392)	34272	50.0000	47.645
6 Trichlorofluoromethane	101	2.339	2.339	(0.412)	41240	50.0000	48 844
7 1,1-Dichloroethene	96	2.826	2.826	(0.498)	90821	50.0000	48 515
8 Carbon Disulfide	76	2.826	2.826	(0.498)	260714	50.0000	48.655(T)
9 112Trichloro122Trifluoroethane	101	2.884	2.884	(0.509)	72815	50.0000	48.683
10 Iodomethane	142	2.981	2.981	(0.526)	76767	50.0000	53.951
11 Bromoethane	108	3.126	3.126	(0.551)	50421	50.0000	50.233
12 Acrolein	56	3.292	3.292	(0.580)	63473	250.000	255.80
13 Methylene Chloride	84	3.510	3.510	(0.619)	91233	50.0000	49.278
14 Acetone	43	3.655	3.655	(0.645)	116199	250.000	228.63

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.668	3.668	(0.647)	96050	50.0000	47.375
	16 Methyl tert butyl ether	73	3.867	3.867	(0.682)	260350	50.0000	50.051
	17 1,1-Dichloroethane	63	4.303	4.303	(0.759)	152110	50.0000	49.841
	18 Acrylonitrile	53	4.402	4.402	(0.776)	26210	50 0000	54.279
	19 Vinyl Acetate	43	4.600	4.600	(0.811)	143156	50.0000	55.407
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	88517	50.0000	49.253
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	120060	50.0000	51.537
	23 Bromochloromethane	128	4.996	4 996	(0.881)	35721	50.0000	50.789
	24 Chloroform	83	5.082	5.082	(0.896)	152620	50.0000	50.099
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	96920	50.0000	51.782
$	27 Dibromofluoromethane	111	5.243	5.243	(0.924)	73860	50.0000	51.217
	26 1,1,1-Trichloroethane	97	5.236	5.236	(0.923)	127437	50.0000	50.199
	28 1,1-Dichloropropene	75	5.350	5.350	(0.874)	124594	50.0000	48.915
	29 2-Butanone	72	5.396	5.396	(0.952)	51159	250.000	267.68
	30 Benzene	78	5.570	5.570	(0.910)	354165	50.0000	48.840
*	31 Pentafluorobenzene	168	5.671	5.671	(1.000)	157722	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.698	5 698	(1.005)	92727	50.0000	50.711
	33 1,2-Dichloroethane	62	5.758	5.758	(0.941)	125281	50.0000	50.449
	34 Trichloroethene	95	6.073	6.073	(0.992)	87350	50.0000	47.862
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	269036	50.0000	
	37 Dibromomethane	93	6.436	6.436	(1.052)	43230	50.0000	50.694
	38 1,2-Dichloropropane	63	6.523	6 523	(1.066)	85556	50.0000	48.884
	39 Bromodichloromethane	83	6.584	6.584	(1.076)	114497	50.0000	51.835
	40 2-Chloroethyl Vinyl Ether	63	7.076	7.076	(1 156)	50742	50.0000	52.196
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	133679	50.0000	51.227
$	42 d8-Toluene	98	7 266	7.266	(1.187)	371137	50.0000	49.851
	43 Toluene	92	7.312	7.312	(1.195)	147751	50.0000	44.014
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	79186	50.0000	48.223
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	178365	250.000	268.19
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	121437	50.0000	51.756
	47 1,1,2-Trichloroethane	97	7.802	7.802	(1.275)	67635	50.0000	50.616
	48 Chlorodibromomethane	129	7.948	7.948	(0.926)	75515	50.0000	56.738
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	124374	50.0000	50.634
	50 1,2-Dibromoethane	107	8.140	8.140	(1.330)	65446	50.0000	51 123
	51 2-Hexanone	43	8.359	8.359	(0.974)	330072	250.000	277.58
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	241232	50.0000	
	53 Chlorobenzene	112	8 597	8 597	(1.002)	231582	50.0000	48.177
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	428836	50.0000	48 531
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	71666	50.0000	51.932
	56 m,p-xylene	106	8.750	8.750	(1.019)	338041	100.000	98.151
	57 o-Xylene	106	9.128	9.128	(1.063)	180623	50.0000	49.055
	58 Styrene	104	9.174	9.174	(1.069)	273916	50.0000	50.176
	59 Bromoform	173	9.188	9.188	(0.861)	41498	50.0000	57.289
	60 Isopropyl Benzene	105	9.401	9.401	(0.881)	420933	50.0000	47.766
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	120492	50.0000	50.589
	63 Bromobenzene	156	9.741	9.741	(0.913)	88634	50.0000	48.424
	64 N-Propyl Benzene	91	9.774	9.774	(0.916)	516687	50.0000	48.548

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	==========	====	==	======	======	========	=======	=======
65	1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	96290	50.0000	53.380
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	296502	50.0000	48.223
67	1,3,5-Trimethyl Benzene	105	9.961	9.961	(0.934)	357001	50.0000	48.541
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	29495	50.0000	54.764
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	30262	50.0000	55.088(Q)
70	4-Chloro Toluene	91	10.067	10.067	(0 944)	306605	50.0000	48.170
71	T-Butyl Benzene	119	10.241	10.241	(0.960)	303849	50.0000	48.291
72	1,2,4-Trimethylbenzene	105	10.307	10.307	(0.966)	352145	50 0000	48.782
73	S-Butyl Benzene	105	10.407	10.407	(0.976)	470804	50.0000	48.751
74	4-Isopropyl Toluene	119	10.540	10.540	(0.988)	377620	50.0000	48.503
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.994)	180839	50.0000	45.926
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.667	(1.000)	124854	50.0000	
77	1,4-Dichlorobenzene	146	10.680	10.680	(1.001)	184300	50.0000	45.949(Q)
78	N-Butyl Benzene	91	10.934	10.934	(1.025)	369499	50.0000	48.446
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	109791	50.0000	50.286
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	171814	50.0000	47.555
81	1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.110)	17986	50.0000	56.288
82	Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.169)	55643	50.0000	51 726
83	1,2,4-Trichlorobenzene	180	12.493	12.493	(1.171)	104890	50.0000	50.713
84	Naphthalene	128	12.813	12.813	(1.201)	285403	50.0000	53.415
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	95909	50.0000	50.536
172	2 pentanone	86	6.873	6.873	(1.212)	13626	50.0000	52.093

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.

Data File: /chem1/nt15.i/20150515.b/050051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 050051515.d
Lab Smp Id: VSTD050
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	157722	0.00
35 1,4-Difluorobenze	269036	134518	538072	269036	0.00
52 d5-Chlorobenzene	241232	120616	482464	241232	0.00
76 d4-1,4-Dichlorobe	124854	62427	249708	124854	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

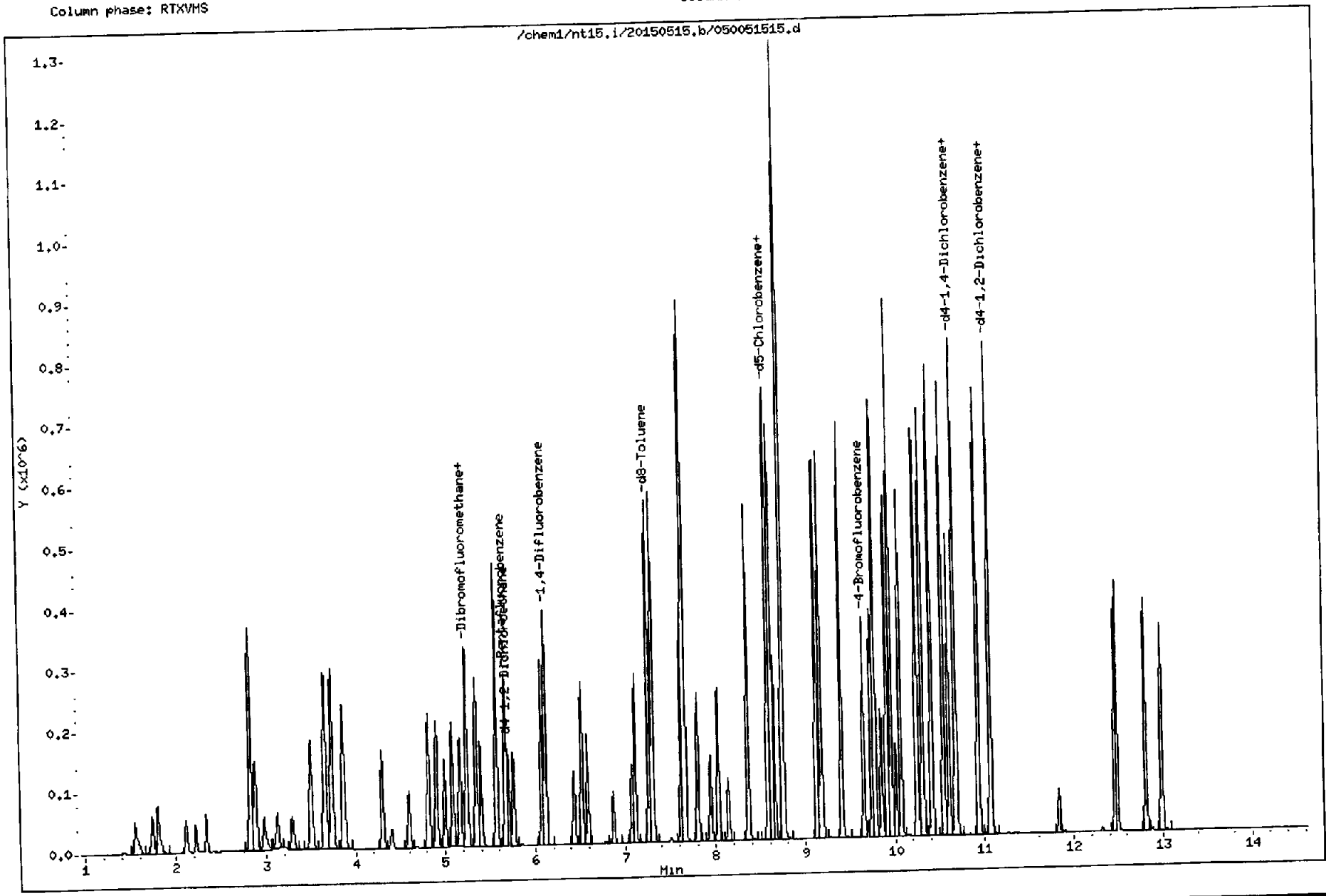
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.1/20150515.b/050051515.d
Date : 15-MAY-2015 15:52
Client ID:
Sample Info: VSTD050,5,5,0,,

Column phase: RTXVMS

Instrument: nt15.1

Operator: PC
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - 050051515.d

Lab ID: VSTD050, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

MC 5/18/15

Data File: /chem1/nt15.i/20150515.b/100051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/100051515.d
Lab Smp Id: VSTD100
Inj Date : 15-MAY-2015 16:20
Operator : PC Inst ID: nt15.i
Smp Info : VSTD100,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/V0051415S.m
Meth Date : 18-May-2015 10:22 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	163439	100.000	102.67
2 Chloromethane	50	1.742	1.742	(0.307)	166320	100.000	102.26
3 Vinyl Chloride	62	1.807	1.807	(0.319)	206730	100.000	101 88
4 Bromomethane	94	2.118	2.118	(0.374)	86357	100 000	93.047
5 Chloroethane	64	2.228	2.222	(0.393)	70078	100.000	98.205
6 Trichlorofluoromethane	101	2.339	2.339	(0.412)	84904	100.000	101.37
7 1,1-Dichloroethene	96	2 838	2.826	(0.501)	185000	100.000	99.617
8 Carbon Disulfide	76	2.838	2.826	(0.501)	534768	100.000	100.60(T)
9 112Trichloro122Trifluoroethane	101	2.890	2.884	(0.510)	148329	100.000	99.968
10 Iodomethane	142	2.988	2 981	(0.527)	148676	100.000	105.33
11 Bromoethane	108	3.139	3.126	(0.554)	102665	100.000	103.10
12 Acrolein	56	3.298	3.292	(0.582)	123920	500.000	503.42
13 Methylene Chloride	84	3.516	3.510	(0.620)	184379	100.000	100.39
14 Acetone	43	3.655	3.655	(0.645)	209831	500.000	517.76

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.668	3.668	(0 647)	197785	100.000	98.339
	16 Methyl tert butyl ether	73	3.866	3.867	(0.682)	519611	100.000	100 70
	17 1,1-Dichloroethane	63	4.302	4.303	(0.759)	312465	100.000	103.21
	18 Acrylonitrile	53	4.408	4.402	(0.777)	49592	100.000	103.53
	19 Vinyl Acetate	43	4.599	4.600	(0.811)	283777	100.000	110.71
	20 Cis-1,2-Dichloroethene	96	4.818	4 818	(0.850)	181139	100.000	101.60
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	254544	100.000	110.14
	23 Bromochloromethane	128	5 003	4.996	(0.882)	72400	100.000	103.77
	24 Chloroform	83	5.082	5.082	(0.896)	299742	100.000	99.183
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	206205	100.000	110.73
$	27 Dibromofluoromethane	111	5.242	5.243	(0.924)	74293	50.0000	51.932
	26 1,1,1-Trichloroethane	97	5.242	5.236	(0.924)	261245	100.000	103.73
	28 1,1-Dichloropropene	75	5.349	5.350	(0.874)	255973	100.000	101.00
	29 2-Butanone	72	5.396	5.396	(0.952)	94653	500.000	499.23
	30 Benzene	78	5.570	5.570	(0.910)	715091	100.000	99.108
*	31 Pentafluorobenzene	168	5.670	5.671	(1.000)	156465	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.698	(1.006)	91137	50.0000	50.242
	33 1,2-Dichloroethane	62	5.757	5.758	(0.941)	248300	100 000	100 49
	34 Trichloroethene	95	6.080	6.073	(0.993)	176537	100.000	97.218
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	267688	50.0000	
	37 Dibromomethane	93	6.436	6.436	(1.052)	87691	100.000	103.35
	38 1,2-Dichloropropane	63	6.523	6.523	(1.066)	174280	100.000	100.08
	39 Bromodichloromethane	83	6.583	6.584	(1.076)	232968	100.000	106.00
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.076	(1.157)	100686	100.000	104.09
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	274110	100.000	105.57
$	42 d8-Toluene	98	7.266	7.266	(1.187)	370336	50.0000	49.994
	43 Toluene	92	7.312	7.312	(1.195)	328388	100.000	98.317
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	164060	100.000	99.582
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	343410	500.000	518.94
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	250359	100.000	107.24
	47 1,1,2-Trichloroethane	97	7.802	7.802	(1.275)	134077	100.000	100.84
	48 Chlorodibromomethane	129	7.947	7.948	(0.926)	157788	100.000	118.16
	49 1,3-Dichloropropane	76	8.033	8.034	(0.936)	248363	100.000	100.78
	50 1,2-Dibromoethane	107	8.146	8.140	(1.331)	131144	100.000	102.96
	51 2-Hexanone	43	8.365	8.359	(0.974)	618162	500.000	518.14
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	242029	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	481416	100.000	99.821
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	881345	100.000	99.412
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	151145	100 000	109.17
	56 m,p-xylene	106	8.756	8.750	(1.020)	712750	200.000	206.27
	57 o-Xylene	106	9.127	9.128	(1.063)	377531	100.000	102.19
	58 Styrene	104	9.174	9.174	(1.069)	569467	100.000	103.97
	59 Bromoform	173	9.194	9.188	(0 861)	88149	100.000	119.94
	60 Isopropyl Benzene	105	9.407	9.401	(0.881)	884408	100.000	98.912
$	62 4-Bromofluorobenzene	95	9 654	9.654	(1.125)	120564	50.0000	50.453
	63 Bromobenzene	156	9.741	9.741	(0.913)	184305	100.000	99.239(Q)
	64 N-Propyl Benzene	91	9.780	9.774	(0.916)	1053410	100.000	97.550

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	189224	100.000	103.39
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	606968	100.000	97.293
67	1,3,5-Trimethyl Benzene	105	9.960	9.961	(0.933)	757994	100.000	101.58
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	57822	100.000	105.81
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	60563	100.000	108.66(Q)
70	4-Chloro Toluene	91	10.067	10.067	(0.943)	626764	100.000	97.049
71	T-Butyl Benzene	119	10.247	10.241	(0.960)	643183	100.000	100.75
72	1,2,4-Trimethylbenzene	105	10.314	10.307	(0.966)	738985	100.000	100.89
73	S-Butyl Benzene	105	10.407	10.407	(0.975)	984339	100.000	100.46
74	4-Isopropyl Toluene	119	10.547	10.540	(0.988)	802248	100.000	101.56
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.993)	377987	100.000	94.608
* 76	d4-1,4-Dichlorobenzene	152	10.673	10.667	(1.000)	126682	50.0000	(Q)
77	1,4-Dichlorobenzene	146	10.687	10.680	(1.001)	378109	100.000	92.909(Q)
78	N-Butyl Benzene	91	10.933	10.934	(1.024)	767440	100.000	99.170
$ 79	d4-1,2-Dichlorobenzene	152	11.066	11.067	(1.037)	110425	50.0000	49.846(Q)
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.037)	353873	100.000	96.532
81	1,2-Dibromo 3-Chloropropane	75	11.839	11.840	(1.109)	35584	100.000	109.76
82	Hexachloro 1,3-Butadiene	225	12.472	12.466	(1.169)	119381	100.000	109.38
83	1,2,4-Trichlorobenzene	180	12.492	12.493	(1.170)	222301	100.000	105.93
84	Naphthalene	128	12.812	12.813	(1.200)	577673	100.000	106.56
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	206673	100.000	107.33
172	2 pentanone	86	6.872	6.873	(1.212)	26007	100.000	100 23

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.

Data File: /chem1/nt15.i/20150515.b/100051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 100051515.d
Lab Smp Id: VSTD100
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	156465	-0.80
35 1,4-Difluorobenze	269036	134518	538072	267688	-0.50
52 d5-Chlorobenzene	241232	120616	482464	242029	0.33
76 d4-1,4-Dichlorobe	124854	62427	249708	126682	1.46

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	-0.01
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	-0.01
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.06

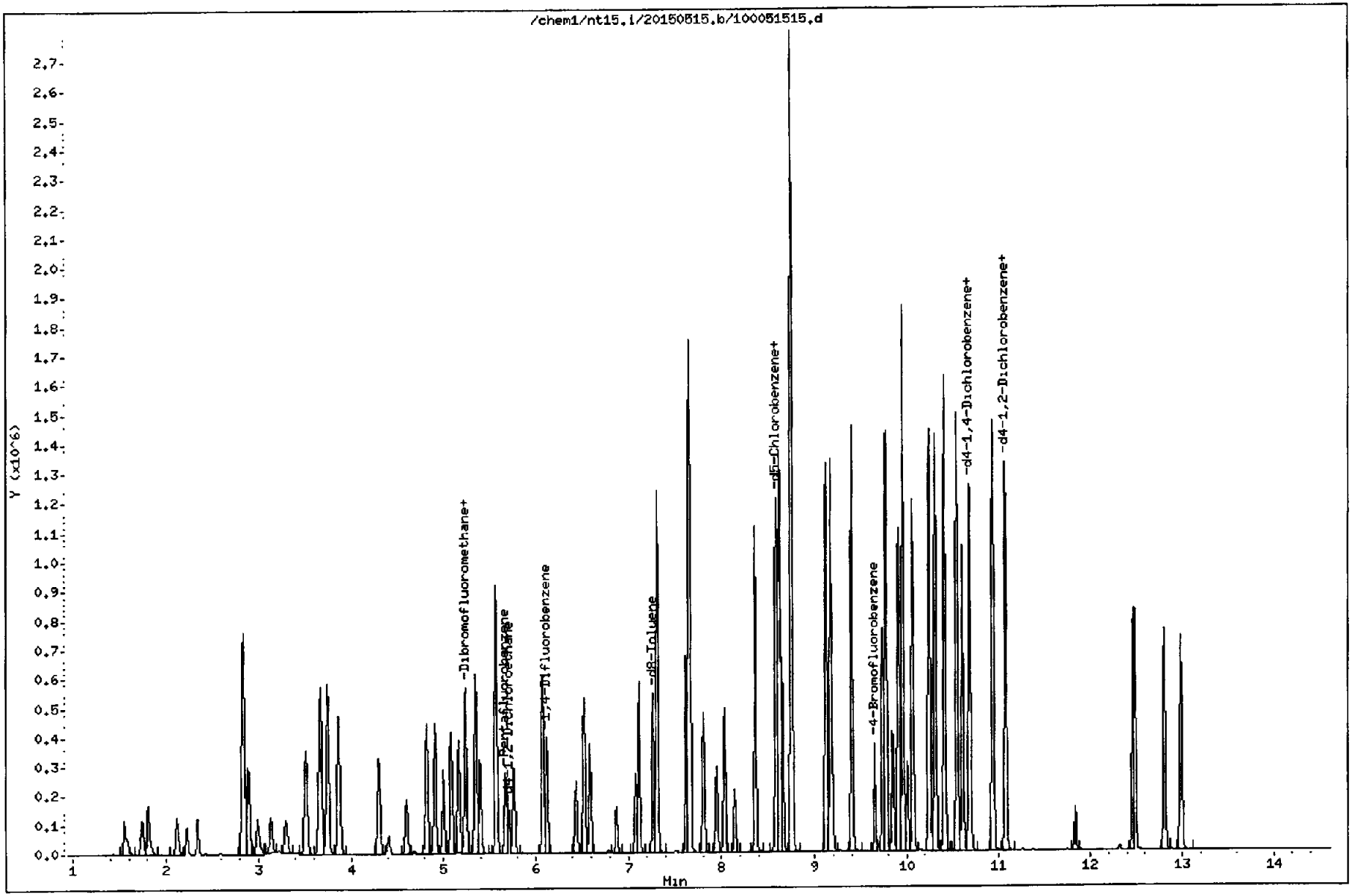
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150515.b/100051515.d
Date : 15-MAY-2015 16:20
Client ID:
Sample Info: VSTD100,5,5,0,,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 100051515.d

Lab ID: VSTD100, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS
NO CO-ELUTIONS	

Quant Method: ICAL

AGF2 00175

MC 5/18/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/150051515.d
Lab Smp Id: VSTD150
Inj Date : 15-MAY-2015 16:47
Operator : PC
Inst ID: nt15.i
Smp Info : VSTD150,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO0514155.m
Meth Date : 18-May-2015 10:22 paul
Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25
Cal File: 010051515.d
Als bottle: 1
Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE
Compound Sublist: voa.sub
Target Version: 3.50
Processing Host: cserv3

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable — Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.547	1.554	(0.273)	231556	150.000	141.51
2 Chloromethane	50	1.742	1.742	(0.307)	240323	150.000	143.74
3 Vinyl Chloride	62	1.807	1 807	(0.319)	304641	150.000	146.05
4 Bromomethane	94	2.118	2.118	(0.374)	141010	150.000	147.80
5 Chloroethane	64	2.222	2.222	(0.392)	99436	150 000	135.56
6 Trichlorofluoromethane	101	2.338	2.339	(0.412)	114362	150.000	132.82
7 1,1-Dichloroethene	96	2.819	2.826	(0.497)	267223	150.000	139.98
8 Carbon Disulfide	76	2.819	2.826	(0.497)	763037	150.000	139.64(T)
9 112Trichloro122Trifluoroethane	101	2.871	2.884	(0.506)	209109	150.000	137.10
10 Iodomethane	142	2.974	2.981	(0.525)	249077	150.000	171.65
11 Bromoethane	108	3.126	3.126	(0.551)	150684	150.000	147.21
12 Acrolein	56	3.298	3.292	(0.582)	180259	750.000	712.37
13 Methylene Chloride	84	3.509	3.510	(0.619)	270021	150.000	143.02
14 Acetone	43	3.668	3.655	(0.647)	281557	750.000	765.70

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.661	3.668	(0.646)	286674	150.000	138 66
	16 Methyl tert butyl ether	73	3.879	3.867	(0.684)	761536	150.000	143.56
	17 1,1-Dichloroethane	63	4.302	4.303	(0.759)	456612	150.000	146.72
	18 Acrylonitrile	53	4.414	4.402	(0.778)	68990	150.000	140.10
	19 Vinyl Acetate	43	4.606	4.600	(0.812)	432020	150.000	163 97
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	265895	150 000	145.08
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	372399	150.000	156.76
	23 Bromochloromethane	128	5.003	4.996	(0.882)	105588	150.000	147.22
	24 Chloroform	83	5.089	5.082	(0.897)	428146	150.000	137.82
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	298903	150.000	156.42
$	27 Dibromofluoromethane	111	5.249	5.243	(0.926)	76429	50.0000	51.972
	26 1,1,1-Trichloroethane	97	5.236	5.236	(0.923)	378259	150.000	146.11
	28 1,1-Dichloropropene	75	5.349	5.350	(0.874)	364542	150.000	140.18
	29 2-Butanone	72	5.409	5.396	(0.954)	132177	750.000	678.18
	30 Benzene	78	5.570	5.570	(0.910)	1049934	150.000	141.81
*	31 Pentafluorobenzene	168	5.670	5.671	(1.000)	160839	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.698	(1.006)	93788	50.0000	50.297
	33 1,2-Dichloroethane	62	5.764	5.758	(0.942)	358388	150.000	141.35
	34 Trichloroethene	95	6.080	6.073	(0.993)	258136	150.000	138.54
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	274679	50.0000	
	37 Dibromomethane	93	6.442	6.436	(1.053)	128383	150.000	147.46
	38 1,2-Dichloropropane	63	6.529	6.523	(1.067)	255371	150.000	142.91
	39 Bromodichloromethane	83	6.590	6.584	(1.077)	327966	150.000	145 43
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.076	(1.157)	143243	150.000	144.32
	41 Cis 1,3-dichloropropene	75	7.121	7.115	(1.164)	402927	150.000	151.23
$	42 d8-Toluene	98	7 266	7.266	(1.187)	382752	50.0000	50.355
	43 Toluene	92	7.311	7.312	(1.195)	512441	150.000	149.52
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	236355	150.000	136.59
	45 4-Methyl-2-Pentanone	58	7.662	7 656	(1.252)	488199	750.000	718.97
	46 Trans 1,3-Dichloropropene	75	7.669	7 669	(1.253)	375135	150.000	156.60
	47 1,1,2-Trichloroethane	97	7.808	7.802	(1.276)	196861	150.000	144.30
	48 Chlorodibromomethane	129	7.954	7.948	(0.927)	234087	150.000	166.91
	49 1,3-Dichloropropane	76	8.033	8.034	(0.936)	360568	150.000	139.30
	50 1,2-Dibromoethane	107	8.146	8.140	(1.331)	189826	150 000	145.23
	51 2-Hexanone	43	8.371	8.359	(0.975)	851576	750.000	679.59
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	254205	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1 002)	700883	150.000	138.37
	54 Ethyl Benzene	91	8.630	8.624	(1.005)	1267157	150.000	136.08
	55 1,1,1,2-Tetrachloroethane	131	8.663	8.657	(1.009)	226703	150.000	155.89
	56 m,p-xylene	106	8.756	8.750	(1.020)	1041760	300.000	287.04
	57 o-Xylene	106	9.127	9.128	(1.063)	565380	150.000	145.71
	58 Styrene	104	9.174	9.174	(1.069)	839319	150.000	145.90
	59 Bromoform	173	9.194	9.188	(0.861)	131516	150.000	171.71
	60 Isopropyl Benzene	105	9.407	9.401	(0.881)	1256373	150.000	134.83
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	123413	50.0000	49.171
	63 Bromobenzene	156	9.747	9.741	(0.913)	272120	150.000	140.60(Q)
	64 N-Propyl Benzene	91	9.780	9.774	(0.916)	1475713	150.000	131.13

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	65 1,1,2,2-Tetrachloroethane	83	9.854	9.847	(0.923)	261369	150.000	137.03
	66 2-Chloro Toluene	91	9.914	9.914	(0.929)	875211	150.000	134.62
	67 1,3,5-Trimethyl Benzene	105	9.967	9.961	(0.934)	1071546	150.000	137.79
	68 1,2,3-Trichloropropane	110	9.974	9.967	(0 934)	82952	150.000	145.66
	69 Trans-1,4-Dichloro 2-Butene	53	10.014	10 007	(0.938)	83250	150.000	143.32(Q)
	70 4-Chloro Toluene	91	10.067	10.067	(0.943)	891121	150.000	132.40
	71 T-Butyl Benzene	119	10.247	10.241	(0.960)	911862	150.000	137.06
	72 1,2,4-Trimethylbenzene	105	10.313	10.307	(0.966)	1052192	150.000	137.85
	73 S-Butyl Benzene	105	10.413	10.407	(0.976)	1365959	150.000	133.76
	74 4-Isopropyl Toluene	119	10.547	10.540	(0.988)	1119616	150.000	136.00
	75 1,3-Dichlorobenzene	146	10.607	10.600	(0.994)	547021	150.000	131.38
*	76 d4-1,4-Dichlorobenzene	152	10.673	10.667	(1.000)	132020	50.0000	(Q)
	77 1,4-Dichlorobenzene	146	10.687	10.680	(1.001)	548149	150.000	129.24(Q)
	78 N-Butyl Benzene	91	10.940	10.934	(1.025)	1040392	150.000	129.01
$	79 d4-1,2-Dichlorobenzene	152	11.073	11.067	(1.037)	113626	50.0000	49 217(Q)
	80 1,2-Dichlorobenzene	146	11.080	11.073	(1.038)	502774	150.000	131.60
	81 1,2-Dibromo 3-Chloropropane	75	11.839	11.840	(1.109)	46811	150.000	138.55
	82 Hexachloro 1,3-Butadiene	225	12.472	12.466	(1.169)	146898	150.000	129.14
	83 1,2,4-Trichlorobenzene	180	12.492	12.493	(1.170)	284173	150.000	129.94
	84 Naphthalene	128	12.812	12.813	(1.200)	745721	150.000	131.99
	85 1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	255881	150.000	127.51
	172 2 pentanone	86	6.879	6.873	(1.213)	36226	150.000	135.81

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 150051515.d
Lab Smp Id: VSTD150
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	160839	1.98
35 1,4-Difluorobenze	269036	134518	538072	274679	2.10
52 d5-Chlorobenzene	241232	120616	482464	254205	5.38
76 d4-1,4-Dichlorobe	124854	62427	249708	132020	5.74

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	-0.01
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	-0.01
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	-0.01
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.06

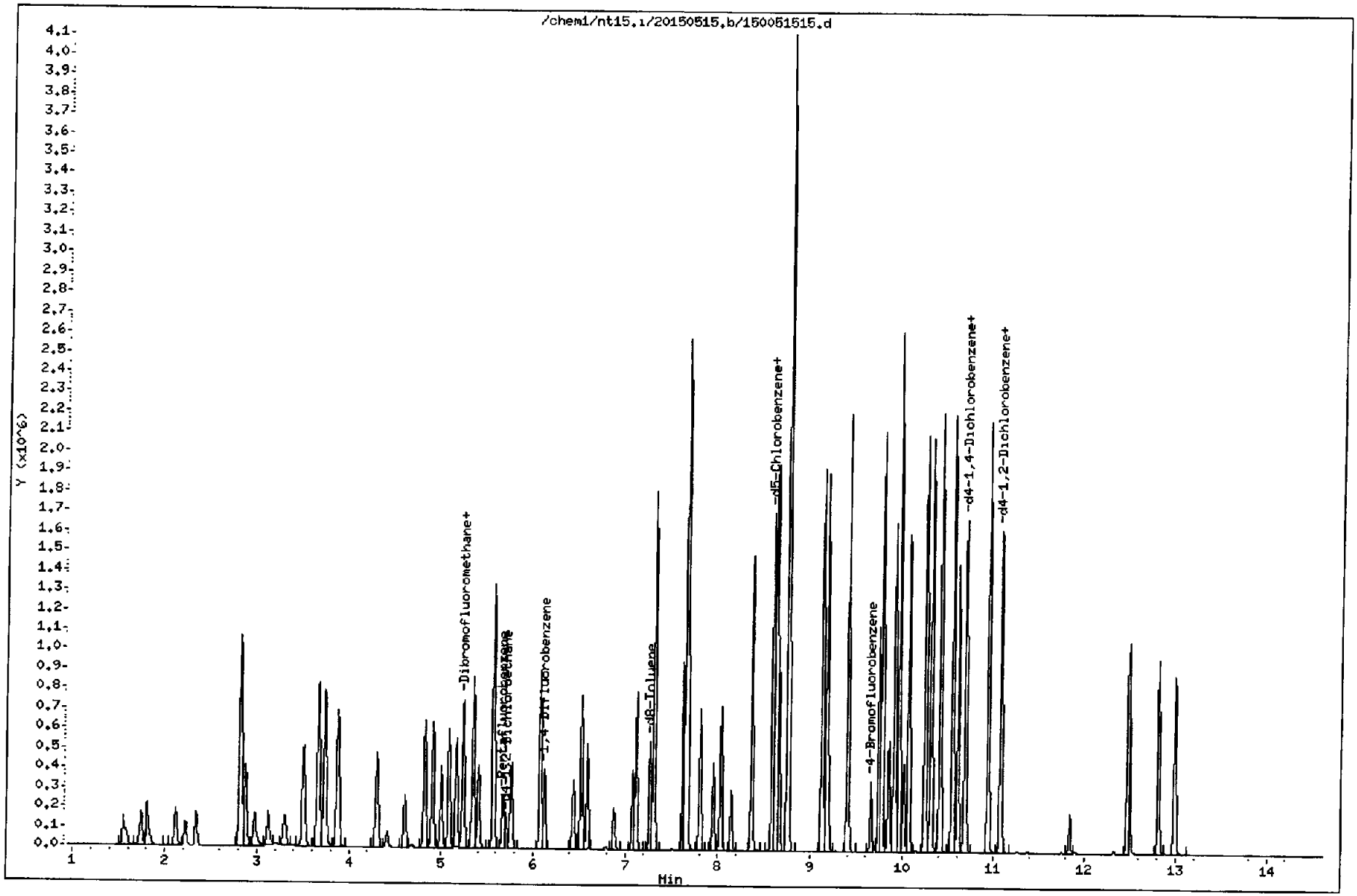
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150515.b/150051515.d
Date : 15-MAY-2015 16:47
Client ID:
Sample Info: VSTD150,5,5,0,,

Column phase: RTXVMS

Instrument: nt15.i

Operator: PC
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - 150051515.d

Lab ID: VSTD150, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/18/15

Data File: /chem1/nt15.i/20150515.b/200051515.d
Report Date: 18-May-2015 10:23

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/200051515.d
Lab Smp Id: VSTD200
Inj Date : 15-MAY-2015 17:15
Operator : PC
Smp Info : VSTD200,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul
Cal Date : 15-MAY-2015 15:25
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Processing Host: cserv3

Inst ID: nt15.i

Quant Type: ISTD
Cal File: 010051515.d
Calibration Sample, Level: 8

Compound Sublist: voa.sub

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.547	1.554	(0.273)	324308	200.000	194.33
2 Chloromethane	50	1.742	1.742	(0.307)	346444	200.000	203.17
3 Vinyl Chloride	62	1.807	1.807	(0.319)	422633	200.000	198.67
4 Bromomethane	94	2.112	2.118	(0.372)	201272	200.000	206.86
5 Chloroethane	64	2.222	2.222	(0.392)	131436	200.000	175.69
6 Trichlorofluoromethane	101	2.339	2.339	(0 412)	159427	200.000	181.56
7 1,1-Dichloroethene	96	2.806	2.826	(0.495)	308342	200.000	158.37
8 Carbon Disulfide	76	2.799	2.826	(0.494)	814500	200.000	146.16(T)
9 112Trichloro122Trifluoroethane	101	2.858	2.884	(0.504)	298131	200.000	191.66
10 Iodomethane	142	2.962	2.981	(0.522)	351965	200 000	237 84
11 Bromoethane	108	3.106	3.126	(0.548)	212131	200.000	203.21
12 Acrolein	56	3.305	3.292	(0.583)	251852	1000.00	975.94
13 Methylene Chloride	84	3.503	3.510	(0.618)	375097	200.000	194.81
14 Acetone	43	3.688	3.655	(0.650)	338589	1000.00	984.02

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	15 Trans-1,2-Dichloroethene	96	3.655	3.668	(0.645)	399861	200.000	189.64
	16 Methyl tert butyl ether	73	3.893	3.867	(0.686)	1135140	200.000	209.83
	17 1,1-Dichloroethane	63	4.296	4.303	(0.758)	634511	200.000	199.91
	18 Acrylonitrile	53	4.421	4.402	(0.780)	102071	200.000	203.25
	19 Vinyl Acetate	43	4.606	4.600	(0.812)	565479	200.000	210.44
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	373659	200.000	199.91
	22 2,2-Dichloropropane	77	4.904	4.910	(0.865)	525594	200.000	216.94
	23 Bromochloromethane	128	5.003	4.996	(0.882)	148861	200.000	203.51
	24 Chloroform	83	5.089	5.082	(0.897)	579746	200.000	182.99
	25 Carbon Tetrachloride	117	5.162	5.169	(0.843)	429947	200.000	220.01
$	27 Dibromofluoromethane	111	5.249	5.243	(0.926)	79628	50.0000	53.093
	26 1,1,1-Trichloroethane	97	5.236	5.236	(0.923)	534535	200.000	202.46
	28 1,1-Dichloropropene	75	5.343	5.350	(0.873)	517809	200.000	194.70
	29 2-Butanone	72	5.416	5.396	(0.955)	183066	1000.00	921.01
	30 Benzene	78	5.570	5.570	(0.910)	1453734	200.000	192.00
*	31 Pentafluorobenzene	168	5.671	5.671	(1.000)	164031	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.698	(1.006)	96579	50.0000	50.786
	33 1,2-Dichloroethane	62	5.764	5.758	(0.942)	495271	200.000	191.01
	34 Trichloroethene	95	6.080	6.073	(0.993)	364654	200.000	191.37
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	280904	50.0000	
	37 Dibromomethane	93	6.442	6.436	(1.053)	178851	200 000	200.87
	38 1,2-Dichloropropane	63	6.530	6.523	(1.067)	358050	200.000	195.94
	39 Bromodichloromethane	83	6.590	6.584	(1.077)	447959	200.000	194.23
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.076	(1.157)	198674	200 000	195 73
	41 Cis 1,3-dichloropropene	75	7.122	7.115	(1.164)	568512	200.000	208.66
$	42 d8-Toluene	98	7.272	7.266	(1.188)	392001	50.0000	50.429
	43 Toluene	92	7.312	7.312	(1.195)	756748	200.000	215.91
	44 Tetrachloroethene	166	7.623	7.623	(0 888)	344464	200.000	188.44
	45 4-Methyl-2-Pentanone	58	7.669	7.656	(1.253)	660505	1000.00	951.16
	46 Trans 1,3-Dichloropropene	75	7.676	7.669	(1.254)	532978	200 000	217.55(Q)
	47 1,1,2-Trichloroethane	97	7.808	7.802	(1.276)	276910	200.000	198.48
	48 Chlorodibromomethane	129	7.954	7.948	(0.927)	327436	200.000	221.00
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	505485	200.000	184.86
	50 1,2-Dibromoethane	107	8.146	8.140	(1.331)	268182	200.000	200 64
	51 2-Hexanone	43	8.372	8.359	(0.975)	1077596	1000 00	814.04
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	268546	50.0000	
	53 Chlorobenzene	112	8.604	8.597	(1.002)	1006786	200.000	188.14
	54 Ethyl Benzene	91	8.630	8.624	(1.005)	1846590	200.000	187.72
	55 1,1,1,2-Tetrachloroethane	131	8.663	8 657	(1.009)	331149	200.000	215.56
	56 m,p-xylene	106	8.756	8.750	(1.020)	1476237	400 000	385.03
	57 o-Xylene	106	9.128	9.128	(1.063)	820426	200.000	200.15
	58 Styrene	104	9.181	9.174	(1.070)	1202212	200.000	197.82
	59 Bromoform	173	9.201	9.188	(0.861)	182697	200.000	240.19
	60 Isopropyl Benzene	105	9.407	9.401	(0.881)	1847748	200.000	199.68
$	62 4-Bromofluorobenzene	95	9.661	9.654	(1.125)	128545	50.0000	48.481
	63 Bromobenzene	156	9.747	9.741	(0.913)	387648	200.000	201.68
	64 N-Propyl Benzene	91	9.781	9.774	(0.916)	2170359	200.000	194.20

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
65	1,1,2,2-Tetrachloroethane	83	9.854	9.847	(0.923)	331856	200.000	175.19
66	2-Chloro Toluene	91	9.921	9.914	(0.929)	1259243	200.000	195.03
67	1,3,5-Trimethyl Benzene	105	9.967	9.961	(0.933)	1580159	200.000	204.60
68	1,2,3-Trichloropropane	110	9.974	9.967	(0.934)	108070	200.000	191.09
69	Trans-1,4-Dichloro 2-Butene	53	10.014	10 007	(0.938)	105636	200.000	183.13(Q)
70	4-Chloro Toluene	91	10.074	10.067	(0.943)	1264806	200.000	189.23
71	T-Butyl Benzene	119	10.247	10.241	(0.959)	1347380	200 000	203.93
72	1,2,4-Trimethylbenzene	105	10.314	10.307	(0.966)	1514979	200.000	199.86
73	S-Butyl Benzene	105	10.414	10.407	(0.975)	2009306	200.000	198.14
74	4-Isopropyl Toluene	119	10.547	10 540	(0.988)	1628631	200.000	199.21
75	1,3-Dichlorobenzene	146	10.607	10.600	(0.993)	744903	200.000	180.15
* 76	d4-1,4-Dichlorobenzene	152	10.680	10.667	(1.000)	131107	50.0000	(Q)
77	1,4-Dichlorobenzene	146	10 693	10.680	(1.001)	736190	200.000	174.79(Q)
78	N-Butyl Benzene	91	10.940	10.934	(1.024)	1477653	200.000	184.50
$ 79	d4-1,2-Dichlorobenzene	152	11.073	11.067	(1.037)	110208	50.0000	48.069(Q)
80	1,2-Dichlorobenzene	146	11.080	11.073	(1.037)	662655	200.000	174.66
81	1,2-Dibromo 3-Chloropropane	75	11.839	11.840	(1.109)	59870	200.000	178.43
82	Hexachloro 1,3-Butadiene	225	12.473	12.466	(1.168)	211811	200.000	187.51
83	1,2,4-Trichlorobenzene	180	12.499	12.493	(1.170)	387093	200.000	178.23
84	Naphthalene	128	12.819	12.813	(1.200)	1011151	200.000	180 22
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.216)	363473	200.000	182.39
172	2 pentanone	86	6.886	6.873	(1.214)	50778	200.000	186.66(Q)

QC Flag Legend

T - Target compound detected outside RT window.
Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 200051515.d
Lab Smp Id: VSTD200
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	164031	4.00
35 1,4-Difluorobenze	269036	134518	538072	280904	4.41
52 d5-Chlorobenzene	241232	120616	482464	268546	11.32
76 d4-1,4-Dichlorobe	124854	62427	249708	131107	5.01

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.68	0.12

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

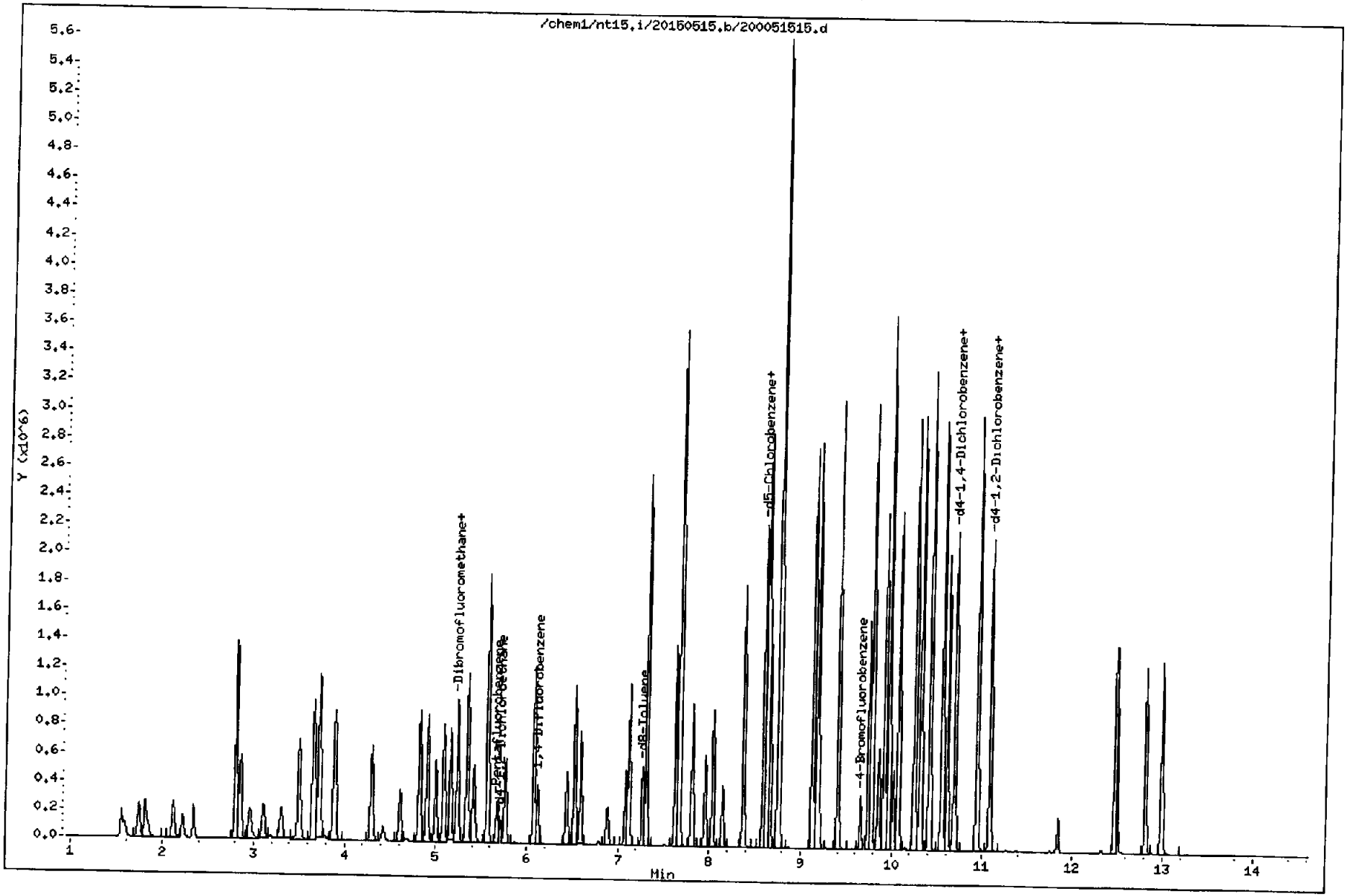
Data File: /chem1/nt15.i/20150515.b/200051515.d
Date : 15-MAY-2015 17:15
Client ID:
Sample Info: VSTD200,5,5,0,,

Instrument: nt15.i

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - 200051515.d

Lab ID: VSTD200, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Data File: /chem1/nt15.i/20150515.b/500051515.d
Report Date: 18-May-2015 10:23

MS 5/18/15

2-pent only

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150515.b/500051515.d
Lab Smp Id: PENT500
Inj Date : 15-MAY-2015 17:43
Operator : PC
Smp Info : PENT500,5,5,0,,
Misc Info : 14-
Comment :
Method : /chem1/nt15.i/20150515.b/VO051415S.m
Meth Date : 18-May-2015 10:22 paul
Cal Date : 15-MAY-2015 15:25
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 3.50
Processing Host: cserv3

Inst ID: nt15.i

Quant Type: ISTD
Cal File: 010051515.d
Calibration Sample, Level: 9

Compound Sublist: voa.sub

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable

Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	1.742	1.742	(0.307)	4616	150.000	2.814
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	2.125	2.118	(0.375)	5322	150.000	5.686
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	3.020	2.981	(0.533)	5098	150.000	3.581
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	Compound Not Detected.					
14 Acetone	43	Compound Not Detected					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	5.242	5.243	(0.924)	71745	150.000	49.724
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	5.671	5.671	(1.000)	157806	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.697	5.698	(1.005)	94286	150.000	51.536
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	274140	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	7.266	7.266	(1.187)	374391	150.000	49.352
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected					
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	243265	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	119273	150.000	49.659
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected					
	66 2-Chloro Toluene	91	Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
	68 1,2,3-Trichloropropane	110	Compound Not Detected.					
	69 Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
	71 T-Butyl Benzene	119	Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105	Compound Not Detected.					
	73 S-Butyl Benzene	105	Compound Not Detected.					
	74 4-Isopropyl Toluene	119	Compound Not Detected.					
	75 1,3-Dichlorobenzene	146	10.600	10.600	(0.994)	2412	150.000	0.6404
*	76 d4-1,4-Dichlorobenzene	152	10.667	10.667	(1.000)	119422	50.0000	
	77 1,4-Dichlorobenzene	146	10.680	10.680	(1.001)	2939	150.000	0.7661(Q)
	78 N-Butyl Benzene	91	10.933	10.934	(1.025)	5004	150.000	0.6859
$	79 d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	106651	150.000	51.069
	80 1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	2171	150.000	0.6282(Q)
	81 1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
	82 Hexachloro 1,3-Butadiene	225	12.466	12.466	(1.169)	614	150.000	0.5967
	83 1,2,4-Trichlorobenzene	180	12.492	12.493	(1.171)	3607	150.000	1 823
	84 Naphthalene	128	12.812	12.813	(1.201)	15197	150.000	2 974
	85 1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	3548	150.000	1.955
	172 2 pentanone	86	6.866	6.873	(1.211)	127739	500 000	488.10(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: 500051515.d
Lab Smp Id: PENT500
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	157806	0.05
35 1,4-Difluorobenze	269036	134518	538072	274140	1.90
52 d5-Chlorobenzene	241232	120616	482464	243265	0.84
76 d4-1,4-Dichlorobe	124854	62427	249708	119422	-4.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

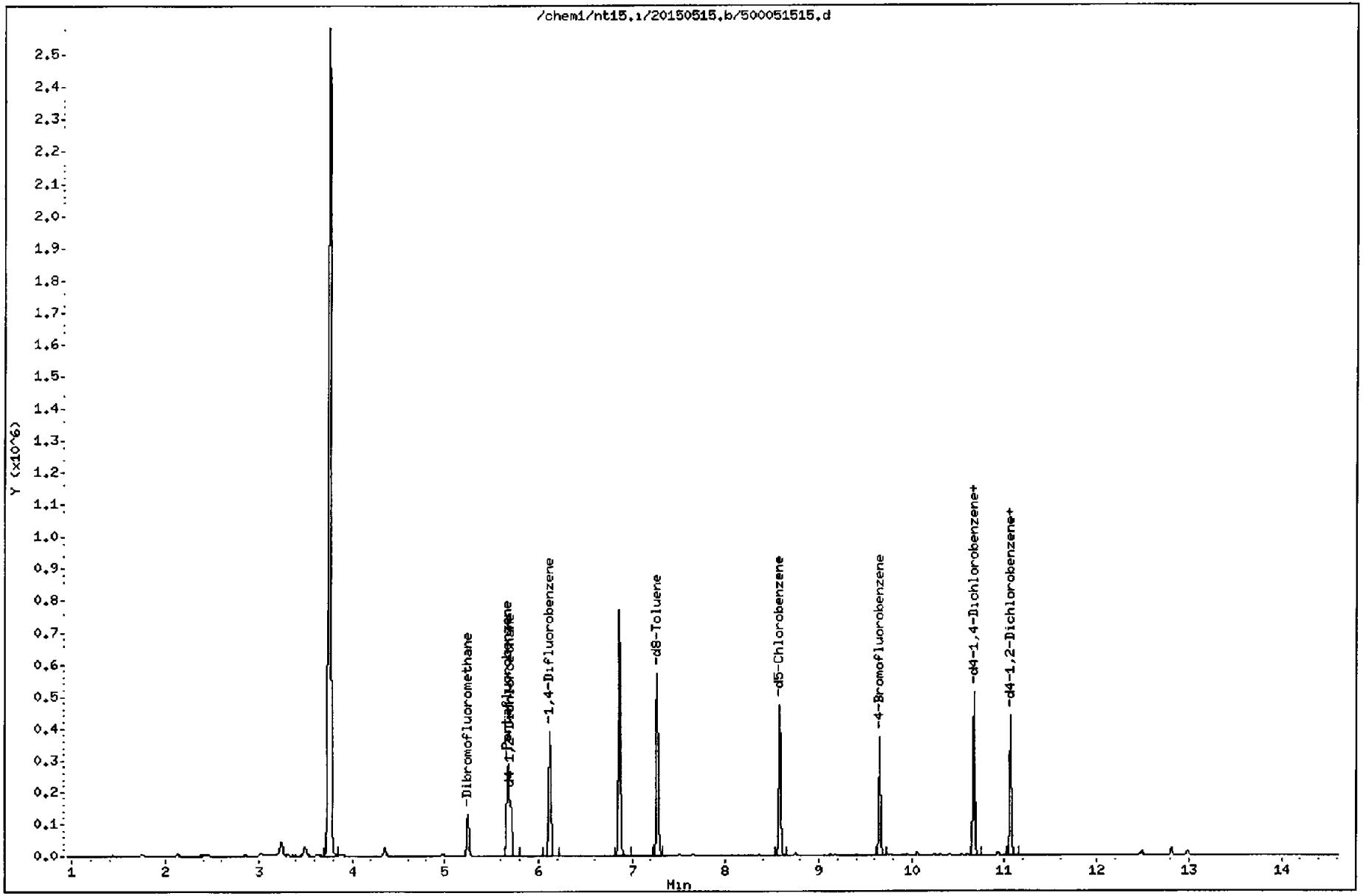
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150515.b/500051515.d
Date : 15-MAY-2015 17:43
Client ID:
Sample Info: PENT500,5,5,0,,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - 500051515.d

Lab ID: PENT500, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	3.873	3.867	(0.683)	482605	94.2526	94.253
	17 1,1-Dichloroethane	63	4.303	4.303	(0.759)	296717	98.7689	98.769
	18 Acrylonitrile	53	4.408	4.402	(0.777)	71821	151.100	151.10(R)
	19 Vinyl Acetate	43	4.600	4.600	(0.811)	164229	64.5726	64.573(R)
	20 Cis-1,2-Dichloroethene	96	4.818	4.818	(0.850)	171120	96.7276	96.728
	22 2,2-Dichloropropane	77	4.910	4.910	(0.866)	250717	109.333	109.33
	23 Bromochloromethane	128	5.003	4.996	(0.882)	139137	200.972	200.97
	24 Chloroform	83	5.082	5.082	(0.896)	288527	96.2164	96.216
	25 Carbon Tetrachloride	117	5.169	5.169	(0.845)	201593	110.687	110.69
$	27 Dibromofluoromethane	111	5.242	5.243	(0.924)	72335	50.9569	50.957
	26 1,1,1-Trichloroethane	97	5 236	5.236	(0.923)	251200	100.524	100 52
	28 1,1-Dichloropropene	75	5.350	5.350	(0.874)	234846	94 7514	94.751
	29 2-Butanone	72	5.403	5.396	(0.953)	22614	120.203	120.20(R)
	30 Benzene	78	5.570	5.570	(0.910)	698702	99.0182	99.018
*	31 Pentafluorobenzene	168	5.671	5 671	(1.000)	155255	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.698	(1.006)	89360	49.6461	49.646
	33 1,2-Dichloroethane	62	5.764	5.758	(0.942)	228768	94.6706	94.671
	34 Trichloroethene	95	6.073	6.073	(0.992)	165284	93.0714	93.071
*	35 1,4-Difluorobenzene	114	6.120	6.120	(1.000)	261791	50.0000	
	37 Dibromomethane	93	6.436	6.436	(1.052)	82878	99.8770	99.877
	38 1,2-Dichloropropane	63	6.523	6.523	(1.066)	164628	96.6668	96.667
	39 Bromodichloromethane	83	6.583	6.584	(1.076)	219468	102.107	102.11
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.076	(1.157)	102877	108.754	108.75(M)
	41 Cis 1,3-dichloropropene	75	7.115	7.115	(1.163)	252472	99.4275	99.427
$	42 d8-Toluene	98	7.266	7.266	(1.187)	361012	49.8327	49.833
	43 Toluene	92	7.312	7.312	(1.195)	323434	99.0150	99 015
	44 Tetrachloroethene	166	7.623	7.623	(0.888)	157761	99.3321	99.332
	45 4-Methyl-2-Pentanone	58	7.656	7.656	(1.251)	72540	112.088	112.09
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	210476	92.1861	92.186(Q)
	47 1,1,2-Trichloroethane	97	7.808	7.802	(1.276)	126013	96.9142	96.914
	48 Chlorodibromomethane	129	7.947	7.948	(0.926)	152025	118.097	118 10
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	242228	101.958	101.96
	50 1,2-Dibromoethane	107	8.146	8.140	(1.331)	124792	100.178	100.18
	51 2-Hexanone	43	8.365	8.359	(0.974)	138248	120.203	120 20(R)
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	233321	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	447884	96.3339	96.334
	54 Ethyl Benzene	91	8.624	8.624	(1.005)	847581	99.1718	99.172
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	140460	105.234	105.23
	56 m,p-xylene	106	8.756	8.750	(1.020)	677265	203.313	203.31
	57 o-Xylene	106	9.128	9.128	(1.063)	353494	99.2595	99.259
	58 Styrene	104	9.174	9.174	(1.069)	535840	101.484	101.48
	59 Bromoform	173	9.194	9.188	(0.861)	84591	120 918	120.92(R)
	60 Isopropyl Benzene	105	9.408	9.401	(0.881)	820056	96.3543	96.354
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	115096	49.9622	49.962
	63 Bromobenzene	156	9.747	9.741	(0.913)	178798	101.144	101.14(Q)
	64 N-Propyl Benzene	91	9.781	9.774	(0.916)	966851	94.0640	94 064
	65 1,1,2,2-Tetrachloroethane	83	9.854	9.847	(0.923)	180824	103.794	103.79

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	66 2-Chloro Toluene	91	9.914	9.914	(0.929)	562928	94.7980	94.798
	67 1,3,5-Trimethyl Benzene	105	9.961	9.961	(0.933)	729983	102.771	102.77
	68 1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	56091	107.835	107.84
	69 Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0 938)	58910	111.037	111.04(Q)
	70 4-Chloro Toluene	91	10.067	10.067	(0.943)	579759	94 3117	94.312
	71 T-Butyl Benzene	119	10.247	10.241	(0.960)	609929	100.371	100.37
	72 1,2,4-Trimethylbenzene	105	10.314	10.307	(0.966)	694281	99.5843	99.584
	73 S-Butyl Benzene	105	10.407	10.407	(0.975)	919449	98.5797	98.580
	74 4-Isopropyl Toluene	119	10.547	10.540	(0.988)	781940	103.995	103.99
	75 1,3-Dichlorobenzene	146	10.600	10.600	(0.993)	341025	89.6751	89.675
*	76 d4-1,4-Dichlorobenzene	152	10.674	10.667	(1.000)	120582	50.0000	(Q)
	77 1,4-Dichlorobenzene	146	10.687	10.680	(1.001)	345854	89.2822	89.282(Q)
	78 N-Butyl Benzene	91	10.933	10.934	(1.024)	728492	98.8993	98.899
$	79 d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	106260	50.3926	50.393(Q)
	80 1,2-Dichlorobenzene	146	11.080	11.073	(1.038)	325301	93.2271	93.227
	81 1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.109)	35656	115.541	115.54
	82 Hexachloro 1,3-Butadiene	225	12.473	12.466	(1.169)	110498	106.358	106.36
	83 1,2,4-Trichlorobenzene	180	12.493	12.493	(1.170)	197672	98.9588	98.959
	84 Naphthalene	128	12.812	12.813	(1.200)	500168	96.9267	96.927
	85 1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	178992	97.6551	97.655
	172 2 pentanone	86	6.879	6.873	(1.213)	292728	1136.91	1136.9(Q)

- spiked above cal range

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: scv051515.d
Lab Smp Id: SCV100
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

Calibration Date: 15-MAY-2015
Calibration Time: 15:52

Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	155255	-1.56
35 1,4-Difluorobenze	269036	134518	538072	261791	-2.69
52 d5-Chlorobenzene	241232	120616	482464	233321	-3.28
76 d4-1,4-Dichlorobe	124854	62427	249708	120582	-3.42

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.67	0.00
35 1,4-Difluorobenze	6.12	5.62	6.62	6.12	0.00
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name:
Client SDG: 20150515
Sample Matrix: SOLID
Fraction: VOA
Lab Smp Id: SCV100
Level: LOW
Operator: PC
Data Type: MS DATA
SampleType: LCS
SpikeList File: icv.spk
Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150515.b/VO051415S.m
Misc Info: 14-

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	100.00	130.38	130.38*	80-120
2 Chloromethane	100.00	106.88	106.88	80-120
3 Vinyl Chloride	100.00	117.04	117.04	80-120
4 Bromomethane	100.00	121.78	121.78*	80-120
5 Chloroethane	100.00	89.166	89.17	80-120
6 Trichlorofluoromet	100.00	96.011	96.01	80-120
7 1,1-Dichloroethene	100.00	95.539	95.54	80-120
8 Carbon Disulfide	100.00	98.935	98.93	80-120
9 112Trichloro122Tri	100.00	112.14	112.14	80-120
10 Iodomethane	100.00	98.017	98.02	80-120
11 Bromoethane	100.00	115.28	115.28	80-120
12 Acrolein	100.00	111.05	111.05	80-120
13 Methylene Chloride	100.00	97.502	97.50	80-120
14 Acetone	100.00	91.783	91.78	80-120
15 Trans-1,2-Dichloro	100.00	93.550	93.55	80-120
16 Methyl tert butyl	100.00	94.253	94.25	80-120
17 1,1-Dichloroethane	100.00	98.769	98.77	80-120
18 Acrylonitrile	100.00	151.10	151.10*	80-120
19 Vinyl Acetate	100.00	64.573	64.57*	80-120
20 Cis-1,2-Dichloroet	100.00	96.728	96.73	80-120
22 2,2-Dichloropropan	100.00	109.33	109.33	80-120
23 Bromochloromethane	200.00	200.97	100.49	80-120
24 Chloroform	100.00	96.216	96.22	80-120
25 Carbon Tetrachlori	100.00	110.69	110.69	80-120
26 1,1,1-Trichloroeth	100.00	100.52	100.52	80-120
28 1,1-Dichloropropen	100.00	94.751	94.75	80-120
29 2-Butanone	100.00	120.20	120.20*	80-120
30 Benzene	100.00	99.018	99.02	80-120
33 1,2-Dichloroethane	100.00	94.671	94.67	80-120
34 Trichloroethene	100.00	93.071	93.07	80-120
37 Dibromomethane	100.00	99.877	99.88	80-120
38 1,2-Dichloropropan	100.00	96.667	96.67	80-120
39 Bromodichlorometha	100.00	102.11	102.11	80-120

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
172 2 pentanone	1000.0	1136.9	113.69	80-120
40 2-Chloroethyl Viny	100.00	108.75	108.75	80-120
41 Cis 1,3-dichloropr	100.00	99.427	99.43	80-120
43 Toluene	100.00	99.015	99.01	80-120
44 Tetrachloroethene	100.00	99.332	99.33	80-120
45 4-Methyl-2-Pentano	100.00	112.09	112.09	80-120
46 Trans 1,3-Dichloro	100.00	92.186	92.19	80-120
47 1,1,2-Trichloroeth	100.00	96.914	96.91	80-120
48 Chlorodibromometha	100.00	118.10	118.10	80-120
49 1,3-Dichloropropan	100.00	101.96	101.96	80-120
50 1,2-Dibromoethane	100.00	100.18	100.18	80-120
51 2-Hexanone	100.00	120.20	120.20*	80-120
53 Chlorobenzene	100.00	96.334	96.33	80-120
54 Ethyl Benzene	100.00	99.172	99.17	80-120
55 1,1,1,2-Tetrachlor	100.00	105.23	105.23	80-120
56 m,p-xylene	200.00	203.31	101.66	80-120
57 o-Xylene	100.00	99.259	99.26	80-120
58 Styrene	100.00	101.48	101.48	80-120
59 Bromoform	100.00	120.92	120.92*	80-120
60 Isopropyl Benzene	100.00	96.354	96.35	80-120
63 Bromobenzene	100.00	101.14	101.14	80-120
64 N-Propyl Benzene	100.00	94.064	94.06	80-120
65 1,1,2,2-Tetrachlor	100.00	103.79	103.79	80-120
66 2-Chloro Toluene	100.00	94.798	94.80	80-120
67 1,3,5-Trimethyl Be	100.00	102.77	102.77	80-120
68 1,2,3-Trichloropro	100.00	107.84	107.84	80-120
69 Trans-1,4-Dichloro	100.00	111.04	111.04	80-120
70 4-Chloro Toluene	100.00	94.312	94.31	80-120
71 T-Butyl Benzene	100.00	100.37	100.37	80-120
72 1,2,4-Trimethylben	100.00	99.584	99.58	80-120
73 S-Butyl Benzene	100.00	98.580	98.58	80-120
74 4-Isopropyl Toluen	100.00	103.99	103.99	80-120
75 1,3-Dichlorobenzen	100.00	89.675	89.68	80-120
77 1,4-Dichlorobenzen	100.00	89.282	89.28	80-120
78 N-Butyl Benzene	100.00	98.899	98.90	80-120
80 1,2-Dichlorobenzen	100.00	93.227	93.23	80-120
81 1,2-Dibromo 3-Chlo	100.00	115.54	115.54	80-120
82 Hexachloro 1,3-But	100.00	106.36	106.36	80-120
83 1,2,4-Trichloroben	100.00	98.959	98.96	80-120
84 Naphthalene	100.00	96.927	96.93	80-120
85 1,2,3-Trichloroben	100.00	97.655	97.66	80-120

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	50.957	101.91	70-130

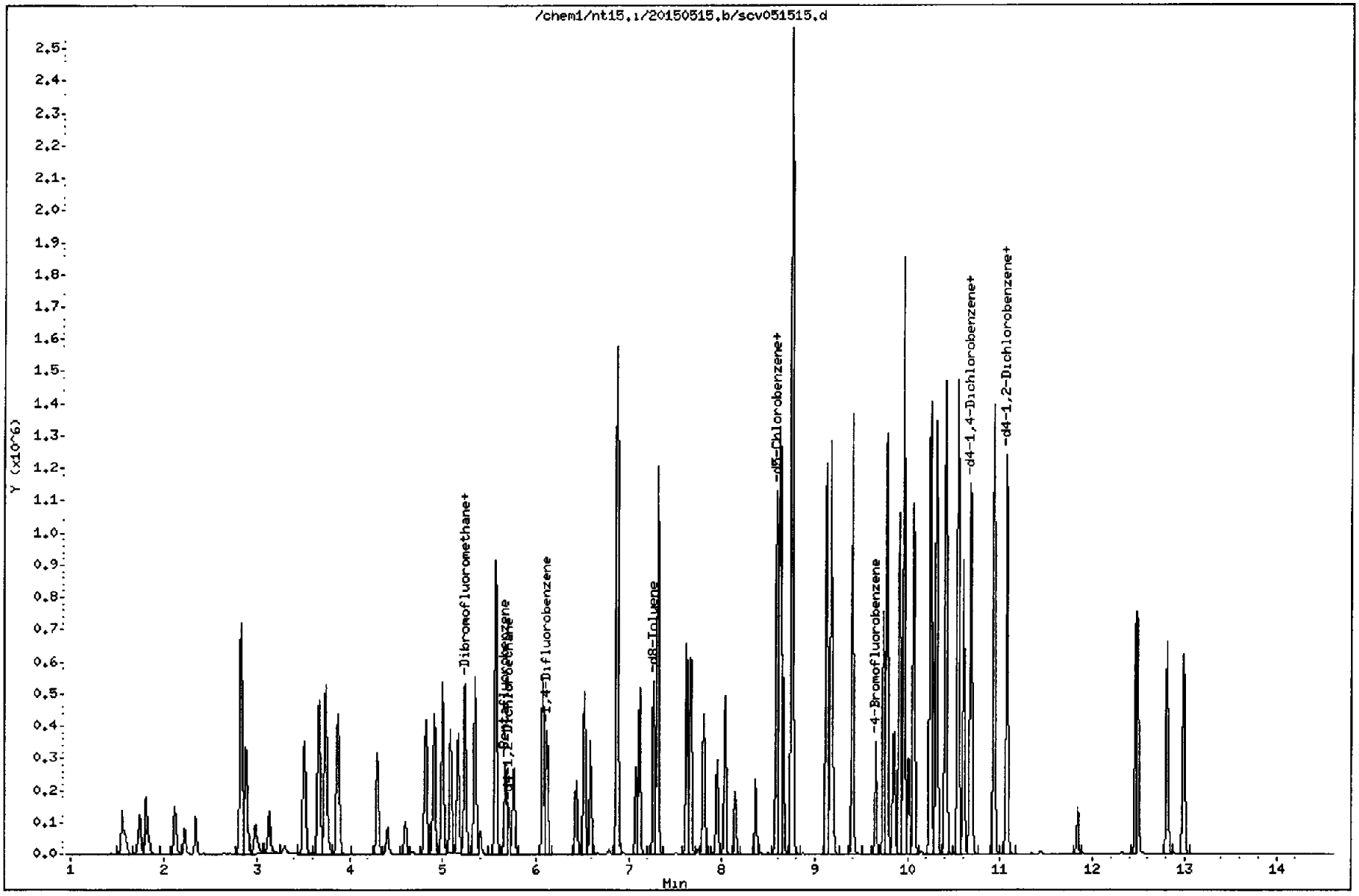
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	49.646	99.29	80-149
$ 42 d8-Toluene	50.000	49.833	99.67	77-120
$ 62 4-Bromofluorobenze	50.000	49.962	99.92	80-120
$ 79 d4-1,2-Dichloroben	50.000	50.393	100.79	80-120

Data File: /chem1/nt15.1/20150515.b/scv051515.d
Date : 15-MAY-2015 18:10
Client ID:
Sample Info: SCV100,5,5,0,,

Instrument: nt15.1

Operator: PC
Column diameter: 0.18

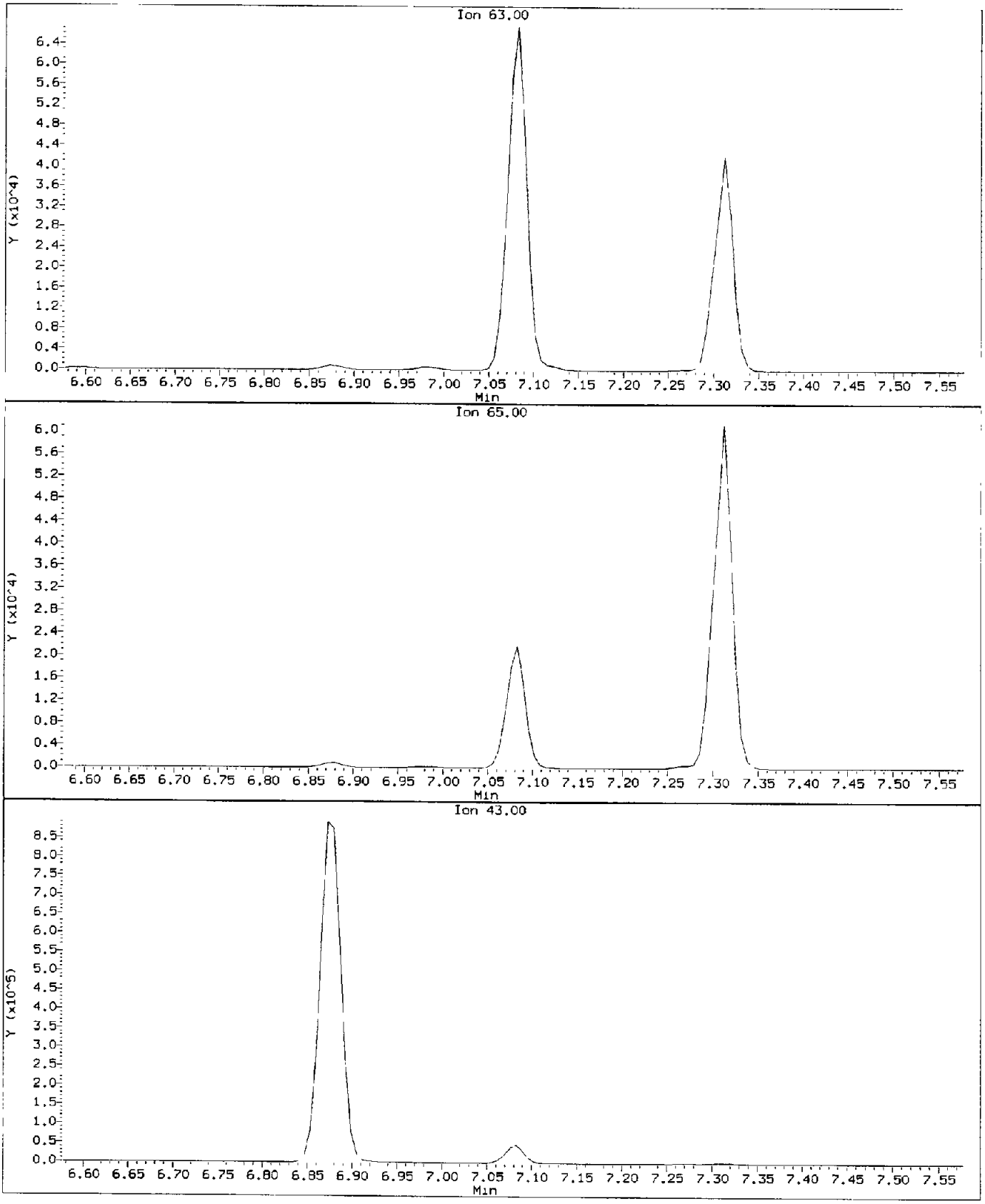
Column phase: RTXVMS



Data File: /chem1/nt15.i/20150515.b/scv051515.d
Injection Date: 15-MAY-2015 18:10
Instrument: nt15.i
Client Sample ID:

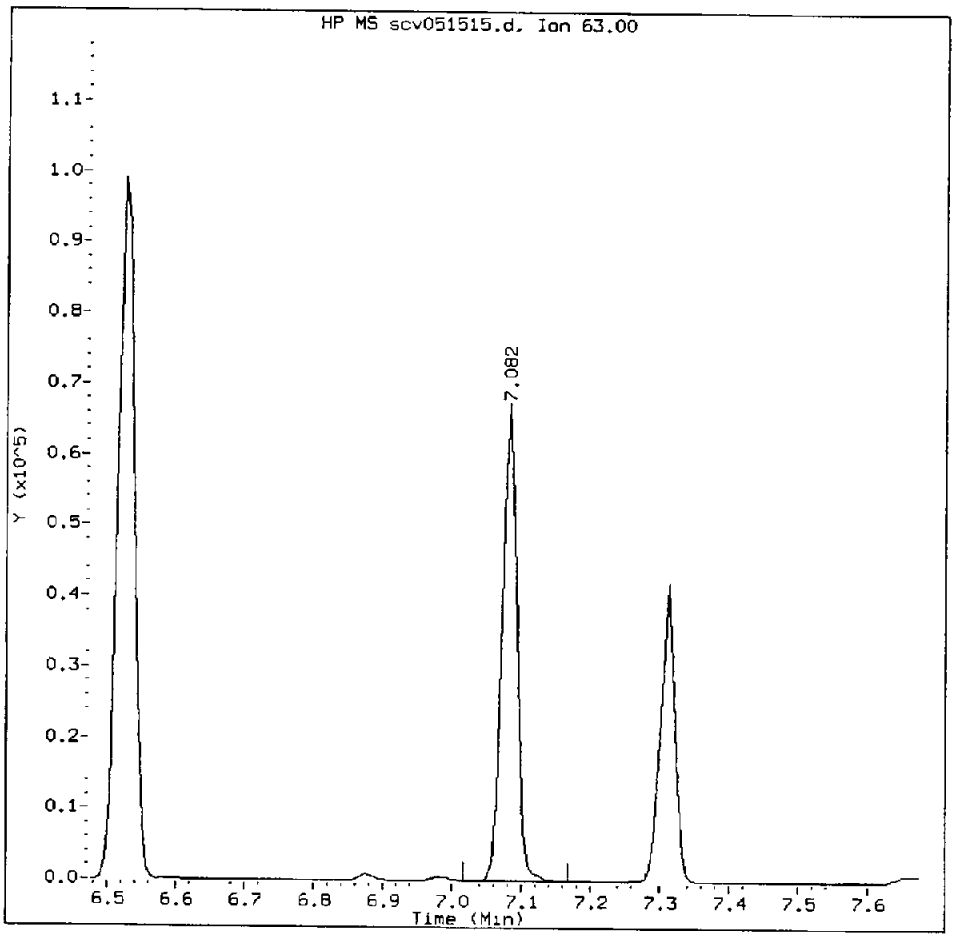
IC 5/18/15

Compound: 2-Chloroethyl Vinyl Ether
CAS Number:



SCV100, /chem1/nt15.i/20150515.b/scv051515.d

2-Chloroethyl Vinyl Ether Amount: 108.75 Area: 102877



MANUAL INTEGRATION for 2-Chloroethyl Vinyl Ether

1. Baseline correction
2. Poor chromatography
3. Peak not found
4. Totals calculation

5. Other _____

Analyst: PC Date: 5/18/15

CO-ELUTION SUMMARY FOR FILE - scv051515.d

Lab ID: SCV100, Method: VO051415S.m, Instrument: nt15.i, Date: 15-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Volatile Raw Data
Run Logs, Continuing Calibrations, and Raw Data

ARI Job ID: AGF2

Analytical Resources, Incorporated
Analytical Chemists and
Consultants

VOA Analyst Notes / Data Review Checklist

ELEMENT/NWA #: AGF2 Client: Kennedy Jenks

METHOD: **NW-TPH** (Gas) **8021B** (BTEX) **NW-VPH** (VPH) **8260C** (VOA) **8260C** (SIM VOA) **524.3**(VOA) **RSK-175**(MEE)

Instrument: NT-2 NT-3 NT-5 NT-7 (NT-15) PID-1 PID-3 FID-6

Calibration Code: V E0018

Purge Volume (mL) 5 Analysis Start Date: 5/14/15

	REVIEW 1/REVIEW 2		REVIEW 1/REVIEW 2
PH ≤ 2.0 / 5035 Preserved?	NA / Y / (N) / ___	Method Blank In Control?	(Y) / N / ✓
BFB Tune Meets Criteria?	NA / (Y) / N / ✓	Surrogate Recovery in Control?	(Y) / N / ✓
Internal STD within 50-200%?	NA / (Y) / N / ✓	BS/BSD Recovery Met?	(Y) / N / ✓
ICV/CCV Meets %D	(Y) / N / ✓	BS/BSD RPD ≤30%?	NA / ___
ICAL Q flag applied?	NA / Y / (N) / ___	MS / MSD Recovery Met?	(NA) / Y / N / ___
ICV/CCV Q Flag applied	NA / (Y) / N / ✓	MS / MSD RPD ≤30%?	NA / ___
Manual Integrations?	Y / (N) / ___	Samples Diluted?	Y / (N) / ___
Integration Summary?	(Y) / N / ✓	Special Analysis Request?	(Y) / N / ___

Bubbles/Headspace: None SM (≤ 2mm •) PB (2-4mm ●) LG (> 4mm) Head Space (> 6mm)

Detail problems, corrective actions and/or other pertinent information below:

Samples compromised, opened in non-VOA free room before VOAs were run

Copied TS from original sample IDs
Sample A needs JA flag on 2-butanone I cannot add this.

(Review 1)Analyst: [signature] **Date:** 5/22/15

(Review 2)Reviewer: [signature] **Date:** 5/22

MANUAL INTEGRATION SUMMARY FOR DATABATCH - /chem1/nt15.i/20150519.b

ARI Job No.: CC05 Method: VO051415S.m Instrument: nt15.i Date: 19-MAY-2015

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1039	cc0519.d	CC0519	CC0519	1	NO MANUAL INTEGRATION
1106	lcs0519.d	LCS0519	LCS0519	1	NO MANUAL INTEGRATION
1133	lcs0519a.d	LCS0519	LCS0519	1	NO MANUAL INTEGRATION
1200	mb0519.d	MB0519	MB0519	1	NO MANUAL INTEGRATION
1442	agf2a.d	AGF2A	SDP-02(16.	1	NO MANUAL INTEGRATION
1510	agf2b.d	AGF2B	SDP-06(12.	1	NO MANUAL INTEGRATION

PC 8/21/15

Data File: /chem1/nt15.i/20150519.b/bfb051915.d

Date : 19-MAY-2015 09:54

Client ID: BFB051915

Instrument: nt15.i

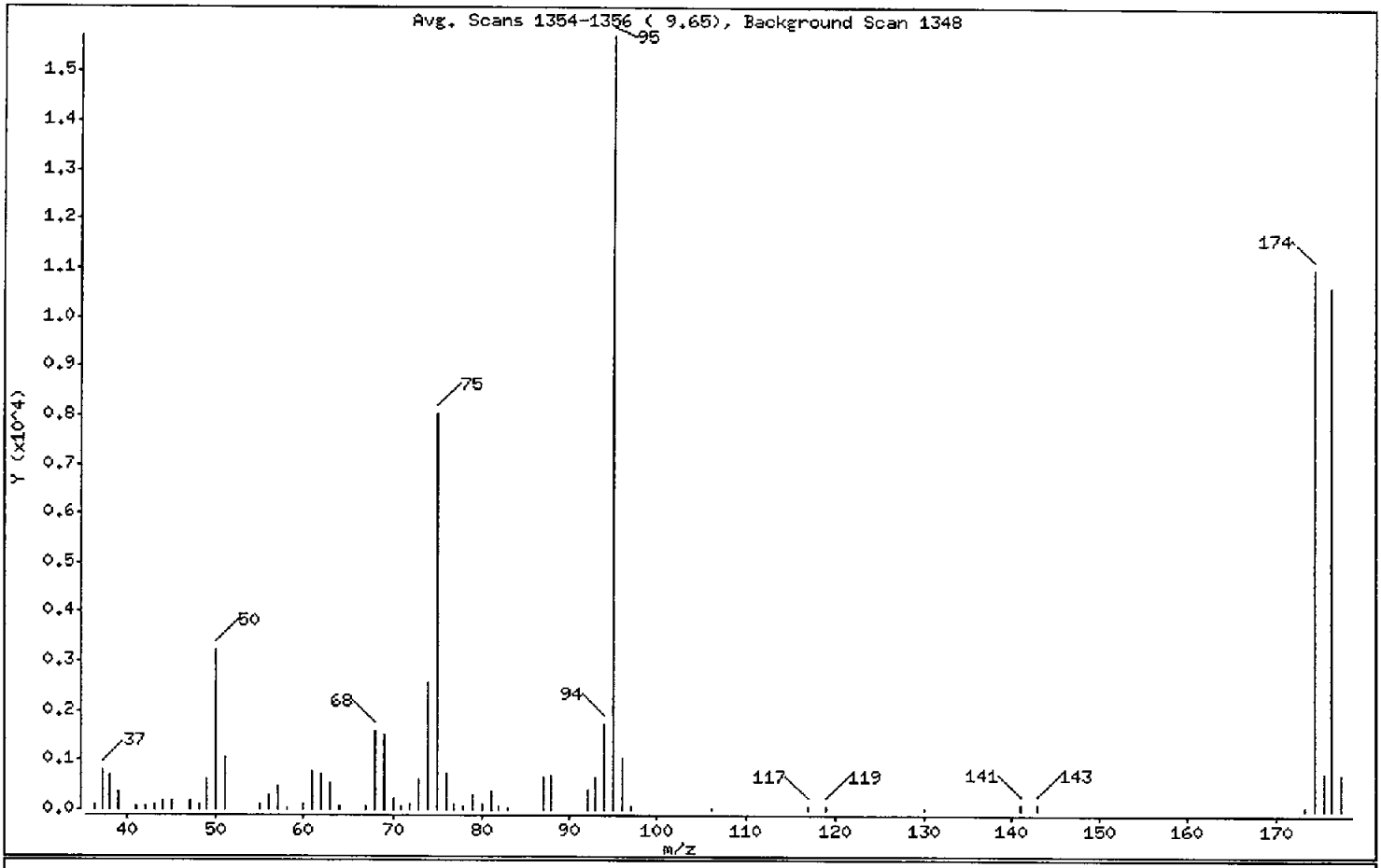
Sample Info: BFB051915,BFB051915,,1,19MAY2015,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.53
75	30.00 - 60.00% of mass 95	51.09
96	5.00 - 9.00% of mass 95	6.63
173	Less than 2.00% of mass 174	0.41 (0.58)
174	50.00 - 100.00% of mass 95	69.94
175	5.00 - 9.00% of mass 174	4.85 (6.94)
176	95.00 - 101.00% of mass 174	67.59 (96.63)
177	5.00 - 9.00% of mass 176	4.56 (6.75)

Data File: /chem1/nt15.i/20150519.b/bfb051915.d

Date : 19-MAY-2015 09:54

Client ID: BFB051915

Instrument: nt15.1

Sample Info: BFB051915,BFB051915,,1,19MAY2015,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18

Data File: bfb051915.d

Spectrum: Avg. Scans 1354-1356 (9.65), Background Scan 1348

Location of Maximum: 95.00

Number of points: 59

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	98	56.00	284	74.00	2577	95.00	15740
37.00	786	57.00	487	75.00	8042	96.00	1044
38.00	703	58.00	39	76.00	727	97.00	77
39.00	355	60.00	118	77.00	95	106.00	19
41.00	65	61.00	756	78.00	58	117.00	70
42.00	64	62.00	727	79.00	282	119.00	61
43.00	94	63.00	541	80.00	99	130.00	35
44.00	166	64.00	71	81.00	371	141.00	117
45.00	182	67.00	62	82.00	75	143.00	117
47.00	163	68.00	1609	83.00	36	173.00	64
48.00	94	69.00	1521	87.00	654	174.00	11009
49.00	633	70.00	208	88.00	682	175.00	764
50.00	3231	71.00	83	92.00	395	176.00	10638
51.00	1044	72.00	104	93.00	634	177.00	718
55.00	99	73.00	611	94.00	1727		

Data File: /chem1/nt15.1/20150519.b/bfb051915.d

Page 1

Date : 19-MAY-2015 09:54

Client ID: BFB051915

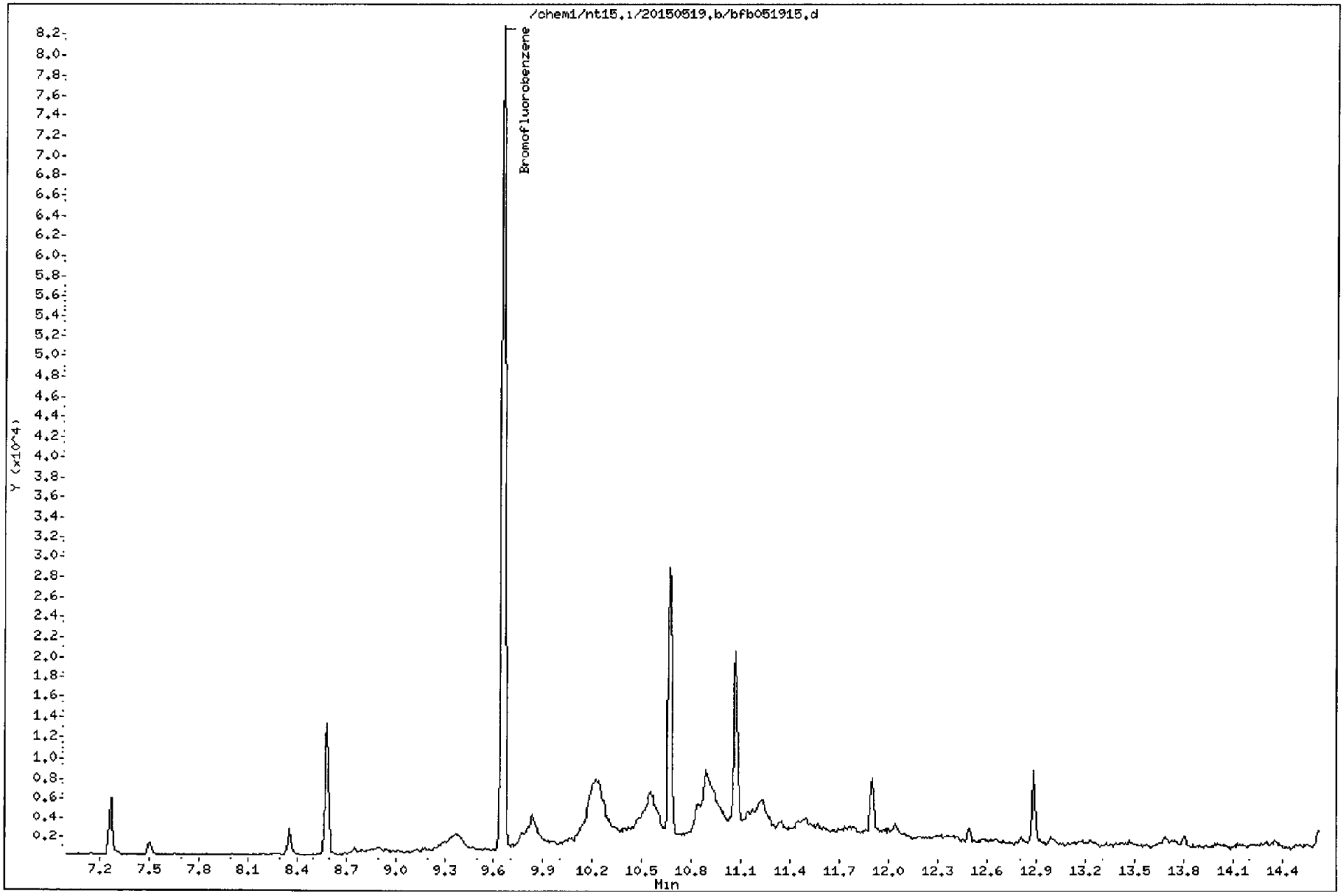
Instrument: nt15.1

Sample Info: BFB051915,BFB051915,,1,19MAY2015,

Operator: PC

Column phase: RTXVMS

Column diameter: 0.18



KK 5/21/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/cc0519.d
Lab Smp Id: CC0519 Client Smp ID: CC0519
Inj Date : 19-MAY-2015 10:39
Operator : PC Inst ID: nt15.i
Smp Info : CC0519,5,5,0,
Misc Info : 15-
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:04 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	78695	50.0000	55.378
2 Chloromethane	50	1.736	1.736	(0.306)	81250	50.0000	55.957
3 Vinyl Chloride	62	1.807	1.807	(0.318)	100759	50.0000	55 623
4 Bromomethane	94	2.118	2.118	(0.373)	53671	50.0000	64 779
5 Chloroethane	64	2.229	2.229	(0.393)	39068	50.0000	61 328
6 Trichlorofluoromethane	101	2.345	2.345	(0.413)	47577	50.0000	63.629
7 1,1-Dichloroethene	96	2.865	2.865	(0.505)	88447	50.0000	53.350
8 Carbon Disulfide	76	2.871	2.871	(0.506)	258048	50.0000	54.378
9 112Trichloro122Trifluoroethane	101	2.923	2.923	(0.515)	73521	50.0000	55.505
10 Iodomethane	142	3.014	3.014	(0.531)	60918	50.0000	48.343
11 Bromoethane	108	3.159	3.159	(0.556)	50905	50.0000	57.266
12 Acrolein	56	3.298	3.298	(0.581)	52327	250.000	238.12
13 Methylene Chloride	84	3.530	3.530	(0.622)	90632	50.0000	55.278
14 Acetone	43	3.642	3.642	(0.641)	121094	250 000	283.19
15 Trans-1,2-Dichloroethene	96	3.688	3.688	(0.650)	95861	50.0000	53.390

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
	16 Methyl tert butyl ether	73	3.860	3.860	(0.680)	235335	50 0000	51.086
	17 1,1-Dichloroethane	63	4 316	4.316	(0.760)	153610	50.0000	56.834
	18 Acrylonitrile	53	4.402	4.402	(0.775)	24757	50.0000	57.894
	19 Vinyl Acetate	43	4.606	4.606	(0.811)	157446	50.0000	68.809
	20 Cis-1,2-Dichloroethene	96	4.831	4.831	(0.851)	89637	50.0000	56.319
	22 2,2-Dichloropropane	77	4.917	4.917	(0.866)	131461	50.0000	63.721
	23 Bromochloromethane	128	5.010	5.010	(0.882)	36259	50.0000	58.214
	24 Chloroform	83	5.089	5.089	(0.896)	138368	50.0000	51.288
	25 Carbon Tetrachloride	117	5.182	5.182	(0.846)	97339	50.0000	56.141
$	27 Dibromofluoromethane	111	5.249	5.249	(0.925)	70263	50.0000	55.017
	26 1,1,1-Trichloroethane	97	5.249	5.249	(0.925)	127813	50 0000	56.851
	28 1,1-Dichloropropene	75	5.356	5.356	(0.874)	126931	50.0000	53.795
	29 2-Butanone	72	5.390	5.390	(0.949)	52843	250.000	312.21
	30 Benzene	78	5.577	5.577	(0.910)	358614	50.0000	53.385
*	31 Pentafluorobenzene	168	5.677	5.677	(1.000)	139679	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.704	(1.005)	89945	50.0000	55.544
	33 1,2-Dichloroethane	62	5.764	5.764	(0.941)	127384	50.0000	55.373
	34 Trichloroethene	95	6.087	6.087	(0 993)	89007	50.0000	52.648
*	35 1,4-Difluorobenzene	114	6.127	6.127	(1.000)	249222	50.0000	
	37 Dibromomethane	93	6.443	6.443	(1.052)	43918	50.0000	55.596
	38 1,2-Dichloropropane	63	6.530	6.530	(1.066)	86708	50.0000	53.481
	39 Bromodichloromethane	83	6.590	6.590	(1.076)	109507	50.0000	53.517
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.082	(1.156)	46650	50.0000	51.803
	41 Cis 1,3-dichloropropene	75	7.122	7.122	(1.162)	137723	50.0000	56.973
$	42 d8-Toluene	98	7.273	7.273	(1.187)	350444	50.0000	50.813
	43 Toluene	92	7.312	7.312	(1.193)	195274	50.0000	62.796
	44 Tetrachloroethene	166	7.630	7.630	(0.889)	83307	50.0000	51.451
	45 4-Methyl-2-Pentanone	58	7.650	7.650	(1.248)	161810	250.000	262.64
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.252)	122954	50.0000	56.569
	47 1,1,2-Trichloroethane	97	7.808	7.808	(1.274)	66934	50.0000	54.074
	48 Chlorodibromomethane	129	7.948	7.948	(0.926)	77653	50.0000	59.170
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	124579	50.0000	51.435
	50 1,2-Dibromoethane	107	8.146	8.146	(1.330)	65007	50.0000	54.817
	51 2-Hexanone	43	8.359	8.359	(0.974)	291960	250.000	249.00
*	52 d5-Chlorobenzene	117	8.584	8 584	(1.000)	237869	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	237742	50.0000	50.158
	54 Ethyl Benzene	91	8.630	8.630	(1.005)	434225	50.0000	49.835
	55 1,1,1,2-Tetrachloroethane	131	8.657	8 657	(1.008)	72719	50.0000	53.441
	56 m,p-xylene	106	8.756	8.756	(1.020)	342370	100.000	100.81
	57 o-Xylene	106	9.128	9.128	(1.063)	189507	50.0000	52.195
	58 Styrene	104	9.174	9.174	(1.069)	277227	50.0000	51.501
	59 Bromoform	173	9.194	9.194	(0.861)	41129	50.0000	57.100
	60 Isopropyl Benzene	105	9.408	9.408	(0.881)	428506	50.0000	48.900
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	120353	50.0000	51.245
	63 Bromobenzene	156	9.747	9.747	(0.913)	90601	50.0000	49.778
	64 N-Propyl Benzene	91	9.781	9.781	(0.916)	530827	50.0000	50.158
	65 1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	89778	50.0000	50.051

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/Kg)	AMOUNTS ON-COL (ug/Kg)
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	296947	50.0000	48.568
67	1,3,5-Trimethyl Benzene	105	9.961	9.961	(0.933)	362973	50.0000	49 631
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	27257	50.0000	50.895
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	29194	50.0000	53.444
70	4-Chloro Toluene	91	10 067	10.067	(0.943)	312754	50.0000	49.413
71	T-Butyl Benzene	119	10.247	10.247	(0.960)	308530	50.0000	49.312
72	1,2,4-Trimethylbenzene	105	10.314	10 314	(0.966)	357947	50.0000	49.865
73	S-Butyl Benzene	105	10.407	10.407	(0.975)	481408	50.0000	50.130
74	4-Isopropyl Toluene	119	10.547	10.547	(0.988)	393203	50.0000	50.790
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.993)	184732	50.0000	47.179
* 76	d4-1,4-Dichlorobenzene	152	10.674	10.674	(1.000)	124153	50.0000	
77	1,4-Dichlorobenzene	146	10.687	10.687	(1.001)	187273	50.0000	46.954
78	N-Butyl Benzene	91	10.934	10.934	(1.024)	395228	50.0000	52.112
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	109232	50 0000	50.312
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.037)	172985	50.0000	48 149
81	1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.109)	17743	50.0000	55 842
82	Hexachloro 1,3-Butadiene	225	12.473	12.473	(1.169)	56009	50.0000	52 360
83	1,2,4-Trichlorobenzene	180	12.493	12.493	(1.170)	115611	50.0000	56.213
84	Naphthalene	128	12.813	12.813	(1.200)	282934	50.0000	53.252
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	103245	50.0000	54.709
172	2 pentanone	86	6.866	6.866	(1.209)	12744	50.0000	55.018

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i
Lab File ID: cc0519.d
Analysis Type: SOIL
Lab Sample ID: CC0519
Method: /chem1/nt15.i/20150519.b/VO051415S.m

Injection Date: 19-MAY-2015 10:39
Init. Cal. Date(s): 15-MAY-2015 15-MAY-2015
Init. Cal. Times: 14:02 17:43
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
1 Dichlorodifluoromethane	0.50869	0.56340	0.56340	0.100	10.75538	20.00000	Averaged	
2 Chloromethane	55.95729	50.00000	0.58170	0.100	11.91458	20.00000	Linear	
3 Vinyl Chloride	0.64844	0.72136	0.72136	0.100	11.24676	20.00000	Averaged	
4 Bromomethane	64.77905	50.00000	0.38425	0.100	29.55811	20.00000	Linear	<-
5 Chloroethane	0.22804	0.27970	0.27970	0.100	22.65616	20.00000	Averaged	<-
6 Trichlorofluoromethane	0.26766	0.34062	0.34062	0.100	27.25737	20.00000	Averaged	<-
7 1,1-Dichloroethene	0.59346	0.63322	0.63322	0.100	6.70005	20.00000	Averaged	
8 Carbon Disulfide	54.37783	50.00000	1.84744	0.010	8.75566	20.00000	Linear	
9 112Trichloro122Trifluoroeth	0.47415	0.52636	0 52636	0.010	11.01013	20.00000	Averaged	
10 Iodomethane	0.45108	0.43613	0.43613	0.010	-3.31468	20.00000	Averaged	
11 Bromoethane	0.31820	0.36445	0.36445	0.010	14.53275	20.00000	Averaged	
12 Acrolein	0.07866	0.07493	0.07493	0.000	-4.75119	20.00000	Averaged	
13 Methylene Chloride	0.58691	0.64886	0.64886	0.010	10.55504	20.00000	Averaged	
14 Acetone	283	250	0.17339	0.001	13 27432	20.00000	Quadratic	
15 Trans-1,2-Dichloroethene	0.64272	0.68630	0.68630	0.010	6.77989	20.00000	Averaged	
16 Methyl tert butyl ether	1.64901	1.68483	1.68483	0.100	2.17209	20.00000	Averaged	
17 1,1-Dichloroethane	0.96749	1.09974	1.09974	0.100	13.66886	20.00000	Averaged	
18 Acrylonitrile	0.15308	0.17725	0.17725	0.001	15.78747	20.00000	Averaged	
19 Vinyl Acetate	0.81908	1.12720	1.12720	0.010	37.61801	20.00000	Averaged	<-
20 Cis-1,2-Dichloroethene	0.56974	0.64174	0.64174	0.010	12.63811	20.00000	Averaged	
22 2,2-Dichloropropane	0.73851	0.94117	0.94117	0.010	27.44112	20.00000	Averaged	<-
23 Bromochloromethane	0.22296	0 25959	0.25959	0.050	16.42809	20.00000	Averaged	
24 Chloroform	0.96574	0.99062	0.99062	0.100	2.57575	20.00000	Averaged	
25 Carbon Tetrachloride	0.34785	0.39057	0.39057	0.100	12.28162	20.00000	Averaged	
$ 27 Dibromofluoromethane	0.45716	0.50304	0.50304	0.100	10.03457	20.00000	Averaged	
26 1,1,1-Trichloroethane	0.80478	0.91505	0.91505	0.100	13.70225	20.00000	Averaged	
28 1,1-Dichloropropene	0.47338	0.50931	0 50931	0.010	7.58962	20.00000	Averaged	
29 2-Butanone	0.06059	0.07566	0.07566	0.001	24.88293	20.00000	Averaged	<-
30 Benzene	1.34770	1.43893	1.43893	0.100	6.76985	20.00000	Averaged	
$ 32 d4-1,2-Dichloroethane	0.57967	0.64395	0.64395	0.010	11.08791	20.00000	Averaged	
33 1,2-Dichloroethane	0.46153	0.51113	0.51113	0.100	10.74699	20.00000	Averaged	
34 Trichloroethene	0.33918	0.35714	0.35714	0.100	5.29521	20.00000	Averaged	
37 Dibromomethane	0 15849	0.17622	0.17622	0.010	11.19127	20.00000	Averaged	
38 1,2-Dichloropropane	0.32527	0.34791	0.34791	0.100	6.96234	20.00000	Averaged	
39 Bromodichloromethane	0.41052	0 43939	0.43939	0.100	7.03411	20.00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i Injection Date: 19-MAY-2015 10:39
Lab File ID: cc0519.d Init. Cal. Date(s): 15-MAY-2015 15-MAY-2015
Analysis Type: SOIL Init. Cal. Times: 14:02 17:43
Lab Sample ID: CC0519 Quant Type: ISTD
Method: /chem1/nt15.i/20150519.b/VO051415S.m

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
40 2-Chloroethyl Vinyl Ether	0.18067	0.18719	0.18719	0.000	3.60592	20.00000	Averaged	
41 Cis 1,3-dichloropropene	0.48498	0.55261	0.55261	0.100	13.94613	20.00000	Averaged	
$ 42 d8-Toluene	1.38364	1.40615	1.40615	0.010	1.62698	20.00000	Averaged	
43 Toluene	0.62388	0.78354	0.78354	0.100	25.59102	20.00000	Averaged	<-
44 Tetrachloroethene	0.34035	0.35023	0 35023	0.100	2.90131	20.00000	Averaged	
45 4-Methyl-2-Pentanone	0.12360	0.12985	0.12985	0.000	5.05473	20.00000	Averaged	
46 Trans 1,3-Dichloropropene	0.43607	0.49335	0 49335	0.010	13.13720	20.00000	Averaged	
47 1,1,2-Trichloroethane	0.24834	0.26857	0 26857	0.100	8.14761	20.00000	Averaged	
48 Chlorodibromomethane	0.27586	0.32645	0 32645	0.100	18.33965	20.00000	Averaged	
49 1,3-Dichloropropane	0.50912	0.52373	0.52373	0.100	2.86969	20.00000	Averaged	
50 1,2-Dibromoethane	0.23792	0.26084	0.26084	0.010	9.63407	20.00000	Averaged	
51 2-Hexanone	0.24647	0.24548	0.24548	0.010	-0.40099	20.00000	Averaged	
53 Chlorobenzene	0.99633	0.99947	0.99947	0.300	0.31511	20.00000	Averaged	
54 Ethyl Benzene	1.83151	1.82548	1.82548	0.100	-0.32929	20.00000	Averaged	
55 1,1,1,2-Tetrachloroethane	0.28603	0.30571	0 30571	0.010	6.88116	20.00000	Averaged	
56 m,p-xylene	0.71386	0.71966	0 71966	0.100	0.81349	20.00000	Averaged	
57 o-Xylene	0.76318	0.79669	0.79669	0.100	4.39087	20.00000	Averaged	
58 Styrene	1 13150	1.16546	1.16546	0.100	3.00185	20.00000	Averaged	
59 Bromoform	0.29008	0.33128	0.33128	0.100	14.20096	20.00000	Averaged	
60 Isopropyl Benzene	3.52907	3.45141	3.45141	0.010	-2.20046	20.00000	Averaged	
$ 62 4-Bromofluorobenzene	0.49367	0.50596	0.50596	0.200	2.49062	20.00000	Averaged	
63 Bromobenzene	0.73301	0.72975	0.72975	0.010	-0.44494	20.00000	Averaged	
64 N-Propyl Benzene	4.26210	4.27556	4.27556	0.010	0.31574	20.00000	Averaged	
65 1,1,2,2-Tetrachloroethane	0.72239	0.72313	0.72313	0.300	0.10172	20.00000	Averaged	
66 2-Chloro Toluene	2.46230	2.39177	2.39177	0.010	-2.86437	20.00000	Averaged	
67 1,3,5-Trimethyl Benzene	2.94531	2.92358	2.92358	0.010	-0.73775	20.00000	Averaged	
68 1,2,3-Trichloropropane	0.21568	0.21955	0.21955	0.010	1.79025	20.00000	Averaged	
69 Trans-1,4-Dichloro 2-Butene	0.21999	0.23514	0.23514	0.001	6.88748	20.00000	Averaged	
70 4-Chloro Toluene	2.54900	2.51909	2.51909	0.010	-1.17349	20.00000	Averaged	
71 T-Butyl Benzene	2.51977	2.48507	2.48507	0.010	-1.37699	20.00000	Averaged	
72 1,2,4-Trimethylbenzene	2.89089	2.88310	2 88310	0.010	-0.26974	20.00000	Averaged	
73 S-Butyl Benzene	3.86748	3.87752	3.87752	0.010	0.25961	20.00000	Averaged	
74 4-Isopropyl Toluene	3.11782	3.16706	3.16706	0.010	1.57958	20.00000	Averaged	
75 1,3-Dichlorobenzene	1.57689	1.48793	1 48793	0.100	-5.64165	20.00000	Averaged	
77 1,4-Dichlorobenzene	1.60626	1.50840	1 50840	0.100	-6.09227	20 00000	Averaged	

Analytical Resources, Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nt15.i
Lab File ID: cc0519.d
Analysis Type: SOIL
Lab Sample ID: CC0519
Method: /chem1/nt15.i/20150519.b/VO051415S.m

Injection Date: 19-MAY-2015 10:39
Init. Cal. Date(s): 15-MAY-2015 15-MAY-2015
Init. Cal. Times: 14:02 17:43
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF50	CCAL RRF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
78 N-Butyl Benzene	3.05435	3.18338	3.18338	0.010	4.22435	20.00000	Averaged
$ 79 d4-1,2-Dichlorobenzene	0.87436	0.87982	0.87982	0.010	0.62409	20.00000	Averaged
80 1,2-Dichlorobenzene	1.44687	1.39332	1.39332	0.100	-3.70152	20.00000	Averaged
81 1,2-Dibromo 3-Chloropropane	0.12796	0.14291	0.14291	0.010	11.68423	20.00000	Averaged
82 Hexachloro 1,3-Butadiene	0.43080	0.45113	0.45113	0.010	4.71969	20.00000	Averaged
83 1,2,4-Trichlorobenzene	0.82828	0.93120	0.93120	0.010	12.42509	20.00000	Averaged
84 Naphthalene	2.13973	2.27890	2.27890	0.010	6.50394	20.00000	Averaged
85 1,2,3-Trichlorobenzene	0.76002	0.83160	0.83160	0.010	9.41737	20.00000	Averaged
172 2 pentanone	0.08292	0.09124	0.09124	0.010	10.03619	20 00000	Averaged

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: cc0519.d
Lab Smp Id: CC0519
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: CC0519
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	139679	-11.44
35 1,4-Difluorobenze	269036	134518	538072	249222	-7.36
52 d5-Chlorobenzene	241232	120616	482464	237869	-1.39
76 d4-1,4-Dichlorobe	124854	62427	249708	124153	-0.56

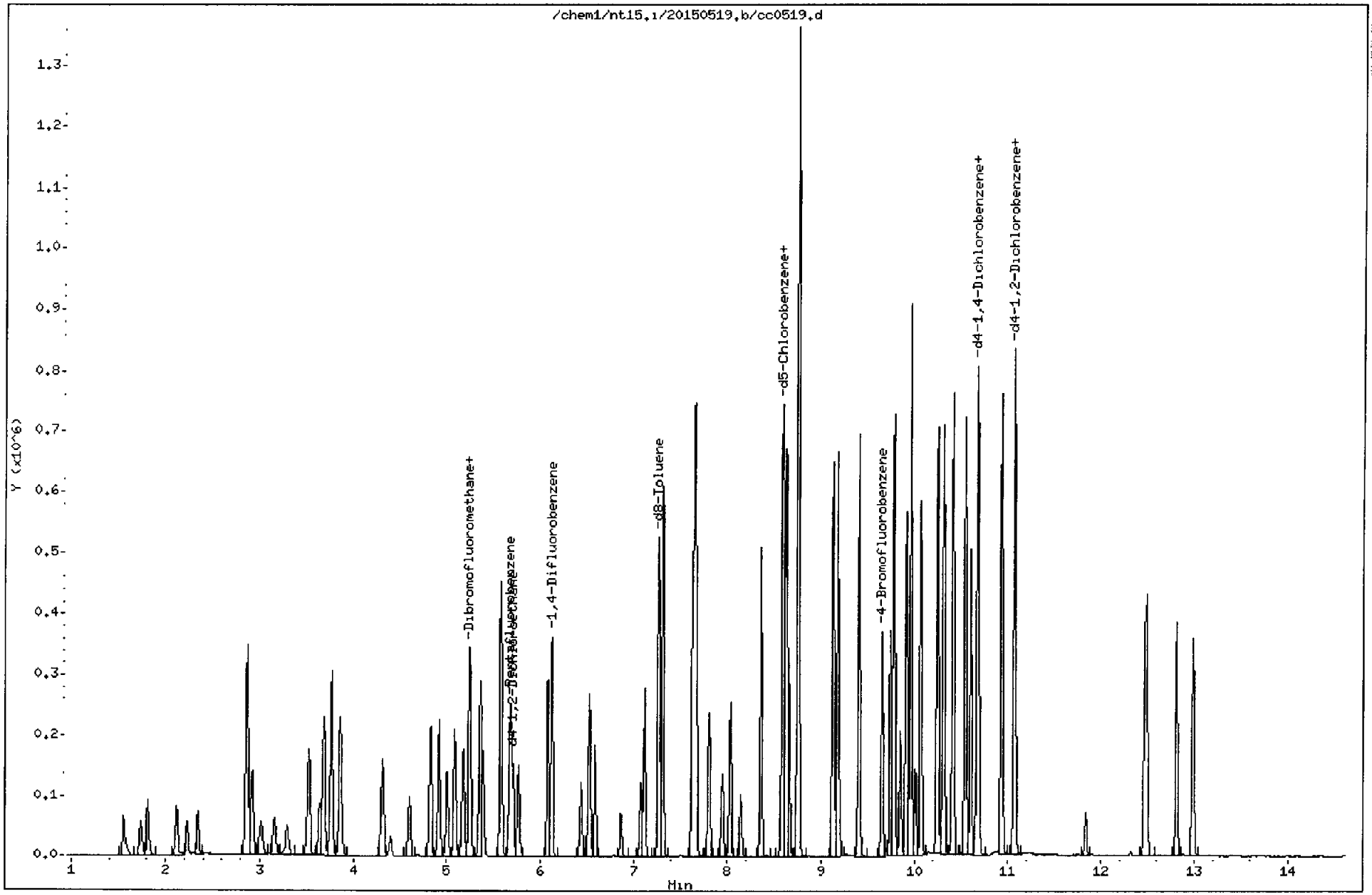
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.67	5.17	6.17	5.68	0.12
35 1,4-Difluorobenze	6.12	5.62	6.62	6.13	0.11
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem1/nt15.i/20150519.b/cc0519.d
Date : 19-MAY-2015 10:39
Client ID: CC0519
Sample Info: CC0519,5.5,0,

Instrument: nt15.i

Operator: PC
Column phase: RTXVMS
Column diameter: 0.18



CO-ELUTION SUMMARY FOR FILE - cc0519.d

Lab ID: CC0519, Method: V0051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/21/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/lcs0519.d
Lab Smp Id: LCS0519 Client Smp ID: LCS0519
Inj Date : 19-MAY-2015 11:06
Operator : PC Inst ID: nt15.i
Smp Info : LCS0519,5,5,0,
Misc Info : 15-
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:04 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	74501	54.1029	54.103
2 Chloromethane	50	1.735	1.736	(0.306)	78196	55.5757	55.576
3 Vinyl Chloride	62	1.807	1.807	(0.318)	98039	55.8527	55.853
4 Bromomethane	94	2.118	2.118	(0.373)	52807	65.7749	65.775
5 Chloroethane	64	2.228	2.229	(0.392)	37276	60.3864	60.386
6 Trichlorofluoromethane	101	2.339	2.345	(0.412)	44030	60.7679	60.768
7 1,1-Dichloroethene	96	2.864	2.865	(0.505)	83790	52.1569	52.157
8 Carbon Disulfide	76	2.864	2.871	(0.505)	244320	53.1316	53.132
9 112Trichloro122Trifluoroethane	101	2.916	2.923	(0.514)	68672	53.5027	53.503
10 Iodomethane	142	3.014	3.014	(0.531)	57510	47.0979	47.098
11 Bromoethane	108	3.153	3.159	(0.555)	48545	56.3583	56 358
12 Acrolein	56	3 291	3.298	(0.580)	51405	241.410	241.41
13 Methylene Chloride	84	3.523	3.530	(0.620)	85927	54.0839	54.084
14 Acetone	43	3.635	3.642	(0.640)	97265	221.373	221.37
15 Trans-1,2-Dichloroethene	96	3.681	3.688	(0.648)	92290	53.0449	53.045

ARI 2 0019

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	3.860	3.860	(0.680)	217851	48.8031	48.803
	17 1,1-Dichloroethane	63	4.309	4.316	(0.759)	145972	55.7357	55.736
	18 Acrylonitrile	53	4.395	4.402	(0.774)	22680	54.7323	54.732
	19 Vinyl Acetate	43	4.600	4.606	(0.810)	144385	65.1189	65.119
	20 Cis-1,2-Dichloroethene	96	4.824	4.831	(0.850)	85678	55.5530	55.553
	22 2,2-Dichloropropane	77	4.917	4.917	(0.866)	122206	61.1287	61.129
	23 Bromochloromethane	128	5.003	5.010	(0.881)	34429	57.0437	57.044
	24 Chloroform	83	5.082	5.089	(0.895)	142616	54.5529	54.553
	25 Carbon Tetrachloride	117	5.175	5.182	(0.846)	92779	56.0582	56.058
$	27 Dibromofluoromethane	111	5.242	5.249	(0.923)	66094	53.4076	53.408
	26 1,1,1-Trichloroethane	97	5.242	5.249	(0.923)	120983	55.5344	55.534
	28 1,1-Dichloropropene	75	5.356	5.356	(0.875)	121734	54.0479	54.048
	29 2-Butanone	72	5.390	5.390	(0.949)	47093	287.133	287 13
	30 Benzene	78	5.577	5.577	(0.911)	341878	53.3163	53.316
*	31 Pentafluorobenzene	168	5.677	5.677	(1.000)	135350	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.704	(1.005)	82842	52.7934	52.793
	33 1,2-Dichloroethane	62	5.764	5.764	(0.942)	117264	53.4014	53.401
	34 Trichloroethene	95	6.080	6.087	(0.993)	85461	52.9566	52.957
*	35 1,4-Difluorobenzene	114	6.120	6.127	(1.000)	237897	50.0000	
	37 Dibromomethane	93	6.436	6.443	(1.052)	41070	54.4652	54.465
	38 1,2-Dichloropropane	63	6.530	6.530	(1.067)	81904	52.9235	52.923
	39 Bromodichloromethane	83	6.583	6.590	(1.076)	108211	55.4015	55.402
	40 2-Chloroethyl Vinyl Ether	63	7.076	7.082	(1.156)	42567	49.5189	49.519
	41 Cis 1,3-dichloropropene	75	7.115	7.122	(1.163)	128376	55.6344	55.634
$	42 d8-Toluene	98	7.272	7.273	(1.188)	334521	50.8139	50.814
	43 Toluene	92	7.312	7.312	(1.195)	164110	55.2861	55.286
	44 Tetrachloroethene	166	7.629	7.630	(0.889)	78318	50.7688	50.769
	45 4-Methyl-2-Pentanone	58	7.649	7.650	(1.250)	150007	255.070	255.07
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	114326	55.1030	55.103
	47 1,1,2-Trichloroethane	97	7.802	7.808	(1.275)	62570	52.9548	52.955
	48 Chlorodibromomethane	129	7.947	7.948	(0.926)	72279	57.8066	57.807
	49 1,3-Dichloropropane	76	8.033	8.034	(0.936)	116205	50.3576	50.358
	50 1,2-Dibromoethane	107	8.146	8.146	(1.331)	60649	53.5771	53.577
	51 2-Hexanone	43	8.358	8.359	(0.974)	267038	239.040	239 04
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	226627	50.0000	
	53 Chlorobenzene	112	8 597	8.597	(1.002)	225620	49.9612	49.961
	54 Ethyl Benzene	91	8.624	8.630	(1.005)	409684	49.3512	49.351
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	68448	52.7967	52.797
	56 m,p-xylene	106	8.756	8.756	(1.020)	319675	98.7999	98.800
	57 o-Xylene	106	9.128	9.128	(1.063)	175057	50.6071	50.607
	58 Styrene	104	9.174	9.174	(1.069)	259194	50.5394	50.539
	59 Bromoform	173	9.194	9.194	(0.861)	37493	56.8143	56.814
	60 Isopropyl Benzene	105	9.407	9.408	(0.881)	406613	50.6455	50.645
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	111221	49.7064	49.706
	63 Bromobenzene	156	9.741	9.747	(0.913)	83380	50.0001	50.000
	64 N-Propyl Benzene	91	9.774	9.781	(0.916)	496239	51.1784	51.178
	65 1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	83149	50.5945	50.595

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	9.914	9.914	(0.929)	279322	49.8636	49.864
67	1,3,5-Trimethyl Benzene	105	9.960	9.961	(0.933)	340909	50.8777	50.878
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	24807	50.5568	50.557
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	26274	52.4994	52.499
70	4-Chloro Toluene	91	10 067	10.067	(0.943)	289292	49.8870	49.887
71	T-Butyl Benzene	119	10.247	10.247	(0.960)	290743	50.7188	50.719
72	1,2,4-Trimethylbenzene	105	10.307	10.314	(0 966)	331545	50.4116	50.412
73	S-Butyl Benzene	105	10.407	10.407	(0.975)	452432	51.4215	51.422
74	4-Isopropyl Toluene	119	10.540	10.547	(0.988)	368073	51.8923	51.892
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.993)	171271	47.7422	47.742
* 76	d4-1,4-Dichlorobenzene	152	10.673	10.674	(1.000)	113749	50.0000	
77	1,4-Dichlorobenzene	146	10.680	10.687	(1.001)	171299	46.8769	46.877
78	N-Butyl Benzene	91	10.933	10.934	(1.024)	364166	52.4083	52.408
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	99604	50.0736	50.074
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.037)	160402	48 7305	48.730
81	1,2-Dibromo 3-Chloropropane	75	11.839	11.840	(1.109)	15818	54.3362	54.336
82	Hexachloro 1,3-Butadiene	225	12.466	12.473	(1.168)	53943	55.0410	55.041
83	1,2,4-Trichlorobenzene	180	12.492	12.493	(1.170)	106219	56.3697	56.370
84	Naphthalene	128	12.812	12.813	(1.200)	266758	54.7996	54.800
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.217)	96146	55.6068	55.607
172	2 pentanone	86	6.866	6.866	(1.209)	11691	52.0835	52.083

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: lcs0519.d
Lab Smp Id: LCS0519
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: LCS0519
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	135350	-14.18
35 1,4-Difluorobenze	269036	134518	538072	237897	-11.57
52 d5-Chlorobenzene	241232	120616	482464	226627	-6.05
76 d4-1,4-Dichlorobe	124854	62427	249708	113749	-8.89

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.68	5.18	6.18	5.68	0.00
35 1,4-Difluorobenze	6.13	5.63	6.63	6.12	-0.11
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150519
Sample Matrix: SOLID Fraction: VOA
Lab Smp Id: LCS0519 Client Smp ID: LCS0519
Level: LOW Operator: PC
Data Type: MS DATA SampleType: LCS
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	54.103	108.21	67-142
2 Chloromethane	50.000	55.576	111.15	65-129
3 Vinyl Chloride	50.000	55.853	111.71	74-134
4 Bromomethane	50.000	65.775	131.55	40-172
5 Chloroethane	50.000	60.386	120.77	53-154
6 Trichlorofluoromet	50.000	60.768	121.54	57-161
12 Acrolein	250.00	241.41	96.56	60-130
9 112Trichloro122Tri	50.000	53.503	107.01	72-142
14 Acetone	250.00	221.37	88.55	48-132
7 1,1-Dichloroethene	50.000	52.157	104.31	73-138
11 Bromoethane	50.000	56.358	112.72	74-132
10 Iodomethane	50.000	47.098	94.20	34-181
13 Methylene Chloride	50.000	54.084	108.17	61-128
8 Carbon Disulfide	50.000	53.132	106.26	72-146
18 Acrylonitrile	50.000	54.732	109.46	59-124
15 Trans-1,2-Dichloro	50.000	53.045	106.09	73-131
19 Vinyl Acetate	50.000	65.119	130.24	54-138
17 1,1-Dichloroethane	50.000	55.736	111.47	65-139
29 2-Butanone	250.00	287.13	114.85	64-120
22 2,2-Dichloropropan	50.000	61.129	122.26	77-137
20 Cis-1,2-Dichloroet	50.000	55.553	111.11	74-124
24 Chloroform	50.000	54.553	109.11	75-126
23 Bromochloromethane	50.000	57.044	114.09	69-133
26 1,1,1-Trichloroeth	50.000	55.534	111.07	78-133
28 1,1-Dichloropropen	50.000	54.048	108.10	80-123
25 Carbon Tetrachlori	50.000	56.058	112.12	76-136
33 1,2-Dichloroethane	50.000	53.401	106.80	77-120
30 Benzene	50.000	53.316	106.63	80-120
34 Trichloroethene	50.000	52.957	105.91	80-120
38 1,2-Dichloropropan	50.000	52.923	105.85	74-120
39 Bromodichlorometha	50.000	55.402	110.80	80-122
37 Dibromomethane	50.000	54.465	108.93	80-120
40 2-Chloroethyl Viny	50.000	49.519	99.04	20-157

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	255.07	102.03	70-124
41 Cis 1,3-dichloropr	50.000	55.634	111.27	80-124
43 Toluene	50.000	55.286	110.57	78-120
46 Trans 1,3-Dichloro	50.000	55.103	110.21	80-126
51 2-Hexanone	250.00	239.04	95.62	62-128
47 1,1,2-Trichloroeth	50.000	52.955	105.91	77-120
49 1,3-Dichloropropan	50.000	50.358	100.72	77-120
44 Tetrachloroethene	50.000	50.769	101.54	76-131
48 Chlorodibromometha	50.000	57.807	115.61	77-123
50 1,2-Dibromoethane	50.000	53.577	107.15	79-120
53 Chlorobenzene	50.000	49.961	99.92	80-120
55 1,1,1,2-Tetrachlor	50.000	52.797	105.59	80-120
54 Ethyl Benzene	50.000	49.351	98.70	80-120
56 m,p-xylene	100.00	98.800	98.80	80-123
57 o-Xylene	50.000	50.607	101.21	80-120
58 Styrene	50.000	50.539	101.08	80-122
60 Isopropyl Benzene	50.000	50.645	101.29	77-127
59 Bromoform	50.000	56.814	113.63	63-120
65 1,1,2,2-Tetrachlor	50.000	50.595	101.19	71-120
68 1,2,3-Trichloropro	50.000	50.557	101.11	75-120
69 Trans-1,4-Dichloro	50.000	52.499	105.00	62-127
64 N-Propyl Benzene	50.000	51.178	102.36	76-126
63 Bromobenzene	50.000	50.000	100.00	75-120
67 1,3,5-Trimethyl Be	50.000	50.878	101.76	77-126
66 2-Chloro Toluene	50.000	49.864	99.73	76-120
70 4-Chloro Toluene	50.000	49.887	99.77	75-121
71 T-Butyl Benzene	50.000	50.719	101.44	77-125
72 1,2,4-Trimethylben	50.000	50.412	100.82	77-125
73 S-Butyl Benzene	50.000	51.422	102.84	77-127
74 4-Isopropyl Toluen	50.000	51.892	103.78	78-131
75 1,3-Dichlorobenzen	50.000	47.742	95.48	76-120
77 1,4-Dichlorobenzen	50.000	46.877	93.75	75-120
78 N-Butyl Benzene	50.000	52.408	104.82	75-134
80 1,2-Dichlorobenzen	50.000	48.730	97.46	77-120
81 1,2-Dibromo 3-Chlo	50.000	54.336	108.67	61-128
83 1,2,4-Trichloroben	50.000	56.370	112.74	75-130
82 Hexachloro 1,3-But	50.000	55.041	110.08	72-135
84 Naphthalene	50.000	54.800	109.60	71-122
85 1,2,3-Trichloroben	50.000	55.607	111.21	76-122

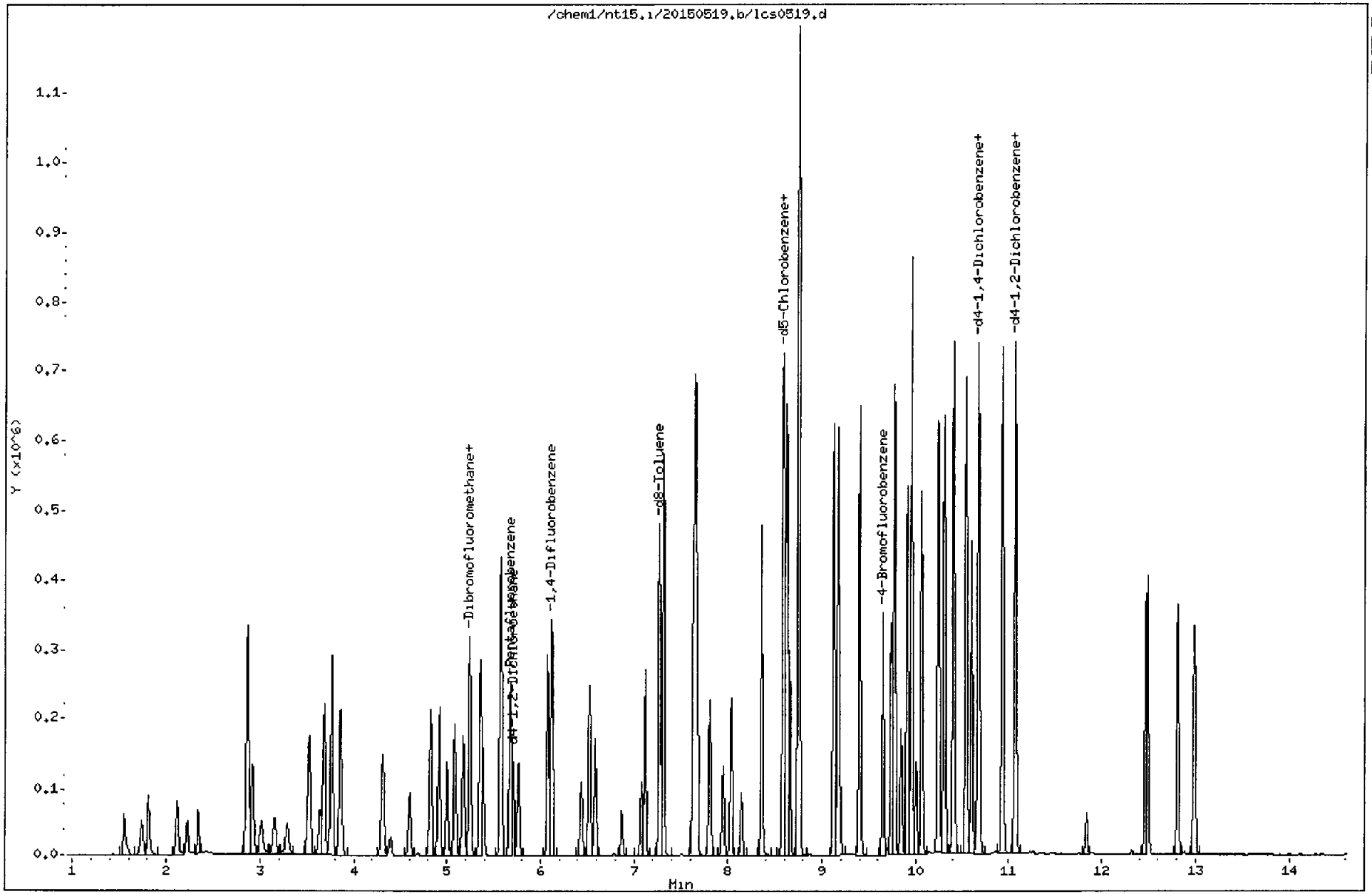
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	53.408	106.82	70-130

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	52.793	105.59	80-149
$ 42 d8-Toluene	50.000	50.814	101.63	77-120
$ 62 4-Bromofluorobenze	50.000	49.706	99.41	80-120
$ 79 d4-1,2-Dichloroben	50.000	50.074	100.15	80-120

Data File: /chem1/nt15.1/20150519.b/lcs0519.d
Date : 19-MAY-2015 11:06
Client ID: LCS0519
Sample Info: LCS0519,5,5,0,

Instrument: nt15.1
Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - lcs0519.d

Lab ID: LCS0519, Method: VO051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/21/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/lcs0519a.d
Lab Smp Id: LCS0519 Client Smp ID: LCS0519
Inj Date : 19-MAY-2015 11:33
Operator : PC Inst ID: nt15.i
Smp Info : LCS0519,5,5,0,
Misc Info : 15-
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:04 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	1.554	1.554	(0.274)	73147	51.8317	51.832
2 Chloromethane	50	1.736	1.736	(0.306)	76636	53.1465	53.146
3 Vinyl Chloride	62	1.807	1.807	(0.318)	95458	53.0634	53.063
4 Bromomethane	94	2.118	2.118	(0.373)	52499	63.8053	63.805
5 Chloroethane	64	2.228	2.229	(0.393)	36110	57.0798	57.080
6 Trichlorofluoromethane	101	2.339	2.345	(0.412)	43097	58.0381	58.038
7 1,1-Dichloroethene	96	2.858	2.865	(0.503)	82762	50.2679	50.268
8 Carbon Disulfide	76	2.864	2.871	(0.505)	241152	51.1708	51.171
9 112Trichloro122Trifluoroethane	101	2.916	2.923	(0.514)	67317	51.1752	51.175
10 Iodomethane	142	3.014	3.014	(0.531)	55762	44.5586	44.559
11 Bromoethane	108	3.153	3.159	(0.555)	48391	54.8167	54.817
12 Acrolein	56	3.291	3.298	(0.580)	58642	268.716	268.72
13 Methylene Chloride	84	3.523	3.530	(0.620)	88164	54.1459	54.146
14 Acetone	43	3.642	3.642	(0.641)	112413	258.968	258.97
15 Trans-1,2-Dichloroethene	96	3.681	3.688	(0.648)	91435	51.2789	51.279

AFA 80220

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	3.860	3.860	(0.680)	229554	50.1776	50.178
	17 1,1-Dichloroethane	63	4.309	4.316	(0.759)	145545	54.2250	54 225
	18 Acrylonitrile	53	4.395	4.402	(0.774)	25661	60.4256	60.426
	19 Vinyl Acetate	43	4.600	4.606	(0.810)	155055	68.2351	68.235
	20 Cis-1,2-Dichloroethene	96	4.824	4.831	(0.850)	86544	54.7535	54.754
	22 2,2-Dichloropropane	77	4.917	4.917	(0.866)	121307	59.2077	59.208
	23 Bromochloromethane	128	5.003	5.010	(0.881)	35490	57.3755	57.375
	24 Chloroform	83	5.082	5.089	(0.895)	143597	53.5962	53.596
	25 Carbon Tetrachloride	117	5 176	5.182	(0.846)	91575	54.4613	54.461
$	27 Dibromofluoromethane	111	5.242	5.249	(0.923)	67967	53.5892	53.589
	26 1,1,1-Trichloroethane	97	5.242	5.249	(0.923)	121156	54.2647	54 265
	28 1,1-Dichloropropene	75	5.356	5 356	(0.875)	118973	51.9928	51.993
	29 2-Butanone	72	5.390	5.390	(0.949)	54125	322.006	322.01(R)
	30 Benzene	78	5 577	5.577	(0.911)	340757	52.3068	52.307
*	31 Pentafluorobenzene	168	5.677	5.677	(1.000)	138714	50.0000	
$	32 d4-1,2-Dichloroethane	65	5 704	5.704	(1.005)	86124	53.5540	53.554
	33 1,2-Dichloroethane	62	5.758	5.764	(0.941)	121236	54.3431	54.343
	34 Trichloroethene	95	6.080	6.087	(0.993)	82346	50.2250	50.225
*	35 1,4-Difluorobenzene	114	6.120	6.127	(1.000)	241693	50.0000	
	37 Dibromomethane	93	6.436	6.443	(1.052)	43869	57.2630	57.263
	38 1,2-Dichloropropane	63	6.523	6.530	(1.066)	84096	53.4858	53.486
	39 Bromodichloromethane	83	6.583	6.590	(1.076)	110953	55.9133	55 913
	40 2-Chloroethyl Vinyl Ether	63	7.082	7.082	(1.157)	46225	52.9299	52.930
	41 Cis 1,3-dichloropropene	75	7.115	7.122	(1.163)	132197	56.3903	56.390
$	42 d8-Toluene	98	7.272	7.273	(1.188)	341677	51.0856	51 086
	43 Toluene	92	7.312	7.312	(1.195)	161218	53.4589	53.459
	44 Tetrachloroethene	166	7.623	7.630	(0.888)	76654	49.5812	49.581
	45 4-Methyl-2-Pentanone	58	7.649	7.650	(1.250)	168289	281.662	281.66
	46 Trans 1,3-Dichloropropene	75	7.669	7.669	(1.253)	119241	56.5691	56.569
	47 1,1,2-Trichloroethane	97	7.802	7.808	(1.275)	66212	55.1570	55 157
	48 Chlorodibromomethane	129	7.947	7.948	(0.926)	75570	60.3068	60.307
	49 1,3-Dichloropropane	76	8.034	8.034	(0.936)	122966	53.1705	53.170
	50 1,2-Dibromoethane	107	8.146	8.146	(1.331)	65203	56.6950	56.695
	51 2-Hexanone	43	8.358	8.359	(0.974)	306495	273.758	273.76
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	227125	50.0000	
	53 Chlorobenzene	112	8.597	8.597	(1.002)	224942	49.7018	49.702
	54 Ethyl Benzene	91	8.624	8.630	(1.005)	409943	49.2741	49.274
	55 1,1,1,2-Tetrachloroethane	131	8.657	8.657	(1.008)	69618	53.5814	53.581
	56 m,p-xylene	106	8.756	8.756	(1.020)	321291	99.0815	99.082
	57 o-Xylene	106	9.128	9.128	(1.063)	173663	50.0940	50.094
	58 Styrene	104	9.174	9.174	(1.069)	262754	51.1211	51.121
	59 Bromoform	173	9.188	9.194	(0.861)	41297	59.9181	59.918
	60 Isopropyl Benzene	105	9.401	9.408	(0.881)	400675	47.7847	47.785
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	115342	51.4350	51.435
	63 Bromobenzene	156	9.741	9.747	(0.913)	86656	49.7563	49.756
	64 N-Propyl Benzene	91	9.774	9.781	(0.916)	489782	48.3655	48.366
	65 1,1,2,2-Tetrachloroethane	83	9.847	9.847	(0.923)	91322	53.2061	53.206

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	9 914	9.914	(0.929)	280411	47.9304	47.930
67	1,3,5-Trimethyl Benzene	105	9.961	9.961	(0.934)	334160	47.7508	47.751
68	1,2,3-Trichloropropane	110	9.967	9.967	(0.934)	27852	54.3504	54.350
69	Trans-1,4-Dichloro 2-Butene	53	10.007	10.007	(0.938)	28557	54.6344	54.634
70	4-Chloro Toluene	91	10.067	10.067	(0.944)	291195	48.0807	48.081
71	T-Butyl Benzene	119	10.240	10.247	(0.960)	286517	47.8572	47.857
72	1,2,4-Trimethylbenzene	105	10.307	10.314	(0.966)	331442	48.2539	48.254
73	S-Butyl Benzene	105	10.407	10.407	(0.976)	440564	47.9444	47.944
74	4-Isopropyl Toluene	119	10.540	10.547	(0.988)	364088	49.1489	49.149
75	1,3-Dichlorobenzene	146	10.600	10.600	(0.994)	173010	46.1772	46.177
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.674	(1.000)	118799	50.0000	
77	1,4-Dichlorobenzene	146	10.680	10.687	(1.001)	176186	46.1652	46.165
78	N-Butyl Benzene	91	10.933	10.934	(1.025)	350795	48.3384	48.338
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	104387	50.2475	50.248
80	1,2-Dichlorobenzene	146	11.073	11.073	(1.038)	165101	48.0260	48 026
81	1,2-Dibromo 3-Chloropropane	75	11.840	11.840	(1.110)	17771	58.4522	58.452
82	Hexachloro 1,3-Butadiene	225	12.466	12.473	(1.169)	51641	50.4525	50.452
83	1,2,4-Trichlorobenzene	180	12.493	12.493	(1.171)	105927	53.8254	53 825
84	Naphthalene	128	12.812	12.813	(1.201)	285662	56.1888	56.189
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	98642	54.6255	54.625
172	2 pentanone	86	6.866	6.866	(1.209)	13204	57.3980	57.398

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: lcs0519a.d
Lab Smp Id: LCS0519
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: LCS0519
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	138714	-12.05
35 1,4-Difluorobenze	269036	134518	538072	241693	-10.16
52 d5-Chlorobenzene	241232	120616	482464	227125	-5.85
76 d4-1,4-Dichlorobe	124854	62427	249708	118799	-4.85

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.68	5.18	6.18	5.68	0.00
35 1,4-Difluorobenze	6.13	5.63	6.63	6.12	-0.11
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150519
Sample Matrix: SOLID Fraction: VOA
Lab Smp Id: LCS0519 Client Smp ID: LCS0519
Level: LOW Operator: PC
Data Type: MS DATA SampleType: LCS
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	51.832	103.66	67-142
2 Chloromethane	50.000	53.146	106.29	65-129
3 Vinyl Chloride	50.000	53.063	106.13	74-134
4 Bromomethane	50.000	63.805	127.61	40-172
5 Chloroethane	50.000	57.080	114.16	53-154
6 Trichlorofluoromet	50.000	58.038	116.08	57-161
12 Acrolein	250.00	268.72	107.49	60-130
9 112Trichloro122Tri	50.000	51.175	102.35	72-142
14 Acetone	250.00	258.97	103.59	48-132
7 1,1-Dichloroethene	50.000	50.268	100.54	73-138
11 Bromoethane	50.000	54.817	109.63	74-132
10 Iodomethane	50.000	44.559	89.12	34-181
13 Methylene Chloride	50.000	54.146	108.29	61-128
8 Carbon Disulfide	50.000	51.171	102.34	72-146
18 Acrylonitrile	50.000	60.426	120.85	59-124
15 Trans-1,2-Dichloro	50.000	51.279	102.56	73-131
19 Vinyl Acetate	50.000	68.235	136.47	54-138
17 1,1-Dichloroethane	50.000	54.225	108.45	65-139
29 2-Butanone	250.00	322.01	128.80*	64-120
22 2,2-Dichloropropan	50.000	59.208	118.42	77-137
20 Cis-1,2-Dichloroet	50.000	54.754	109.51	74-124
24 Chloroform	50.000	53.596	107.19	75-126
23 Bromochloromethane	50.000	57.375	114.75	69-133
26 1,1,1-Trichloroeth	50.000	54.265	108.53	78-133
28 1,1-Dichloropropen	50.000	51.993	103.99	80-123
25 Carbon Tetrachlori	50.000	54.461	108.92	76-136
33 1,2-Dichloroethane	50.000	54.343	108.69	77-120
30 Benzene	50.000	52.307	104.61	80-120
34 Trichloroethene	50.000	50.225	100.45	80-120
38 1,2-Dichloropropan	50.000	53.486	106.97	74-120
39 Bromodichlorometha	50.000	55.913	111.83	80-122
37 Dibromomethane	50.000	57.263	114.53	80-120
40 2-Chloroethyl Viny	50.000	52.930	105.86	20-157

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
45 4-Methyl-2-Pentano	250.00	281.66	112.66	70-124
41 Cis 1,3-dichloropr	50.000	56.390	112.78	80-124
43 Toluene	50.000	53.459	106.92	78-120
46 Trans 1,3-Dichloro	50.000	56.569	113.14	80-126
51 2-Hexanone	250.00	273.76	109.50	62-128
47 1,1,2-Trichloroeth	50.000	55.157	110.31	77-120
49 1,3-Dichloropropan	50.000	53.170	106.34	77-120
44 Tetrachloroethene	50.000	49.581	99.16	76-131
48 Chlorodibromometha	50.000	60.307	120.61	77-123
50 1,2-Dibromoethane	50.000	56.695	113.39	79-120
53 Chlorobenzene	50.000	49.702	99.40	80-120
55 1,1,1,2-Tetrachlor	50.000	53.581	107.16	80-120
54 Ethyl Benzene	50.000	49.274	98.55	80-120
56 m,p-xylene	100.00	99.082	99.08	80-123
57 o-Xylene	50.000	50.094	100.19	80-120
58 Styrene	50.000	51.121	102.24	80-122
60 Isopropyl Benzene	50.000	47.785	95.57	77-127
59 Bromoform	50.000	59.918	119.84	63-120
65 1,1,2,2-Tetrachlor	50.000	53.206	106.41	71-120
68 1,2,3-Trichloropro	50.000	54.350	108.70	75-120
69 Trans-1,4-Dichloro	50.000	54.634	109.27	62-127
64 N-Propyl Benzene	50.000	48.366	96.73	76-126
63 Bromobenzene	50.000	49.756	99.51	75-120
67 1,3,5-Trimethyl Be	50.000	47.751	95.50	77-126
66 2-Chloro Toluene	50.000	47.930	95.86	76-120
70 4-Chloro Toluene	50.000	48.081	96.16	75-121
71 T-Butyl Benzene	50.000	47.857	95.71	77-125
72 1,2,4-Trimethylben	50.000	48.254	96.51	77-125
73 S-Butyl Benzene	50.000	47.944	95.89	77-127
74 4-Isopropyl Toluen	50.000	49.149	98.30	78-131
75 1,3-Dichlorobenzen	50.000	46.177	92.35	76-120
77 1,4-Dichlorobenzen	50.000	46.165	92.33	75-120
78 N-Butyl Benzene	50.000	48.338	96.68	75-134
80 1,2-Dichlorobenzen	50.000	48.026	96.05	77-120
81 1,2-Dibromo 3-Chlo	50.000	58.452	116.90	61-128
83 1,2,4-Trichloroben	50.000	53.825	107.65	75-130
82 Hexachloro 1,3-But	50.000	50.452	100.90	72-135
84 Naphthalene	50.000	56.189	112.38	71-122
85 1,2,3-Trichloroben	50.000	54.625	109.25	76-122

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	53.589	107.18	70-130

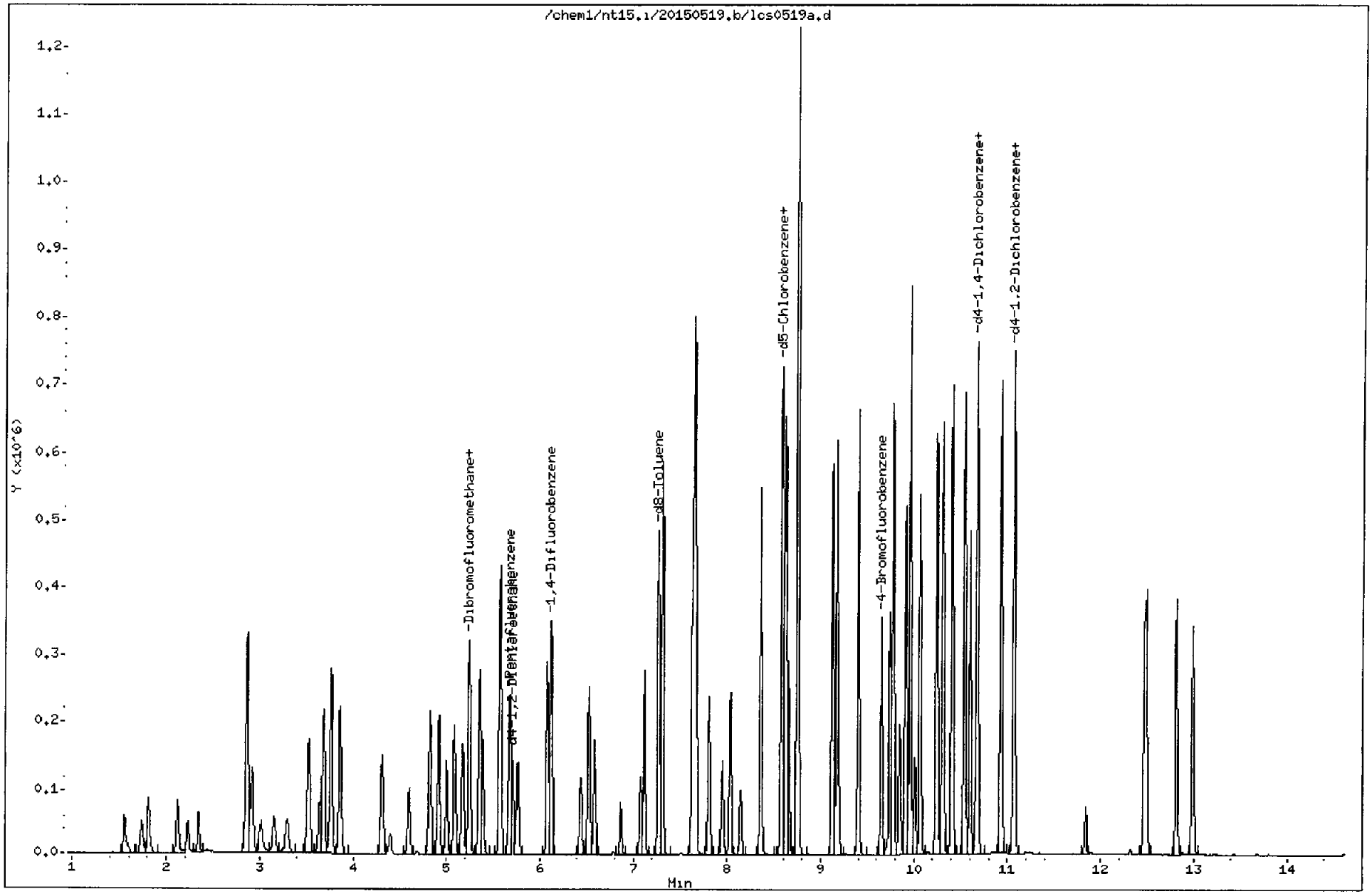
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 32 d4-1,2-Dichloroeth	50.000	53.554	107.11	80-149
$ 42 d8-Toluene	50.000	51.086	102.17	77-120
$ 62 4-Bromofluorobenze	50.000	51.435	102.87	80-120
$ 79 d4-1,2-Dichloroben	50.000	50.248	100.50	80-120

Data File: /chem1/nt15.i/20150519.b/lcs0519a.d
Date : 19-MAY-2015 11:33
Client ID: LCS0519
Sample Info: LCS0519,5,5,0,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



CO-ELUTION SUMMARY FOR FILE - lcs0519a.d

Lab ID: LCS0519, Method: VO051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

PC 5/21/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/mb0519.d
Lab Smp Id: MB0519 Client Smp ID: MB0519
Inj Date : 19-MAY-2015 12:00
Operator : PC Inst ID: nt15.i
Smp Info : MB0519,5,5,0,
Misc Info : 15-
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:05 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.00000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	Compound Not Detected.					
14 Acetone	43	Compound Not Detected.					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	5.249	5.249	(0.925)	58885	50.3222	50 322
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	Compound Not Detected.					
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	5.677	5.677	(1.000)	127981	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.704	(1.005)	76620	51.6398	51.640
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	6.120	6.127	(1.000)	221340	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	7.272	7.273	(1.188)	307630	50.2246	50.225
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	8.584	8.584	(1.000)	199939	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected					
	58 Styrene	104	Compound Not Detected					
	59 Bromoform	173	Compound Not Detected					
	60 Isopropyl Benzene	105	Compound Not Detected					
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.125)	99167	50.2348	50.235
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.674	(1.000)	99105	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	88584	51.1139	51.114
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	12.492	12.493	(1.171)	1173	0.71449	0.7145
84	Naphthalene	128	12.812	12.813	(1.201)	4704	1.10913	1.109
85	1,2,3-Trichlorobenzene	180	12.992	12.992	(1.218)	1095	0.72688	0.7269
172	2 pentanone	86	Compound Not Detected.					

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: mb0519.d
Lab Smp Id: MB0519
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: MB0519
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	127981	-18.86
35 1,4-Difluorobenze	269036	134518	538072	221340	-17.73
52 d5-Chlorobenzene	241232	120616	482464	199939	-17.12
76 d4-1,4-Dichlorobe	124854	62427	249708	99105	-20.62

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.68	5.18	6.18	5.68	0.00
35 1,4-Difluorobenze	6.13	5.63	6.63	6.12	-0.11
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	0.00
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150519
Sample Matrix: SOLID Fraction: VOA
Lab Smp Id: MB0519 Client Smp ID: MB0519
Level: LOW Operator: PC
Data Type: MS DATA SampleType: BLANK
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150519.b/V0051415S.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	50.322	100.64	70-130
$ 32 d4-1,2-Dichloroeth	50.000	51.640	103.28	80-149
$ 42 d8-Toluene	50.000	50.225	100.45	77-120
$ 62 4-Bromofluorobenze	50.000	50.235	100.47	80-120
$ 79 d4-1,2-Dichloroben	50.000	51.114	102.23	80-120

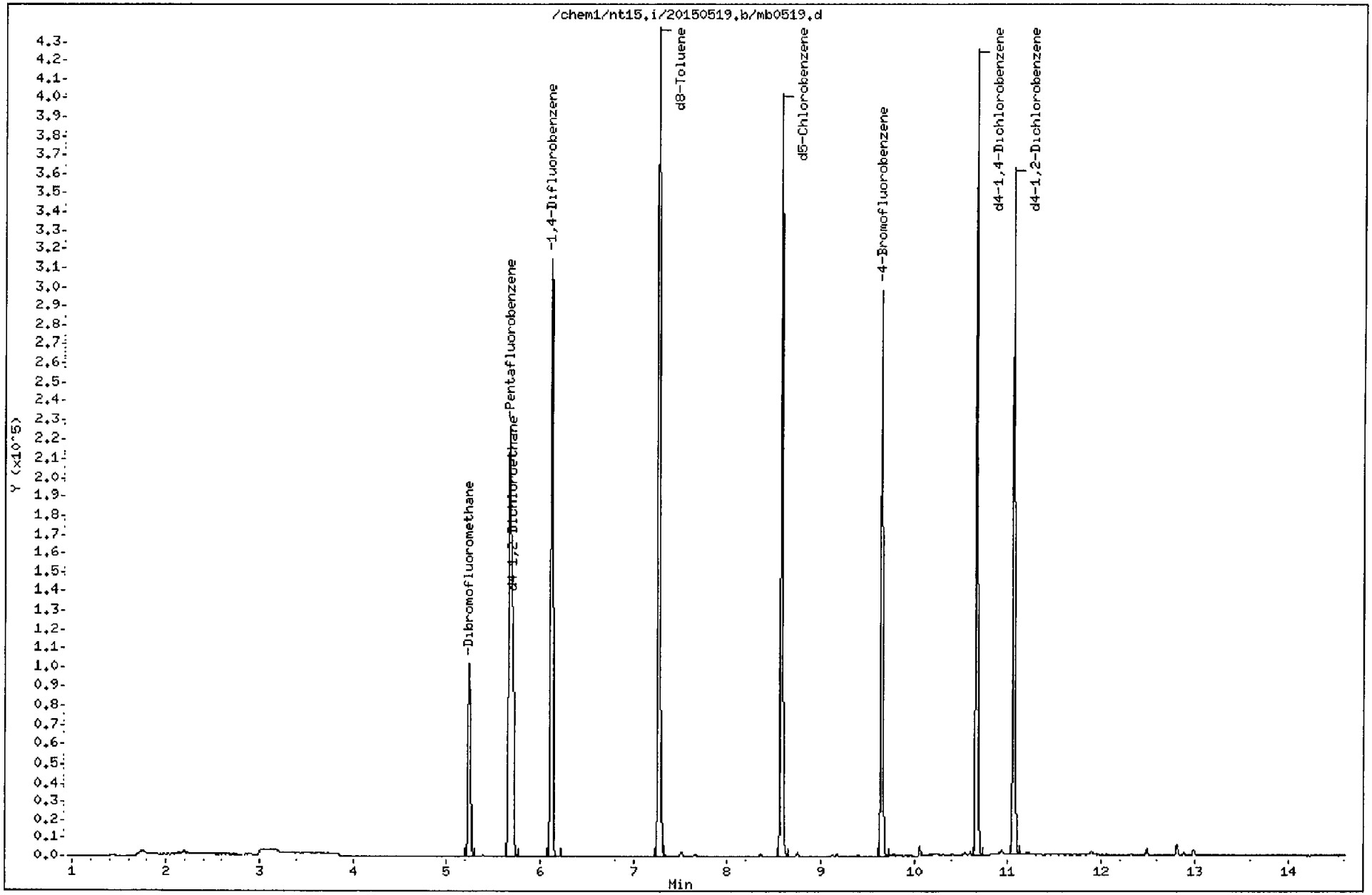
AGF2 - 00241

Data File: /chem1/nt15.i/20150519.b/mb0519.d
Date : 19-MAY-2015 12:00
Client ID: MB0519
Sample Info: MB0519,5,5,0,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt15.1/20150519.b/mb0519.d

Date : 19-MAY-2015 12:00

Client ID: MB0519

Instrument: nt15.1

Sample Info: MB0519,5,5,0,

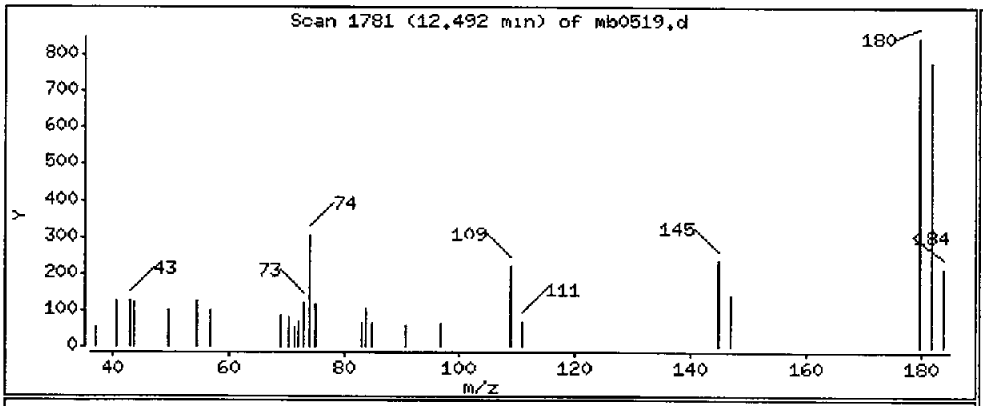
Operator: PC

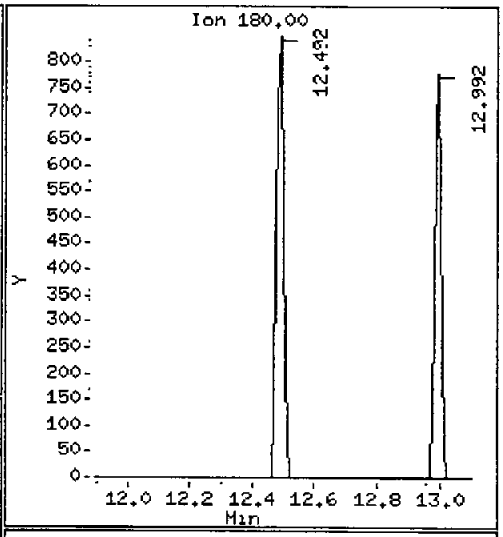
Column phase: RTXWMS

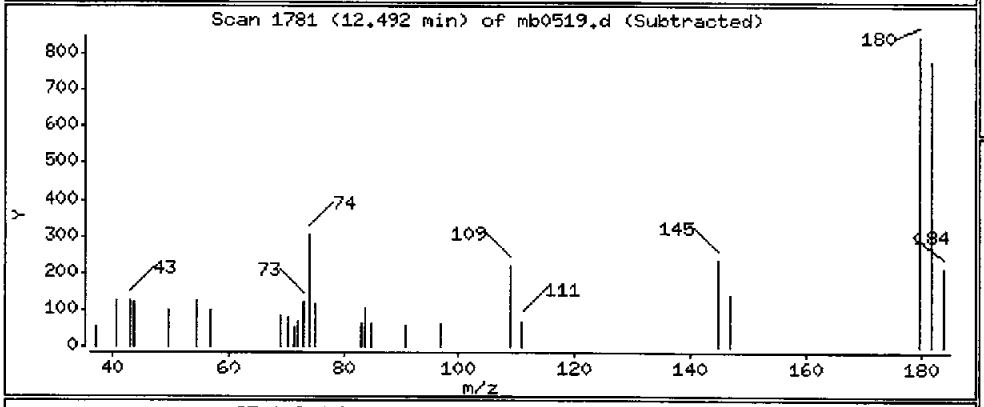
Column diameter: 0.18

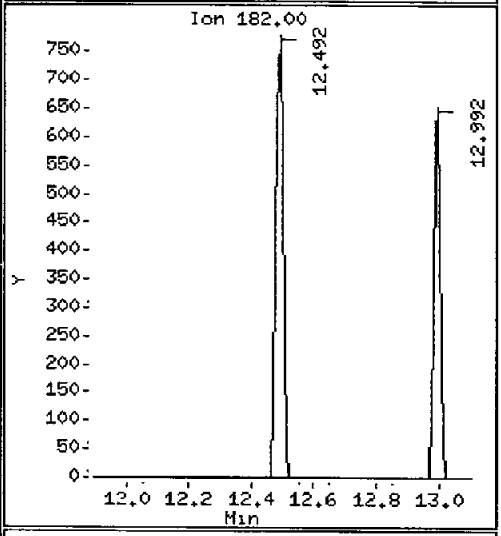
83 1,2,4-Trichlorobenzene

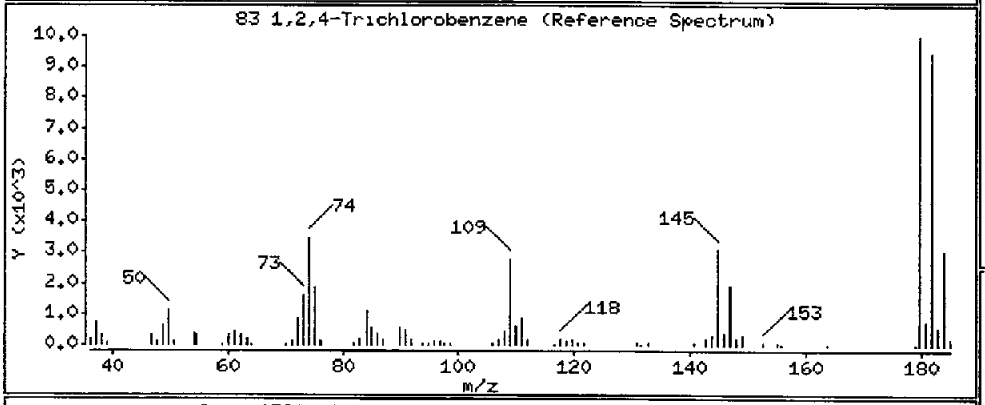
Concentration: 0.7145 ug/Kg

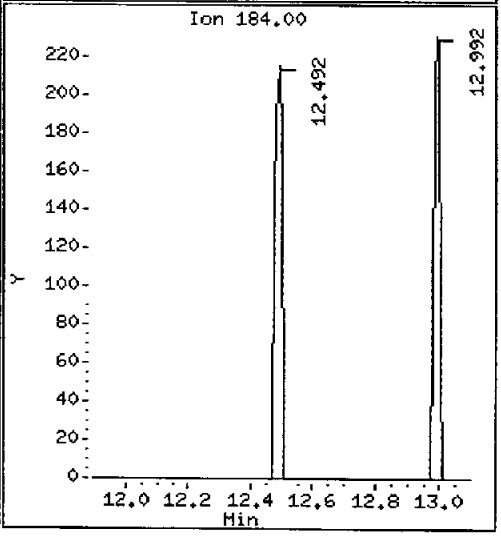


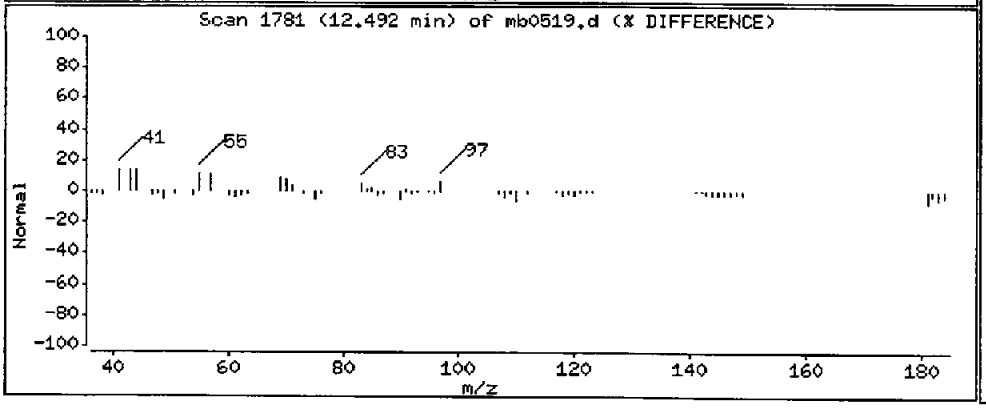












Data File: /chem1/nt15.1/20150519.b/mb0519.d

Date : 19-MAY-2015 12:00

Client ID: MB0519

Instrument: nt15.1

Sample Info: MB0519,5,5,0,

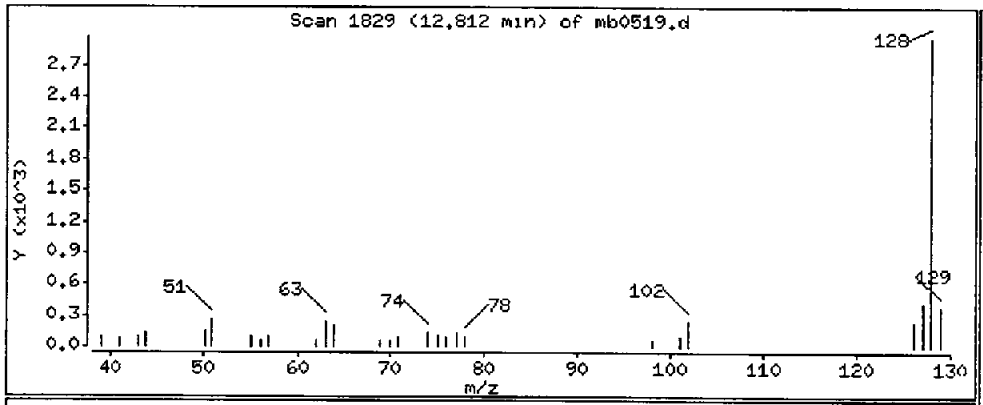
Operator: PC

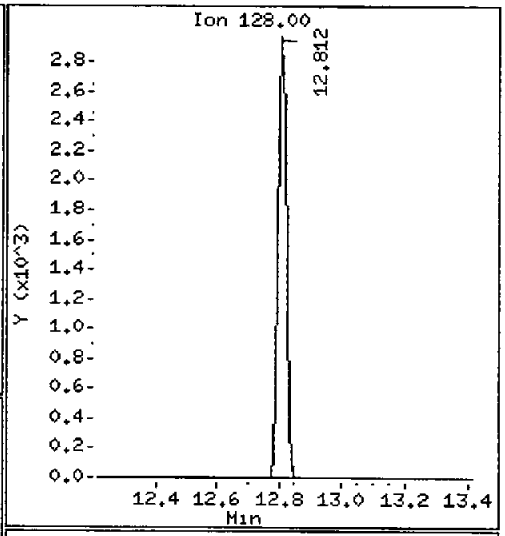
Column phase: RTXVMS

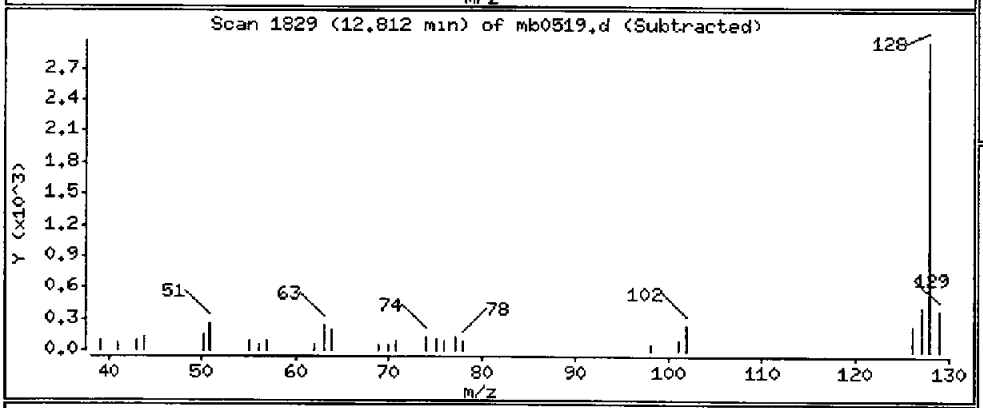
Column diameter: 0.18

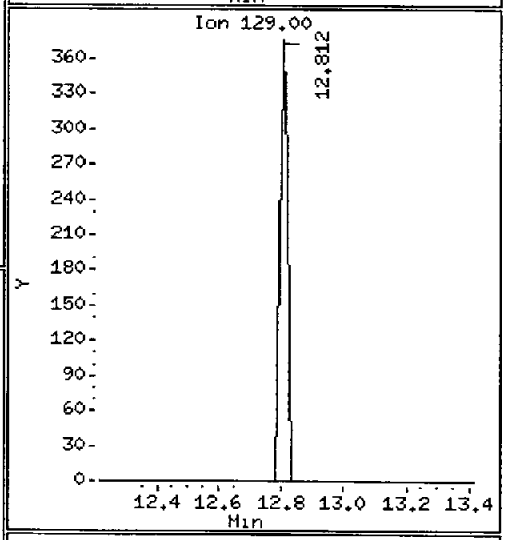
84 Naphthalene

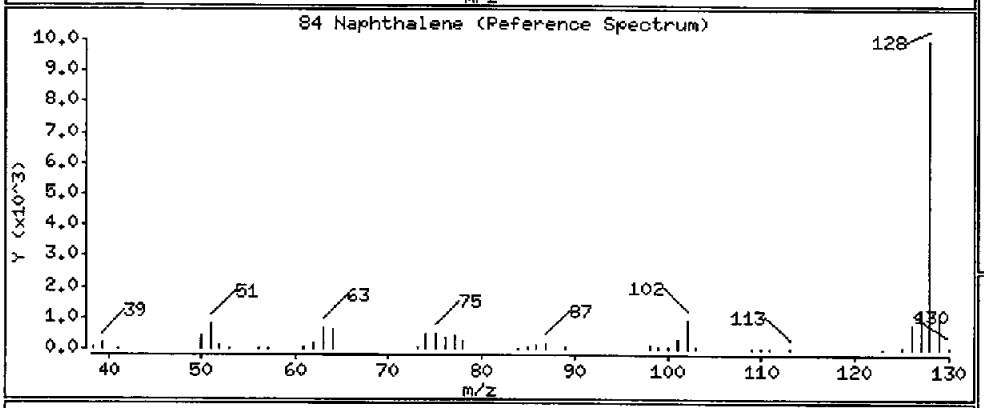
Concentration: 1.109 ug/Kg

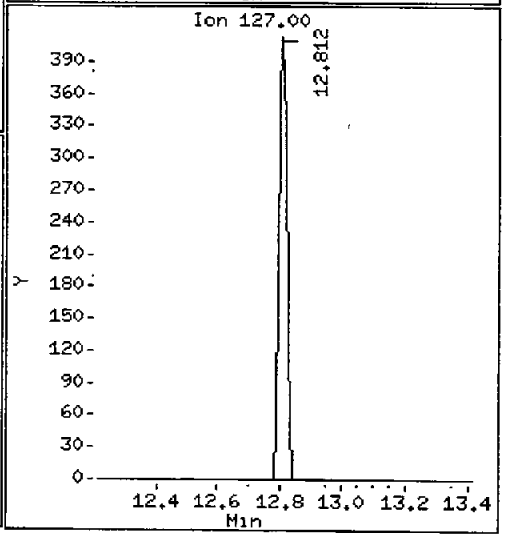


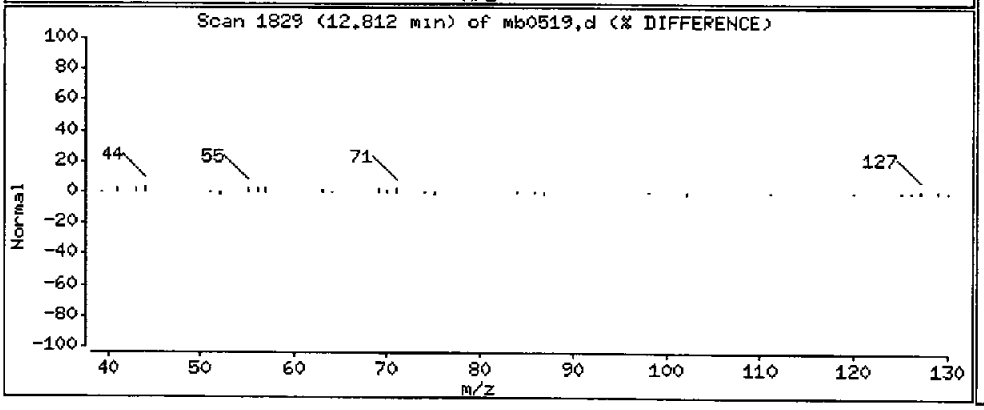












Data File: /chem1/nt15.1/20150519.b/mb0519.d

Date : 19-MAY-2015 12:00

Client ID: MB0519

Instrument: nt15.1

Sample Info: MB0519,5,5,0,

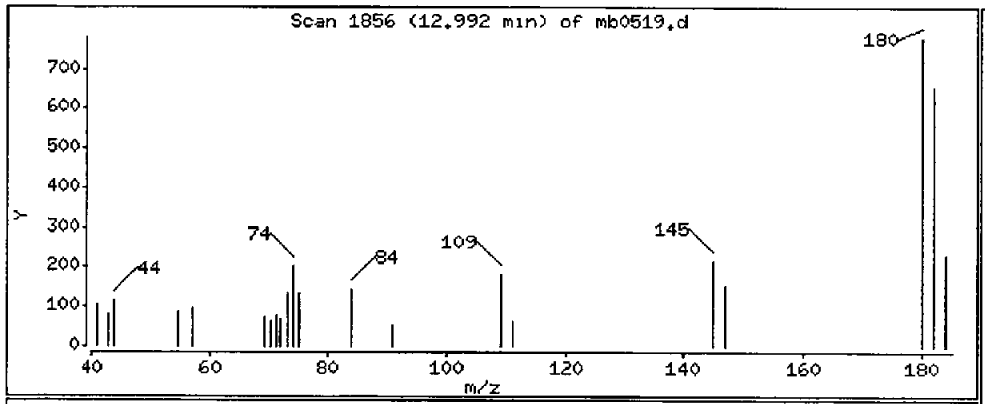
Operator: PC

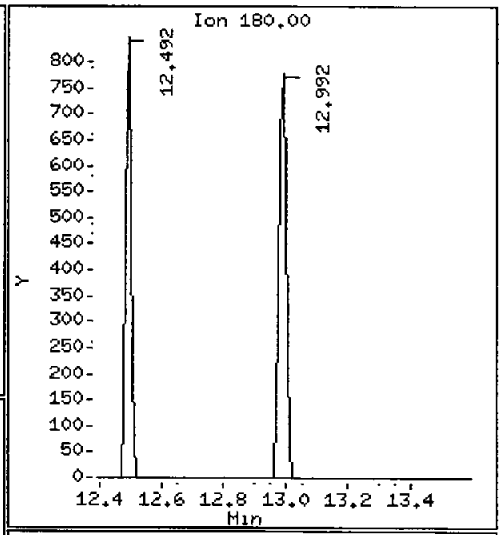
Column phase: RTXVMS

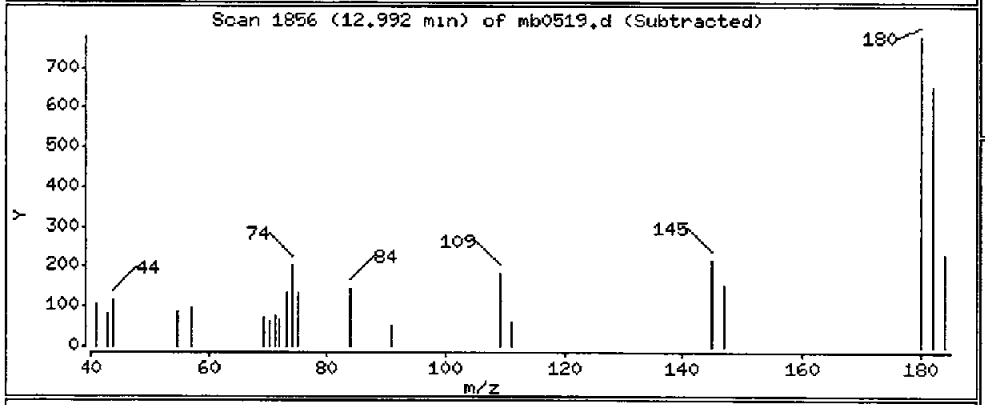
Column diameter: 0.18

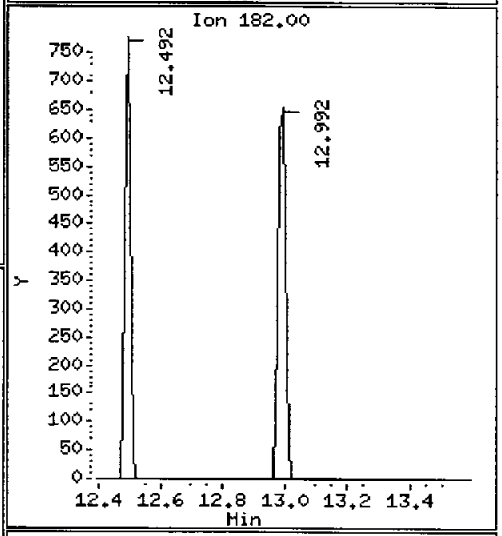
85 1,2,3-Trichlorobenzene

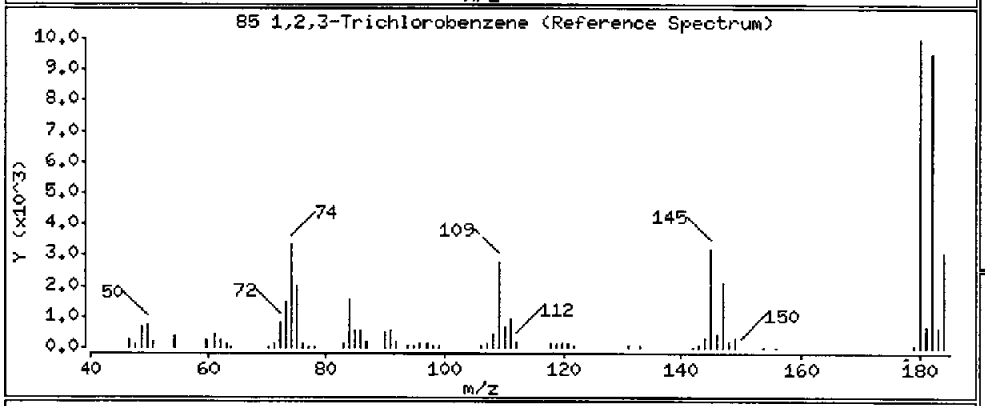
Concentration: 0.7269 ug/Kg

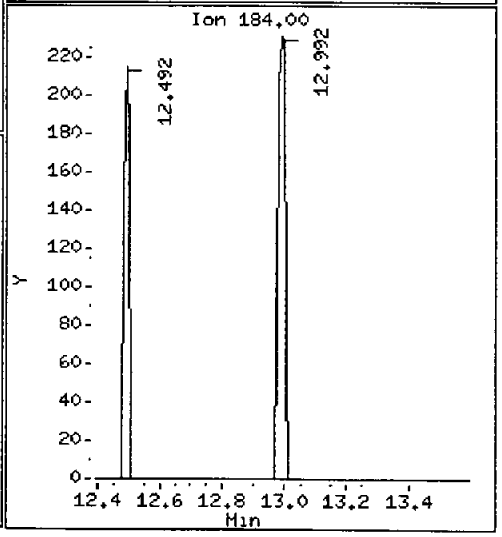


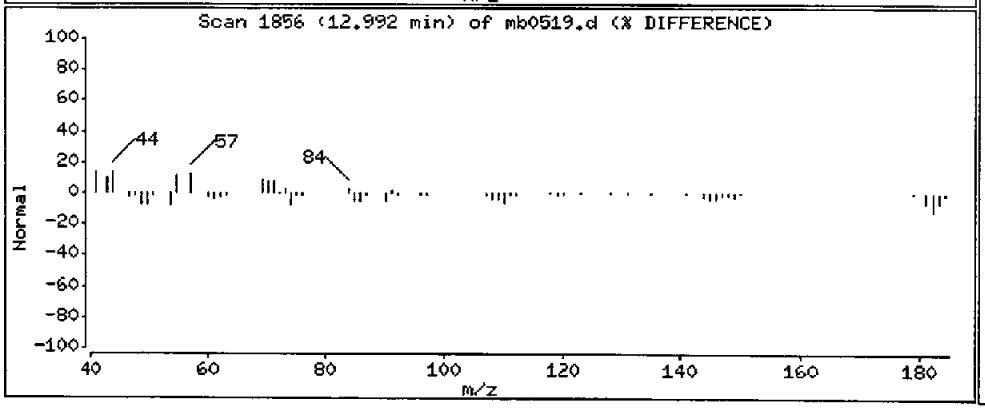












CO-ELUTION SUMMARY FOR FILE - mb0519.d

Lab ID: MB0519, Method: VO051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

AFF2 00246

EG 5/20/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/agf2a.d
Lab Smp Id: AGF2A Client Smp ID: SDP-02(16.0-17.5)
Inj Date : 19-MAY-2015 14:42
Operator : PC Inst ID: nt15.i
Smp Info : AGF2A,5,5.32,0,
Misc Info : 15-9525
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:05 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.32000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	2.877	2.871	(0.507)	23235	4.97073	4.672
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	3.516	3.530	(0.620)	222899	138.016	129.71
14 Acetone	43	3.615	3 642	(0.638)	13464	22 5316	21.176
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	5.242	5.249	(0.924)	69210	55.0168	51.707
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	5.383	5.390	(0.949)	531	3.18495	2.993(Q)
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	5.670	5.677	(1.000)	137586	50.0000	
$	32 d4-1,2-Dichloroethane	65	5.697	5.704	(1.005)	96184	60.2999	56.673
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	6.120	6.127	(1.000)	251619	50 0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	7.265	7.273	(1.187)	349352	50 1727	47 155
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	8.577	8.584	(1.000)	243038	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected					
	59 Bromoform	173	Compound Not Detected					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	9 654	9.654	(1.126)	123145	51.3189	48.232
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	10.666	10 674	(1.000)	113923	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	11.066	11.067	(1.037)	98204	49.2943	46.329
80	1,2-Dichlorobenzene	146	Compound Not Detected					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected.					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					
172	2 pentanone	86	6.866	6.866	(1.211)	177	0.77572	0.7291

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: agf2a.d
Lab Smp Id: AGF2A
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-9525

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: SDP-02(16.0-17.5)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	137586	-12.77
35 1,4-Difluorobenze	269036	134518	538072	251619	-6.47
52 d5-Chlorobenzene	241232	120616	482464	243038	0.75
76 d4-1,4-Dichlorobe	124854	62427	249708	113923	-8.76

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.68	5.18	6.18	5.67	-0.13
35 1,4-Difluorobenze	6.13	5.63	6.63	6.12	-0.12
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	-0.08
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	-0.07

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: KJC
Client SDG: AGF2
Sample Matrix: SOLID
Fraction: VOA
Lab Smp Id: AGF2A
Client Smp ID: SDP-02(16.0-17.5)
Level: LOW
Operator: PC
Data Type: MS DATA
SampleType: SAMPLE
SpikeList File: voasoil.spk
Quant Type: ISTD
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-9525

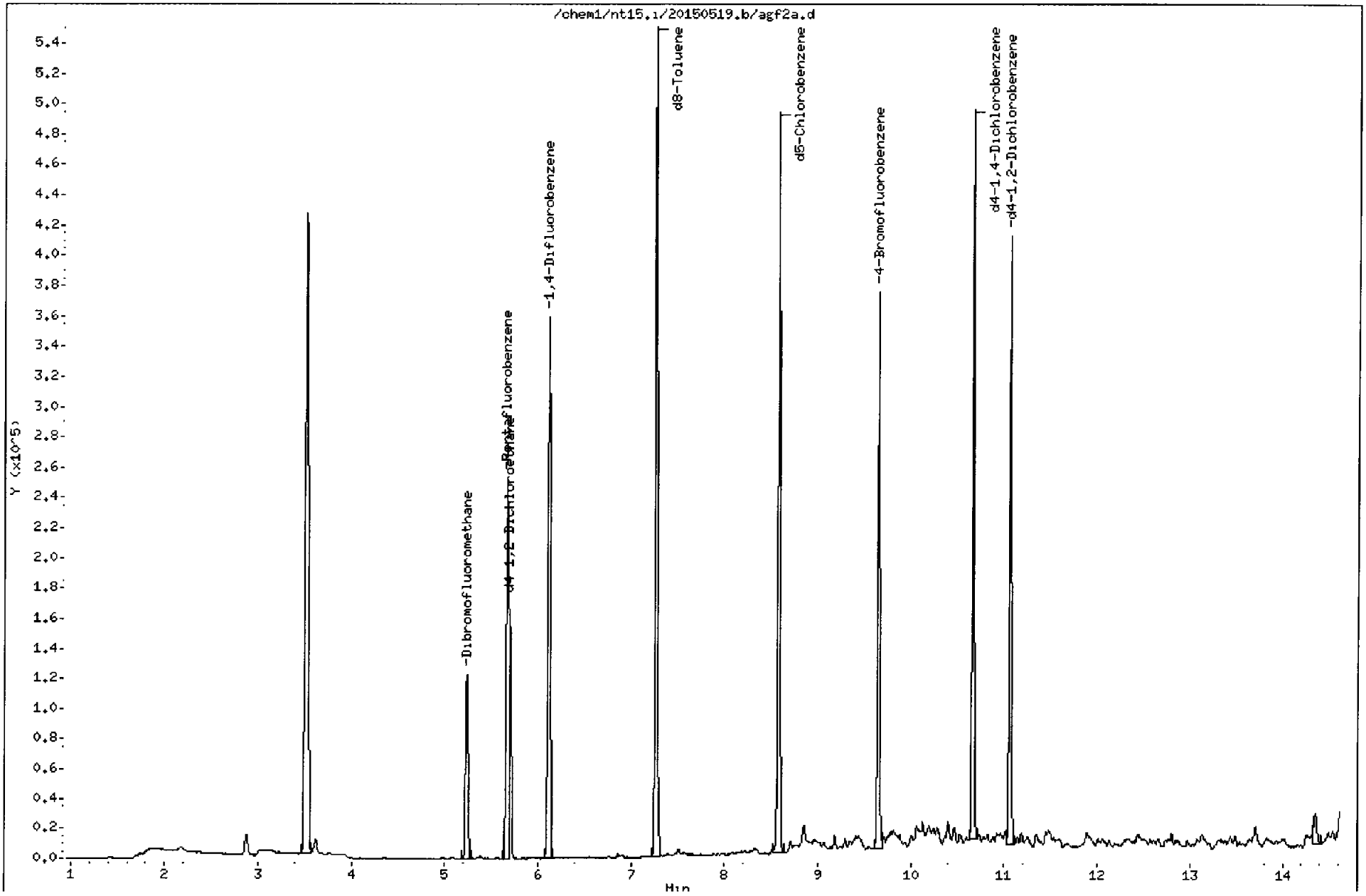
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	55.017	110.03	70-130
$ 32 d4-1,2-Dichloroeth	50.000	60.300	120.60	80-149
$ 42 d8-Toluene	50.000	50.173	100.35	77-120
$ 62 4-Bromofluorobenze	50.000	51.319	102.64	80-120
$ 79 d4-1,2-Dichloroben	50.000	49.294	98.59	80-120

Data File: /chem1/nt15.i/20150519.b/agf2a.d
Date : 19-MAY-2015 14:42
Client ID: SDP-02(16.0-17.5)
Sample Info: AGF2A,5,5.32,0,

Instrument: nt15.i

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt15.i/20150519.b/agf2a.d

Date : 19-MAY-2015 14:42

Client ID: SDP-02(16.0-17.5)

Instrument: nt15.i

Sample Info: AGF2A,5,5,32,0,

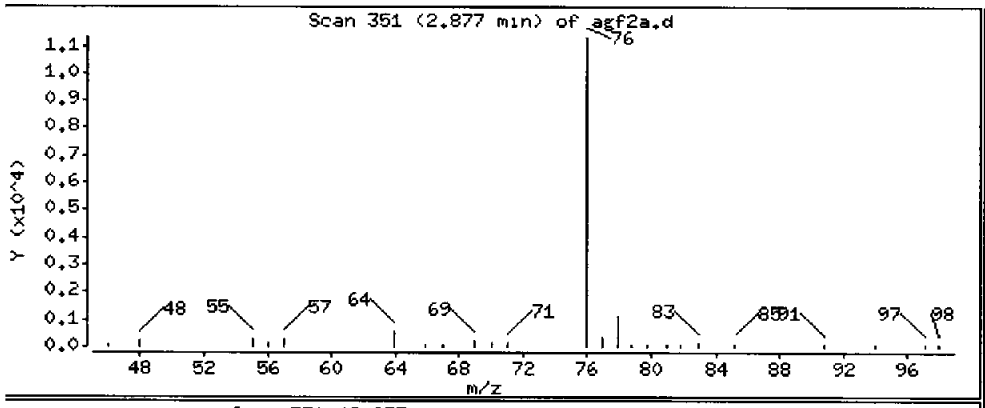
Operator: PC

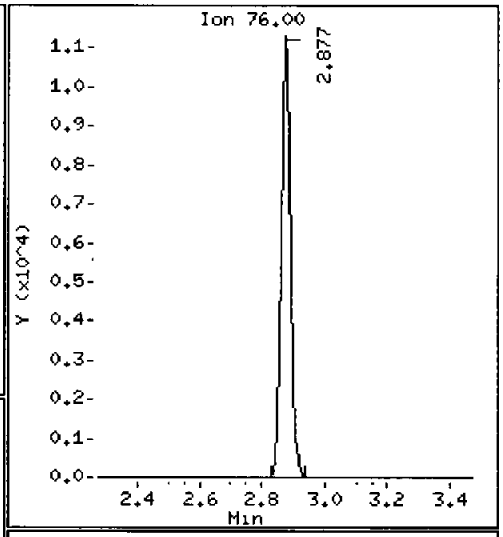
Column phase: RTXVMS

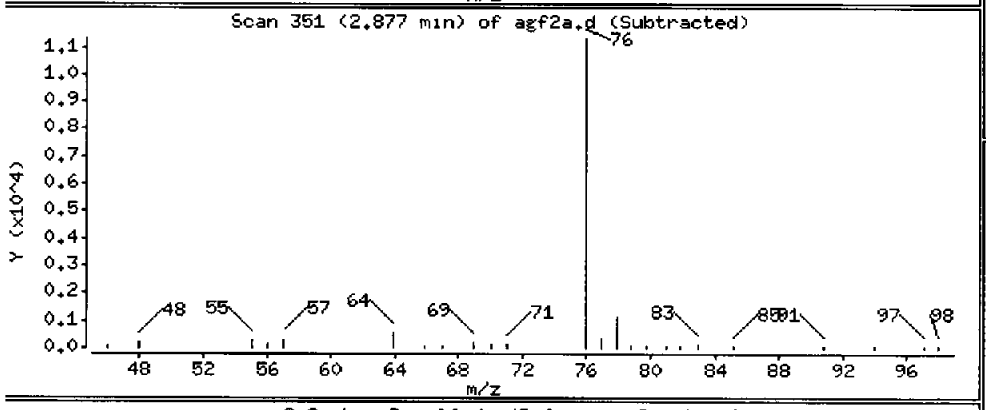
Column diameter: 0.18

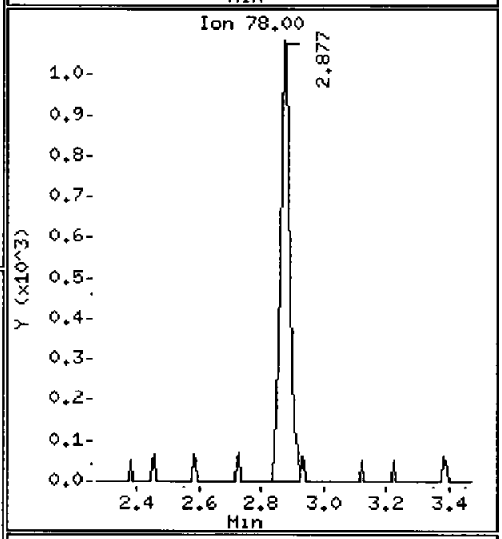
8 Carbon Disulfide

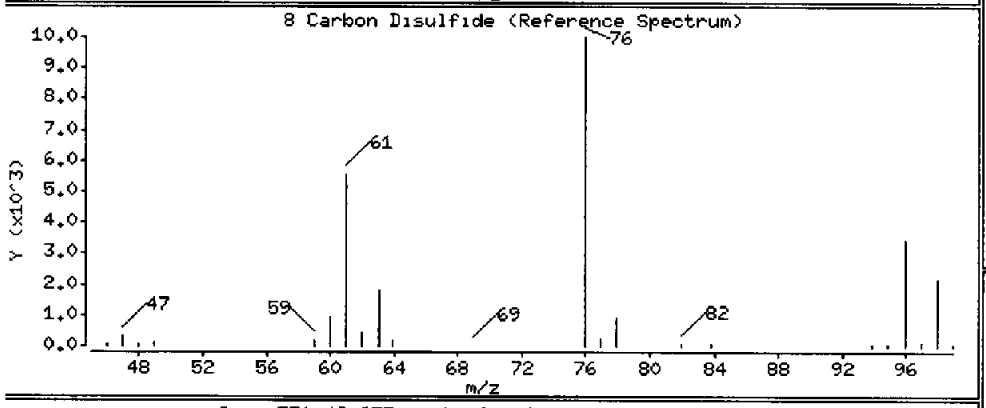
Concentration: 4.672 ug/Kg

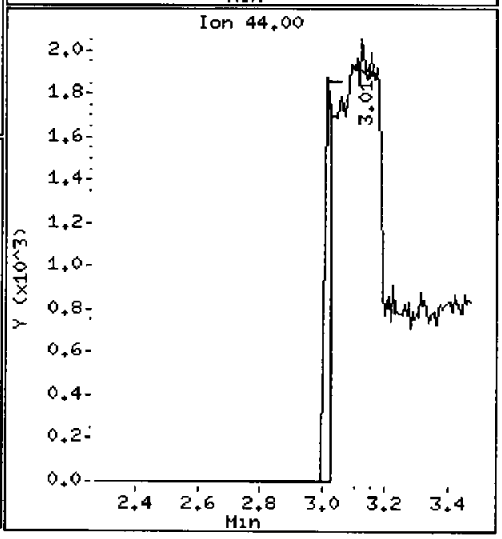


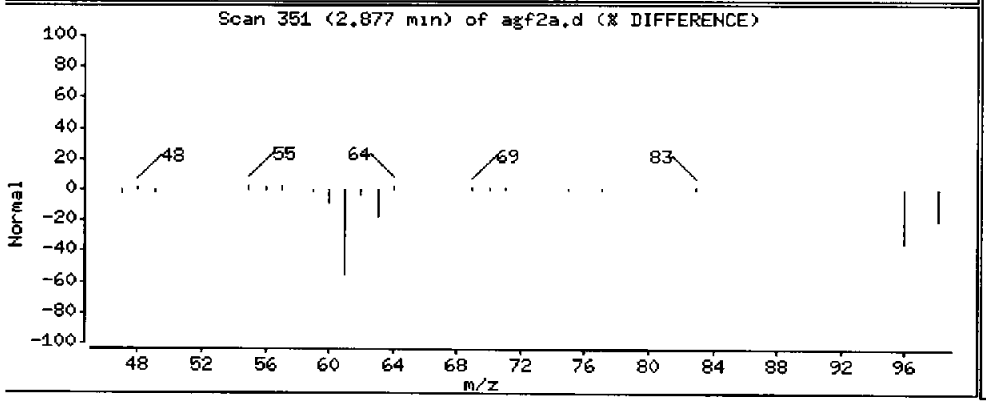












Data File: /chem1/nt15.i/20150519.b/agf2a.d

Date : 19-MAY-2015 14:42

Client ID: SDP-02(16.0-17.5)

Instrument: nt15.i

Sample Info: AGF2A,5,5.32,0,

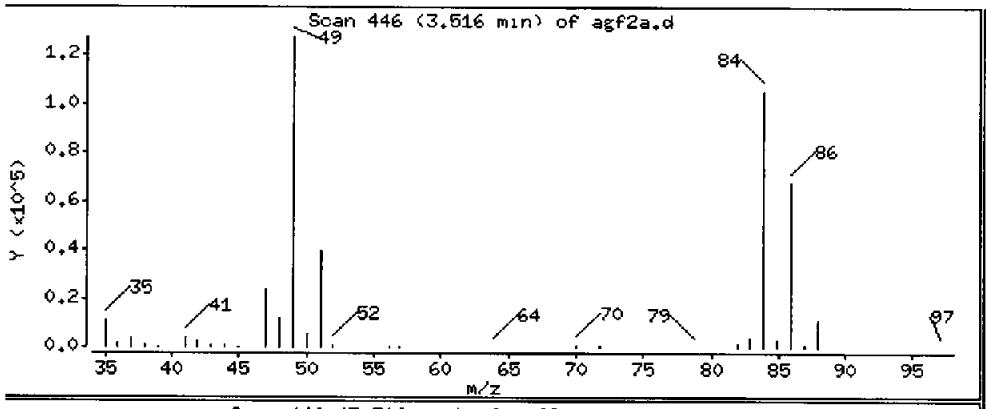
Operator: PC

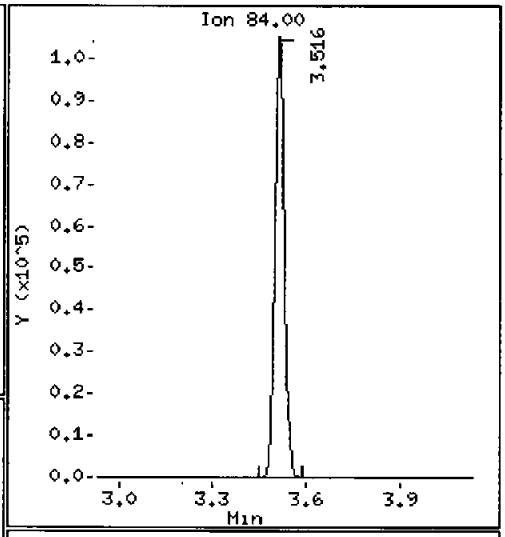
Column phase: RTXVMS

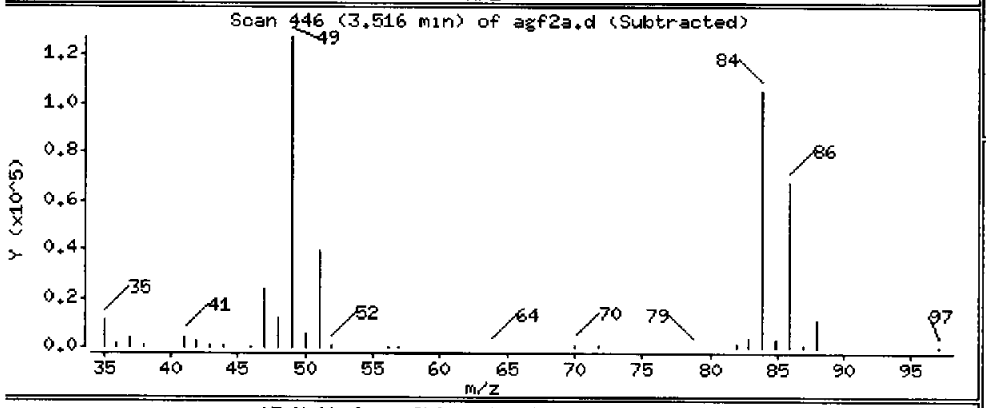
Column diameter: 0.18

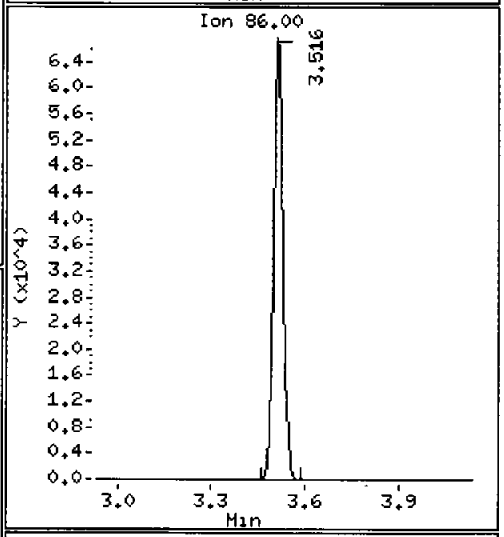
13 Methylene Chloride

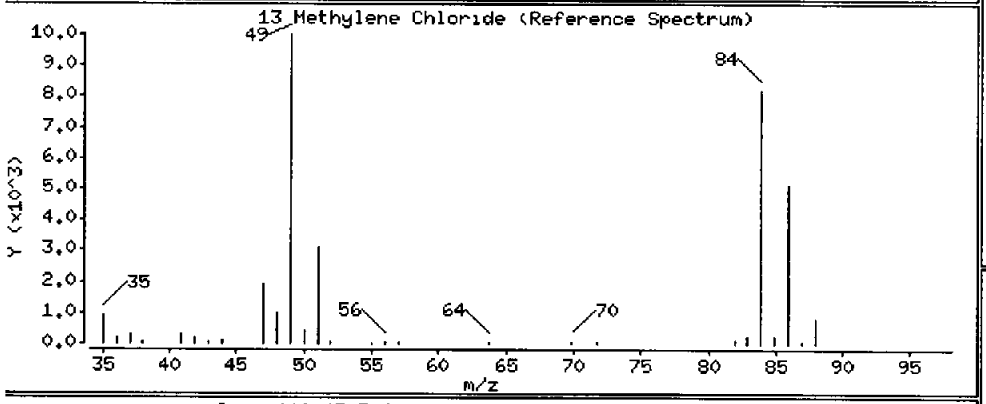
Concentration: 129.71 ug/Kg

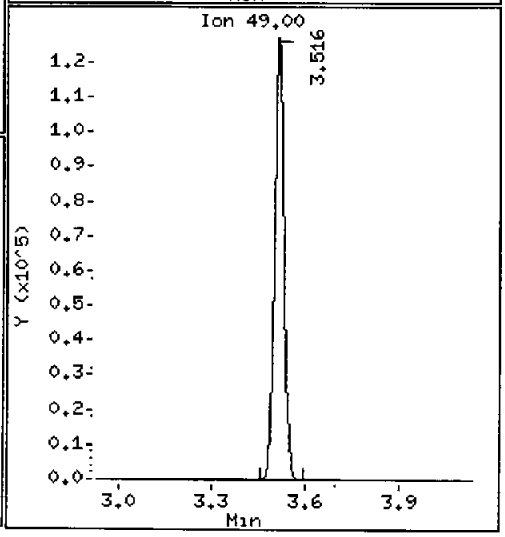


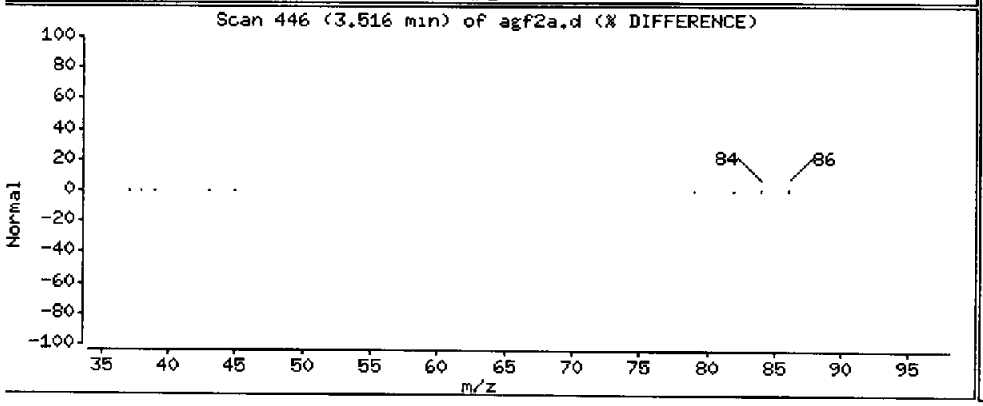












Data File: /chem1/nt15.1/20150519.b/agf2a.d

Date : 19-MAY-2015 14:42

Client ID: SDP-02(16.0-17.5)

Instrument: nt15.1

Sample Info: AGF2A,5,5.32,0,

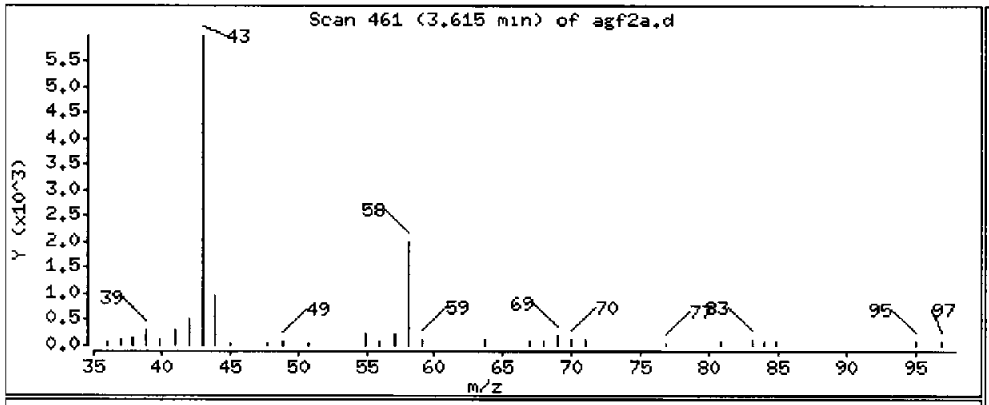
Operator: PC

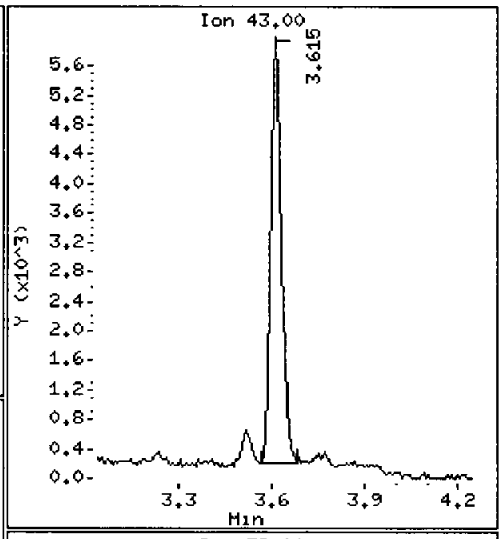
Column phase: RTXVMS

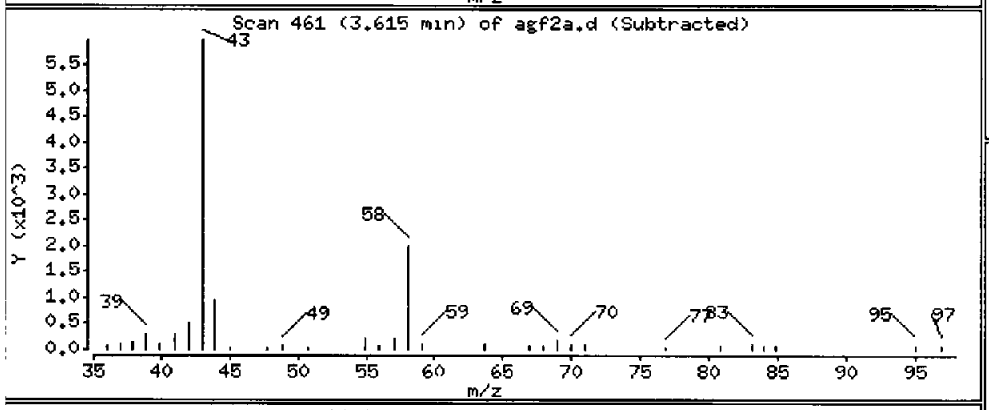
Column diameter: 0.18

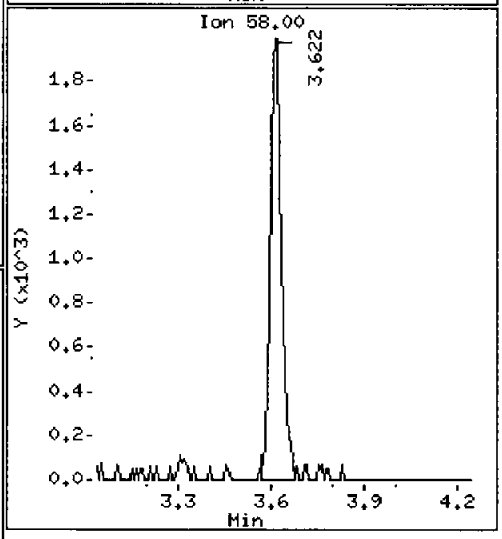
14 Acetone

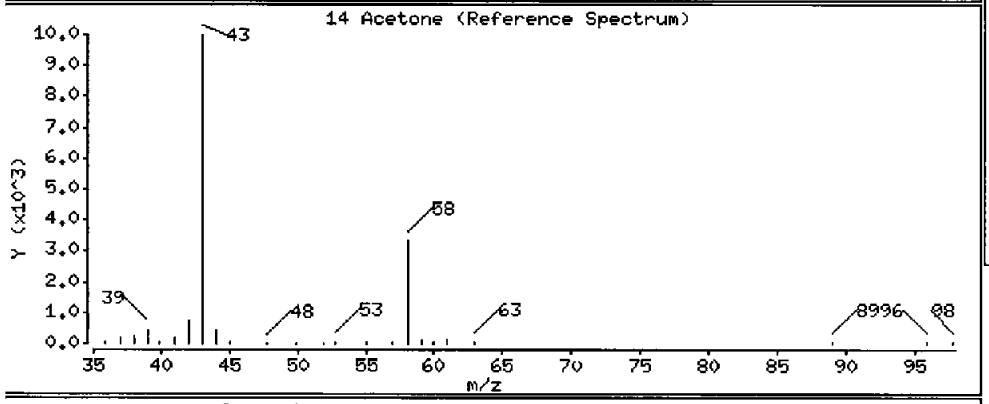
Concentration: 21.176 ug/Kg

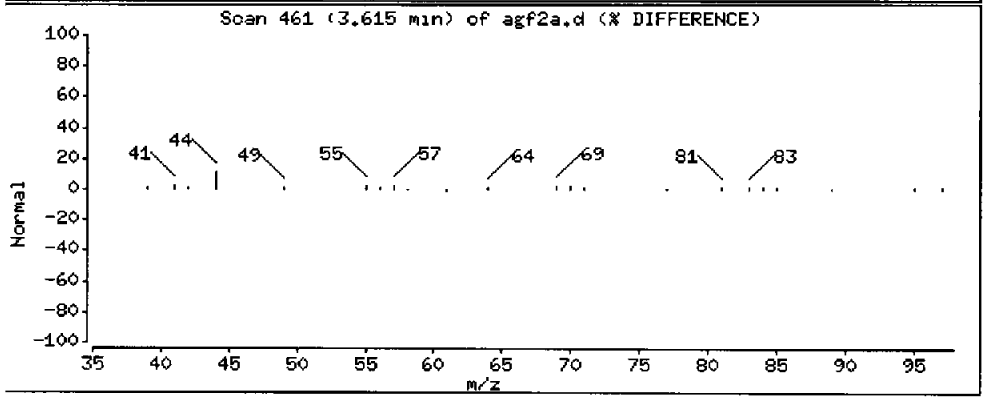












Data File: /chem1/nt15.i/20150519.b/agf2a.d

Date : 19-MAY-2015 14:42

Client ID: SDP-02(16.0-17.5)

Instrument: nt15.i

Sample Info: AGF2A,5,5.32,0,

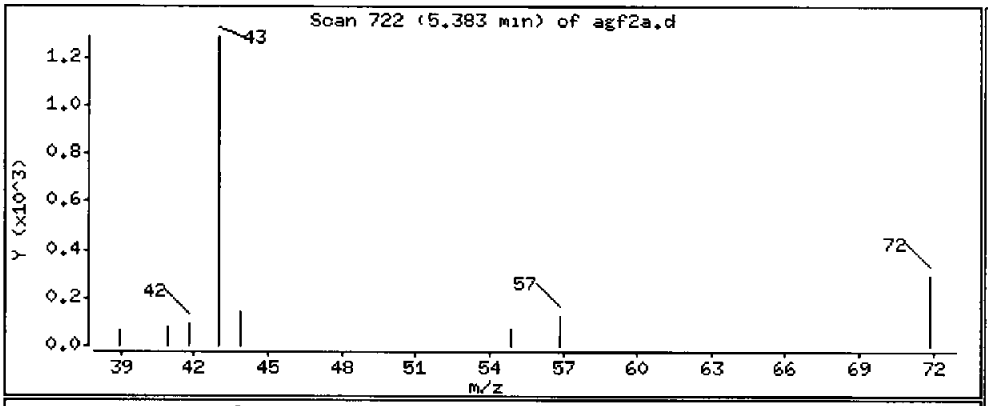
Operator: PC

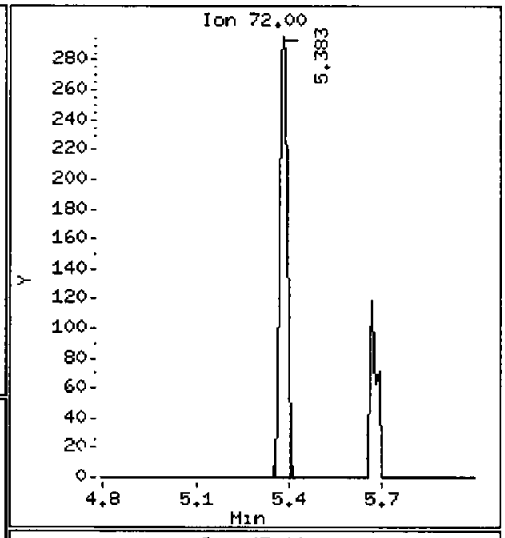
Column phase: RTXVMS

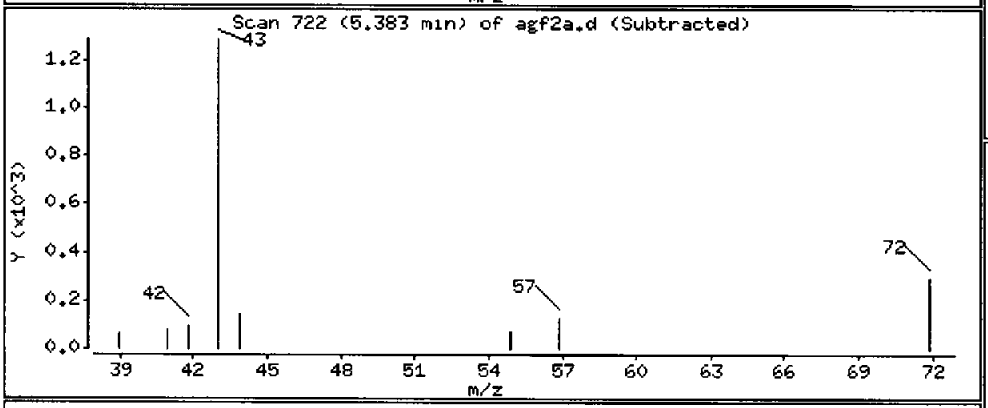
Column diameter: 0.18

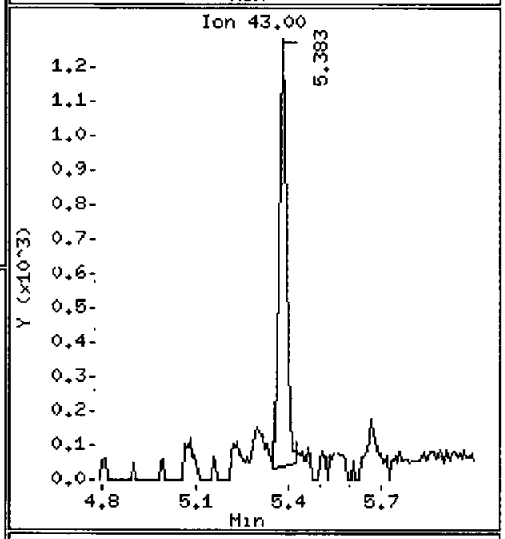
29 2-Butanone

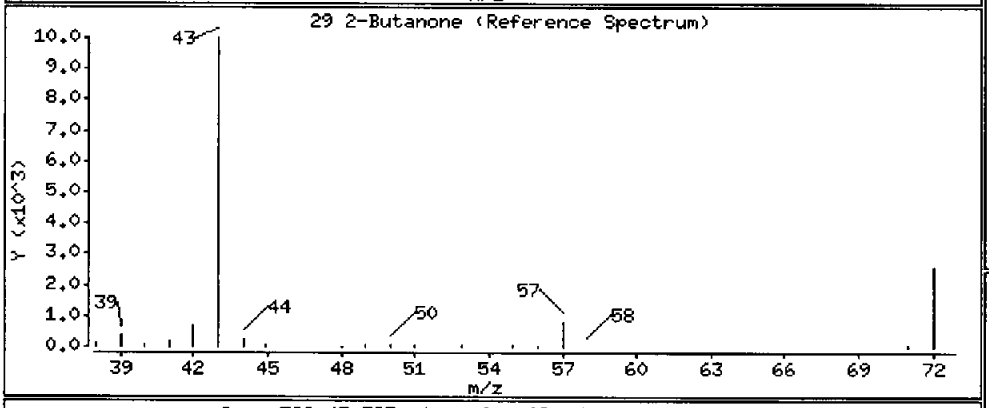
Concentration: 2.993 ug/kg

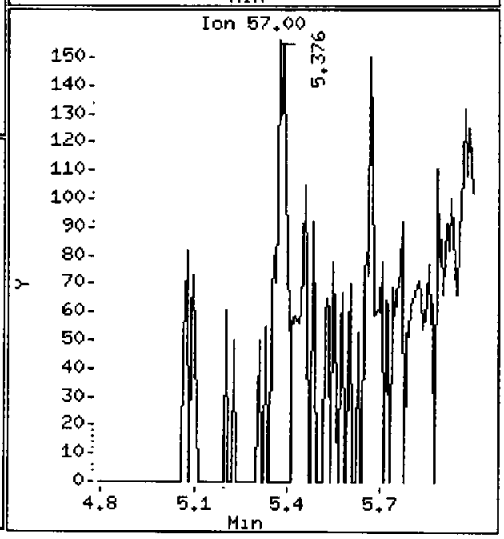


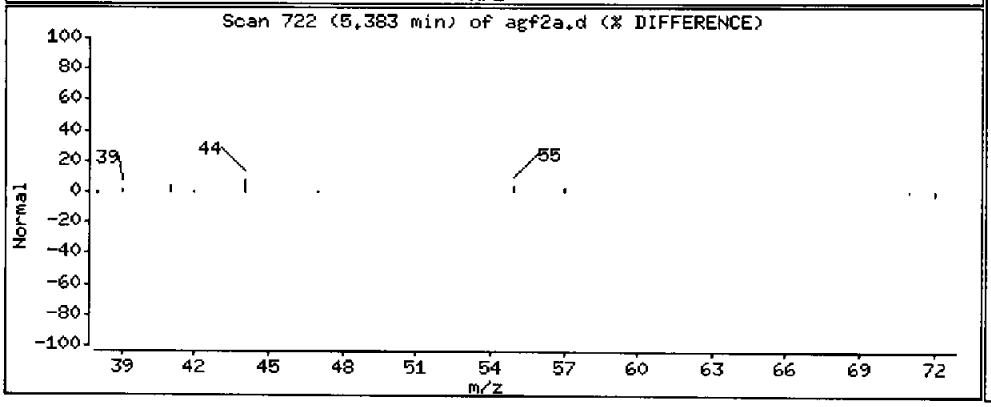












Data File: /chem1/nt15.1/20150519.b/agf2a.d

Date : 19-MAY-2015 14:42

Client ID: SDP-02(16.0-17.5)

Instrument: nt15.1

Sample Info: AGF2A,5,5.32,0,

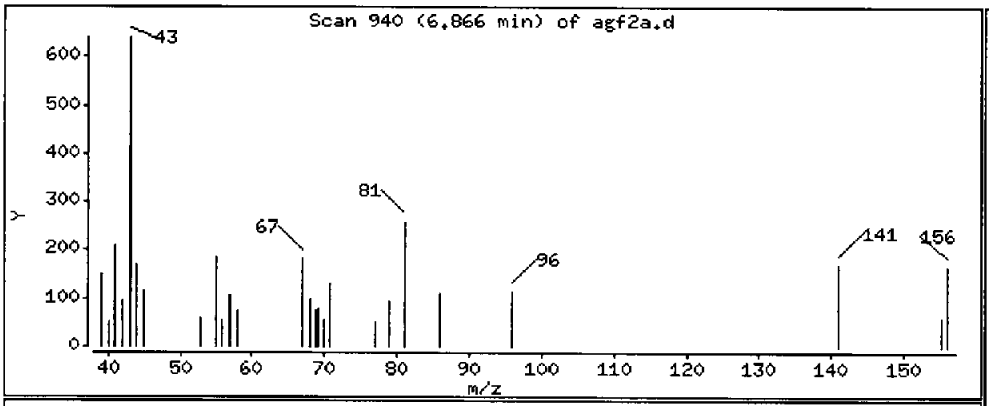
Operator: PC

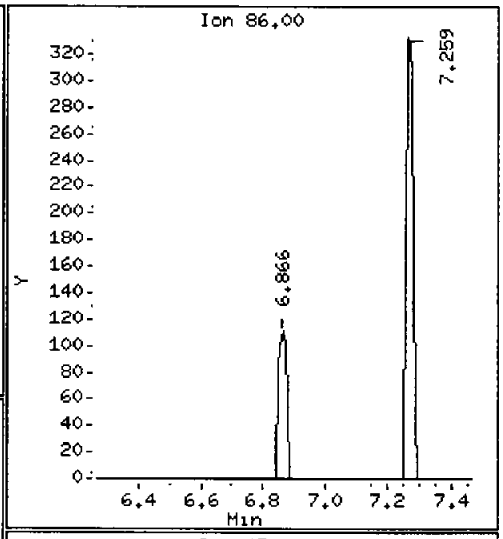
Column phase: RTXVMS

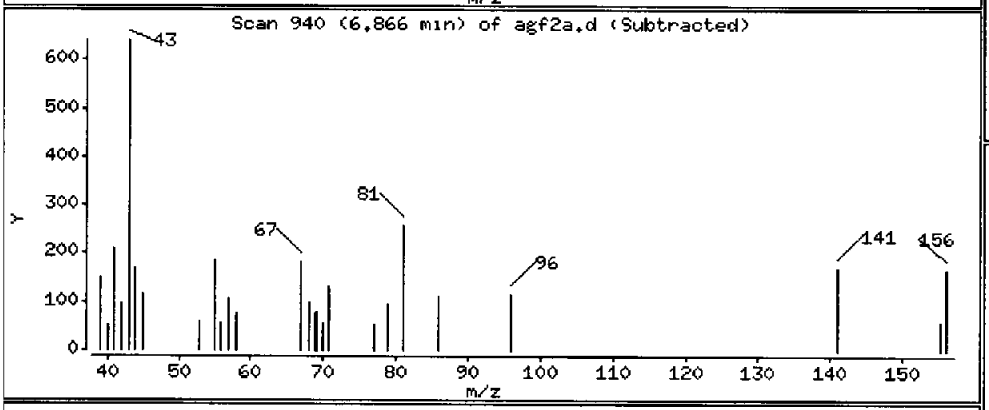
Column diameter: 0.18

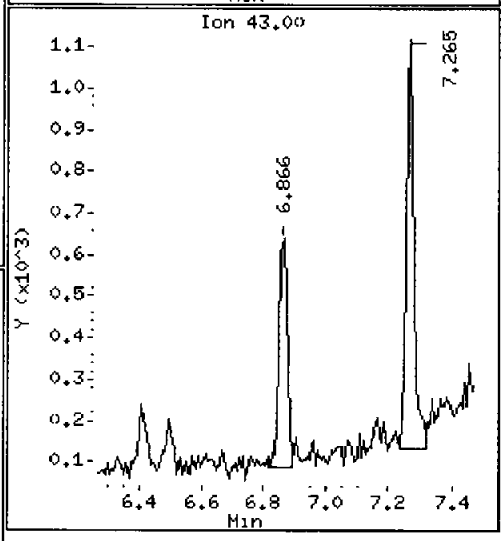
172 2 pentanone

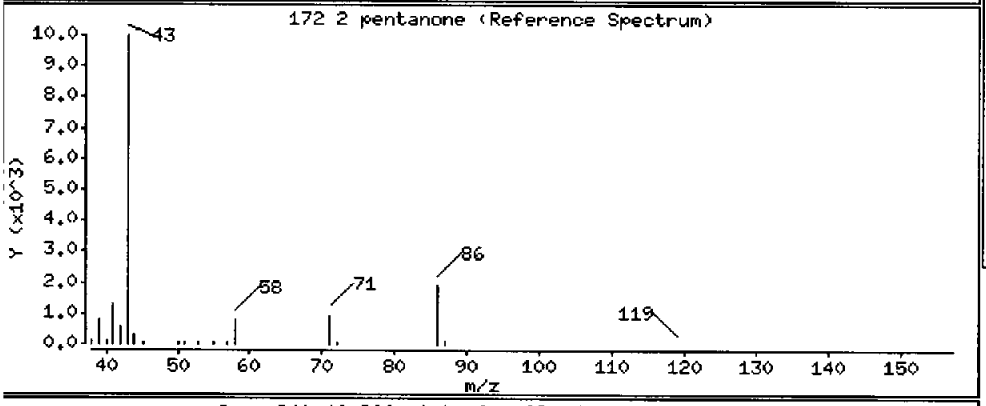
Concentration: 0.7291 ug/Kg

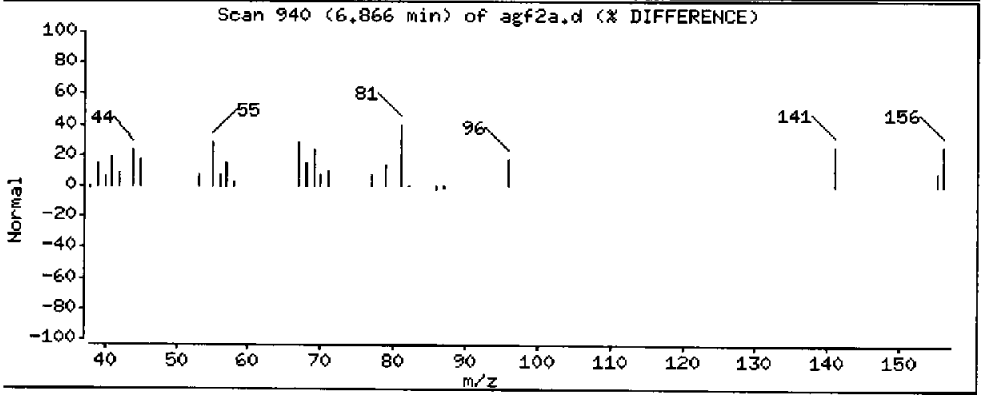












CO-ELUTION SUMMARY FOR FILE - agf2a.d

Lab ID: AGF2A, Method: VO051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

5/22/15

Analytical Resources, Inc.

8260C

Data file : /chem1/nt15.i/20150519.b/agf2b.d
Lab Smp Id: AGF2B Client Smp ID: SDP-06(12.5-13.5)
Inj Date : 19-MAY-2015 15:10
Operator : PC Inst ID: nt15.i
Smp Info : AGF2B,5,5.38,0,
Misc Info : 15-9526
Comment :
Method : /chem1/nt15.i/20150519.b/VO051415S.m
Meth Date : 21-May-2015 11:05 paul Quant Type: ISTD
Cal Date : 15-MAY-2015 15:25 Cal File: 010051515.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voa.sub
Target Version: 3.50

Concentration Formula: Amt * DF * Pv * 1 / (Sa * ((100 - M) / 100)) * CpndVaria

Name	Value	Description
DF	1.00000	Dilution Factor
Pv	5.00000	Purge Volume
Sa	5.38000	Sample Amount
M	0.00000	% Moisture (not decanted)

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	3.529	3.530	(0.622)	120653	77.0111	71.572
14 Acetone	43	3.622	3.642	(0.638)	68159	144.005	133.83
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
	16 Methyl tert butyl ether	73	Compound Not Detected.					
	17 1,1-Dichloroethane	63	Compound Not Detected.					
	18 Acrylonitrile	53	Compound Not Detected.					
	19 Vinyl Acetate	43	Compound Not Detected.					
	20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
	22 2,2-Dichloropropane	77	Compound Not Detected.					
	23 Bromochloromethane	128	Compound Not Detected.					
	24 Chloroform	83	Compound Not Detected.					
	25 Carbon Tetrachloride	117	Compound Not Detected.					
$	27 Dibromofluoromethane	111	5.242	5.249	(0.923)	65454	53.6360	49.848
	26 1,1,1-Trichloroethane	97	Compound Not Detected.					
	28 1,1-Dichloropropene	75	Compound Not Detected.					
	29 2-Butanone	72	5.383	5.390	(0.948)	2445	15.1175	14.050(Q)
	30 Benzene	78	Compound Not Detected.					
*	31 Pentafluorobenzene	168	5.677	5.677	(1.000)	133469	50 0000	
$	32 d4-1,2-Dichloroethane	65	5.704	5.704	(1.005)	90641	58.5777	54 440
	33 1,2-Dichloroethane	62	Compound Not Detected.					
	34 Trichloroethene	95	Compound Not Detected.					
*	35 1,4-Difluorobenzene	114	6.120	6.127	(1.000)	236487	50.0000	
	37 Dibromomethane	93	Compound Not Detected.					
	38 1,2-Dichloropropane	63	Compound Not Detected.					
	39 Bromodichloromethane	83	Compound Not Detected.					
	40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
	41 Cis 1,3-dichloropropene	75	Compound Not Detected.					
$	42 d8-Toluene	98	7.266	7.273	(1.187)	333299	50.9301	47.333
	43 Toluene	92	Compound Not Detected.					
	44 Tetrachloroethene	166	Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58	Compound Not Detected.					
	46 Trans 1,3-Dichloropropene	75	Compound Not Detected.					
	47 1,1,2-Trichloroethane	97	Compound Not Detected.					
	48 Chlorodibromomethane	129	Compound Not Detected.					
	49 1,3-Dichloropropane	76	Compound Not Detected.					
	50 1,2-Dibromoethane	107	Compound Not Detected.					
	51 2-Hexanone	43	Compound Not Detected.					
*	52 d5-Chlorobenzene	117	8.577	8.584	(1.000)	224356	50.0000	
	53 Chlorobenzene	112	Compound Not Detected.					
	54 Ethyl Benzene	91	Compound Not Detected.					
	55 1,1,1,2-Tetrachloroethane	131	Compound Not Detected.					
	56 m,p-xylene	106	Compound Not Detected.					
	57 o-Xylene	106	Compound Not Detected.					
	58 Styrene	104	Compound Not Detected.					
	59 Bromoform	173	Compound Not Detected.					
	60 Isopropyl Benzene	105	Compound Not Detected.					
$	62 4-Bromofluorobenzene	95	9.654	9.654	(1.126)	116921	52.7825	49.054
	63 Bromobenzene	156	Compound Not Detected.					
	64 N-Propyl Benzene	91	Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83	Compound Not Detected					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/Kg)	CONCENTRATIONS FINAL (ug/Kg)
66	2-Chloro Toluene	91	Compound Not Detected.					
67	1,3,5-Trimethyl Benzene	105	Compound Not Detected.					
68	1,2,3-Trichloropropane	110	Compound Not Detected.					
69	Trans-1,4-Dichloro 2-Butene	53	Compound Not Detected.					
70	4-Chloro Toluene	91	Compound Not Detected.					
71	T-Butyl Benzene	119	Compound Not Detected.					
72	1,2,4-Trimethylbenzene	105	Compound Not Detected.					
73	S-Butyl Benzene	105	Compound Not Detected.					
74	4-Isopropyl Toluene	119	Compound Not Detected.					
75	1,3-Dichlorobenzene	146	Compound Not Detected.					
* 76	d4-1,4-Dichlorobenzene	152	10.667	10.674	(1.000)	116486	50.0000	
77	1,4-Dichlorobenzene	146	Compound Not Detected.					
78	N-Butyl Benzene	91	Compound Not Detected.					
$ 79	d4-1,2-Dichlorobenzene	152	11.067	11.067	(1.037)	105856	51.9662	48 296
80	1,2-Dichlorobenzene	146	Compound Not Detected.					
81	1,2-Dibromo 3-Chloropropane	75	Compound Not Detected.					
82	Hexachloro 1,3-Butadiene	225	Compound Not Detected					
83	1,2,4-Trichlorobenzene	180	Compound Not Detected					
84	Naphthalene	128	Compound Not Detected.					
85	1,2,3-Trichlorobenzene	180	Compound Not Detected.					
172	2 pentanone	86	Compound Not Detected.					

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Analytical Resources, Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: nt15.i
Lab File ID: agf2b.d
Lab Smp Id: AGF2B
Analysis Type: VOA
Quant Type: ISTD
Operator: PC
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-9526

Calibration Date: 19-MAY-2015
Calibration Time: 10:39
Client Smp ID: SDP-06(12.5-13.5)
Level: LOW
Sample Type: Soil

Test Mode:
Use Initial Calibration Level 5.
If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	157722	78861	315444	133469	-15.38
35 1,4-Difluorobenze	269036	134518	538072	236487	-12.10
52 d5-Chlorobenzene	241232	120616	482464	224356	-7.00
76 d4-1,4-Dichlorobe	124854	62427	249708	116486	-6.70

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
31 Pentafluorobenzen	5.68	5.18	6.18	5.68	0.00
35 1,4-Difluorobenze	6.13	5.63	6.63	6.12	-0.11
52 d5-Chlorobenzene	8.58	8.08	9.08	8.58	-0.08
76 d4-1,4-Dichlorobe	10.67	10.17	11.17	10.67	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Analytical Resources, Inc.

RECOVERY REPORT

Client Name: KJC
Sample Matrix: SOLID
Lab Smp Id: AGF2B
Level: LOW
Data Type: MS DATA
SpikeList File: voasoil.spk
Sublist File: voa.sub
Method File: /chem1/nt15.i/20150519.b/VO051415S.m
Misc Info: 15-9526

Client SDG: AGF2
Fraction: VOA
Client Smp ID: SDP-06(12.5-13.5)
Operator: PC
SampleType: SAMPLE
Quant Type: ISTD

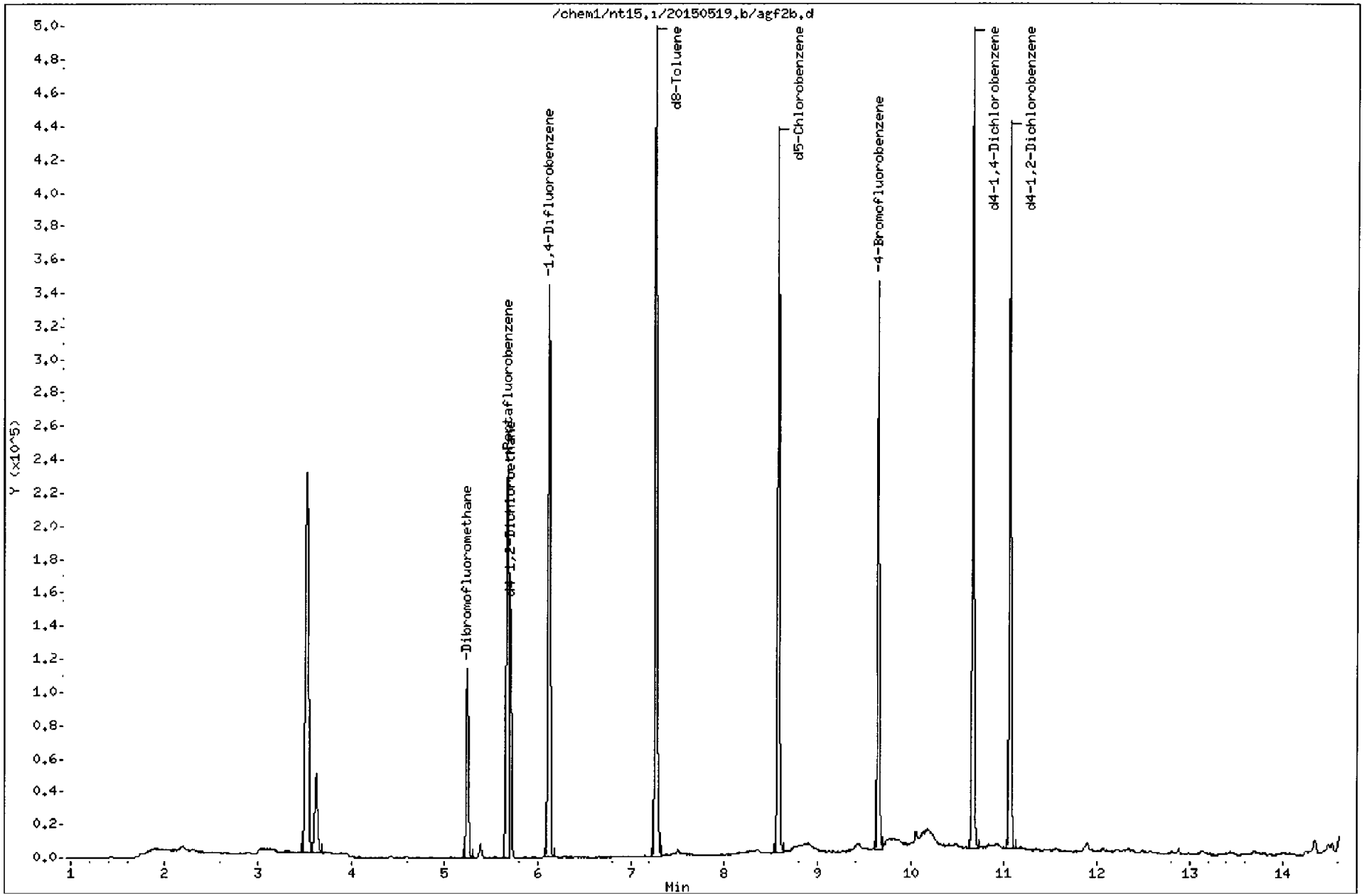
SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 27 Dibromofluorometha	50.000	53.636	107.27	70-130
$ 32 d4-1,2-Dichloroeth	50.000	58.578	117.16	80-149
$ 42 d8-Toluene	50.000	50.930	101.86	77-120
$ 62 4-Bromofluorobenze	50.000	52.782	105.56	80-120
$ 79 d4-1,2-Dichloroben	50.000	51.966	103.93	80-120

Data File: /chem1/nt15.1/20150519.b/agf2b.d
Date : 19-MAY-2015 15:10
Client ID: SDP-06(12.5-13.5)
Sample Info: AGF2B,5,5.38,0,

Instrument: nt15.1

Operator: PC
Column diameter: 0.18

Column phase: RTXVMS



Data File: /chem1/nt15.1/20150519.b/agf2b.d

Date : 19-MAY-2015 15:10

Client ID: SDP-06(12.5-13.5)

Instrument: nt15.1

Sample Info: AGF2B,5,5.38,0,

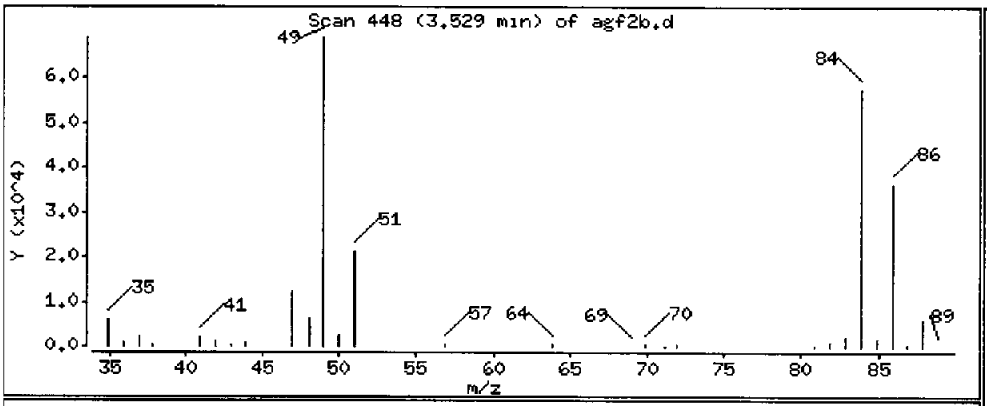
Operator: PC

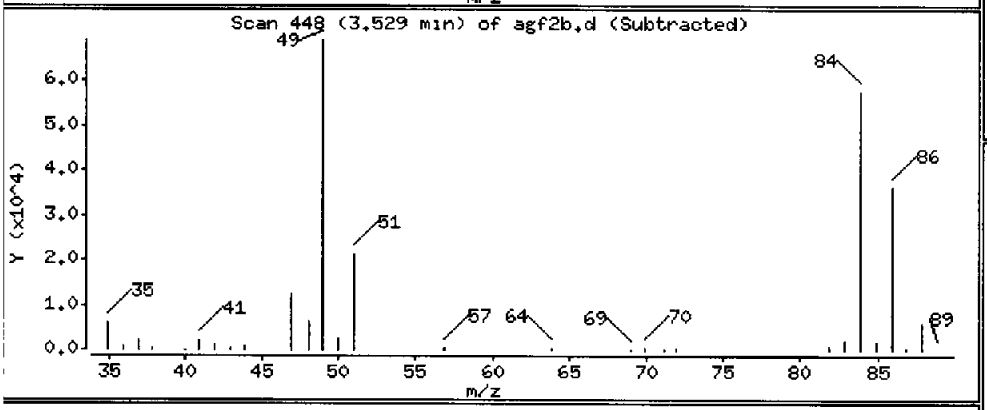
Column phase: RTXVMS

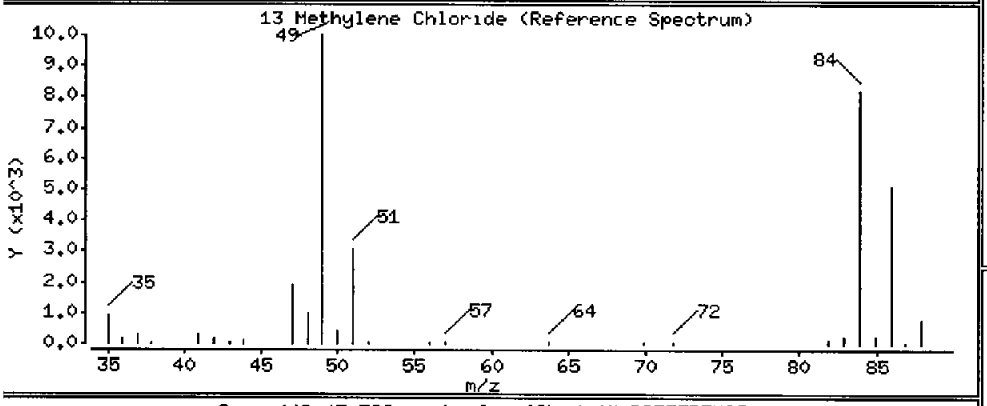
Column diameter: 0.18

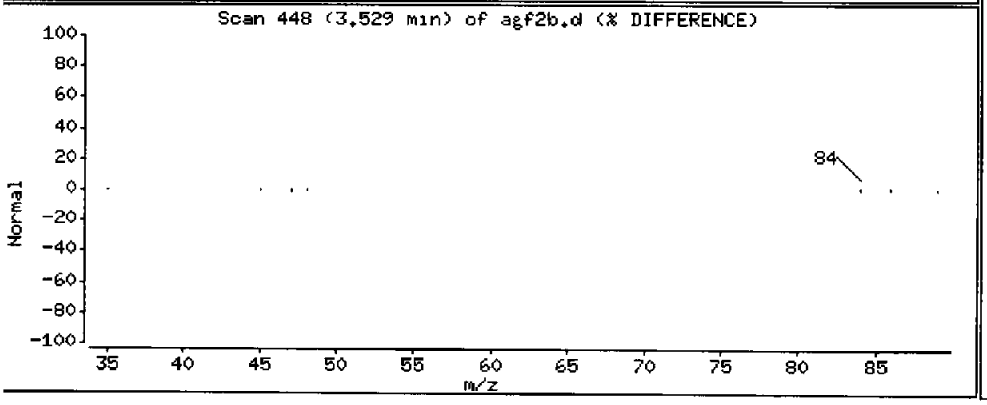
13 Methylene Chloride

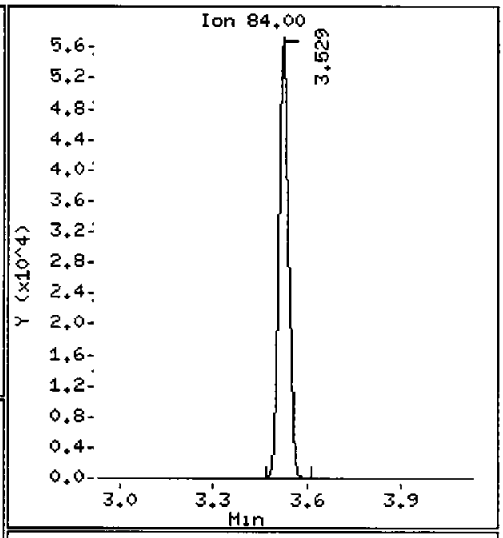
Concentration: 71.572 ug/Kg

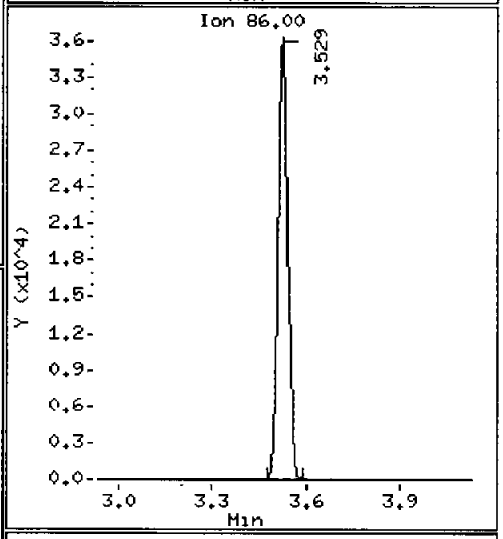


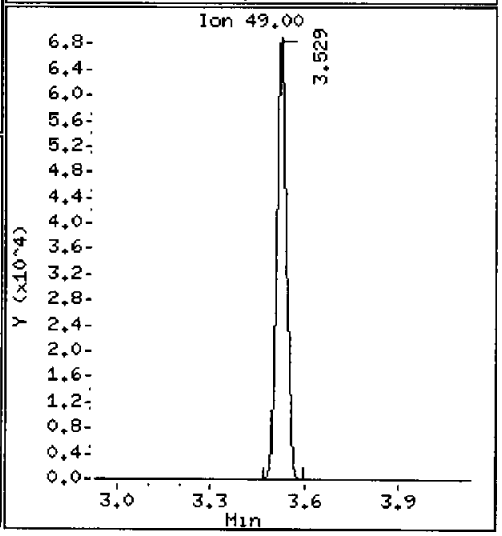












Data File: /chem1/nt15.1/20150519.b/agf2b.d

Date : 19-MAY-2015 15:10

Client ID: SDP-06(12.5-13.5)

Instrument: nt15.1

Sample Info: AGF2B,5,5.38,0,

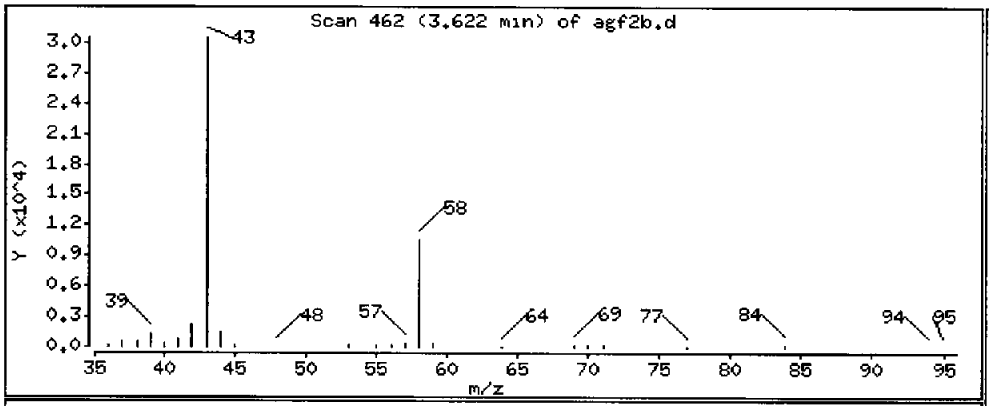
Operator: PC

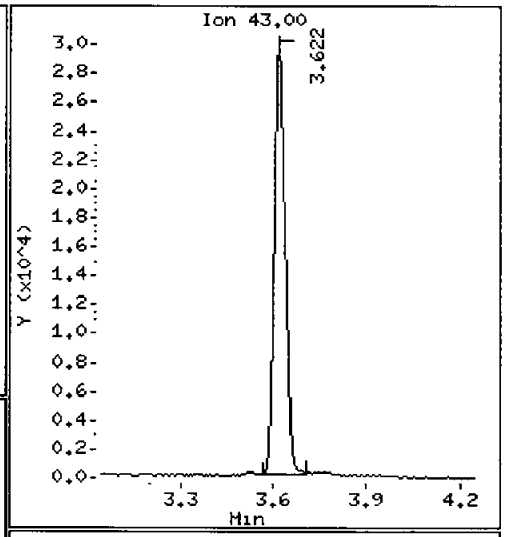
Column phase: RTXVMS

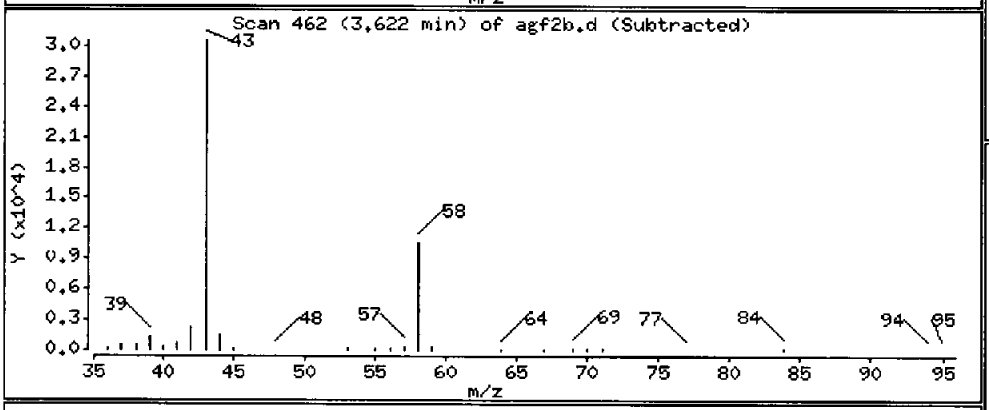
Column diameter: 0.18

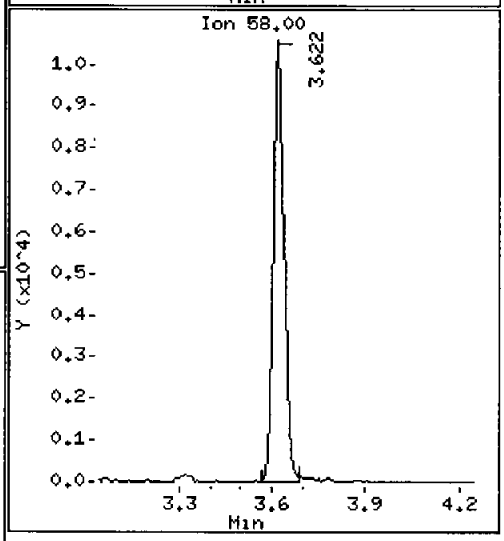
14 Acetone

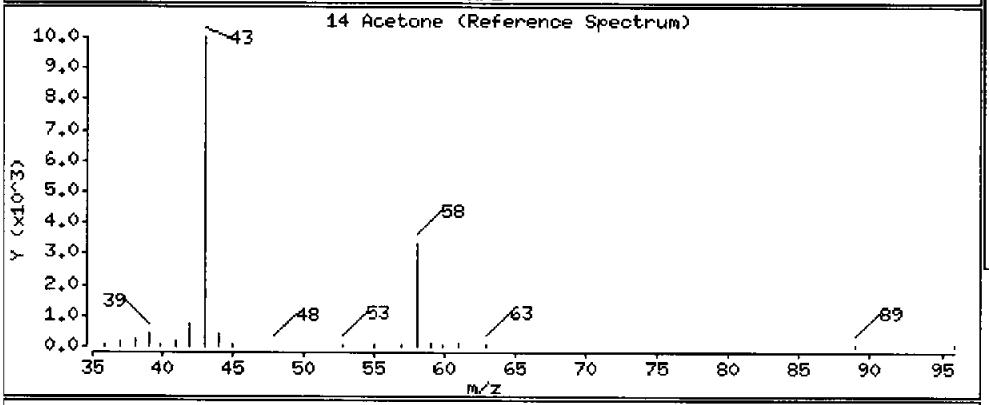
Concentration: 133.83 ug/Kg

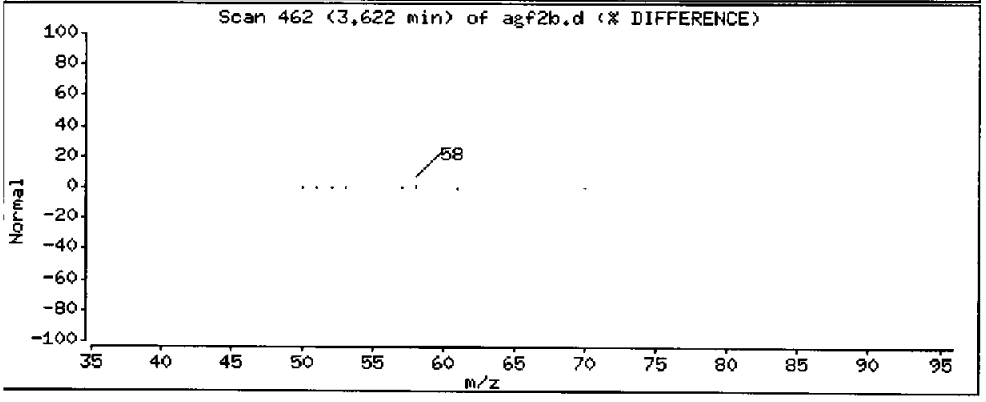












Data File: /chem1/nt15.1/20150519.b/agf2b.d

Date : 19-MAY-2015 15:10

Client ID: SDP-06(12.5-13.5)

Instrument: nt15.1

Sample Info: AGF2B,5,5.38,0,

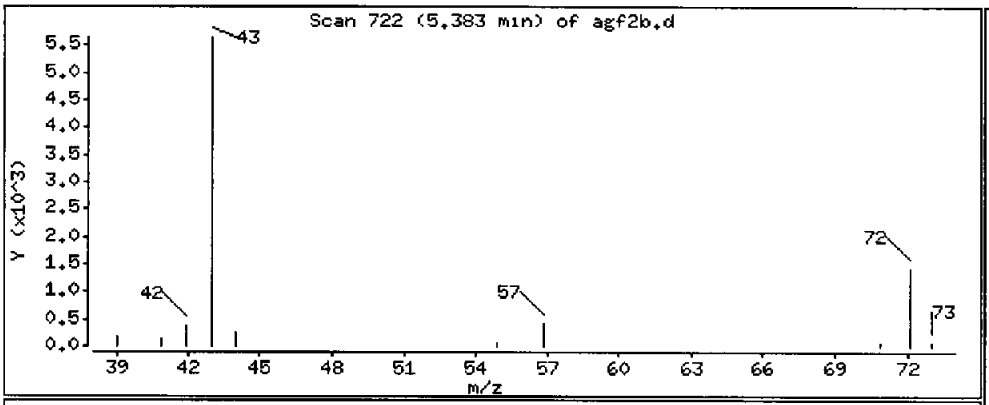
Operator: PC

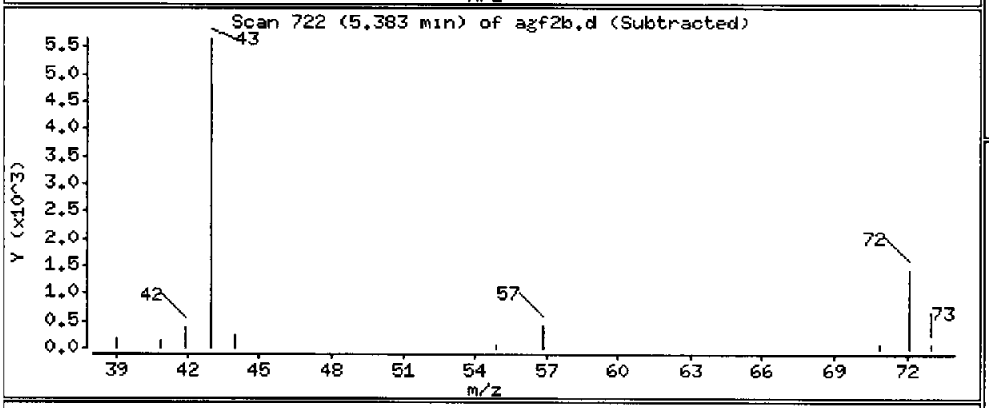
Column phase: RTXVMS

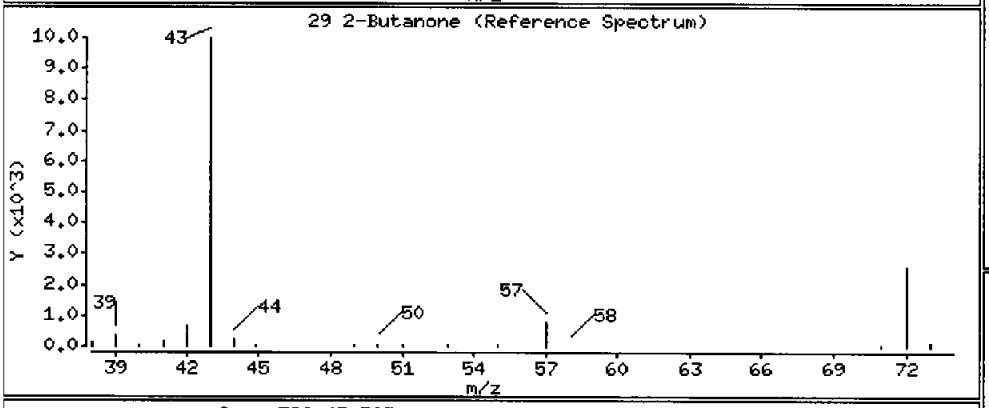
Column diameter: 0.18

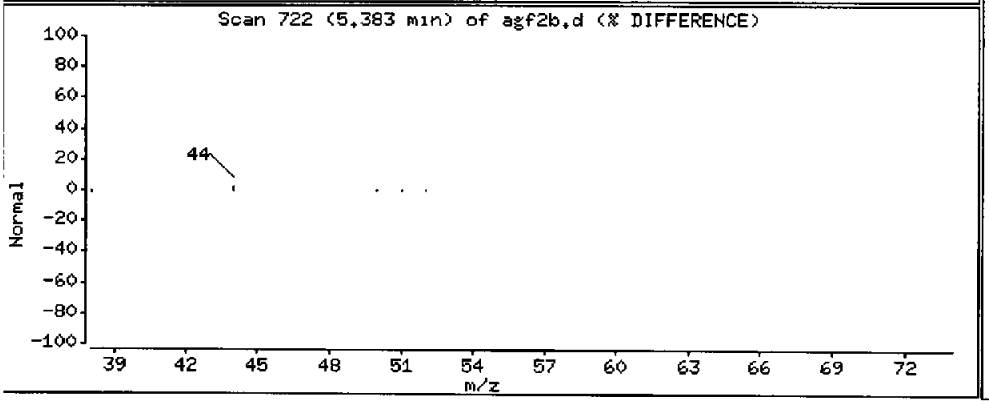
29 2-Butanone

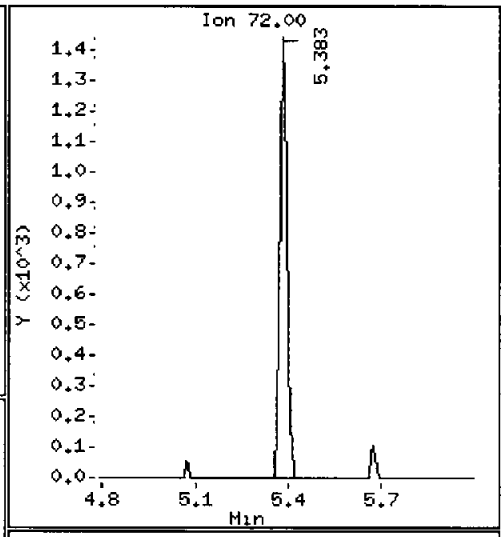
Concentration: 14.050 ug/Kg

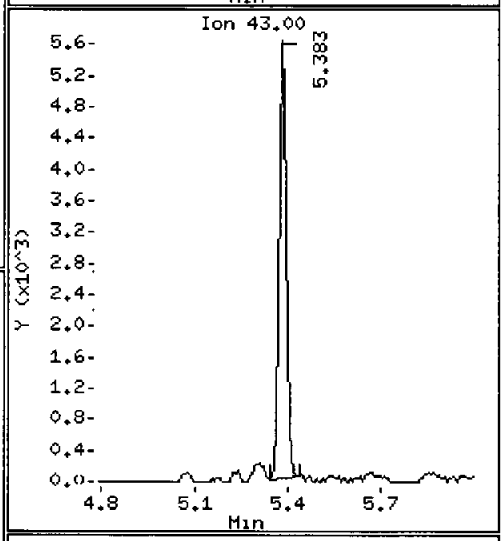


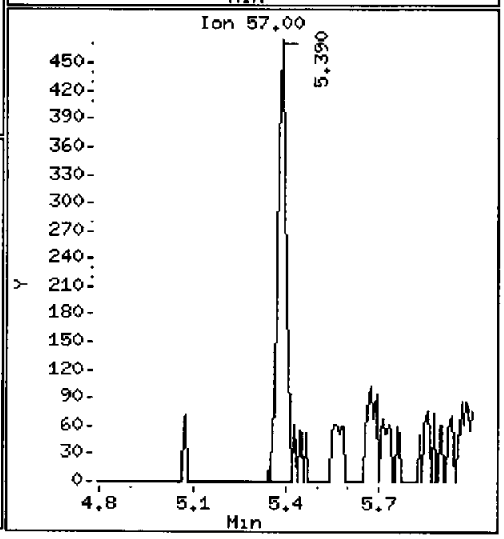












CO-ELUTION SUMMARY FOR FILE - agf2b.d

Lab ID: AGF2B, Method: VO051415S.m, Instrument: nt15.i, Date: 19-MAY-2015

RT	CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

Table of Contents: ARI Job AHS2

Client: Kennedy Jenks Consultants

Project: 1496007.00 POS Sliver

	Page From:	Page To:
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Case Narrative, Data Qualifiers, Control Limits	15	17
Metals Analysis		
Report and Summary QC Forms	18	41
Metals Raw Data		
Preparation Bench Sheets and Notes	42	47
Run Logs, Calibrations, and Raw Data	48	183

Signature

June-22-2015
Date

Analytical Resources, Incorporated
Analytical Chemists and Consultants

June 22, 2015

Ryan Hultgren
Kennedy/Jenks Consultants Inc.
32001 32nd Avenue South, Suite 100
Federal Way, WA 98001

RE: Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AHS2

Dear Mr. Hultgren:

Please find enclosed the Chain of Custody records (COCs), sample receipt documentation, and the final data package for samples from the project referenced above.

Sample receipt and details of these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs com
www.arilabs.com

cc: eFile: AHS2

Enclosures

Chain of Custody Documentation

ARI Job ID: AHS2

Subject: RE: EDD for ARI Job AGC9 (POS Sliver)
From: Ryan Hultgren <RyanHultgren@kennedyjenks.com>
Date: 6/11/2015 4:21 PM
To: Cheronne Oreiro <cheronneo@arilabs.com>
CC: Ty Schreiner <TySchreiner@KennedyJenks.com>

Cheronne,

For TCLP metals analysis, the field sample names are the following:

SDP-01 (8.0-9.0)	[5/14/15 sample]
SDP-04 (10.5-12.0)	[5/14/15 sample]
SDP-07 (1.5-3.0)	[5/13/15 sample]
SDP-10 (15.5-16.5)	[5/13/15 sample]

Let me know if any issues with the 5/13/15 samples, or if they would be flagged?

Thanks,
Ryan

Ryan Hultgren, P.E. | Project Manager
Kennedy/Jenks Consultants
32001 32nd Ave S. Suite 100 | Federal Way, WA 98001
P. 253.835.6400 | Direct 253.835 6432 | Mobile: 253.549.9725
Celebrating 95 years of service to our clients staff, and communities

From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: June 11, 2015 4:02 PM
To: Ryan Hultgren
Subject: Re: EDD for ARI Job AGC9 (POS Sliver)

Hi Ryan - Sure, Mercury has a 28 day holding time. Which samples do you want to run for TCLP metals?
-Cheronne

On 6/11/2015 3:53 PM, Ryan Hultgren wrote:

> Cheronne,
>
> If we wanted to run TCLP metals on some of the previously analyzed samples would the lab be able to get them started before the hold time expires for mercury? For those collected on the 14th, today is 28th day I believe.
>
> Thanks,
> Ryan

From: Cheronne Oreiro [mailto:cheronneo@arilabs.com]
Sent: June 09, 2015 10:32 AM
To: Ryan Hultgren
Cc: dianad@arilabs.com
Subject: Re: EDD for ARI Job AGC9 (POS Sliver)

Hi Ryan - Yes, the .pdf packages are too big to send through email. I am working with IT to get you access to our secure site. Hopefully we can accomplish this today. In the meantime, see attached the .pdf data summaries and let me know if you have any questions.
-Cheronne

Cheronne Oreiro
Project Manager
Analytical Resources, Inc.
4611 S. 134th Place, Suite 100
Tukwila, WA 98168-3240
cheronneo@arilabs.com
(206)-695-6214

How was your customer experience?
Please take our 5 minute online customer survey.

This correspondence contains confidential information from Analytical Resources, Inc. (ARI) The information contained herein is intended solely for the use of the individual(s) named above. If you are not the intended recipient, any copying, distribution. disclosure, or use of the text and/or attached document(s) is strictly prohibited.

If you have received this correspondence in error, please notify sender immediately. Thank you.

On 6/9/2015 10:09 AM, Ryan Hultgren wrote:

> Diana,
>
> Thank you for the EDDs. Will the lab report come separately?
>
> Thanks,
> Ryan
>
> ---
> Ryan Hultgren, P.E. | Project Manager
> Kennedy/Jenks Consultants
> 32001 32nd Ave S. Suite 100 | Federal Way, WA 98001
> P: 253.835.6400 | Direct: 253.835.6432 | Mobile: 253.549.9725
> Celebrating 95 years of service to our clients, staff, and communities
>
> -----Original Message-----
> From: Diana Denman [mailto:]
> Sent: June 08, 2015 2:33 PM
> To: Ryan Hultgren
> Subject: EDD for ARI Job AGC9 (POS Sliver)

Ryan,

The EDD for ARI Job AGC9 is attached. Please contact me if you have any qu

--
Diana Denman
ARI Labs, Inc.
dianad@arilabs.com
206-695-6219

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGAE	Turn-around Requested: std.	Page 1 of 2	
ARI Client Company: Kennedy/Jenks	Phone (253)549-9725	Date 05/13/15	Ice Present?
Client Contact: Ryan Hultgren		No of Coolers.	Cooler Temps:
Client Project Name: POS Slives			
Client Project # 1496007.00	Samplers C. Joseph/J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No Containers	Metals ①	PAHs EPA 8270C SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-10 (2.0-3.5)	5/13/15	0930	Soil	1									① RCRA and Cu+Zn by 6020 Hg: 7471 HOLD
SDP-10 (7.0-8.0)	5/13/15	0952	Soil	1									HOLD
SDP-10 (13.5-15.0)	5/13/15	1020	Soil	1	X	X	X						
SDP-10 (15.5-16.5)	5/13/15	1045	Soil	1	X	X	X	X					
SDP-10 (16.5-17.5)	5/13/15	1040	Soil	1	X	X	X						
SDP-09 (5.0-6.5)	5/13/15	1120	Soil	1									HOLD
SDP-09 (2.5-4.0)	5/13/15	1130	Soil	1	X	X	X						
SDP-08 (6.0-7.0)	5/13/15	1209	Soil	1									HOLD
SDP-08 (3.5-5.0)	5/13/15	1200	Soil	1									HOLD
SDP-08 (12.0-13.5)	5/13/15	1230	Soil	1	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Rich Hulse	Printed Name	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/13/15 1640	Date & Time: 5/13/15 1640	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 2 of 2	
ARI Client Company: Kennedy / Jenks	Phone: (253) 541-9235	Date: 05/13/15	Ice Present?
Client Contact: Ryan Hamilton		No of Coolers:	Cooler Temps:
Client Project Name: POS Silver			
Client Project #: 1496007.00	Samplers: C. Joseph / J Schwarz		

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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
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Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals (6020)	PAHs 8270D SIM	PCBs 8082	NWTPH-Dx					Notes/Comments
SDP-07 (1.5-3.0)	05/13/15	1315	Soil	1	X	X	X	X					@ RCRA, Cu, Zn by 6020 Hg by 7471
SDP-07 (8.5-9.5)		1335			X	X	X						
SDP-07 (12.5-13.5)		1345											HOLD
SDP-07 (19.0-20.0)		1350											HOLD
SDP-07 (1.5-3.0)-MS		1330			X	X	X	X					
SDP-06 (1.5-3.0)		1410											HOLD
SDP-06 (12.5-13.5)		1430			X	X	X	X					
SDP-06 (10.0-11.0)		1435			X	X	X	X					
SDP-06 (17.0-18.0)		1445											HOLD
RB-051315		1530	Water	7	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Kirk Hamilton	Printed Name:	Printed Name:
	Company: Kennedy / Jenks	Company: ARI	Company:	Company:
	Date & Time: 5/13/15 1638	Date & Time: 5/13/15 1640	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client*

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Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Kennedy Jenks Project Name PCS Silver

COC No(s). _____ NA Delivered by Fed-Ex UPS Courier (Hand Delivered) Other _____

Assigned ARI Job No AGA8 Tracking No _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES (NO)

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry) 8.8 7.4

Time 1640

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90277950

Cooler Accepted by _____ Date 5/13/15 Time 1640

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES (NO)

What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA YES (NO)

Were all bottles sealed in individual plastic bags? YES (NO)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA (YES) NO

Were all VOC vials free of air bubbles? (NA) YES NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI (NA) _____

Was Sample Split by ARI (NA) YES Date/Time _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date 5/14/15 Time 0714

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By _____ Date _____

Small Air Bubbles ~ 2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• •	• • •	● ● ●

Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)

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Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#: 1+2 Temperature(°C): 8&+2.4

Sample ID	Bottle Count	Bottle Type
All samples received above 6°C.		

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by _____ Date 5/14/15 Time 844

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: AGCG	Turn-around Requested: Std	Page 1 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date 5/14/15	Ice Present? Yes
Client Contact: Ryan Holtgren		No. of Coolers: 3J	Cooler Temps: 6.5 7.9
Client Project Name: POS Slivers			
Client Project #: 1496007.00	Samplers: C. Joseph/J. Schwarz		

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Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
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Sample ID	Date	Time	Matrix	No Containers	Analysis Requested: Metals (1)	PAHs 8270c SIM	PCBs 8082	Hydrocarbon-Dx (2)					Notes/Comments
SDP-01(3.0-4.0)	5/14/15	0835	Soil	1	X	X	X						(1) RCRA, Cu, Zn by 6020 Hg by 7471
SDP-01(8.0-9.0)		0855			X	X	X						(2) WITHOUT Silica Gel Cleanup
SDP-01(11.0-12.5)		0905						~~X~~ (2)					HOLD
SDP-01(22.5-24.0)		0915											HOLD
SDP-02(7.0-8.5)		0940											HOLD
SDP-02(12.5-13.5)		0955											HOLD
SDP-02(16.0-17.5)		1030			X	X	X	X					
SDP-02(18.5-19.5)		1035			X	X	X	X					
SDP-02(20.0-21.5)		1043											HOLD
SDP-02(22.0-23.5)		1045			X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by: (Signature)	Relinquished by. (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Attwell	Printed Name.	Printed Name
	Company: Kennedy Jenks	Company: ARI	Company.	Company
	Date & Time: 5/14/15 1615	Date & Time. 5-14-15 1615	Date & Time	Date & Time

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 2 of 3	
ARI Client Company: Kennedy/Jenks	Phone: (253)835-6400	Date: 5/14/15	Ice Present?
Client Contact: Ryan Hultgren		No. of Coolers:	Cooler Temps:
Client Project Name: POS Slivers			
Client Project #: 1496007.00	Samplers: C. Joseph / J. Schwarz		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)
www.arilabs.com

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: Metals (1)	PAHs 8270D SIM	PCBs 8082	NWTPH-Dx (2)					Notes/Comments
SDP-03 (2.0-3.5)	5/14/15	1105	Soil	1									(1) RCRA, Cu, Zn by 6020 Hg by 7471 (2) w/ silica Gel Cleanup HOLD
SDP-03 (6.5-8.0)		1115			X	X	X						
SDP-03 (21.0-22.0)		1205											HOLD
SDP-03 (23.5-24.5)		1210			X	X	X						
SDP-04 (1.5-3.0)		1305			X	X	X	X					
SDP-04 (8.0-9.0)		1310											HOLD
SDP-04 (10.5-12.0)		1320			X	X	X	X					
SDP-04 (16.0-17.0)		1325											HOLD
SDP-04 (18.0-19.5)		1330											HOLD
SDP-04 (1.5-3.0)-MS		1335			X	X	X	X					MS/MSD

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name:	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company:	Company:
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std	Page: 3 of 3	
ARI Client Company: Kennedy Jenks Phone: (253)835-6400		Date: 5/14/15	Ice Present?
Client Contact: Ryan Holtgren		No. of Coolers:	Cooler Temps:
Client Project Name: POS Silver			
Client Project #: 1496007.00	Samplers: C. Joseph/J. Schwarz		

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Sample ID	Date	Time	Matrix	No Containers	Metals (1)	PAHs 8270c SIM	PCBs 8082	DRPH-DX (2)					Notes/Comments
SDP-05 (1.0-2.5)	5/14/15	1350	Soil	1									(1) RCRA, Cu, Zn by 6020 Hg by 7471 (2) without Silica Gel Cleanup HOLD
SDP-05 (6.5-7.5)		1405			X	X	X						
SDP-05 (13.0-14.0)		1410											HOLD
SDP-05 (17.5-19.0)		1420			X	X	X						
WC-051415		1450											HOLD
RB-051415	5/14/15	1340	Water	7	X	X	X	X					

Comments/Special Instructions	Relinquished by (Signature)	Received by (Signature)	Relinquished by (Signature)	Received by (Signature)
	Printed Name: Craig Joseph	Printed Name: Chris Atwell	Printed Name:	Printed Name
	Company: Kennedy/Jenks	Company: ARI	Company	Company
	Date & Time: 5/14/15 1615	Date & Time: 5-14-15 1615	Date & Time	Date & Time

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Kennedy Jenks Project Name: POS Silver

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: AGCG Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry): 6.5 7.9 ___ ___ ___ ___

Time: 1615

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 90877752

Cooler Accepted by: CA Date 5-14-15 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap (Wet) Ice Gel Packs (Baggies) Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)..	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)	_____	

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by _____

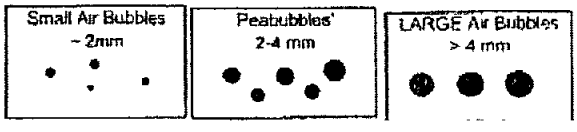
Samples Logged by: AV Date 5/15/15 Time: 939

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

AHS2 : 00018

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Temperature Compliance Form

Cooler#:	Temperature(°C): 4.5 7.9	
Sample ID	**Bottle Count**	**Bottle Type**
All samples above 0°C		

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Cooler#:	Temperature(°C):	
Sample ID	**Bottle Count**	**Bottle Type**

Completed by CA Date 5-14-15 Time 1615

Case Narrative, Data Qualifiers, Control Limits

ARI Job ID: AHS2

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Case Narrative

Client: Kennedy/Jenks Consultants Inc.
Project: Port of Seattle Sliver, 1496007.00 TASK02
ARI Job No.: AHS2

Sample Receipt

Four soil samples were removed from frozen archive on June 12, 2015 and logged under ARI job AHS2. The samples were analyzed for TCLP metals, as requested. For details regarding sample receipt, please refer to the Cooler Receipt Form.

TCLP Metals/Mercury by SW1311/6010/7470

The samples and associated laboratory QC were prepared, digested, and analyzed for metals within the method recommended holding times. The samples and associated laboratory QC were prepared, digested, and analyzed for mercury outside the method recommended holding time.

Both method blanks had barium results greater than the reporting limit. All sample results were less than ten times the TCLP regulatory limit for barium. No corrective action was taken.

The matrix spike percent recoveries and duplicate RPDs were within control limits.

AHS2 : 00016

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: AHS2
Client: Kennedy Jenks Consultants
Project Event: 1496007.00
Project Name: POS Sliver

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	SDP-10(15.5-16.5)	AHS2A	15-11151	Soil	05/13/15 10:45	05/14/15 16:15
2.	SDP-07(1.5-3.0)	AHS2B	15-11152	Soil	05/13/15 13:15	05/14/15 16:15
3.	SDP-01(8.0-9.0)	AHS2C	15-11153	Soil	05/14/15 08:55	05/14/15 16:15
4.	SDP-04(10.5-12.0)	AHS2D	15-11154	Soil	05/14/15 13:20	05/14/15 16:15

AHS2 00017

Metals Analysis
Report and Summary QC Forms

ARI Job ID: AHS2

Cover Page

INORGANIC ANALYSIS DATA PACKAGE

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AHS2

CLIENT ID	ARI ID	ARI LIMS ID	REPREP
SDP-10(15.5-16.5)	AHS2A	15-11151	
SDP-10(15.5-16.5)D	AHS2ADUP	15-11151	
SDP-10(15.5-16.5)S	AHS2ASPK	15-11151	
SDP-07(1.5-3.0)	AHS2B	15-11152	
PBS	AHS2MB1	15-11152	
SDP-01(8.0-9.0)	AHS2C	15-11153	
PBS	AHS2MB2	15-11153	
SDP-04(10.5-12.0)	AHS2D	15-11154	

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments: _____

THIS DATA PACKAGE HAS BEEN REVIEWED AND AUTHORIZED FOR RELEASE BY:

Signature: _____ Name: Jay Kuhn

Date: 6/19/15 Title: Inorganics Director

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS
Page 1 of 1

Sample ID: SDP-10(15.5-16.5)
SAMPLE

Lab Sample ID: AHS2A
LIMS ID: 15-11151
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/14/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.10**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	7440-47-3	Chromium	0.02	0.02	U
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS

Sample ID: SDP-07(1.5-3.0)
SAMPLE

Lab Sample ID: AHS2B
LIMS ID: 15-11152
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/14/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.52**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	**7440-47-3**	**Chromium**	0.02	**0.03**	
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS
Page 1 of 1

Sample ID: SDP-01(8.0-9.0)
SAMPLE

Lab Sample ID: AHS2C
LIMS ID: 15-11153
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.19**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	7440-47-3	Chromium	0.02	0.02	U
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS
Page 1 of 1

Sample ID: SDP-04(10.5-12.0)
SAMPLE

Lab Sample ID: AHS2D
LIMS ID: 15-11154
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/14/15
Date Received: 05/14/15

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.85**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	7440-47-3	Chromium	0.02	0.02	U
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS

Sample ID: SDP-10(15.5-16.5)
MATRIX SPIKE

Lab Sample ID: AHS2A
LIMS ID: 15-11151
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/14/15

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Spike	Spike Added	% Recovery	Q
Arsenic	6010C	0.2 U	4.1	4.0	102%	
Barium	6010C	0.10	4.10	4.00	100%	
Cadmium	6010C	0.01 U	1.01	1.00	101%	
Chromium	6010C	0.02 U	1.00	1.00	100%	
Lead	6010C	0.1 U	3.8	4.0	95.0%	
Mercury	7470A	0.0001 U	0.0012	0.0010	120%	
Selenium	6010C	0.2 U	4.1	4.0	102%	
Silver	6010C	0.02 U	1.02	1.00	102%	

Reported in mg/L

N-Control Limit Not Met
H-% Recovery Not Applicable, Sample Concentration Too High
NA-Not Applicable, Analyte Not Spiked or diluted near or below detection limit

Percent Recovery Limits: 75-125%

AHS2 00023

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS

Sample ID: SDP-10(15.5-16.5) DUPLICATE

Lab Sample ID: AHS2A
LIMS ID: 15-11151
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: 05/13/15
Date Received: 05/14/15

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Analysis Method	Sample	Duplicate	RPD	Control Limit	Q
Arsenic	6010C	0.2 U	0.2 U	0.0%	+/- 0.2	L
Barium	6010C	0.10	0.10	0.0%	+/- 20%	
Cadmium	6010C	0.01 U	0.01 U	0.0%	+/- 0.01	L
Chromium	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L
Lead	6010C	0.1 U	0.1 U	0.0%	+/- 0.1	L
Mercury	7470A	0.0001 U	0.0001 U	0.0%	+/- 0.0001	L
Selenium	6010C	0.2 U	0.2 U	0.0%	+/- 0.2	L
Silver	6010C	0.02 U	0.02 U	0.0%	+/- 0.02	L

Reported in mg/L

*-Control Limit Not Met
L-RPD Invalid, Limit = Detection Limit

AHS2-000251

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS

Sample ID: METHOD BLANK

Lab Sample ID: AHS2MB
LIMS ID: 15-11152
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.02**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	7440-47-3	Chromium	0.02	0.02	U
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

ANALYTICAL RESOURCES INCORPORATED

INORGANICS ANALYSIS DATA SHEET
TCLP METALS
Page 1 of 1

Sample ID: METHOD BLANK

Lab Sample ID: AHS2MB
LIMS ID: 15-11153
Matrix: Soil
Data Release Authorized:
Reported: 06/19/15

QC Report No: AHS2-Kennedy Jenks Consultants
Project: POS Sliver
1496007.00
Date Sampled: NA
Date Received: NA

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	LOQ	mg/L	Q
1311	06/16/15	6010C	06/18/15	7440-38-2	Arsenic	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	**7440-39-3**	**Barium**	0.02	**0.02**	
1311	06/16/15	6010C	06/18/15	7440-43-9	Cadmium	0.01	0.01	U
1311	06/16/15	6010C	06/18/15	7440-47-3	Chromium	0.02	0.02	U
1311	06/16/15	6010C	06/18/15	7439-92-1	Lead	0.1	0.1	U
1311	06/16/15	7470A	06/17/15	7439-97-6	Mercury	0.0001	0.0001	U
1311	06/16/15	6010C	06/18/15	7782-49-2	Selenium	0.2	0.2	U
1311	06/16/15	6010C	06/18/15	7440-22-4	Silver	0.02	0.02	U

U-Analyte undetected at given LOQ
LOQ-Limit of Quantitation

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AHS2

ANALYTE	EL	M	RUN	ICVTV	ICV	%R	CCVTV	CCV1	%R	CCV2	%R	CCV3	%R	CCV4	%R	CCV5	%R
Arsenic	AS	ICP	IP061871	2000.0	1992.05	**99.6**	2000.0	1956.81	**97.8**	1988.92	**99.4**	1984.42	**99.2**	1960.04	**98.0**	2016.14	**100.8**
Barium	BA	ICP	IP061871	1000.0	1032.83	**103.3**	1000.0	1015.87	**101.6**	1027.26	**102.7**	1026.63	**102.7**	1035.67	**103.6**	1037.59	**103.8**
Cadmium	CD	ICP	IP061871	1000.0	1054.70	**105.5**	1000.0	1009.26	**100.9**	1047.33	**104.7**	1045.37	**104.5**	1032.27	**103.2**	1063.80	**106.4**
Chromium	CR	ICP	IP061871	1000.0	1028.14	**102.8**	1000.0	1006.99	**100.7**	1024.15	**102.4**	1029.34	**102.9**	1034.82	**103.5**	1047.72	**104.8**
Lead	PB	ICP	IP061871	2000.0	1999.94	**100.0**	2000.0	1913.29	**95.7**	1991.65	**99.6**	1984.45	**99.2**	1963.75	**98.2**	2017.40	**100.9**
Mercury	HG	CVA	HG061702	8.0	7.92	**99.0**	4.0	4.04	**101.0**	4.04	**101.0**						
Selenium	SE	ICP	IP061871	2000.0	2017.23	**100.9**	2000.0	1979.22	**99.0**	2011.88	**100.6**	2004.48	**100.2**	1988.49	**99.4**	2043.56	**102.2**
Silver	AG	ICP	IP061871	1000.0	1034.14	**103.4**	1000.0	1019.81	**102.0**	1025.90	**102.6**	1020.35	**102.0**	1025.34	**102.5**	1003.48	**100.3**

Control Limits: Mercury 80-120; Other Metals 90-110

Calibration Verification

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AHS2

ANALYTE	EL	M	RUN	CCVTV	CCV6	%R	CCV7	%R	CCV8	%R	CCV9	%R	CCV10	%R	CCV11	%R
Arsenic	AS	ICP	IP061871	2000.0	1989.57	99.5	2016.94	100.8	2026.18	101.3	1919.56	96.0	1918.89	95.9	1926.14	96.3
Barium	BA	ICP	IP061871	1000.0	1037.26	103.7	1038.46	103.8	1033.16	103.3	1003.83	100.4	1022.23	102.2	1004.41	100.4
Cadmium	CD	ICP	IP061871	1000.0	1043.22	104.3	1053.71	105.4	1032.03	103.2	1003.89	100.4	1003.81	100.4	1006.22	100.6
Chromium	CR	ICP	IP061871	1000.0	1034.32	103.4	1036.67	103.7	1036.49	103.6	999.76	100.0	1007.57	100.8	996.05	99.6
Lead	PB	ICP	IP061871	2000.0	1991.02	99.6	2011.79	100.6	1965.32	98.3	1917.04	95.9	1922.04	96.1	1922.90	96.1
Mercury	HG	CVA	HG061702	4.0												
Selenium	SE	ICP	IP061871	2000.0	2012.43	100.6	2037.25	101.9	2044.78	102.2	1942.90	97.1	1939.54	97.0	1949.79	97.5
Silver	AG	ICP	IP061871	1000.0	1040.02	104.0	1046.47	104.6	1055.01	105.5	1000.29	100.0	1007.60	100.8	999.58	100.0

Control Limits: Mercury 80-120; Other Metals 90-110

CRDL Standard

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS:ug/L

SDG: AHS2

ANALYTE	EL	M	RUN	CRA/I TV	CR-1	%R	CR-2	%R	CR-3	%R	CR-4	%R	CR-5	%R	CR-6	%R
Arsenic	AS	ICP	IP061871	50.0	48.74	**97.5**										
Barium	BA	ICP	IP061871	3.0	4.02	**134.0**										
Cadmium	CD	ICP	IP061871	2.0	2.20	**110.0**										
Chromium	CR	ICP	IP061871	5.0	4.24	**84.8**										
Lead	PB	ICP	IP061871	20.0	20.93	**104.7**										
Mercury	HG	CVA	HG061702	0.1	0.07	**70.0**										
Selenium	SE	ICP	IP061871	50.0	48.91	**97.8**										
Silver	AG	ICP	IP061871	3.0	3.04	**101.3**										

Control Limits: no control limits have been established by the EPA at this time.

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AHS2

ANALYTE	EL	METH	RUN	CRDL	IDL	ICB	C	CCB1	C	CCB2	C	CCB3	C	CCB4	C	CCB5	C
Arsenic	AS	ICP	IP061871	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Barium	BA	ICP	IP061871	200.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Cadmium	CD	ICP	IP061871	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chromium	CR	ICP	IP061871	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Lead	PB	ICP	IP061871	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U
Mercury	HG	CVA	HG061702	0.2	0.1	0.1	U	0.1	U	0.1	U						
Selenium	SE	ICP	IP061871	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Silver	AG	ICP	IP061871	10.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U

0550S

Calibration Blanks

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

UNITS: ug/L

SDG: AHS2

ANALYTE	EL	METH	RUN	CRDL	IDL	CCB6	C	CCB7	C	CCB8	C	CCB9	C	CCB10	C	CCB11	C
Arsenic	AS	ICP	IP061871	10.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Barium	BA	ICP	IP061871	200.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U
Cadmium	CD	ICP	IP061871	5.0	2.0	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chromium	CR	ICP	IP061871	10.0	5.0	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U
Lead	PB	ICP	IP061871	3.0	20.0	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U	20.0	U
Mercury	HG	CVA	HG061702	0.2	0.1												
Selenium	SE	ICP	IP061871	5.0	50.0	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0	U
Silver	AG	ICP	IP061871	10.0	3.0	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U

ICP Interference Check Sample

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

ICS SOURCE: I.V.

PROJECT: POS Sliver

RUNID: IP061871

SDG: AHS2

INSTRUMENT ID: OPTIMA ICP 2

UNITS: ug/L

ANALYTE	ICSA TV	ICSAB TV	ICSA1	ICSAB1	%R	ICSA2	ICSAB2	%R	ICSA3	ICSAB3	%R
Aluminum	200000	200000	198124.5	197166.7	**98.6**						
Antimony		1000	-8.9	1023.9	**102.4**						
Arsenic		1000	20.7	1024.9	**102.5**						
Barium		1000	3.1	1022.1	**102.2**						
Beryllium		1000	0.1	975.8	**97.6**						
Boron			-7.3	-7.8							
Cadmium		1000	-1.4	1055.8	**105.6**						
Calcium	100000	100000	99665.5	99882.7	**99.9**						
Chromium		1000	2.9	1022.9	**102.3**						
Cobalt		1000	2.7	987.9	**98.8**						
Copper		1000	0.2	1067.2	**106.7**						
Iron	200000	200000	193791.5	194141.7	**97.1**						
Lead		1000	-2.0	966.6	**96.7**						
Magnesium	100000	100000	102577.3	99666.0	**99.7**						
Manganese		1000	-0.3	950.0	**95.0**						
Molybdenum			4.5	5.3							
Nickel		1000	0.3	961.6	**96.2**						
Potassium			-2.7	-13.0							
Selenium		1000	21.8	1035.9	**103.6**						
Silicon			-18.2	-19.4							
Silver		1000	-1.5	1075.9	**107.6**						
Sodium			-5.2	-3.9							
Strontium			6.4	6.3							
Thallium		1000	16.4	973.7	**97.4**						
Tin			-2.7	-2.7							
Titanium			4.8	4.6							
Vanadium		1000	5.3	1000.7	**100.1**						
Zinc		1000	-1.8	936.6	**93.7**						

SCAN SEAL

IDLs and ICP Linear Ranges

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AHS2

UNITS: ug/L

ANALYTE	EL	METH	INSTRUMENT	WAVELENTH (nm)	GFA BACK-GROUND	CLP CRDL	RL	RL DATE	ICP LINEAR RANGE (ug/L)	ICP LR DATE
Arsenic	AS	ICP	OPTIMA ICP 2	197.20		10	50.0	4/1/2012	30000.0	5/27/2015
Barium	BA	ICP	OPTIMA ICP 2	455.50		200	3.0	4/1/2012	100000.0	5/27/2015
Cadmium	CD	ICP	OPTIMA ICP 2	228.80		5	2.0	4/1/2012	20000.0	5/27/2015
Chromium	CR	ICP	OPTIMA ICP 2	267.72		10	5.0	4/1/2012	100000.0	5/27/2015
Lead	PB	ICP	OPTIMA ICP 2	220.35		3	20.0	4/1/2012	300000.0	5/27/2015
Mercury	HG	CVA	CETAC MERCURY	253.70		0.2	0.1	4/1/2012		
Selenium	SE	ICP	OPTIMA ICP 2	196.02		5	50.0	4/1/2012	20000.0	5/27/2015
Silver	AG	ICP	OPTIMA ICP 2	328.07		10	3.0	4/1/2012	5000.0	5/27/2015

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

IEC DATE: 5/27/2015

SDG: AHS2

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	AL	AS	BA	BE	CA	CD	CO	CR	CU	FE
Aluminum	308.22	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	12.9963870	0.0000000	0.0000000
Arsenic	188.98	0.0000000	0.0000000	0.0000000	0.0000000	0.1701060	0.0000000	-1.0130830	1.7708180	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1680500	0.0000000	0.0904500	0.1089990
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Boron	249.67	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	2.0143280	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	6.2722070	0.0000000	0.0000000	-0.0042320	0.0000000	0.1559820	0.0000000	0.0000000	0.0125340
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.0574070
Cobalt	228.62	0.0000000	0.0000000	0.0749070	0.0000000	0.0000000	0.0000000	0.0000000	-0.0345650	0.0000000	0.0000000
Copper	324.75	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1645030	0.0000000	0.0000000	-0.0416680
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-2.0309950	0.0000000	0.0000000
Lead	220.35	-0.2920310	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.1453350	-1.7772800	1.5490250	0.0537930
Magnesium	279.08	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-1.9208850	-1.3957580	0.0000000	0.6720250
Manganese	257.61	0.0078430	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0185970	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.6153710	0.0000000	0.0000000	0.0000000
Silicon	288.16	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.5881860	0.0000000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Thallium	190.80	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	5.7328080	0.4395290	0.0000000	-0.1372270
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.1330180	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.0000000	0.0000000	0.0948540	0.0000000	0.0000000	0.2005530	0.0000000	0.0000000
Vanadium	292.40	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-3.6981180	0.0000000	0.0533100
Zinc	206.20	0.0000000	0.0000000	0.0000000	0.0000000	0.0125960	0.0000000	0.0000000	-0.4630410	0.0000000	0.0000000

ICP Interelement Correction Factors

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

IEC DATE: 5/27/2015

SDG: AHS2

INSTRUMENT ID: OPTIMA ICP 2

ANALYTE	WAVELENGTH	MG	MN	MO	NI	PB	SB	TI	TL	V	ZN
Aluminum	308.22	0.0000000	0.0000000	16.4931900	0.0000000	0.0000000	0.0000000	2.0139320	0.0000000	14.4993090	0.0000000
Antimony	206.84	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.4944740	0.0000000	-4.2602390	0.0000000
Arsenic	188.98	0.0000000	0.0000000	3.6629630	0.0000000	0.0000000	0.0000000	-33.0733180	0.0000000	0.0000000	0.0000000
Barium	233.53	0.0000000	0.0000000	0.0000000	0.0967780	0.0000000	0.0000000	0.0000000	0.0000000	0.2048370	0.0000000
Beryllium	313.04	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0116350	0.0000000	0.2017140	0.0000000
Boron	249.67	0.0000000	0.0000000	-1.2009570	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Cadmium	228.80	0.0000000	0.0000000	0.0000000	-1.1190750	0.0000000	0.0000000	0.0000000	0.0000000	0.0666920	0.0000000
Calcium	317.93	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Chromium	267.72	0.0882340	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.3749420	0.0000000
Cobalt	228.62	0.0000000	0.0000000	-0.1556230	0.1548310	0.0000000	0.0000000	1.8067830	0.0000000	0.0000000	0.0000000
Copper	324.75	0.0040580	0.0000000	0.3490750	0.0000000	0.0000000	0.0000000	0.1703120	0.0000000	0.0000000	0.0000000
Iron	273.96	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	11.4750080	0.0000000
Lead	220.35	0.0000000	0.0000000	0.0000000	-0.1686960	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Magnesium	279.08	0.0000000	0.0000000	-6.0593460	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Manganese	257.61	0.0025550	0.0000000	0.0000000	0.0000000	-0.2055050	0.0000000	0.0000000	0.0000000	-0.0260190	0.0000000
Molybdenum	202.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nickel	231.60	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.5024410	0.0000000	0.4001140	0.0000000	0.0000000
Potassium	766.49	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Selenium	196.03	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.6280090	0.0000000
Silicon	288.16	0.0000000	0.0000000	-1.7903470	0.0000000	0.0000000	0.0000000	24.8173000	0.0000000	0.0000000	0.0000000
Silver	328.07	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	-0.2453230	0.0000000
Sodium	589.59	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	309.5270500	0.0000000	0.0000000	309.4728800
Thallium	190.80	0.0000000	0.0000000	-1.1938590	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	3.5626360	0.0000000
Tin	189.93	0.0000000	0.0000000	0.0000000	0.0000000	-0.0521320	-0.5716780	0.0000000	0.0000000	0.0000000	0.0000000
Titanium	334.90	0.0000000	0.0000000	0.8797330	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Vanadium	292.40	0.0000000	-0.1515070	-0.4743490	0.0000000	0.0000000	0.0000000	0.5066230	0.0000000	0.0000000	0.0000000
Zinc	206.20	0.0000000	0.0000000	0.2360740	0.0000000	-0.0910930	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AHS2

ANALYSIS METHOD: ICP

ARI PREP CODE: LEN

PREPDATE: 6/16/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-10(15.5-16.5)	AHS2A	0.000	50.0	50.0
SDP-10(15.5-16.5)D	AHS2ADUP	0.000	50.0	50.0
SDP-10(15.5-16.5)S	AHS2ASPK	0.000	50.0	50.0
SDP-07(1.5-3.0)	AHS2B	0.000	50.0	50.0
SDP-01(8.0-9.0)	AHS2C	0.000	50.0	50.0
SDP-04(10.5-12.0)	AHS2D	0.000	50.0	50.0
PBS	AHS2MB1	0.000	50.0	50.0
PBS	AHS2MB2	0.000	50.0	50.0

Preparation Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver

SDG: AHS2

ANALYSIS METHOD: CVA

ARI PREP CODE: LEM

PREPDATE: 6/16/2015

CLIENT ID	ARI ID	MASS (g)	INITIAL VOLUME (mL)	FINAL VOLUME (mL)
SDP-10(15.5-16.5)	AHS2A	0.000	20.0	20.0
SDP-10(15.5-16.5)D	AHS2ADUP	0.000	20.0	20.0
SDP-10(15.5-16.5)S	AHS2ASPK	0.000	20.0	20.0
SDP-07(1.5-3.0)	AHS2B	0.000	20.0	20.0
SDP-01(8.0-9.0)	AHS2C	0.000	20.0	20.0
SDP-04(10.5-12.0)	AHS2D	0.000	20.0	20.0
PBS	AHS2MB1	0.000	20.0	20.0
PBS	AHS2MB2	0.000	20.0	20.0

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 6/18/2015

SDG: AHS2 | RUNID: IP061871 | METHOD: ICP | END DATE: 6/18/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	08165		X		X		X			X		X										X		X							
S2	S2	1.00	08210						X			X		X																			
S3	S3	1.00	08230		X		X																	X		X							
S4	S4	1.00	08252																														
S5	S5	1.00	08273																														
ICV	ICV	1.00	08354		X		X		X			X		X										X		X							
ICB	ICB	1.00	08394		X		X		X			X		X										X		X							
CRI	CRII	1.00	08445		X		X		X			X		X										X		X							
ICSA	ICSAI	1.00	08491		X		X		X			X		X										X		X							
ICSAB	ICSABI	1.00	08533		X		X		X			X		X										X		X							
CCV	CCV1	1.00	08585		X		X		X			X		X										X		X							
CCB	CCB1	1.00	09025		X		X		X			X		X										X		X							
ZZZZZZ	AHW3MB	1.00	09073																														
ZZZZZZ	AHW3A	1.00	09114																														
ZZZZZZ	AHW3MBSPK	1.00	09160																														
CCV	CCV2	1.00	09200		X		X		X			X		X										X		X							
CCB	CCB2	1.00	09240		X		X		X			X		X										X		X							
ZZZZZZ	AHP4MB1	1.00	09282																														
ZZZZZZ	AHP4A	1.00	09323																														
ZZZZZZ	AHP4B	1.00	09363																														
ZZZZZZ	AHP4C	1.00	09403																														
ZZZZZZ	AHP4D	1.00	09444																														
ZZZZZZ	AHP4E	1.00	09484																														
ZZZZZZ	AHP4F	1.00	09530																														
ZZZZZZ	AHP4G	1.00	09571																														
ZZZZZZ	AHP4H	1.00	10013																														
ZZZZZZ	AHP4MB1SPK	1.00	10054																														
CCV	CCV3	1.00	10094		X		X		X			X		X										X		X							
CCB	CCB3	1.00	10134		X		X		X			X		X										X		X							
ZZZZZZ	AHP4I	1.00	10180																														
ZZZZZZ	AHP4J	1.00	10221																														
ZZZZZZ	AHP4K	1.00	10263																														
ZZZZZZ	AHP4L	1.00	10303																														
ZZZZZZ	AHP4M	1.00	10344																														
ZZZZZZ	AHP4N	1.00	10390																														

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 6/18/2015

SDG: AHS2 | RUNID: IP061871 | METHOD: ICP | END DATE: 6/18/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AHP4ODUP	1.00	10431																														
ZZZZZZ	AHP4O	1.00	10472																														
ZZZZZZ	AHP4OSPK	1.00	10514																														
ZZZZZZ	AHP4MB1SPD	1.00	10554																														
CCV	CCV4	1.00	10594		X		X		X			X		X										X		X						
CCB	CCB4	1.00	11034		X		X		X			X		X										X		X						
ZZZZZZ	AHP4MB2	1.00	11080																														
ZZZZZZ	AHP4P	1.00	11121																														
ZZZZZZ	AHP4Q	1.00	11163																														
ZZZZZZ	AHP4R	1.00	11204																														
ZZZZZZ	AHP4S	1.00	11245																														
ZZZZZZ	AHP4T	1.00	11291																														
ZZZZZZ	AHP4UDUP	1.00	11332																														
ZZZZZZ	AHP4U	1.00	11374																														
ZZZZZZ	AHP4USPK	1.00	11415																														
ZZZZZZ	AHP4MB2SPK	1.00	11455																														
CCV	CCV5	1.00	11495		X		X		X			X		X										X		X						
CCB	CCB5	1.00	11534		X		X		X			X		X										X		X						
ZZZZZZ	AHP8MB1	1.00	11580																														
ZZZZZZ	AHP4V	1.00	12021																														
ZZZZZZ	AHP4W	1.00	12063																														
ZZZZZZ	AHP4X	1.00	12104																														
ZZZZZZ	AHP8ADUP	1.00	12145																														
ZZZZZZ	AHP8A	1.00	12191																														
ZZZZZZ	AHP8ASPK	1.00	12232																														
ZZZZZZ	AHP8B	1.00	12272																														
ZZZZZZ	AHP8MB1SPK	1.00	12314																														
ZZZZZZ	AHP4MB2SPD	1.00	12354																														
CCV	CCV6	1.00	12394		X		X		X			X		X										X		X						
CCB	CCB6	1.00	12434		X		X		X			X		X										X		X						
ZZZZZZ	AHP8C	1.00	12475																														
ZZZZZZ	AHP8D	1.00	12521																														
ZZZZZZ	AHP8E	1.00	12562																														
ZZZZZZ	AHP8F	1.00	13004																														
ZZZZZZ	AHP8G	1.00	13045																														

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 6/18/2015

SDG: AHS2 | RUNID: IP061871 | METHOD: ICP | END DATE: 6/18/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
ZZZZZZ	AHP8H	1.00	13091																														
ZZZZZZ	AHP8I	1.00	13132																														
ZZZZZZ	AHP8J	1.00	13173																														
ZZZZZZ	AHP8K	1.00	13215																														
ZZZZZZ	AHP8MB1SPD	1.00	13260																														
CCV	CCV7	1.00	13300		X		X		X			X		X										X		X						
CCB	CCB7	1.00	13341		X		X		X			X		X										X		X						
ZZZZZZ	AHP8MB2	1.00	13382																														
ZZZZZZ	AHP8L	1.00	13424																														
ZZZZZZ	AHP8ODUP	1.00	13464																														
ZZZZZZ	AHP8O	1.00	13505																														
ZZZZZZ	AHP8OSPK	1.00	13550																														
ZZZZZZ	AHP8P	1.00	13591																														
ZZZZZZ	AHP8Q	1.00	14032																														
ZZZZZZ	AHP8R	1.00	14073																														
ZZZZZZ	AHP8S	1.00	14115																														
ZZZZZZ	AHP8MB2SPK	1.00	14160																														
CCV	CCV8	1.00	14200		X		X		X			X		X										X		X						
CCB	CCB8	1.00	14241		X		X		X			X		X										X		X						
ZZZZZZ	AHP8T	1.00	14282																														
ZZZZZZ	AHP8U	1.00	14324																														
ZZZZZZ	AHP8V	1.00	14365																														
ZZZZZZ	AHP8W	1.00	14410																														
ZZZZZZ	AHP8X	1.00	14452																														
ZZZZZZ	AHP8Y	1.00	14493																														
ZZZZZZ	AHP8Z	1.00	14533																														
ZZZZZZ	AHS8A	2.00	14575																														
ZZZZZZ	AHS8B	2.00	15015																														
ZZZZZZ	AHP8MB2SPD	1.00	15055																														
CCV	CCV9	1.00	15095		X		X		X			X		X										X		X						
CCB	CCB9	1.00	15135		X		X		X			X		X										X		X						
ZZZZZZ	AHS8MB1	2.00	15181																														
PBW	AHS2MB1	5.00	15222		X		X		X			X		X										X		X						
SDP-10(15.5-16.5)D	AHS2ADUP	5.00	15265		X		X		X			X		X										X		X						
SDP-10(15.5-16.5)	AHS2A	5.00	15312		X		X		X			X		X										X		X						

FORM XIV

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: OPTIMA ICP 2 | START DATE: 6/18/2015

SDG: AHS2 | RUNID: IP061871 | METHOD: ICP | END DATE: 6/18/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
SDP-10(15.5-16.5)S	AHS2ASPK	5.00	15360		X		X		X			X		X										X		X							
SDP-07(1.5-3.0)	AHS2B	5.00	15401		X		X		X			X		X										X		X							
SDP-01(8.0-9.0)	AHS2C	5.00	15445		X		X		X			X		X										X		X							
ZZZZZZ	AHS8C	2.00	15490																														
ZZZZZZ	AHS8D	2.00	15530																														
ZZZZZZ	AHS8MB1SPK	2.00	15570																														
CCV	CCV10	1.00	16010		X		X		X			X		X										X		X							
CCB	CCB10	1.00	16050		X		X		X			X		X										X		X							
ZZZZZZ	AHQ6MB	5.00	16092																														
ZZZZZZ	AHQ7MB	5.00	16134																														
PBW	AHS2MB2	5.00	16181		X		X		X			X		X										X		X							
SDP-04(10.5-12.0)	AHS2D	5.00	16222		X		X		X			X		X										X		X							
ZZZZZZ	AHQ6ADUP	5.00	16265																														
ZZZZZZ	AHQ6A	5.00	16311																														
ZZZZZZ	AHQ6ASPK	5.00	16352																														
ZZZZZZ	AHQ7ADUP	5.00	16392																														
ZZZZZZ	AHQ7A	5.00	16440																														
ZZZZZZ	AHQ7ASPK	5.00	16483																														
CCV	CCV11	1.00	16530		X		X		X			X		X										X		X							
CCB	CCB11	1.00	16571		X		X		X			X		X										X		X							

AHS2, 0806A

Analysis Run Log

ANALYTICAL RESOURCES INCORPORATED

CLIENT: Kennedy Jenks Consul

PROJECT: POS Sliver | INSTRUMENT ID: CETAC MERCURY | START DATE: 6/17/2015

SDG: AHS2 | RUNID: HG061702 | METHOD: CVA | END DATE: 6/17/2015

CLIENT ID	ARI ID	DIL.	TIME	%R	AG	AL	AS	B	BA	BE	CA	CD	CO	CR	CU	FE	HG	K	MG	MN	MO	NA	NI	PB	SB	SE	SI	SN	TI	TL	U	V	ZN
S0	S0	1.00	10282														X																
S0.1	S0.1	1.00	10302														X																
S0.5	S0.5	1.00	10315														X																
S1	S1	1.00	10333														X																
S2	S2	1.00	10351														X																
S5	S5	1.00	10365														X																
S10	S10	1.00	10383														X																
ICV	AICV	1.00	10405																														
CCV	ACCV1	1.00	10434														X																
ICV	AICV	1.00	10481														X																
ICB	ICB	1.00	10504														X																
CCV	ACCV1	1.00	10522														X																
CCB	CCB1	1.00	10540														X																
CRA	CRA	1.00	10554														X																
PBW	AHS2MB1	1.00	10571														X																
SDP-10(15.5-16.5)	AHS2A	1.00	10585														X																
SDP-10(15.5-16.5)D	AHS2ADUP	1.00	11003														X																
SDP-10(15.5-16.5)S	AHS2ASPK	1.00	11020														X																
SDP-07(1.5-3.0)	AHS2B	1.00	11034														X																
SDP-04(10.5-12.0)	AHS2D	1.00	11052														X																
PBW	AHS2MB2	1.00	11065														X																
SDP-01(8.0-9.0)	AHS2C	1.00	11083														X																
CCV	ACCV2	1.00	11101														X																
CCB	CCB2	1.00	11115														X																

Metals Raw Data
Preparation Bench Sheets and Notes

ARI Job ID: AHS2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

TCLP / SPLP Extraction Log

Analyst: MB Date: 6/15/15

Balance ID: CO254292 pH Meter ID: 1230275270 Tumbler ID: #1

AHS2 Sample ID:	A	B	C	D	MB1	MB2
Bottle #:	1	1	1	1	–	–
Client ID:	–	–	–	–	–	–
A. Sample Description						
1. Number of solid phases	1	1	1	1	0	0
2. Number of liquid phases	0	0	0	0	1	1
B. Percent solid phase						
1. Weight of flask						
2. weight of funnel						
3. Weight of filter						
4. Weight of weight boat						
5. Weight of subsample + boat						
6. Weight of residue + boat						
7. Weight of subsample filtered						
8. Weight of initial filtrate + flask						
9. Weight of initial filtrate						
10. Weight percent solids (wet)	100	100	100	100	–	–
11. Weight ratio of solids	–	–	–	–	–	–
C. Extraction Fluid Determination						
1. Initial pH (after mixing 5 minutes)	9.95	11.18	11.29	10.38	4.94	2.83
4. Post – HCl pH (ambient temp)	1.63	4.22	7.80	2.22	–	–
D. Selection of Extraction Fliud						
1. Extraction fluid (EF#1 or EF#2)	mp2650	mp2650	mp2649	mp2650	mp2650	mp2649
E. Determination of Sample Size for Extraction						
1. Weight of solids extracted	40.0g	40.0g	40.0g	40.0g	–	
F. Determination of Amount of Extraction Fluid						
1. Volume of extraction fluid	800ml	800ml	800ml	800ml	800ml	800ml
2. Extraction Vessel #	–	–	–	–	–	–
G. Post Extraction Determinations						
1. pH of filtrate	5.30	9.35	9.55	8.09	4.98	2.89
2. Volume of filtrate	–	–	–	–	–	–
3. Volume of initial filtrate added	–	–	–	–	–	–

MB 6/15/15

Calculations: B7 = B5 – B6, B9 = B8 – B1, B10 = 100% x (1-B9/B7), B11 = (B7-B9)/B9, F1 = 20 x E1, G3 = (G2/20)/B11

Extraction Fluid Determination: (10 minutes required)	Time samples reached 50 °C	Time heating discontinued
	1235	1245

Extraction Conditions	RPM	Start Time	Start Date	Start Temp	Stop Date	Stop Time	Stop Temp
	30	1430	6/15/15	26.0°C	6/16/15	0830	27.0°C

AHS2 : 00015

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Digestion Log

Analyst: MB/TH Date: ~~5/16/15~~ 5/16/15 MB 5/16/15 Time: 0945

Matrix: water Block ID: #1 Block Temp: 90°C Thermometer: MP84

ARI Sample ID	Btl #	pH<2	Prep Code: LEN Initial ~~Wt~~ (g) Vol (mL)	Prep Code: LEN Final Vol (mL)	Prep Code: Initial Wt (g) Vol (mL)	Prep Code: Final Vol (mL)	Comments
AHS2 A	1	-	50.0	50.0			
" ADUP	1	-					
" ASPK	1	-					
" B	1	-					
" C	1	-					
" D	1	-					
" MB1	-	-					
" MB2	-	-					
AHQ6 A	2	-					
" ADUP	2	-					
" ASPK	2	-					
" MB	-	-					
AHQ7 A	3	-					
" ADUP	3	-					
" ASPK	3	-					
" MB	-	-	50.0	50.0			

MB 5/16/15

Chemical/Reagent ID:

HNO_3: D1439 HCl: D2451 H_2O_2: — Tube Lot #: 1561174

AHS2 - AHQ8

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Digestion Log

Prep Code: LEM Matrix: water
Analyst: MS Date: 6/16/15
Bath Temp: 95°C Start Time: 1000 End Time: 1200

ARI Sample ID	Sample Bottle #	pH<2	Initial ~~Weight (g)~~ Volume (mL)	Final Volume (mL)	# $KMnO_4$ Aliquots	CLP	Comments
AHSC A	1	-	20.0	20.0	6/17 1	N	
" ADUP	1	-			1		
" ASPK	1	-			1		
" MB2	-	-			1		
AHT4 A	1	-			6/17 1		
" ADUP	1	-			1		
" ASPK	1	-			1		
" MB	-	-			6/17 1		
AHT3 A	1	-			1		Batch
" ADUP	1	-			1		
" ASPK	1	-			1		
" MB	-	-			1		
AHT5 A	1	-			6/17 1		
" B	1	-			1	N	
AHS2 A	1	-			6/23 1	Y	
" ADUP	1	-			1		
" ASPK	1	-			1		
" B	1	-			1		
" C	1	-			1		
" D	1	-			1		
" MB1	-	-			1		
" MB2	-	-	20.0	20.0	1	Y	
			MS	6/16/15			

Chemical/Reagent ID:

HNO_3: 01439 H_2SO_4: E3708 HCl: -

5% $K_2S_2O_8$: 01402 5% $KMnO_4$: 01835 Digest Tube Lot: 1501179

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SPIKING LOG

Analyst: MB **Final Volume** 50.0 **Sample ID** AH52 ASPK

Date: 6/16/15 **Final Volume (Hg):** 20.0

		Prepcode:	LEN		
		Spike Solution:	ICP Routine	ICP No GFA	GFA
		Standard No.:	02206		
		Vol Added (mL):	1.0		
	Ag		50 ✓		2.0
S	Al		200	200	
T	As		200 ✓		10
O	Ba		200 ✓	200	
C	Be		50	50	
K	Ca		1000	1000	
	Cd		50 ✓		2.0
	Co		50	50	
C	Cr		50 ✓	50	
O	Cu		50	50	
N	Fe		200	200	
C	K		1000	1000	
E	Mg		1000	1000	
N	Mn		50	50	
T	Na		1000	1000	
R	Ni		50	50	
A	Pb		200 ✓		10
T	Se		200 ✓		10
I	Sr		50	50	
O	Tl		200		10
N	V		50	50	
	Zn		50	50	

	ICP-MS #1	ICP-MS #2	ICP-MS Minerals
Ag	25		
Al			500
As	25		
Ba	25		
Be	25		
Ca			500
Cd	25		
Co	25		
Cr	25		
Cu	25		
Fe			500
K			500
Mg			500
Mn	25		
Mo		25	
Na			500
Ni	25		
Pb	25		
Sb		25	
Se	80		
Tl	25		
U	25		
V	25		
Zn	80		

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std No.
Hg	LEM	CVA	1.0	0.02	00214
Hg MBSPK		CVA	1.0		
Sb		ICP	2000		
Sb		GFA	100		
B		ICP	500		
Mo		ICP	500		
Si		ICP	10000		
Sn		ICP	500		
Ti		ICP	2000		

Additional Elements:

Element	Prepcode	Analysis	Stock Conc.	Stock Added	Std. No

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Metals Laboratory Analyst Notes

ARI Job No.: A1152

Client ID:

Parameter:

Client Project:

List problems, concerns, corrective actions and any other pertinent information
Temp was high during TCLP extraction

Analyst Initials:	MB	Date:	6/15/15

Metals Raw Data
Run Logs, Calibrations, and Raw Data

ARI Job ID: AHS2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Metals Laboratory
Analyst Notes

ARI Job No.: AHSZ

Client ID:

Parameter: ICP

Client Project:

List problems, concerns, corrective actions and any other pertinent information
0.00425 ppm Pb in MB1
0.0032 ppm Be in MB2
Contamination from filter

Analyst Initials:	JH	Date:	6-8-10

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: (ICP) ICP-MS GFA CVA **Analysis Date:** 6-18-15

IZ	Analyst 6-19	Peer 6-19-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	✓	✓	
Carry-over	✓	✓	
Method QC:			
CRI/CRA	✓	✓	
ICSA/ICSAB	✓	✓	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	—	
Matrix QC:			
SRM/LCS	✓	✓	
Matrix Spikes	✓	✓	
Matrix Duplicates	✓	✓	
Method Blanks	✓	✓	AHQ6,AHSZ
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts Notes and CAF's	✓	✓	A.W AHQ6 AHSZ

AHSZ : 00050

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: 5-27-15 Analysis Date: 6-18-15 Analyst: JT

LR Date: 5-27-15 Page: 1 of 6

All corrections made by analyst unless otherwise noted. JT 6-18-15

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		STD	D2457		
		2	D2569		
		3	D2570		
		4	D2571		
		5	D2572		
		ICV	D2309		
		ICB	D2457		
		CRI	D2330		
		ICSA	D2331		
		ICSAB	D2332		
		~~AHW3 MB~~			NOT Run here
		~~A~~			
		~~MBSPL~~			
		CCV1	D2309		
		CCB1	D2457		
		AHW3 MB	TWC		
		A			
		MBSPL		✓	
		CCV2			
		CCB2			
		AHPL MB1	TWC		
		A			
		B			
		C			

AHS2 : 00051

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: — Analysis Date: 6-18-15 Analyst: M

LR Date: — Page: 2 of 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		AHP4 D	TWL		
		E			
		F			
		G			
		H			
		MB1SPL		✓	
		CCV3			
		CCB3			
		AHP4 I	TWL		
		J			
		K			
		L			
		M			
		N			
		ODUP		✓	
		O			
		OSPL		✓	
		MB1SPD		✓	
		CCV4			
		CCB4			
		AHP4 MB2	TWL		
		P			
		Q			
		R	✓		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: — Analysis Date: 6/8/15 Analyst: MT

LR Date: — Page: 3 of 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		AHP4 S	TWC		
		T			
		UDup		✓	
		U			
		Uspk		✓	
		MBZspk		✓	
		CCV5			
		CCB5			
		AHP5 MB1	TWC		
		AHP4 V			
		W			
		X			
		AHP5 ADup		✓	
		A			
		Aspk		✓	
		B			
		MBspk			
SPD		AHP4 MBZSPD		✓	
		CCV6			
		CCB6			
		AHP5 C	TWC		
		D			
		E			
		F			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: — Analysis Date: 6-18-15 Analyst: PT

LR Date: — Page: 4 of 4

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		AHP8 G	TWC		
		H			
		I			
		J			
		K			
		MB1spD		✓	
		CCV7			
		CCB7			
		AHP8 MB2	TWC		
		L			
		ODup		✓	
		O			
		Ospk		✓	
		P			
		Q			
		R			
		S			
		MB2spk	✓		
		CCV8			
		CCB8			
		AHP8 T	TWC		
		U			
		V			
		W			

AHS2 00054

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: ~~6/8/15~~ Analysis Date: 6/8/15 Analyst: AT

LR Date: _____ Page: 5 of 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		AHP8 X	TWC		
		Y			
TWC		Z			
BLK		AHS8 A	SWC	2	
		B			
		AHP8 MB2SD	TWC		
		CCV9			
		CCB9			
		AHS8 MB1	SWC	2	
		AHS2 MB1	LEN	5	A.N. Ba 0.004
		ADup			
		A			
		ASpL			
		B			
		C			
		AHS8 @	SWC	2	
		D			
		MB1SpL			
		CCV10			
		CCB10			
		AHQ6 MB	LEN	5	A.N Ba 0.003
		AHQ7 MB			
		AHS2 MB2			A.N Ba 0.003
		D			

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

IEC Date: ——— Analysis Date: 6-18-15 Analyst: MT

LR Date: ——— Page: 6 of 6

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		AHQ6 ADup	LEN	5 ✓	
		↓ A	↓	↓	
		↓ Aspk	↓	↓ ✓	
		AHQ7 ADup	↓	✓	
		↓ A	↓	↓	
		↓ Aspk	↓	↓ ✓	
		CCV11			
		CCB11			
		Rinse / DI			
		AHQ7 1/5			

Nebulizer Parameters: Hg_ReAlign

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

6/18/2015 7:52:48 AM Hg ReAlign... Actual peak offset (nm): 0.004
Drift (nm): -0.000 Slit adjustment: -2

Analysis Begun

Start Time: 6/18/2015 7:55:00 AM
Logged In Analyst: Metals
Spectrometer: Optima 7300 DV, S/N 077C8121202
Plasma On Time: 6/18/2015 7:07:14 AM
Technique: ICP Continuous
Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\BLKS.sif
Batch ID:
Results Data Set: I2150618
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Method Loaded
Method Name: 7300bcESI2FAST
IEC File: IEC052715.iec
Method Description: 12Axial Elements
Method Last Saved: 8/13/2012 7:13:22 AM
MSF File:

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag 328.068	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Al 308.215	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
As 188.979	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
B 249.677	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ba 233.527	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Be 313.042	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ca 317.933	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Cd 228.802	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Co 228.616	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Cr 267.716	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Cu 324.752	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Fe 273.955	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
K 766.490	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Mg 279.077	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Mn 257.610	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Mo 202.031	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Na 589.592	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Na 330.237	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ni 231.604	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Pb 220.353	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Sb 206.836	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Se 196.026	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Si 288.158	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Sn 189.927	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Sr 421.552	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Ti 334.903	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Tl 190.801	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
V 292.402	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Zn 206.200	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
ScA 357.253	Lin, Calc Int	Peak Area	Axial	n/a	n/a
ScR 361.383	Lin, Calc Int	Peak Area	Radial	n/a	n/a

Sequence No.: 1
Sample ID: B1
Autosampler Location: 1
Date Collected: 6/18/2015 7:55:09 AM
Data Type: Original

Dilution: 1.000000X

Nebulizer Parameters: B1

Analyte	Back Pressure	Flow
All	222.0 kPa	0.75 L/min

6-18-15

AH32-6807

Analysis Begun

Start Time: 6/18/2015 8:16:50 AM
Logged In Analyst: Metals
Spectrometer: Optima 7300 DV, S/N 077C8121202
Plasma On Time: 6/18/2015 7:07:14 AM
Technique: ICP Continuous
Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\0618.sif
Batch ID:
Results Data Set: I2150618
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 1
Sample ID: Calib Blank 1
Autosampler Location: 1
Date Collected: 6/18/2015 8:16:51 AM
Data Type: Original

Nebulizer Parameters: Calib Blank 1

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
ScA 357.253	2727315.3	28080.52	1.03%	100.0	%
ScR 361.383	285869.5	2255.56	0.79%	100.0	%
Ag 328.068†	258.8	20.52	7.93%	[0.00]	mg/L
Al 308.215†	92.6	2.94	3.18%	[0.00]	mg/L
As 188.979†	-6.1	1.11	18.20%	[0.00]	mg/L
B 249.677†	-28.4	2.92	10.26%	[0.00]	mg/L
Ba 233.527†	-0.0	1.54	>999.9%	[0.00]	mg/L
Be 313.042†	534.5	14.07	2.63%	[0.00]	mg/L
Ca 317.933†	-31.5	4.59	14.54%	[0.00]	mg/L
Cd 228.802†	195.6	2.46	1.26%	[0.00]	mg/L
Co 228.616†	-111.5	3.92	3.51%	[0.00]	mg/L
Cr 267.716†	-24.9	4.58	18.36%	[0.00]	mg/L
Cu 324.752†	2240.5	18.76	0.84%	[0.00]	mg/L
Fe 273.955†	-34.5	0.39	1.12%	[0.00]	mg/L
K 766.490†	408.7	21.28	5.21%	[0.00]	mg/L
Mg 279.077†	5.7	3.24	56.96%	[0.00]	mg/L
Mn 257.610†	55.8	1.02	1.82%	[0.00]	mg/L
Mo 202.031†	68.1	2.54	3.73%	[0.00]	mg/L
Na 589.592†	209.5	5.40	2.58%	[0.00]	mg/L
Na 330.237†	4.9	3.19	65.69%	[0.00]	mg/L
Ni 231.604†	13.9	1.79	12.89%	[0.00]	mg/L
Pb 220.353†	-42.8	2.49	5.81%	[0.00]	mg/L
Sb 206.836†	9.5	2.13	22.47%	[0.00]	mg/L
Se 196.026†	-50.7	2.37	4.67%	[0.00]	mg/L
Si 288.158†	44.2	4.40	9.95%	[0.00]	mg/L
Sn 189.927†	-8.7	1.39	15.95%	[0.00]	mg/L
Sr 421.552†	27.0	30.74	113.82%	[0.00]	mg/L
Ti 334.903†	109.1	5.12	4.70%	[0.00]	mg/L
Tl 190.801†	-20.6	3.31	16.10%	[0.00]	mg/L
V 292.402†	56.9	12.99	22.84%	[0.00]	mg/L
Zn 206.200†	-14.5	0.72	4.99%	[0.00]	mg/L

Sequence No.: 2
Sample ID: STD2
Autosampler Location: 2
Date Collected: 6/18/2015 8:21:06 AM
Data Type: Original

Nebulizer Parameters: STD2

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: STD2

	Mean Corrected				Calib

Analyte	Intensity	Std.Dev.	RSD	Conc.	Units
ScA 357.253	2729308.6	23666.83	0.87%	100.1	%
ScR 361.383	286528.2	379.51	0.13%	100.2	%
Ba 233.527†	48991.0	28.95	0.06%	[10]	mg/L
Cd 228.802†	221438.0	2085.48	0.94%	[10]	mg/L
Co 228.616†	307898.5	2485.87	0.81%	[10]	mg/L
Cr 267.716†	66177.3	146.69	0.22%	[10]	mg/L
Cu 324.752†	2727992.5	3314.44	0.12%	[10]	mg/L
Mn 257.610†	437694.1	965.30	0.22%	[10]	mg/L
V 292.402†	1539187.3	9100.92	0.59%	[10]	mg/L

Sequence No.: 3
Sample ID: STD3

Autosampler Location: 3
Date Collected: 6/18/2015 8:23:07 AM
Data Type: Original

Nebulizer Parameters: STD3

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: STD3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
ScA 357.253	2698908.7	5787.39	0.21%	98.96	%
ScR 361.383	277011.3	2533.46	0.91%	96.90	%
Ag 328.068†	236786.1	130.51	0.06%	[1.0]	mg/L
As 188.979†	12804.6	67.54	0.53%	[10]	mg/L
B 249.677†	50952.0	460.80	0.90%	[10]	mg/L
Be 313.042†	2350683.3	14053.69	0.60%	[5.0]	mg/L
Na 589.592†	786200.0	2072.43	0.26%	[50]	mg/L
Ni 231.604†	30061.0	398.02	1.32%	[10]	mg/L
Pb 220.353†	81481.7	392.71	0.48%	[10]	mg/L
Se 196.026†	14665.4	111.03	0.76%	[10]	mg/L
Sr 421.552†	4208291.1	10113.89	0.24%	[5]	mg/L
Tl 190.801†	16186.5	79.27	0.49%	[10]	mg/L
Zn 206.200†	33549.6	227.35	0.68%	[10]	mg/L

Sequence No.: 4
Sample ID: STD4

Autosampler Location: 4
Date Collected: 6/18/2015 8:25:24 AM
Data Type: Original

Nebulizer Parameters: STD4

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: STD4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
ScA 357.253	2754168.6	14012.10	0.51%	101.0	%
ScR 361.383	285600.1	751.06	0.26%	99.91	%
Mo 202.031†	179074.9	1518.11	0.85%	[10]	mg/L
Sb 206.836†	26964.1	200.00	0.74%	[10]	mg/L
Si 288.158†	11770.6	120.56	1.02%	[10]	mg/L
Sn 189.927†	46018.4	418.68	0.91%	[10]	mg/L
Ti 334.903†	214508.7	626.64	0.29%	[10]	mg/L

Sequence No.: 5
Sample ID: STD5

Autosampler Location: 5
Date Collected: 6/18/2015 8:27:38 AM
Data Type: Original

Nebulizer Parameters: STD5

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: STD5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
ScA 357.253	2554002.1	9148.29	0.36%	93.65	%
ScR 361.383	280431.5	3577.70	1.28%	98.10	%
Al 308.215†	29046.6	297.53	1.02%	[30]	mg/L
Ca 317.933†	238536.8	1287.55	0.54%	[30]	mg/L
Fe 273.955†	98063.7	81.57	0.08%	[100]	mg/L
K 766.490†	259545.9	1228.68	0.47%	[100]	mg/L
Mg 279.077†	21700.4	148.69	0.69%	[30]	mg/L
Na 330.237†	2436.1	17.44	0.72%	[100]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	1	Lin Thru 0	0.0	236800	0.00000	1.000000	
Al 308.215	1	Lin Thru 0	0.0	968.2	0.00000	1.000000	
As 188.979	1	Lin Thru 0	0.0	1280	0.00000	1.000000	
B 249.677	1	Lin Thru 0	0.0	5095	0.00000	1.000000	
Ba 233.527	1	Lin Thru 0	0.0	4899	0.00000	1.000000	
Be 313.042	1	Lin Thru 0	0.0	470100	0.00000	1.000000	
Ca 317.933	1	Lin Thru 0	0.0	7951	0.00000	1.000000	
Cd 228.802	1	Lin Thru 0	0.0	22140	0.00000	1.000000	
Co 228.616	1	Lin Thru 0	0.0	30790	0.00000	1.000000	
Cr 267.716	1	Lin Thru 0	0.0	6618	0.00000	1.000000	
Cu 324.752	1	Lin Thru 0	0.0	272800	0.00000	1.000000	
Fe 273.955	1	Lin Thru 0	0.0	980.6	0.00000	1.000000	
K 766.490	1	Lin Thru 0	0.0	2595	0.00000	1.000000	
Mg 279.077	1	Lin Thru 0	0.0	723.3	0.00000	1.000000	
Mn 257.610	1	Lin Thru 0	0.0	43770	0.00000	1.000000	
Mo 202.031	1	Lin Thru 0	0.0	17910	0.00000	1.000000	
Na 589.592	1	Lin Thru 0	0.0	15720	0.00000	1.000000	
Na 330.237	1	Lin Thru 0	0.0	24.36	0.00000	1.000000	
Ni 231.604	1	Lin Thru 0	0.0	3006	0.00000	1.000000	
Pb 220.353	1	Lin Thru 0	0.0	8148	0.00000	1.000000	
Sb 206.836	1	Lin Thru 0	0.0	2696	0.00000	1.000000	
Se 196.026	1	Lin Thru 0	0.0	1467	0.00000	1.000000	
Si 288.158	1	Lin Thru 0	0.0	1177	0.00000	1.000000	
Sn 189.927	1	Lin Thru 0	0.0	4602	0.00000	1.000000	
Sr 421.552	1	Lin Thru 0	0.0	841700	0.00000	1.000000	
Ti 334.903	1	Lin Thru 0	0.0	21450	0.00000	1.000000	
Tl 190.801	1	Lin Thru 0	0.0	1619	0.00000	1.000000	
V 292.402	1	Lin Thru 0	0.0	153900	0.00000	1.000000	
Zn 206.200	1	Lin Thru 0	0.0	3355	0.00000	1.000000	

AHSE . 88668

Analysis Begun

Start Time: 6/18/2015 8:35:42 AM
Logged In Analyst: Metals
Spectrometer: Optima 7300 DV, S/N 077C8121202
Plasma On Time: 6/18/2015 7:07:14 AM
Technique: ICP Continuous
Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\0618.sif
Batch ID:
Results Data Set: I2150618
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 1
Sample ID: CV
Analyst: ALA
Dilution: 1.000000X
Autosampler Location: 7
Date Collected: 6/18/2015 8:35:43 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2681158.2	98.31	%	0.319				0.32%
ScR 361.383	277944.1	97.23	%	0.269				0.28%
Ag 328.068†	244812.5	1.034	mg/L	0.0036	1.034	mg/L	0.0036	0.34%
Al 308.215†	1979.7	2.011	mg/L	0.0165	2.011	mg/L	0.0165	0.82%
As 188.979†	2514.4	1.992	mg/L	0.0147	1.992	mg/L	0.0147	0.74%
B 249.677†	4998.0	0.9801	mg/L	0.00405	0.9801	mg/L	0.00405	0.41%
Ba 233.527†	5062.1	1.033	mg/L	0.0079	1.033	mg/L	0.0079	0.76%
Be 313.042†	452631.0	0.9626	mg/L	0.00126	0.9626	mg/L	0.00126	0.13%
Ca 317.933†	16461.2	2.070	mg/L	0.0124	2.070	mg/L	0.0124	0.60%
Cd 228.802†	23608.6	1.055	mg/L	0.0064	1.055	mg/L	0.0064	0.61%
Co 228.616†	31602.0	1.025	mg/L	0.0062	1.025	mg/L	0.0062	0.61%
Cr 267.716†	6806.8	1.028	mg/L	0.0037	1.028	mg/L	0.0037	0.36%
Cu 324.752†	277462.4	1.017	mg/L	0.0045	1.017	mg/L	0.0045	0.44%
Fe 273.955†	2015.1	2.046	mg/L	0.0111	2.046	mg/L	0.0111	0.54%
K 766.490†	51805.0	19.96	mg/L	0.056	19.96	mg/L	0.056	0.28%
Mg 279.077†	1457.6	2.023	mg/L	0.0121	2.023	mg/L	0.0121	0.60%
Mn 257.610†	42619.8	0.9741	mg/L	0.00122	0.9741	mg/L	0.00122	0.12%
Mo 202.031†	18334.2	1.024	mg/L	0.0054	1.024	mg/L	0.0054	0.53%
Na 589.592†	779945.3	49.60	mg/L	0.019	49.60	mg/L	0.019	0.04%
Na 330.237†	1270.4	52.06	mg/L	0.360	52.06	mg/L	0.360	0.69%
Ni 231.604†	2977.0	0.9906	mg/L	0.00533	0.9906	mg/L	0.00533	0.54%
Pb 220.353†	16287.3	2.000	mg/L	0.0127	2.000	mg/L	0.0127	0.64%
Sb 206.836†	5566.3	2.066	mg/L	0.0127	2.066	mg/L	0.0127	0.61%
Se 196.026†	2960.2	2.017	mg/L	0.0161	2.017	mg/L	0.0161	0.80%
Si 288.158†	2415.3	2.026	mg/L	0.0131	2.026	mg/L	0.0131	0.65%
Sn 189.927†	4755.0	1.035	mg/L	0.0071	1.035	mg/L	0.0071	0.69%
Sr 421.552†	831327.2	0.9877	mg/L	0.00056	0.9877	mg/L	0.00056	0.06%
Ti 334.903†	21548.4	1.003	mg/L	0.0009	1.003	mg/L	0.0009	0.09%
Tl 190.801†	3237.2	1.992	mg/L	0.0096	1.992	mg/L	0.0096	0.48%
V 292.402†	153640.1	1.002	mg/L	0.0019	1.002	mg/L	0.0019	0.19%
Zn 206.200†	3287.4	0.9802	mg/L	0.00515	0.9802	mg/L	0.00515	0.53%

Sequence No.: 2
Sample ID: CB
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 8:39:46 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2709638.4	99.35	%	0.350				0.35%
ScR 361.383	282633.7	98.87	%	0.489				0.49%
Ag 328.068†	-13.9	-0.00006	mg/L	0.000055	-0.00006	mg/L	0.000055	93.85%
Al 308.215†	9.6	0.00986	mg/L	0.006672	0.00986	mg/L	0.006672	67.64%
As 188.979†	0.2	0.00018	mg/L	0.001809	0.00018	mg/L	0.001809	>999.9%
B 249.677†	12.7	0.00249	mg/L	0.000645	0.00249	mg/L	0.000645	25.88%
Ba 233.527†	5.3	0.00108	mg/L	0.000361	0.00108	mg/L	0.000361	33.40%
Be 313.042†	29.2	0.00006	mg/L	0.000032	0.00006	mg/L	0.000032	50.98%
Ca 317.933†	-0.7	-0.00009	mg/L	0.000230	-0.00009	mg/L	0.000230	263.56%
Cd 228.802†	6.8	0.00031	mg/L	0.000116	0.00031	mg/L	0.000116	37.89%
Co 228.616†	-2.7	-0.00009	mg/L	0.000093	-0.00009	mg/L	0.000093	105.92%
Cr 267.716†	-2.6	-0.00039	mg/L	0.000438	-0.00039	mg/L	0.000438	113.13%
Cu 324.752†	68.5	0.00025	mg/L	0.000181	0.00025	mg/L	0.000181	72.37%
Fe 273.955†	-1.2	-0.00119	mg/L	0.001768	-0.00119	mg/L	0.001768	147.94%
K 766.490†	5.4	0.00208	mg/L	0.013810	0.00208	mg/L	0.013810	665.15%
Mg 279.077†	1.8	0.00245	mg/L	0.006093	0.00245	mg/L	0.006093	248.27%
Mn 257.610†	1.7	0.00004	mg/L	0.000092	0.00004	mg/L	0.000092	238.43%
Mo 202.031†	38.9	0.00217	mg/L	0.000635	0.00217	mg/L	0.000635	29.19%
Na 589.592†	-7.9	-0.00050	mg/L	0.003009	-0.00050	mg/L	0.003009	598.23%
Na 330.237†	1.4	0.05675	mg/L	0.202669	0.05675	mg/L	0.202669	357.10%
Ni 231.604†	-2.0	-0.00065	mg/L	0.001540	-0.00065	mg/L	0.001540	236.82%
Pb 220.353†	0.4	0.00005	mg/L	0.000969	0.00005	mg/L	0.000969	>999.9%
Sb 206.836†	11.2	0.00417	mg/L	0.000485	0.00417	mg/L	0.000485	11.62%
Se 196.026†	0.0	0.00000	mg/L	0.003398	0.00000	mg/L	0.003398	>999.9%
Si 288.158†	1.0	0.00087	mg/L	0.005236	0.00087	mg/L	0.005236	603.18%
Sn 189.927†	4.1	0.00089	mg/L	0.000474	0.00089	mg/L	0.000474	53.36%
Sr 421.552†	22.5	0.00003	mg/L	0.000037	0.00003	mg/L	0.000037	139.35%
Ti 334.903†	9.7	0.00045	mg/L	0.000178	0.00045	mg/L	0.000178	39.54%
Tl 190.801†	-0.4	-0.00024	mg/L	0.000434	-0.00024	mg/L	0.000434	182.61%
V 292.402†	10.8	0.00007	mg/L	0.000014	0.00007	mg/L	0.000014	19.82%
Zn 206.200†	-2.8	-0.00083	mg/L	0.000896	-0.00083	mg/L	0.000896	108.27%

Sequence No.: 3
Sample ID: CRI
Analyst: ALA
Dilution: 1.000000X
User canceled analysis.

All samples in place 6-18-15

Autosampler Location: 301
Date Collected: 6/18/2015 8:44:01 AM
Data Type: Original

Analysis Begun

Start Time: 6/18/2015 8:44:56 AM
Logged In Analyst: Metals
Spectrometer: Optima 7300 DV, S/N 077C8121202

Plasma On Time: 6/18/2015 7:07:14 AM
Technique: ICP Continuous
Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\0618.sif
Batch ID:
Results Data Set: I2150618
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 3
Sample ID: CRI
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 301
Date Collected: 6/18/2015 8:44:56 AM
Data Type: Original

Nebulizer Parameters: CRI

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CRI

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2715231.6	99.56	%	0.196				0.20%
ScR 361.383	283857.5	99.30	%	1.158				1.17%
Ag 328.068†	720.5	0.00304	mg/L	0.000148	0.00304	mg/L	0.000148	4.88%
Al 308.215†	54.6	0.05627	mg/L	0.007212	0.05627	mg/L	0.007212	12.82%
As 188.979†	62.2	0.04874	mg/L	0.000905	0.04874	mg/L	0.000905	1.86%
B 249.677†	107.8	0.02116	mg/L	0.000950	0.02116	mg/L	0.000950	4.49%
Ba 233.527†	19.7	0.00402	mg/L	0.000280	0.00402	mg/L	0.000280	6.96%
Be 313.042†	490.1	0.00104	mg/L	0.000018	0.00104	mg/L	0.000018	1.75%
Ca 317.933†	406.2	0.05108	mg/L	0.000736	0.05108	mg/L	0.000736	1.44%
Cd 228.802†	55.3	0.00220	mg/L	0.000083	0.00220	mg/L	0.000083	3.76%
Co 228.616†	93.1	0.00301	mg/L	0.000061	0.00301	mg/L	0.000061	2.02%
Cr 267.716†	28.1	0.00424	mg/L	0.000504	0.00424	mg/L	0.000504	11.87%
Cu 324.752†	558.5	0.00205	mg/L	0.000126	0.00205	mg/L	0.000126	6.17%
Fe 273.955†	49.2	0.05011	mg/L	0.002005	0.05011	mg/L	0.002005	4.00%
K 766.490†	1321.5	0.5092	mg/L	0.00552	0.5092	mg/L	0.00552	1.08%
Mg 279.077†	37.7	0.05219	mg/L	0.007633	0.05219	mg/L	0.007633	14.63%
Mn 257.610†	43.7	0.00100	mg/L	0.000049	0.00100	mg/L	0.000049	4.90%
Mo 202.031†	96.3	0.00538	mg/L	0.000149	0.00538	mg/L	0.000149	2.77%
Na 589.592†	7618.8	0.4845	mg/L	0.00311	0.4845	mg/L	0.00311	0.64%
Na 330.237†	8.5	0.3484	mg/L	0.15479	0.3484	mg/L	0.15479	44.43%
Ni 231.604†	30.2	0.01005	mg/L	0.000845	0.01005	mg/L	0.000845	8.41%
Pb 220.353†	170.3	0.02093	mg/L	0.000848	0.02093	mg/L	0.000848	4.05%
Sb 206.836†	140.5	0.05218	mg/L	0.001991	0.05218	mg/L	0.001991	3.82%
Se 196.026†	71.7	0.04891	mg/L	0.001455	0.04891	mg/L	0.001455	2.98%
Si 288.158†	64.5	0.05459	mg/L	0.003835	0.05459	mg/L	0.003835	7.03%
Sn 189.927†	46.9	0.01024	mg/L	0.000857	0.01024	mg/L	0.000857	8.37%
Sr 421.552†	821.2	0.00098	mg/L	0.000037	0.00098	mg/L	0.000037	3.75%
Ti 334.903†	113.1	0.00526	mg/L	0.000220	0.00526	mg/L	0.000220	4.19%
Tl 190.801†	75.8	0.04684	mg/L	0.001490	0.04684	mg/L	0.001490	3.18%
V 292.402†	476.4	0.00311	mg/L	0.000112	0.00311	mg/L	0.000112	3.60%
Zn 206.200†	30.3	0.00904	mg/L	0.000669	0.00904	mg/L	0.000669	7.40%

Sequence No.: 4
Sample ID: ICSA
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 302
Date Collected: 6/18/2015 8:49:15 AM
Data Type: Original

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2668889.0	97.86	%	0.232				0.24%
ScR 361.383	277134.7	96.94	%	0.385				0.40%
Ag 328.068†	-353.9	-0.00149	mg/L	0.000293	-0.00149	mg/L	0.000293	19.63%
Al 308.215†	191828.2	198.1	mg/L	0.77	198.1	mg/L	0.77	0.39%
As 188.979†	47.6	0.02067	mg/L	0.004242	0.02067	mg/L	0.004242	20.52%
B 249.677†	-37.4	-0.00735	mg/L	0.001197	-0.00735	mg/L	0.001197	16.29%
Ba 233.527†	118.7	0.00311	mg/L	0.001199	0.00311	mg/L	0.001199	38.50%
Be 313.042†	48.8	0.00010	mg/L	0.000021	0.00010	mg/L	0.000021	20.92%
Ca 317.933†	792463.3	99.67	mg/L	0.623	99.67	mg/L	0.623	0.62%
Cd 228.802†	18.6	-0.00140	mg/L	0.000120	-0.00140	mg/L	0.000120	8.56%
Co 228.616†	83.8	0.00269	mg/L	0.000185	0.00269	mg/L	0.000185	6.86%
Cr 267.716†	5.7	0.00292	mg/L	0.001079	0.00292	mg/L	0.001079	36.91%
Cu 324.752†	-2033.4	0.00020	mg/L	0.000088	0.00020	mg/L	0.000088	44.05%
Fe 273.955†	190039.3	193.8	mg/L	0.90	193.8	mg/L	0.90	0.46%
K 766.490†	-7.0	-0.00269	mg/L	0.015447	-0.00269	mg/L	0.015447	574.17%
Mg 279.077†	74293.1	102.6	mg/L	1.03	102.6	mg/L	1.03	1.00%
Mn 257.610†	82.7	-0.00026	mg/L	0.000300	-0.00026	mg/L	0.000300	114.77%
Mo 202.031†	113.9	0.00451	mg/L	0.000474	0.00451	mg/L	0.000474	10.52%
Na 589.592†	-81.4	-0.00518	mg/L	0.001532	-0.00518	mg/L	0.001532	29.58%
Na 330.237†	-30.5	-1.248	mg/L	0.1583	-1.248	mg/L	0.1583	12.69%
Ni 231.604†	0.9	0.00031	mg/L	0.001766	0.00031	mg/L	0.001766	566.50%
Pb 220.353†	-403.3	-0.00205	mg/L	0.001323	-0.00205	mg/L	0.001323	64.62%
Sb 206.836†	-23.6	-0.00888	mg/L	0.000801	-0.00888	mg/L	0.000801	9.02%
Se 196.026†	31.9	0.02177	mg/L	0.008322	0.02177	mg/L	0.008322	38.23%
Si 288.158†	-21.2	-0.01825	mg/L	0.000895	-0.01825	mg/L	0.000895	4.91%
Sn 189.927†	-73.3	-0.00268	mg/L	0.001433	-0.00268	mg/L	0.001433	53.41%
Sr 421.552†	5345.7	0.00635	mg/L	0.000072	0.00635	mg/L	0.000072	1.13%
Ti 334.903†	306.7	0.00484	mg/L	0.000822	0.00484	mg/L	0.000822	16.99%
Tl 190.801†	-16.4	0.01640	mg/L	0.003045	0.01640	mg/L	0.003045	18.57%
V 292.402†	1914.0	0.00527	mg/L	0.000371	0.00527	mg/L	0.000371	7.03%
Zn 206.200†	-1.7	-0.00177	mg/L	0.001456	-0.00177	mg/L	0.001456	82.07%

Sequence No.: 5
Sample ID: ICSAB
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 303
Date Collected: 6/18/2015 8:53:30 AM
Data Type: Original

Nebulizer Parameters: ICSAB

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2651613.8	97.22	%	0.224				0.23%
ScR 361.383	283545.9	99.19	%	0.254				0.26%
Ag 328.068†	254691.6	1.076	mg/L	0.0149	1.076	mg/L	0.0149	1.38%
Al 308.215†	190914.8	197.2	mg/L	0.34	197.2	mg/L	0.34	0.17%
As 188.979†	1334.5	1.025	mg/L	0.0088	1.025	mg/L	0.0088	0.86%
B 249.677†	-29.7	-0.00781	mg/L	0.000955	-0.00781	mg/L	0.000955	12.23%
Ba 233.527†	5112.3	1.022	mg/L	0.0040	1.022	mg/L	0.0040	0.39%
Be 313.042†	458845.7	0.9758	mg/L	0.00184	0.9758	mg/L	0.00184	0.19%
Ca 317.933†	794189.8	99.88	mg/L	0.182	99.88	mg/L	0.182	0.18%
Cd 228.802†	23550.8	1.056	mg/L	0.0044	1.056	mg/L	0.0044	0.41%
Co 228.616†	30424.9	0.9879	mg/L	0.00461	0.9879	mg/L	0.00461	0.47%
Cr 267.716†	6756.3	1.023	mg/L	0.0020	1.023	mg/L	0.0020	0.19%
Cu 324.752†	288983.3	1.067	mg/L	0.0137	1.067	mg/L	0.0137	1.28%
Fe 273.955†	190391.8	194.1	mg/L	0.56	194.1	mg/L	0.56	0.29%
K 766.490†	-33.6	-0.01296	mg/L	0.004185	-0.01296	mg/L	0.004185	32.29%
Mg 279.077†	72185.0	99.67	mg/L	0.069	99.67	mg/L	0.069	0.07%
Mn 257.610†	41664.0	0.9500	mg/L	0.00283	0.9500	mg/L	0.00283	0.30%
Mo 202.031†	128.1	0.00530	mg/L	0.000283	0.00530	mg/L	0.000283	5.34%
Na 589.592†	-62.1	-0.00395	mg/L	0.001614	-0.00395	mg/L	0.001614	40.88%
Na 330.237†	-15.7	-0.9327	mg/L	0.19476	-0.9327	mg/L	0.19476	20.88%
Ni 231.604†	2890.4	0.9616	mg/L	0.00287	0.9616	mg/L	0.00287	0.30%
Pb 220.353†	7488.3	0.9666	mg/L	0.00451	0.9666	mg/L	0.00451	0.47%
Sb 206.836†	2785.5	1.024	mg/L	0.0045	1.024	mg/L	0.0045	0.44%
Se 196.026†	1521.0	1.036	mg/L	0.0049	1.036	mg/L	0.0049	0.47%
Si 288.158†	-27.1	-0.01944	mg/L	0.003946	-0.01944	mg/L	0.003946	20.30%
Sn 189.927†	-76.7	-0.00274	mg/L	0.001303	-0.00274	mg/L	0.001303	47.50%
Sr 421.552†	5304.1	0.00630	mg/L	0.000038	0.00630	mg/L	0.000038	0.60%
Ti 334.903†	308.6	0.00463	mg/L	0.000145	0.00463	mg/L	0.000145	3.14%
Tl 190.801†	1548.7	0.9737	mg/L	0.00492	0.9737	mg/L	0.00492	0.50%
V 292.402†	154529.7	1.001	mg/L	0.0137	1.001	mg/L	0.0137	1.37%
Zn 206.200†	3144.5	0.9366	mg/L	0.00470	0.9366	mg/L	0.00470	0.50%

Sequence No.: 6
Sample ID: CV
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 8:58:54 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2751182.9	100.9	%	0.27				0.27%
ScR 361.383	285659.3	99.93	%	0.492				0.49%
Ag 328.068†	241419.5	1.020	mg/L	0.0045	1.020	mg/L	0.0045	0.44%
Al 308.215†	1930.6	1.962	mg/L	0.0166	1.962	mg/L	0.0166	0.84%
As 188.979†	2470.1	1.957	mg/L	0.0145	1.957	mg/L	0.0145	0.74%
B 249.677†	4899.2	0.9607	mg/L	0.00850	0.9607	mg/L	0.00850	0.88%
Ba 233.527†	4979.0	1.016	mg/L	0.0125	1.016	mg/L	0.0125	1.23%
Be 313.042†	442736.2	0.9415	mg/L	0.00375	0.9415	mg/L	0.00375	0.40%
Ca 317.933†	16144.7	2.030	mg/L	0.0191	2.030	mg/L	0.0191	0.94%
Cd 228.802†	22597.8	1.009	mg/L	0.0027	1.009	mg/L	0.0027	0.27%
Co 228.616†	30306.5	0.9825	mg/L	0.00218	0.9825	mg/L	0.00218	0.22%
Cr 267.716†	6666.8	1.007	mg/L	0.0081	1.007	mg/L	0.0081	0.81%
Cu 324.752†	264542.8	0.9695	mg/L	0.00235	0.9695	mg/L	0.00235	0.24%
Fe 273.955†	1963.0	1.993	mg/L	0.0167	1.993	mg/L	0.0167	0.84%
K 766.490†	50972.9	19.64	mg/L	0.065	19.64	mg/L	0.065	0.33%
Mg 279.077†	1432.1	1.988	mg/L	0.0187	1.988	mg/L	0.0187	0.94%
Mn 257.610†	41409.8	0.9465	mg/L	0.00313	0.9465	mg/L	0.00313	0.33%
Mo 202.031†	17549.2	0.9800	mg/L	0.00568	0.9800	mg/L	0.00568	0.58%
Na 589.592†	764275.0	48.61	mg/L	0.061	48.61	mg/L	0.061	0.13%
Na 330.237†	1238.0	50.73	mg/L	0.376	50.73	mg/L	0.376	0.74%
Ni 231.604†	2937.2	0.9773	mg/L	0.00896	0.9773	mg/L	0.00896	0.92%
Pb 220.353†	15581.1	1.913	mg/L	0.0077	1.913	mg/L	0.0077	0.40%
Sb 206.836†	5498.9	2.041	mg/L	0.0143	2.041	mg/L	0.0143	0.70%
Se 196.026†	2904.4	1.979	mg/L	0.0188	1.979	mg/L	0.0188	0.95%
Si 288.158†	2341.0	1.963	mg/L	0.0201	1.963	mg/L	0.0201	1.02%
Sn 189.927†	4633.2	1.008	mg/L	0.0103	1.008	mg/L	0.0103	1.02%
Sr 421.552†	813060.0	0.9660	mg/L	0.00141	0.9660	mg/L	0.00141	0.15%
Ti 334.903†	21057.8	0.9803	mg/L	0.00132	0.9803	mg/L	0.00132	0.13%
Tl 190.801†	3189.5	1.962	mg/L	0.0146	1.962	mg/L	0.0146	0.74%
V 292.402†	151416.5	0.9875	mg/L	0.00472	0.9875	mg/L	0.00472	0.48%
Zn 206.200†	3213.3	0.9582	mg/L	0.00776	0.9582	mg/L	0.00776	0.81%

Sequence No.: 7
Sample ID: CB
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 9:02:58 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2763854.9	101.3	%	0.47				0.46%
ScR 361.383	288256.5	100.8	%	1.13				1.12%
Ag 328.068†	-31.2	-0.00013	mg/L	0.000103	-0.00013	mg/L	0.000103	77.93%
Al 308.215†	5.5	0.00563	mg/L	0.003791	0.00563	mg/L	0.003791	67.37%
As 188.979†	-0.5	-0.00042	mg/L	0.002762	-0.00042	mg/L	0.002762	663.35%
B 249.677†	14.2	0.00280	mg/L	0.000454	0.00280	mg/L	0.000454	16.24%
Ba 233.527†	6.4	0.00130	mg/L	0.000412	0.00130	mg/L	0.000412	31.65%
Be 313.042†	19.4	0.00004	mg/L	0.000013	0.00004	mg/L	0.000013	31.81%
Ca 317.933†	7.4	0.00093	mg/L	0.000273	0.00093	mg/L	0.000273	29.24%
Cd 228.802†	8.8	0.00040	mg/L	0.000242	0.00040	mg/L	0.000242	60.75%
Co 228.616†	4.1	0.00013	mg/L	0.000094	0.00013	mg/L	0.000094	70.02%
Cr 267.716†	-1.5	-0.00022	mg/L	0.000922	-0.00022	mg/L	0.000922	415.76%
Cu 324.752†	59.6	0.00022	mg/L	0.000139	0.00022	mg/L	0.000139	63.96%
Fe 273.955†	2.3	0.00231	mg/L	0.000225	0.00231	mg/L	0.000225	9.74%
K 766.490†	37.6	0.01450	mg/L	0.008612	0.01450	mg/L	0.008612	59.40%
Mg 279.077†	2.1	0.00291	mg/L	0.006442	0.00291	mg/L	0.006442	221.13%
Mn 257.610†	0.7	0.00002	mg/L	0.000055	0.00002	mg/L	0.000055	362.14%
Mo 202.031†	35.1	0.00196	mg/L	0.000446	0.00196	mg/L	0.000446	22.76%
Na 589.592†	-84.5	-0.00537	mg/L	0.000670	-0.00537	mg/L	0.000670	12.48%
Na 330.237†	-1.1	-0.04658	mg/L	0.199419	-0.04658	mg/L	0.199419	428.09%
Ni 231.604†	-0.6	-0.00020	mg/L	0.001532	-0.00020	mg/L	0.001532	769.32%
Pb 220.353†	6.4	0.00078	mg/L	0.000707	0.00078	mg/L	0.000707	90.35%
Sb 206.836†	10.3	0.00382	mg/L	0.002006	0.00382	mg/L	0.002006	52.51%
Se 196.026†	-2.8	-0.00188	mg/L	0.001221	-0.00188	mg/L	0.001221	64.85%
Si 288.158†	-0.2	-0.00018	mg/L	0.004539	-0.00018	mg/L	0.004539	>999.9%
Sn 189.927†	4.6	0.00101	mg/L	0.000229	0.00101	mg/L	0.000229	22.69%
Sr 421.552†	6.9	0.00001	mg/L	0.000009	0.00001	mg/L	0.000009	115.59%
Ti 334.903†	4.2	0.00019	mg/L	0.000158	0.00019	mg/L	0.000158	81.79%
Tl 190.801†	0.1	0.00004	mg/L	0.002818	0.00004	mg/L	0.002818	>999.9%
V 292.402†	8.3	0.00005	mg/L	0.000140	0.00005	mg/L	0.000140	259.78%
Zn 206.200†	-1.6	-0.00046	mg/L	0.000263	-0.00046	mg/L	0.000263	56.80%

Analysis Begun

Start Time: 6/18/2015 9:07:29 AM
Logged In Analyst: Metals
Spectrometer: Optima 7300 DV, S/N 077C8121202
Plasma On Time: 6/18/2015 7:07:14 AM
Technique: ICP Continuous
Autosampler: ESI

Sample Information File: C:\pe\metals\Sample Information\0618.sif
Batch ID:
Results Data Set: I2150618
Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 1
Sample ID: AHW3 MB TWC
Analyst: ALA
Dilution: 1.000000X
Autosampler Location: 304
Date Collected: 6/18/2015 9:07:31 AM
Data Type: Original

Nebulizer Parameters: AHW3 MB TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHW3 MB TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2726466.6	99.97	%	0.931				0.93%
ScR 361.383	291010.0	101.8	%	0.60				0.59%
Ag 328.068†	-37.3	-0.00016	mg/L	0.000031	-0.00016	mg/L	0.000031	19.71%
Al 308.215†	8.2	0.00850	mg/L	0.002814	0.00850	mg/L	0.002814	33.10%
As 188.979†	-1.7	-0.00135	mg/L	0.001413	-0.00135	mg/L	0.001413	104.53%
B 249.677†	7.3	0.00144	mg/L	0.000704	0.00144	mg/L	0.000704	48.89%
Ba 233.527†	3.4	0.00070	mg/L	0.000581	0.00070	mg/L	0.000581	83.08%
Be 313.042†	1.3	0.00000	mg/L	0.000017	0.00000	mg/L	0.000017	656.87%
Ca 317.933†	74.9	0.00942	mg/L	0.000447	0.00942	mg/L	0.000447	4.74%
Cd 228.802†	7.5	0.00035	mg/L	0.000128	0.00035	mg/L	0.000128	36.69%
Co 228.616†	-5.2	-0.00017	mg/L	0.000138	-0.00017	mg/L	0.000138	82.69%
Cr 267.716†	-1.4	-0.00022	mg/L	0.000574	-0.00022	mg/L	0.000574	262.87%
Cu 324.752†	115.9	0.00043	mg/L	0.000226	0.00043	mg/L	0.000226	53.06%
Fe 273.955†	2.6	0.00260	mg/L	0.001107	0.00260	mg/L	0.001107	42.59%
K 766.490†	25.7	0.00989	mg/L	0.011817	0.00989	mg/L	0.011817	119.50%
Mg 279.077†	2.3	0.00316	mg/L	0.004821	0.00316	mg/L	0.004821	152.42%
Mn 257.610†	1.3	0.00003	mg/L	0.000056	0.00003	mg/L	0.000056	195.23%
Mo 202.031†	1.6	0.00009	mg/L	0.000167	0.00009	mg/L	0.000167	191.52%
Na 589.592†	-79.7	-0.00507	mg/L	0.001157	-0.00507	mg/L	0.001157	22.82%
Na 330.237†	-1.0	-0.04335	mg/L	0.159459	-0.04335	mg/L	0.159459	367.85%
Ni 231.604†	-0.9	-0.00029	mg/L	0.000426	-0.00029	mg/L	0.000426	148.38%
Pb 220.353†	-2.0	-0.00025	mg/L	0.000662	-0.00025	mg/L	0.000662	264.34%
Sb 206.836†	2.1	0.00078	mg/L	0.001401	0.00078	mg/L	0.001401	180.82%
Se 196.026†	-3.4	-0.00233	mg/L	0.001137	-0.00233	mg/L	0.001137	48.86%
Si 288.158†	15.3	0.01298	mg/L	0.003442	0.01298	mg/L	0.003442	26.51%
Sn 189.927†	2.9	0.00063	mg/L	0.000483	0.00063	mg/L	0.000483	76.61%
Sr 421.552†	9.8	0.00001	mg/L	0.000033	0.00001	mg/L	0.000033	281.29%
Ti 334.903†	-11.0	-0.00051	mg/L	0.000182	-0.00051	mg/L	0.000182	35.59%
Tl 190.801†	-1.0	-0.00059	mg/L	0.001157	-0.00059	mg/L	0.001157	195.26%
V 292.402†	17.9	0.00012	mg/L	0.000130	0.00012	mg/L	0.000130	111.78%
Zn 206.200†	2.3	0.00069	mg/L	0.000702	0.00069	mg/L	0.000702	101.40%

AHW3 80868

Sequence No.: 2
Sample ID: AHW3 A TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 305
Date Collected: 6/18/2015 9:11:47 AM
Data Type: Original

Nebulizer Parameters: AHW3 A TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHW3 A TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2716275.5	99.60	%	0.236				0.24%
ScR 361.383	287917.3	100.7	%	0.54				0.54%
Ag 328.068†	-38.8	-0.00016	mg/L	0.000161	-0.00016	mg/L	0.000161	103.59%
Al 308.215†	8165.3	8.432	mg/L	0.0160	8.432	mg/L	0.0160	0.19%
As 188.979†	12.2	0.02337	mg/L	0.001532	0.02337	mg/L	0.001532	6.56%
B 249.677†	55.0	0.01077	mg/L	0.000803	0.01077	mg/L	0.000803	7.46%
Ba 233.527†	437.9	0.08766	mg/L	0.000768	0.08766	mg/L	0.000768	0.88%
Be 313.042†	77.9	0.00015	mg/L	0.000011	0.00015	mg/L	0.000011	7.42%
Ca 317.933†	127730.1	16.06	mg/L	0.081	16.06	mg/L	0.081	0.50%
Cd 228.802†	4.4	0.00004	mg/L	0.000078	0.00004	mg/L	0.000078	188.69%
Co 228.616†	489.0	0.01496	mg/L	0.000006	0.01496	mg/L	0.000006	0.04%
Cr 267.716†	175.4	0.02606	mg/L	0.000582	0.02606	mg/L	0.000582	2.23%
Cu 324.752†	6206.1	0.02325	mg/L	0.000249	0.02325	mg/L	0.000249	1.07%
Fe 273.955†	15304.1	15.61	mg/L	0.051	15.61	mg/L	0.051	0.32%
K 766.490†	8434.8	3.250	mg/L	0.0198	3.250	mg/L	0.0198	0.61%
Mg 279.077†	10886.8	15.04	mg/L	0.007	15.04	mg/L	0.007	0.05%
Mn 257.610†	52657.4	1.203	mg/L	0.0031	1.203	mg/L	0.0031	0.26%
Mo 202.031†	60.3	0.00307	mg/L	0.000093	0.00307	mg/L	0.000093	3.04%
Na 589.592†	95625.9	6.082	mg/L	0.0344	6.082	mg/L	0.0344	0.57%
Na 330.237†	150.1	6.257	mg/L	0.0904	6.257	mg/L	0.0904	1.44%
Ni 231.604†	98.8	0.03285	mg/L	0.001461	0.03285	mg/L	0.001461	4.45%
Pb 220.353†	13.7	0.00333	mg/L	0.000876	0.00333	mg/L	0.000876	26.35%
Sb 206.836†	5.0	0.00182	mg/L	0.000813	0.00182	mg/L	0.000813	44.59%
Se 196.026†	8.4	0.00569	mg/L	0.000690	0.00569	mg/L	0.000690	12.13%
Si 288.158†	39062.5	33.17	mg/L	0.048	33.17	mg/L	0.048	0.15%
Sn 189.927†	-34.8	-0.00542	mg/L	0.000570	-0.00542	mg/L	0.000570	10.52%
Sr 421.552†	86359.1	0.1026	mg/L	0.00065	0.1026	mg/L	0.00065	0.63%
Ti 334.903†	10784.8	0.5012	mg/L	0.00198	0.5012	mg/L	0.00198	0.39%
Tl 190.801†	5.7	0.00542	mg/L	0.000932	0.00542	mg/L	0.000932	17.20%
V 292.402†	5366.9	0.03432	mg/L	0.000308	0.03432	mg/L	0.000308	0.90%
Zn 206.200†	99.6	0.02949	mg/L	0.000609	0.02949	mg/L	0.000609	2.07%

Sequence No.: 3
Sample ID: AHW3 MBSPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 306
Date Collected: 6/18/2015 9:16:01 AM
Data Type: Original

Nebulizer Parameters: AHW3 MBSPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHW3 MBSPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2730676.5	100.1	%	0.27				0.27%
ScR 361.383	289822.5	101.4	%	0.90				0.89%
Ag 328.068†	123292.8	0.5208	mg/L	0.00280	0.5208	mg/L	0.00280	0.54%
Al 308.215†	1934.8	1.991	mg/L	0.0271	1.991	mg/L	0.0271	1.36%
As 188.979†	2568.8	2.004	mg/L	0.0136	2.004	mg/L	0.0136	0.68%
B 249.677†	12.8	0.00151	mg/L	0.000612	0.00151	mg/L	0.000612	40.65%
Ba 233.527†	9899.9	2.020	mg/L	0.0332	2.020	mg/L	0.0332	1.64%
Be 313.042†	226076.5	0.4808	mg/L	0.00306	0.4808	mg/L	0.00306	0.64%
Ca 317.933†	77263.7	9.717	mg/L	0.0182	9.717	mg/L	0.0182	0.19%
Cd 228.802†	11200.7	0.4937	mg/L	0.00339	0.4937	mg/L	0.00339	0.69%
Co 228.616†	15286.7	0.4963	mg/L	0.00376	0.4963	mg/L	0.00376	0.76%
Cr 267.716†	3330.4	0.5023	mg/L	0.00786	0.5023	mg/L	0.00786	1.57%
Cu 324.752†	136360.7	0.5000	mg/L	0.00388	0.5000	mg/L	0.00388	0.78%
Fe 273.955†	1986.5	2.021	mg/L	0.0256	2.021	mg/L	0.0256	1.27%
K 766.490†	25359.2	9.771	mg/L	0.0418	9.771	mg/L	0.0418	0.43%
Mg 279.077†	7341.3	10.15	mg/L	0.146	10.15	mg/L	0.146	1.43%
Mn 257.610†	20874.6	0.4773	mg/L	0.00229	0.4773	mg/L	0.00229	0.48%
Mo 202.031†	31.4	0.00157	mg/L	0.000121	0.00157	mg/L	0.000121	7.72%
Na 589.592†	151971.5	9.665	mg/L	0.0292	9.665	mg/L	0.0292	0.30%
Na 330.237†	255.4	10.34	mg/L	0.385	10.34	mg/L	0.385	3.72%
Ni 231.604†	1463.1	0.4869	mg/L	0.00621	0.4869	mg/L	0.00621	1.27%
Pb 220.353†	15826.3	1.943	mg/L	0.0164	1.943	mg/L	0.0164	0.85%
Sb 206.836†	5520.5	2.043	mg/L	0.0161	2.043	mg/L	0.0161	0.79%
Se 196.026†	2930.2	1.997	mg/L	0.0166	1.997	mg/L	0.0166	0.83%
Si 288.158†	93.8	0.08153	mg/L	0.023293	0.08153	mg/L	0.023293	28.57%
Sn 189.927†	-24.5	-0.00276	mg/L	0.000490	-0.00276	mg/L	0.000490	17.76%
Sr 421.552†	405811.5	0.4822	mg/L	0.00056	0.4822	mg/L	0.00056	0.12%
Ti 334.903†	32.4	0.00045	mg/L	0.000248	0.00045	mg/L	0.000248	55.47%
Tl 190.801†	3243.4	1.999	mg/L	0.0106	1.999	mg/L	0.0106	0.53%
V 292.402†	76926.6	0.5016	mg/L	0.00344	0.5016	mg/L	0.00344	0.69%
Zn 206.200†	1577.1	0.4704	mg/L	0.00671	0.4704	mg/L	0.00671	1.43%

Sequence No.: 4
Sample ID: CV 7
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 9:20:01 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2732213.0	100.2	%	0.37				0.37%
ScR 361.383	284892.9	99.66	%	0.299				0.30%
Ag 328.068†	242861.3	1.026	mg/L	0.0064	1.026	mg/L	0.0064	0.62%
Al 308.215†	1963.0	1.994	mg/L	0.0031	1.994	mg/L	0.0031	0.16%
As 188.979†	2510.9	1.989	mg/L	0.0074	1.989	mg/L	0.0074	0.37%
B 249.677†	4969.4	0.9745	mg/L	0.00289	0.9745	mg/L	0.00289	0.30%
Ba 233.527†	5034.8	1.027	mg/L	0.0044	1.027	mg/L	0.0044	0.43%
Be 313.042†	448474.2	0.9537	mg/L	0.00352	0.9537	mg/L	0.00352	0.37%
Ca 317.933†	16398.0	2.062	mg/L	0.0054	2.062	mg/L	0.0054	0.26%
Cd 228.802†	23445.0	1.047	mg/L	0.0046	1.047	mg/L	0.0046	0.44%
Co 228.616†	31512.7	1.022	mg/L	0.0051	1.022	mg/L	0.0051	0.50%
Cr 267.716†	6780.4	1.024	mg/L	0.0026	1.024	mg/L	0.0026	0.26%
Cu 324.752†	275540.4	1.010	mg/L	0.0027	1.010	mg/L	0.0027	0.27%
Fe 273.955†	1993.6	2.024	mg/L	0.0100	2.024	mg/L	0.0100	0.49%
K 766.490†	51297.9	19.76	mg/L	0.072	19.76	mg/L	0.072	0.36%
Mg 279.077†	1448.2	2.010	mg/L	0.0055	2.010	mg/L	0.0055	0.27%
Mn 257.610†	41777.3	0.9549	mg/L	0.00423	0.9549	mg/L	0.00423	0.44%
Mo 202.031†	18231.5	1.018	mg/L	0.0068	1.018	mg/L	0.0068	0.67%
Na 589.592†	771766.8	49.08	mg/L	0.099	49.08	mg/L	0.099	0.20%
Na 330.237†	1255.5	51.44	mg/L	0.048	51.44	mg/L	0.048	0.09%
Ni 231.604†	2980.1	0.9916	mg/L	0.00177	0.9916	mg/L	0.00177	0.18%
Pb 220.353†	16219.7	1.992	mg/L	0.0122	1.992	mg/L	0.0122	0.61%
Sb 206.836†	5556.4	2.063	mg/L	0.0116	2.063	mg/L	0.0116	0.56%
Se 196.026†	2952.3	2.012	mg/L	0.0120	2.012	mg/L	0.0120	0.60%
Si 288.158†	2393.1	2.007	mg/L	0.0178	2.007	mg/L	0.0178	0.89%
Sn 189.927†	4711.0	1.025	mg/L	0.0078	1.025	mg/L	0.0078	0.76%
Sr 421.552†	820914.5	0.9754	mg/L	0.00244	0.9754	mg/L	0.00244	0.25%
Ti 334.903†	21275.8	0.9905	mg/L	0.00497	0.9905	mg/L	0.00497	0.50%
Tl 190.801†	3230.2	1.987	mg/L	0.0091	1.987	mg/L	0.0091	0.46%
V 292.402†	152599.5	0.9953	mg/L	0.00695	0.9953	mg/L	0.00695	0.70%
Zn 206.200†	3269.2	0.9748	mg/L	0.00254	0.9748	mg/L	0.00254	0.26%

AHSB: 20071

Sequence No.: 5
Sample ID: CB 2
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 9:24:05 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2732356.9	100.2	%	0.72				0.71%
ScR 361.383	284493.5	99.52	%	1.219				1.23%
Ag 328.068†	-16.5	-0.00007	mg/L	0.000064	-0.00007	mg/L	0.000064	92.04%
Al 308.215†	10.2	0.01049	mg/L	0.004766	0.01049	mg/L	0.004766	45.45%
As 188.979†	-1.3	-0.00105	mg/L	0.001351	-0.00105	mg/L	0.001351	128.99%
B 249.677†	8.5	0.00166	mg/L	0.000458	0.00166	mg/L	0.000458	27.53%
Ba 233.527†	4.8	0.00097	mg/L	0.000367	0.00097	mg/L	0.000367	37.80%
Be 313.042†	36.3	0.00008	mg/L	0.000026	0.00008	mg/L	0.000026	34.05%
Ca 317.933†	6.3	0.00079	mg/L	0.000515	0.00079	mg/L	0.000515	64.86%
Cd 228.802†	7.4	0.00034	mg/L	0.000128	0.00034	mg/L	0.000128	37.55%
Co 228.616†	2.4	0.00008	mg/L	0.000062	0.00008	mg/L	0.000062	78.12%
Cr 267.716†	-4.1	-0.00062	mg/L	0.001174	-0.00062	mg/L	0.001174	187.87%
Cu 324.752†	87.5	0.00032	mg/L	0.000039	0.00032	mg/L	0.000039	12.27%
Fe 273.955†	0.5	0.00047	mg/L	0.001584	0.00047	mg/L	0.001584	338.97%
K 766.490†	41.1	0.01585	mg/L	0.011757	0.01585	mg/L	0.011757	74.18%
Mg 279.077†	-0.0	-0.00006	mg/L	0.007672	-0.00006	mg/L	0.007672	>999.9%
Mn 257.610†	2.5	0.00006	mg/L	0.000036	0.00006	mg/L	0.000036	63.65%
Mo 202.031†	33.6	0.00188	mg/L	0.000630	0.00188	mg/L	0.000630	33.56%
Na 589.592†	-22.9	-0.00145	mg/L	0.006718	-0.00145	mg/L	0.006718	462.24%
Na 330.237†	-1.0	-0.03962	mg/L	0.119273	-0.03962	mg/L	0.119273	301.07%
Ni 231.604†	-0.1	-0.00004	mg/L	0.000574	-0.00004	mg/L	0.000574	>999.9%
Pb 220.353†	0.2	0.00002	mg/L	0.000709	0.00002	mg/L	0.000709	>999.9%
Sb 206.836†	13.5	0.00500	mg/L	0.001102	0.00500	mg/L	0.001102	22.03%
Se 196.026†	-2.3	-0.00159	mg/L	0.002875	-0.00159	mg/L	0.002875	180.37%
Si 288.158†	3.8	0.00323	mg/L	0.006263	0.00323	mg/L	0.006263	193.91%
Sn 189.927†	-0.9	-0.00019	mg/L	0.000114	-0.00019	mg/L	0.000114	58.89%
Sr 421.552†	83.0	0.00010	mg/L	0.000045	0.00010	mg/L	0.000045	45.47%
Ti 334.903†	4.2	0.00020	mg/L	0.000426	0.00020	mg/L	0.000426	216.91%
Tl 190.801†	0.2	0.00014	mg/L	0.000806	0.00014	mg/L	0.000806	578.78%
V 292.402†	0.6	0.00000	mg/L	0.000033	0.00000	mg/L	0.000033	>999.9%
Zn 206.200†	-2.4	-0.00072	mg/L	0.000030	-0.00072	mg/L	0.000030	4.12%

Sequence No.: 6
Sample ID: AHP4 MB1 TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 307
Date Collected: 6/18/2015 9:28:20 AM
Data Type: Original

Nebulizer Parameters: AHP4 MB1 TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHP4 MB1 TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2755370.7	101.0	%	1.56				1.54%
ScR 361.383	285767.3	99.96	%	1.799				1.80%
Ag 328.068†	-3.9	-0.00002	mg/L	0.000073	-0.00002	mg/L	0.000073	438.02%
Al 308.215†	9.0	0.00925	mg/L	0.008962	0.00925	mg/L	0.008962	96.86%
As 188.979†	0.9	0.00070	mg/L	0.000548	0.00070	mg/L	0.000548	78.22%
B 249.677†	6.1	0.00121	mg/L	0.001572	0.00121	mg/L	0.001572	130.42%
Ba 233.527†	4.9	0.00100	mg/L	0.000615	0.00100	mg/L	0.000615	61.51%
Be 313.042†	0.8	0.00000	mg/L	0.000024	0.00000	mg/L	0.000024	>999.9%
Ca 317.933†	36.6	0.00460	mg/L	0.000474	0.00460	mg/L	0.000474	10.30%
Cd 228.802†	5.4	0.00024	mg/L	0.000164	0.00024	mg/L	0.000164	68.22%
Co 228.616†	1.5	0.00005	mg/L	0.000213	0.00005	mg/L	0.000213	435.74%
Cr 267.716†	-2.8	-0.00042	mg/L	0.000106	-0.00042	mg/L	0.000106	25.43%
Cu 324.752†	74.4	0.00027	mg/L	0.000075	0.00027	mg/L	0.000075	27.31%
Fe 273.955†	1.1	0.00111	mg/L	0.003022	0.00111	mg/L	0.003022	271.10%
K 766.490†	31.4	0.01210	mg/L	0.013651	0.01210	mg/L	0.013651	112.86%
Mg 279.077†	-0.0	-0.00005	mg/L	0.004980	-0.00005	mg/L	0.004980	>999.9%
Mn 257.610†	2.9	0.00007	mg/L	0.000008	0.00007	mg/L	0.000008	12.85%
Mo 202.031†	3.0	0.00017	mg/L	0.000139	0.00017	mg/L	0.000139	82.63%
Na 589.592†	-12.0	-0.00076	mg/L	0.001280	-0.00076	mg/L	0.001280	167.43%
Na 330.237†	0.6	0.02446	mg/L	0.031712	0.02446	mg/L	0.031712	129.64%
Ni 231.604†	2.0	0.00066	mg/L	0.000570	0.00066	mg/L	0.000570	86.25%
Pb 220.353†	-0.8	-0.00010	mg/L	0.000470	-0.00010	mg/L	0.000470	464.87%
Sb 206.836†	3.7	0.00137	mg/L	0.000329	0.00137	mg/L	0.000329	24.01%
Se 196.026†	-1.1	-0.00073	mg/L	0.000989	-0.00073	mg/L	0.000989	136.06%
Si 288.158†	28.1	0.02385	mg/L	0.001659	0.02385	mg/L	0.001659	6.96%
Sn 189.927†	3.7	0.00080	mg/L	0.000360	0.00080	mg/L	0.000360	45.05%
Sr 421.552†	-1.8	-0.00000	mg/L	0.000032	-0.00000	mg/L	0.000032	>999.9%
Ti 334.903†	-4.3	-0.00020	mg/L	0.000274	-0.00020	mg/L	0.000274	136.77%
Tl 190.801†	-1.1	-0.00067	mg/L	0.001723	-0.00067	mg/L	0.001723	255.95%
V 292.402†	12.9	0.00008	mg/L	0.000077	0.00008	mg/L	0.000077	92.66%
Zn 206.200†	1.0	0.00029	mg/L	0.000485	0.00029	mg/L	0.000485	165.93%

AHS2:000713

Sequence No.: 7
Sample ID: AHP4 A TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 308
Date Collected: 6/18/2015 9:32:37 AM
Data Type: Original

Nebulizer Parameters: AHP4 A TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 A TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2758018.8	101.1	%	0.42				0.41%
ScR 361.383	288901.6	101.1	%	0.42				0.42%
Ag 328.068†	-50.2	-0.00021	mg/L	0.000089	-0.00021	mg/L	0.000089	41.99%
Al 308.215†	39.4	0.04062	mg/L	0.008453	0.04062	mg/L	0.008453	20.81%
As 188.979†	16.4	0.01022	mg/L	0.002572	0.01022	mg/L	0.002572	25.16%
B 249.677†	146.1	0.02867	mg/L	0.000414	0.02867	mg/L	0.000414	1.44%
Ba 233.527†	282.9	0.05773	mg/L	0.000685	0.05773	mg/L	0.000685	1.19%
Be 313.042†	13.0	0.00003	mg/L	0.000011	0.00003	mg/L	0.000011	39.14%
Ca 317.933†	124483.9	15.66	mg/L	0.065	15.66	mg/L	0.065	0.42%
Cd 228.802†	57.7	0.00259	mg/L	0.000106	0.00259	mg/L	0.000106	4.09%
Co 228.616†	18.2	0.00058	mg/L	0.000253	0.00058	mg/L	0.000253	43.50%
Cr 267.716†	3.9	0.00045	mg/L	0.000268	0.00045	mg/L	0.000268	59.43%
Cu 324.752†	14727.5	0.05398	mg/L	0.000320	0.05398	mg/L	0.000320	0.59%
Fe 273.955†	7.7	0.00789	mg/L	0.001087	0.00789	mg/L	0.001087	13.77%
K 766.490†	3545.5	1.366	mg/L	0.0149	1.366	mg/L	0.0149	1.09%
Mg 279.077†	1179.0	1.630	mg/L	0.0094	1.630	mg/L	0.0094	0.58%
Mn 257.610†	181.8	0.00410	mg/L	0.000046	0.00410	mg/L	0.000046	1.11%
Mo 202.031†	35.8	0.00171	mg/L	0.000295	0.00171	mg/L	0.000295	17.22%
Na 589.592†	93043.9	5.917	mg/L	0.0132	5.917	mg/L	0.0132	0.22%
Na 330.237†	155.0	6.183	mg/L	0.1027	6.183	mg/L	0.1027	1.66%
Ni 231.604†	3.4	0.00114	mg/L	0.001186	0.00114	mg/L	0.001186	104.28%
Pb 220.353†	0.6	-0.00000	mg/L	0.000373	-0.00000	mg/L	0.000373	>999.9%
Sb 206.836†	7.4	0.00268	mg/L	0.001062	0.00268	mg/L	0.001062	39.62%
Se 196.026†	8.5	0.00577	mg/L	0.001444	0.00577	mg/L	0.001444	25.01%
Si 288.158†	6381.6	5.422	mg/L	0.0421	5.422	mg/L	0.0421	0.78%
Sn 189.927†	-22.1	-0.00272	mg/L	0.000275	-0.00272	mg/L	0.000275	10.09%
Sr 421.552†	63431.7	0.07537	mg/L	0.000262	0.07537	mg/L	0.000262	0.35%
Ti 334.903†	44.5	0.00059	mg/L	0.000258	0.00059	mg/L	0.000258	43.81%
Tl 190.801†	8.7	0.00539	mg/L	0.002132	0.00539	mg/L	0.002132	39.53%
V 292.402†	27.5	0.00018	mg/L	0.000018	0.00018	mg/L	0.000018	10.01%
Zn 206.200†	1946.4	0.5800	mg/L	0.00293	0.5800	mg/L	0.00293	0.51%

A462-88674

Sequence No.: 8
Sample ID: AHP4 B TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 309
Date Collected: 6/18/2015 9:36:36 AM
Data Type: Original

Nebulizer Parameters: AHP4 B TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHP4 B TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2760866.3	101.2	%	0.45				0.45%
ScR 361.383	292997.4	102.5	%	0.05				0.05%
Ag 328.068†	-78.8	-0.00033	mg/L	0.000140	-0.00033	mg/L	0.000140	41.93%
Al 308.215†	32.6	0.03363	mg/L	0.001016	0.03363	mg/L	0.001016	3.02%
As 188.979†	19.0	0.01206	mg/L	0.002346	0.01206	mg/L	0.002346	19.46%
B 249.677†	149.2	0.02928	mg/L	0.000357	0.02928	mg/L	0.000357	1.22%
Ba 233.527†	232.0	0.04736	mg/L	0.000471	0.04736	mg/L	0.000471	0.99%
Be 313.042†	1.1	0.00000	mg/L	0.000014	0.00000	mg/L	0.000014	609.43%
Ca 317.933†	133453.1	16.78	mg/L	0.049	16.78	mg/L	0.049	0.29%
Cd 228.802†	58.3	0.00261	mg/L	0.000192	0.00261	mg/L	0.000192	7.36%
Co 228.616†	23.5	0.00076	mg/L	0.000089	0.00076	mg/L	0.000089	11.74%
Cr 267.716†	6.3	0.00081	mg/L	0.001633	0.00081	mg/L	0.001633	201.93%
Cu 324.752†	13410.6	0.04915	mg/L	0.000362	0.04915	mg/L	0.000362	0.74%
Fe 273.955†	4.6	0.00471	mg/L	0.000518	0.00471	mg/L	0.000518	11.00%
K 766.490†	3661.0	1.411	mg/L	0.0178	1.411	mg/L	0.0178	1.26%
Mg 279.077†	1232.8	1.704	mg/L	0.0089	1.704	mg/L	0.0089	0.52%
Mn 257.610†	149.3	0.00335	mg/L	0.000021	0.00335	mg/L	0.000021	0.61%
Mo 202.031†	35.5	0.00167	mg/L	0.000121	0.00167	mg/L	0.000121	7.24%
Na 589.592†	101758.4	6.472	mg/L	0.0373	6.472	mg/L	0.0373	0.58%
Na 330.237†	170.0	6.799	mg/L	0.1316	6.799	mg/L	0.1316	1.94%
Ni 231.604†	0.1	0.00004	mg/L	0.000422	0.00004	mg/L	0.000422	>999.9%
Pb 220.353†	-4.4	-0.00060	mg/L	0.000970	-0.00060	mg/L	0.000970	160.96%
Sb 206.836†	5.5	0.00197	mg/L	0.001045	0.00197	mg/L	0.001045	53.17%
Se 196.026†	11.1	0.00757	mg/L	0.001633	0.00757	mg/L	0.001633	21.57%
Si 288.158†	6321.0	5.370	mg/L	0.0085	5.370	mg/L	0.0085	0.16%
Sn 189.927†	-24.4	-0.00308	mg/L	0.000628	-0.00308	mg/L	0.000628	20.43%
Sr 421.552†	68744.9	0.08168	mg/L	0.000549	0.08168	mg/L	0.000549	0.67%
Ti 334.903†	44.8	0.00049	mg/L	0.000580	0.00049	mg/L	0.000580	117.29%
Tl 190.801†	11.0	0.00682	mg/L	0.001646	0.00682	mg/L	0.001646	24.12%
V 292.402†	29.8	0.00020	mg/L	0.000026	0.00020	mg/L	0.000026	13.28%
Zn 206.200†	1960.6	0.5842	mg/L	0.00194	0.5842	mg/L	0.00194	0.33%

AHS2 - 00075

Sequence No.: 9
Sample ID: AHP4 C TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 310
Date Collected: 6/18/2015 9:40:35 AM
Data Type: Original

Nebulizer Parameters: AHP4 C TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHP4 C TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2786850.4	102.2	%	0.45				0.44%
ScR 361.383	293904.5	102.8	%	0.78				0.76%
Ag 328.068†	-53.3	-0.00023	mg/L	0.000121	-0.00023	mg/L	0.000121	53.91%
Al 308.215†	15.7	0.01620	mg/L	0.008752	0.01620	mg/L	0.008752	54.02%
As 188.979†	4.8	0.00305	mg/L	0.002575	0.00305	mg/L	0.002575	84.56%
B 249.677†	68.1	0.01336	mg/L	0.000555	0.01336	mg/L	0.000555	4.15%
Ba 233.527†	31.9	0.00651	mg/L	0.000552	0.00651	mg/L	0.000552	8.47%
Be 313.042†	2.6	0.00001	mg/L	0.000006	0.00001	mg/L	0.000006	100.62%
Ca 317.933†	32504.1	4.088	mg/L	0.0170	4.088	mg/L	0.0170	0.41%
Cd 228.802†	15.8	0.00071	mg/L	0.000146	0.00071	mg/L	0.000146	20.59%
Co 228.616†	5.7	0.00019	mg/L	0.000271	0.00019	mg/L	0.000271	145.56%
Cr 267.716†	0.5	0.00004	mg/L	0.000768	0.00004	mg/L	0.000768	>999.9%
Cu 324.752†	3246.1	0.01190	mg/L	0.000264	0.01190	mg/L	0.000264	2.22%
Fe 273.955†	9.8	0.00998	mg/L	0.001972	0.00998	mg/L	0.001972	19.76%
K 766.490†	1364.5	0.5257	mg/L	0.01704	0.5257	mg/L	0.01704	3.24%
Mg 279.077†	286.0	0.3954	mg/L	0.00807	0.3954	mg/L	0.00807	2.04%
Mn 257.610†	54.6	0.00123	mg/L	0.000058	0.00123	mg/L	0.000058	4.74%
Mo 202.031†	18.1	0.00094	mg/L	0.000221	0.00094	mg/L	0.000221	23.58%
Na 589.592†	13064.0	0.8308	mg/L	0.00139	0.8308	mg/L	0.00139	0.17%
Na 330.237†	21.1	0.8314	mg/L	0.01931	0.8314	mg/L	0.01931	2.32%
Ni 231.604†	0.4	0.00014	mg/L	0.001270	0.00014	mg/L	0.001270	879.04%
Pb 220.353†	0.7	0.00007	mg/L	0.000610	0.00007	mg/L	0.000610	919.52%
Sb 206.836†	4.6	0.00169	mg/L	0.001181	0.00169	mg/L	0.001181	69.81%
Se 196.026†	1.9	0.00130	mg/L	0.001859	0.00130	mg/L	0.001859	143.47%
Si 288.158†	3553.9	3.019	mg/L	0.0304	3.019	mg/L	0.0304	1.01%
Sn 189.927†	-10.2	-0.00167	mg/L	0.001157	-0.00167	mg/L	0.001157	69.48%
Sr 421.552†	14113.9	0.01677	mg/L	0.000083	0.01677	mg/L	0.000083	0.50%
Ti 334.903†	4.2	-0.00019	mg/L	0.000311	-0.00019	mg/L	0.000311	160.15%
Tl 190.801†	5.1	0.00317	mg/L	0.002266	0.00317	mg/L	0.002266	71.57%
V 292.402†	17.7	0.00012	mg/L	0.000035	0.00012	mg/L	0.000035	30.59%
Zn 206.200†	379.2	0.1130	mg/L	0.00087	0.1130	mg/L	0.00087	0.77%

AHP 0007E

Sequence No.: 10
Sample ID: AHP4 D TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 311
Date Collected: 6/18/2015 9:44:49 AM
Data Type: Original

Nebulizer Parameters: AHP4 D TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 D TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2712748.6	99.47	%	1.263				1.27%
ScR 361.383	285375.0	99.83	%	1.280				1.28%
Ag 328.068†	-37.1	-0.00016	mg/L	0.000114	-0.00016	mg/L	0.000114	73.03%
Al 308.215†	51.3	0.05295	mg/L	0.003754	0.05295	mg/L	0.003754	7.09%
As 188.979†	13.8	0.00934	mg/L	0.001688	0.00934	mg/L	0.001688	18.08%
B 249.677†	108.6	0.02131	mg/L	0.000874	0.02131	mg/L	0.000874	4.10%
Ba 233.527†	95.5	0.01949	mg/L	0.000471	0.01949	mg/L	0.000471	2.42%
Be 313.042†	13.2	0.00003	mg/L	0.000012	0.00003	mg/L	0.000012	43.59%
Ca 317.933†	66837.5	8.406	mg/L	0.0334	8.406	mg/L	0.0334	0.40%
Cd 228.802†	39.4	0.00175	mg/L	0.000149	0.00175	mg/L	0.000149	8.55%
Co 228.616†	17.9	0.00058	mg/L	0.000076	0.00058	mg/L	0.000076	13.19%
Cr 267.716†	-1.8	-0.00034	mg/L	0.000555	-0.00034	mg/L	0.000555	161.03%
Cu 324.752†	18153.6	0.06654	mg/L	0.000438	0.06654	mg/L	0.000438	0.66%
Fe 273.955†	4.1	0.00422	mg/L	0.001427	0.00422	mg/L	0.001427	33.78%
K 766.490†	3172.6	1.222	mg/L	0.0044	1.222	mg/L	0.0044	0.36%
Mg 279.077†	644.6	0.8911	mg/L	0.01093	0.8911	mg/L	0.01093	1.23%
Mn 257.610†	666.5	0.01520	mg/L	0.000074	0.01520	mg/L	0.000074	0.49%
Mo 202.031†	20.3	0.00098	mg/L	0.000113	0.00098	mg/L	0.000113	11.57%
Na 589.592†	30239.6	1.923	mg/L	0.0092	1.923	mg/L	0.0092	0.48%
Na 330.237†	52.7	2.044	mg/L	0.1030	2.044	mg/L	0.1030	5.04%
Ni 231.604†	2.9	0.00098	mg/L	0.001535	0.00098	mg/L	0.001535	157.38%
Pb 220.353†	-0.7	-0.00018	mg/L	0.000606	-0.00018	mg/L	0.000606	339.31%
Sb 206.836†	3.5	0.00127	mg/L	0.000616	0.00127	mg/L	0.000616	48.67%
Se 196.026†	4.6	0.00316	mg/L	0.003402	0.00316	mg/L	0.003402	107.66%
Si 288.158†	5395.0	4.583	mg/L	0.0268	4.583	mg/L	0.0268	0.58%
Sn 189.927†	-16.1	-0.00238	mg/L	0.000309	-0.00238	mg/L	0.000309	13.01%
Sr 421.552†	39435.0	0.04685	mg/L	0.000081	0.04685	mg/L	0.000081	0.17%
Ti 334.903†	18.8	0.00008	mg/L	0.000277	0.00008	mg/L	0.000277	360.65%
Tl 190.801†	7.0	0.00432	mg/L	0.002820	0.00432	mg/L	0.002820	65.29%
V 292.402†	33.0	0.00022	mg/L	0.000088	0.00022	mg/L	0.000088	40.62%
Zn 206.200†	1296.6	0.3864	mg/L	0.00105	0.3864	mg/L	0.00105	0.27%

Sequence No.: 11
Sample ID: AHP4 E TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 312
Date Collected: 6/18/2015 9:48:48 AM
Data Type: Original

Nebulizer Parameters: AHP4 E TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 E TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2738202.4	100.4	%	0.66				0.66%
ScR 361.383	289076.0	101.1	%	0.43				0.43%
Ag 328.068†	-32.3	-0.00014	mg/L	0.000089	-0.00014	mg/L	0.000089	65.30%
Al 308.215†	31.8	0.03283	mg/L	0.002717	0.03283	mg/L	0.002717	8.28%
As 188.979†	7.9	0.00518	mg/L	0.000708	0.00518	mg/L	0.000708	13.67%
B 249.677†	69.9	0.01373	mg/L	0.000166	0.01373	mg/L	0.000166	1.21%
Ba 233.527†	42.7	0.00872	mg/L	0.000848	0.00872	mg/L	0.000848	9.73%
Be 313.042†	4.6	0.00001	mg/L	0.000014	0.00001	mg/L	0.000014	150.30%
Ca 317.933†	47669.9	5.995	mg/L	0.0383	5.995	mg/L	0.0383	0.64%
Cd 228.802†	8.6	0.00038	mg/L	0.000032	0.00038	mg/L	0.000032	8.47%
Co 228.616†	6.1	0.00020	mg/L	0.000082	0.00020	mg/L	0.000082	41.53%
Cr 267.716†	-5.0	-0.00081	mg/L	0.000702	-0.00081	mg/L	0.000702	86.69%
Cu 324.752†	616.9	0.00226	mg/L	0.000123	0.00226	mg/L	0.000123	5.46%
Fe 273.955†	6.3	0.00646	mg/L	0.000522	0.00646	mg/L	0.000522	8.08%
K 766.490†	1390.9	0.5359	mg/L	0.01078	0.5359	mg/L	0.01078	2.01%
Mg 279.077†	441.2	0.6099	mg/L	0.00499	0.6099	mg/L	0.00499	0.82%
Mn 257.610†	14.9	0.00032	mg/L	0.000127	0.00032	mg/L	0.000127	39.71%
Mo 202.031†	22.0	0.00112	mg/L	0.000290	0.00112	mg/L	0.000290	25.95%
Na 589.592†	18412.2	1.171	mg/L	0.0049	1.171	mg/L	0.0049	0.41%
Na 330.237†	28.4	1.144	mg/L	0.1688	1.144	mg/L	0.1688	14.76%
Ni 231.604†	-0.8	-0.00025	mg/L	0.000786	-0.00025	mg/L	0.000786	311.67%
Pb 220.353†	-0.2	-0.00002	mg/L	0.000359	-0.00002	mg/L	0.000359	>999.9%
Sb 206.836†	-0.4	-0.00016	mg/L	0.001531	-0.00016	mg/L	0.001531	935.29%
Se 196.026†	1.8	0.00120	mg/L	0.002138	0.00120	mg/L	0.002138	178.06%
Si 288.158†	4444.6	3.776	mg/L	0.0231	3.776	mg/L	0.0231	0.61%
Sn 189.927†	-7.1	-0.00076	mg/L	0.000438	-0.00076	mg/L	0.000438	57.90%
Sr 421.552†	19234.6	0.02285	mg/L	0.000119	0.02285	mg/L	0.000119	0.52%
Ti 334.903†	14.3	0.00010	mg/L	0.000266	0.00010	mg/L	0.000266	275.43%
Tl 190.801†	2.8	0.00173	mg/L	0.002231	0.00173	mg/L	0.002231	128.90%
V 292.402†	54.7	0.00035	mg/L	0.000183	0.00035	mg/L	0.000183	51.92%
Zn 206.200†	228.3	0.06799	mg/L	0.000369	0.06799	mg/L	0.000369	0.54%

Sequence No.: 12
Sample ID: AHP4 F TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 313
Date Collected: 6/18/2015 9:53:02 AM
Data Type: Original

Nebulizer Parameters: AHP4 F TWC

Analyte	Back Pressure	Flow
All	223.0 kPa	0.75 L/min

Mean Data: AHP4 F TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2644328.8	96.96	%	1.034				1.07%
ScR 361.383	283276.2	99.09	%	0.908				0.92%
Ag 328.068†	-111.1	-0.00047	mg/L	0.000203	-0.00047	mg/L	0.000203	43.19%
Al 308.215†	327.6	0.3383	mg/L	0.00942	0.3383	mg/L	0.00942	2.78%
As 188.979†	34.7	0.02051	mg/L	0.001872	0.02051	mg/L	0.001872	9.13%
B 249.677†	36.6	0.00718	mg/L	0.000528	0.00718	mg/L	0.000528	7.35%
Ba 233.527†	71.5	0.01459	mg/L	0.000690	0.01459	mg/L	0.000690	4.73%
Be 313.042†	36.3	0.00008	mg/L	0.000013	0.00008	mg/L	0.000013	16.25%
Ca 317.933†	317507.9	39.93	mg/L	0.288	39.93	mg/L	0.288	0.72%
Cd 228.802†	-4.8	-0.00021	mg/L	0.000093	-0.00021	mg/L	0.000093	43.52%
Co 228.616†	62.6	0.00202	mg/L	0.000068	0.00202	mg/L	0.000068	3.35%
Cr 267.716†	1.6	-0.00018	mg/L	0.001143	-0.00018	mg/L	0.001143	647.32%
Cu 324.752†	1539.6	0.00562	mg/L	0.000184	0.00562	mg/L	0.000184	3.26%
Fe 273.955†	43.3	0.04413	mg/L	0.000892	0.04413	mg/L	0.000892	2.02%
K 766.490†	10531.8	4.058	mg/L	0.0467	4.058	mg/L	0.0467	1.15%
Mg 279.077†	3474.5	4.803	mg/L	0.0549	4.803	mg/L	0.0549	1.14%
Mn 257.610†	2138.0	0.04870	mg/L	0.000686	0.04870	mg/L	0.000686	1.41%
Mo 202.031†	65.3	0.00290	mg/L	0.000439	0.00290	mg/L	0.000439	15.12%
Na 589.592†	35033.8	2.228	mg/L	0.0142	2.228	mg/L	0.0142	0.64%
Na 330.237†	51.9	2.115	mg/L	0.1306	2.115	mg/L	0.1306	6.18%
Ni 231.604†	11.7	0.00389	mg/L	0.000569	0.00389	mg/L	0.000569	14.63%
Pb 220.353†	-9.2	-0.00104	mg/L	0.000853	-0.00104	mg/L	0.000853	81.73%
Sb 206.836†	16.8	0.00613	mg/L	0.001124	0.00613	mg/L	0.001124	18.35%
Se 196.026†	17.9	0.01223	mg/L	0.001680	0.01223	mg/L	0.001680	13.74%
Si 288.158†	8973.8	7.624	mg/L	0.0985	7.624	mg/L	0.0985	1.29%
Sn 189.927†	-42.8	-0.00398	mg/L	0.000715	-0.00398	mg/L	0.000715	17.97%
Sr 421.552†	70537.3	0.08381	mg/L	0.000533	0.08381	mg/L	0.000533	0.64%
Ti 334.903†	137.7	0.00263	mg/L	0.000307	0.00263	mg/L	0.000307	11.67%
Tl 190.801†	20.6	0.01269	mg/L	0.001778	0.01269	mg/L	0.001778	14.00%
V 292.402†	32.2	0.00021	mg/L	0.000026	0.00021	mg/L	0.000026	12.27%
Zn 206.200†	173.1	0.05108	mg/L	0.000856	0.05108	mg/L	0.000856	1.68%

Sequence No.: 13
Sample ID: AHP4 G TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 314
Date Collected: 6/18/2015 9:57:16 AM
Data Type: Original

Nebulizer Parameters: AHP4 G TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 G TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2684814.6	98.44	%	0.663				0.67%
ScR 361.383	282782.4	98.92	%	2.084				2.11%
Ag 328.068†	-93.2	-0.00039	mg/L	0.000101	-0.00039	mg/L	0.000101	25.56%
Al 308.215†	321.4	0.3319	mg/L	0.00366	0.3319	mg/L	0.00366	1.10%
As 188.979†	38.0	0.02322	mg/L	0.001647	0.02322	mg/L	0.001647	7.09%
B 249.677†	33.8	0.00664	mg/L	0.001647	0.00664	mg/L	0.001647	24.82%
Ba 233.527†	71.3	0.01456	mg/L	0.000103	0.01456	mg/L	0.000103	0.71%
Be 313.042†	19.9	0.00004	mg/L	0.000013	0.00004	mg/L	0.000013	31.62%
Ca 317.933†	311877.8	39.22	mg/L	0.149	39.22	mg/L	0.149	0.38%
Cd 228.802†	-3.5	-0.00018	mg/L	0.000063	-0.00018	mg/L	0.000063	35.66%
Co 228.616†	65.3	0.00211	mg/L	0.000131	0.00211	mg/L	0.000131	6.21%
Cr 267.716†	1.9	-0.00013	mg/L	0.000487	-0.00013	mg/L	0.000487	366.35%
Cu 324.752†	1505.5	0.00550	mg/L	0.000128	0.00550	mg/L	0.000128	2.33%
Fe 273.955†	14.4	0.01473	mg/L	0.002281	0.01473	mg/L	0.002281	15.49%
K 766.490†	10302.3	3.969	mg/L	0.0517	3.969	mg/L	0.0517	1.30%
Mg 279.077†	3407.1	4.710	mg/L	0.0800	4.710	mg/L	0.0800	1.70%
Mn 257.610†	2110.4	0.04807	mg/L	0.000775	0.04807	mg/L	0.000775	1.61%
Mo 202.031†	59.1	0.00257	mg/L	0.000117	0.00257	mg/L	0.000117	4.54%
Na 589.592†	34359.6	2.185	mg/L	0.0092	2.185	mg/L	0.0092	0.42%
Na 330.237†	53.5	2.180	mg/L	0.1581	2.180	mg/L	0.1581	7.25%
Ni 231.604†	11.7	0.00390	mg/L	0.000908	0.00390	mg/L	0.000908	23.30%
Pb 220.353†	-14.1	-0.00165	mg/L	0.000541	-0.00165	mg/L	0.000541	32.90%
Sb 206.836†	12.1	0.00439	mg/L	0.000983	0.00439	mg/L	0.000983	22.37%
Se 196.026†	18.1	0.01232	mg/L	0.004312	0.01232	mg/L	0.004312	35.01%
Si 288.158†	8794.0	7.471	mg/L	0.0885	7.471	mg/L	0.0885	1.18%
Sn 189.927†	-40.3	-0.00354	mg/L	0.000125	-0.00354	mg/L	0.000125	3.53%
Sr 421.552†	68718.9	0.08165	mg/L	0.000305	0.08165	mg/L	0.000305	0.37%
Ti 334.903†	130.4	0.00235	mg/L	0.000125	0.00235	mg/L	0.000125	5.31%
Tl 190.801†	19.8	0.01223	mg/L	0.005095	0.01223	mg/L	0.005095	41.67%
V 292.402†	15.6	0.00011	mg/L	0.000037	0.00011	mg/L	0.000037	34.61%
Zn 206.200†	168.4	0.04971	mg/L	0.000749	0.04971	mg/L	0.000749	1.51%

Sequence No.: 14
Sample ID: AHP4 H TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 315
Date Collected: 6/18/2015 10:01:30 AM
Data Type: Original

Nebulizer Parameters: AHP4 H TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 H TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2722467.1	99.82	%	0.617				0.62%
ScR 361.383	286626.8	100.3	%	0.50				0.50%
Ag 328.068†	-38.1	-0.00016	mg/L	0.000198	-0.00016	mg/L	0.000198	122.94%
Al 308.215†	17.4	0.01800	mg/L	0.002927	0.01800	mg/L	0.002927	16.27%
As 188.979†	8.5	0.00548	mg/L	0.001588	0.00548	mg/L	0.001588	29.00%
B 249.677†	14.3	0.00282	mg/L	0.000474	0.00282	mg/L	0.000474	16.84%
Ba 233.527†	19.3	0.00393	mg/L	0.000430	0.00393	mg/L	0.000430	10.95%
Be 313.042†	12.0	0.00003	mg/L	0.000020	0.00003	mg/L	0.000020	76.55%
Ca 317.933†	53890.1	6.778	mg/L	0.0082	6.778	mg/L	0.0082	0.12%
Cd 228.802†	3.2	0.00013	mg/L	0.000144	0.00013	mg/L	0.000144	110.14%
Co 228.616†	8.3	0.00027	mg/L	0.000050	0.00027	mg/L	0.000050	18.73%
Cr 267.716†	-1.2	-0.00026	mg/L	0.000172	-0.00026	mg/L	0.000172	65.39%
Cu 324.752†	152.3	0.00056	mg/L	0.000139	0.00056	mg/L	0.000139	25.00%
Fe 273.955†	41.0	0.04183	mg/L	0.003059	0.04183	mg/L	0.003059	7.31%
K 766.490†	3635.7	1.401	mg/L	0.0072	1.401	mg/L	0.0072	0.52%
Mg 279.077†	701.4	0.9696	mg/L	0.01220	0.9696	mg/L	0.01220	1.26%
Mn 257.610†	56.4	0.00126	mg/L	0.000097	0.00126	mg/L	0.000097	7.64%
Mo 202.031†	19.3	0.00095	mg/L	0.000185	0.00095	mg/L	0.000185	19.45%
Na 589.592†	15833.5	1.007	mg/L	0.0032	1.007	mg/L	0.0032	0.32%
Na 330.237†	24.6	1.011	mg/L	0.1533	1.011	mg/L	0.1533	15.16%
Ni 231.604†	-0.8	-0.00026	mg/L	0.000868	-0.00026	mg/L	0.000868	329.73%
Pb 220.353†	-1.6	-0.00019	mg/L	0.000281	-0.00019	mg/L	0.000281	144.49%
Sb 206.836†	6.3	0.00232	mg/L	0.000717	0.00232	mg/L	0.000717	30.88%
Se 196.026†	4.0	0.00270	mg/L	0.001068	0.00270	mg/L	0.001068	39.53%
Si 288.158†	7722.7	6.561	mg/L	0.0431	6.561	mg/L	0.0431	0.66%
Sn 189.927†	-13.0	-0.00193	mg/L	0.000482	-0.00193	mg/L	0.000482	25.00%
Sr 421.552†	23033.7	0.02737	mg/L	0.000175	0.02737	mg/L	0.000175	0.64%
Ti 334.903†	15.9	0.00010	mg/L	0.000125	0.00010	mg/L	0.000125	129.21%
Tl 190.801†	6.3	0.00389	mg/L	0.001646	0.00389	mg/L	0.001646	42.31%
V 292.402†	19.2	0.00012	mg/L	0.000059	0.00012	mg/L	0.000059	48.42%
Zn 206.200†	1.6	0.00040	mg/L	0.000217	0.00040	mg/L	0.000217	53.66%

Sequence No.: 15
Sample ID: AHP4 MB1SPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 316
Date Collected: 6/18/2015 10:05:44 AM
Data Type: Original

Nebulizer Parameters: AHP4 MB1SPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 MB1SPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2706839.7	99.25	%	0.922				0.93%
ScR 361.383	285503.2	99.87	%	1.001				1.00%
Ag 328.068†	123216.4	0.5205	mg/L	0.00148	0.5205	mg/L	0.00148	0.28%
Al 308.215†	1949.1	2.006	mg/L	0.0191	2.006	mg/L	0.0191	0.95%
As 188.979†	2601.5	2.030	mg/L	0.0208	2.030	mg/L	0.0208	1.02%
B 249.677†	5.2	0.00004	mg/L	0.000438	0.00004	mg/L	0.000438	>999.9%
Ba 233.527†	9944.7	2.030	mg/L	0.0207	2.030	mg/L	0.0207	1.02%
Be 313.042†	223920.9	0.4762	mg/L	0.00068	0.4762	mg/L	0.00068	0.14%
Ca 317.933†	77219.4	9.712	mg/L	0.0320	9.712	mg/L	0.0320	0.33%
Cd 228.802†	11178.9	0.4925	mg/L	0.00270	0.4925	mg/L	0.00270	0.55%
Co 228.616†	15140.7	0.4915	mg/L	0.00358	0.4915	mg/L	0.00358	0.73%
Cr 267.716†	3345.1	0.5045	mg/L	0.00382	0.5045	mg/L	0.00382	0.76%
Cu 324.752†	135688.6	0.4975	mg/L	0.00309	0.4975	mg/L	0.00309	0.62%
Fe 273.955†	1997.2	2.032	mg/L	0.0173	2.032	mg/L	0.0173	0.85%
K 766.490†	25414.7	9.792	mg/L	0.0463	9.792	mg/L	0.0463	0.47%
Mg 279.077†	7365.8	10.18	mg/L	0.093	10.18	mg/L	0.093	0.91%
Mn 257.610†	20798.0	0.4755	mg/L	0.00079	0.4755	mg/L	0.00079	0.17%
Mo 202.031†	26.1	0.00128	mg/L	0.000222	0.00128	mg/L	0.000222	17.38%
Na 589.592†	152064.4	9.671	mg/L	0.0342	9.671	mg/L	0.0342	0.35%
Na 330.237†	254.6	10.30	mg/L	0.116	10.30	mg/L	0.116	1.13%
Ni 231.604†	1472.9	0.4892	mg/L	0.00231	0.4892	mg/L	0.00231	0.47%
Pb 220.353†	15756.5	1.935	mg/L	0.0115	1.935	mg/L	0.0115	0.59%
Sb 206.836†	11.6	-0.00020	mg/L	0.001032	-0.00020	mg/L	0.001032	520.35%
Se 196.026†	2959.7	2.018	mg/L	0.0068	2.018	mg/L	0.0068	0.34%
Si 288.158†	36.5	0.03285	mg/L	0.006986	0.03285	mg/L	0.006986	21.27%
Sn 189.927†	-18.8	-0.00269	mg/L	0.000199	-0.00269	mg/L	0.000199	7.38%
Sr 421.552†	404718.5	0.4809	mg/L	0.00147	0.4809	mg/L	0.00147	0.31%
Ti 334.903†	29.1	0.00029	mg/L	0.000199	0.00029	mg/L	0.000199	67.50%
Tl 190.801†	3266.0	2.013	mg/L	0.0117	2.013	mg/L	0.0117	0.58%
V 292.402†	76741.2	0.5004	mg/L	0.00153	0.5004	mg/L	0.00153	0.31%
Zn 206.200†	1587.7	0.4735	mg/L	0.00333	0.4735	mg/L	0.00333	0.70%

AHS2:88882

Sequence No.: 16
Sample ID: CV3
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 10:09:44 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2707513.8	99.27	%	0.266				0.27%
ScR 361.383	277300.3	97.00	%	1.141				1.18%
Ag 328.068†	241548.0	1.020	mg/L	0.0135	1.020	mg/L	0.0135	1.33%
Al 308.215†	1970.3	2.002	mg/L	0.0244	2.002	mg/L	0.0244	1.22%
As 188.979†	2505.0	1.984	mg/L	0.0097	1.984	mg/L	0.0097	0.49%
B 249.677†	4992.2	0.9790	mg/L	0.01100	0.9790	mg/L	0.01100	1.12%
Ba 233.527†	5031.7	1.027	mg/L	0.0105	1.027	mg/L	0.0105	1.02%
Be 313.042†	449309.5	0.9555	mg/L	0.00964	0.9555	mg/L	0.00964	1.01%
Ca 317.933†	16464.5	2.071	mg/L	0.0210	2.071	mg/L	0.0210	1.02%
Cd 228.802†	23400.9	1.045	mg/L	0.0042	1.045	mg/L	0.0042	0.41%
Co 228.616†	31392.6	1.018	mg/L	0.0057	1.018	mg/L	0.0057	0.56%
Cr 267.716†	6814.7	1.029	mg/L	0.0118	1.029	mg/L	0.0118	1.14%
Cu 324.752†	274475.9	1.006	mg/L	0.0182	1.006	mg/L	0.0182	1.81%
Fe 273.955†	2011.1	2.042	mg/L	0.0255	2.042	mg/L	0.0255	1.25%
K 766.490†	51752.8	19.94	mg/L	0.027	19.94	mg/L	0.027	0.13%
Mg 279.077†	1454.5	2.019	mg/L	0.0275	2.019	mg/L	0.0275	1.36%
Mn 257.610†	42025.3	0.9606	mg/L	0.00297	0.9606	mg/L	0.00297	0.31%
Mo 202.031†	18134.8	1.013	mg/L	0.0049	1.013	mg/L	0.0049	0.49%
Na 589.592†	774790.2	49.27	mg/L	0.139	49.27	mg/L	0.139	0.28%
Na 330.237†	1257.9	51.54	mg/L	0.625	51.54	mg/L	0.625	1.21%
Ni 231.604†	2996.0	0.9969	mg/L	0.00954	0.9969	mg/L	0.00954	0.96%
Pb 220.353†	16160.9	1.984	mg/L	0.0093	1.984	mg/L	0.0093	0.47%
Sb 206.836†	5513.1	2.047	mg/L	0.0106	2.047	mg/L	0.0106	0.52%
Se 196.026†	2941.5	2.004	mg/L	0.0089	2.004	mg/L	0.0089	0.45%
Si 288.158†	2399.5	2.013	mg/L	0.0288	2.013	mg/L	0.0288	1.43%
Sn 189.927†	4678.0	1.018	mg/L	0.0042	1.018	mg/L	0.0042	0.41%
Sr 421.552†	825276.2	0.9805	mg/L	0.00258	0.9805	mg/L	0.00258	0.26%
Ti 334.903†	21380.4	0.9953	mg/L	0.00338	0.9953	mg/L	0.00338	0.34%
Tl 190.801†	3216.2	1.979	mg/L	0.0127	1.979	mg/L	0.0127	0.64%
V 292.402†	151514.5	0.9882	mg/L	0.01389	0.9882	mg/L	0.01389	1.41%
Zn 206.200†	3286.3	0.9799	mg/L	0.01108	0.9799	mg/L	0.01108	1.13%

AHSP 80063

Sequence No.: 17
Sample ID: CB3
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 10:13:47 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2716354.5	99.60	%	0.666				0.67%
ScR 361.383	284328.2	99.46	%	0.698				0.70%
Ag 328.068†	-48.4	-0.00020	mg/L	0.000144	-0.00020	mg/L	0.000144	70.25%
Al 308.215†	5.7	0.00588	mg/L	0.003889	0.00588	mg/L	0.003889	66.14%
As 188.979†	-1.6	-0.00122	mg/L	0.000422	-0.00122	mg/L	0.000422	34.56%
B 249.677†	9.6	0.00188	mg/L	0.001344	0.00188	mg/L	0.001344	71.33%
Ba 233.527†	5.9	0.00121	mg/L	0.001117	0.00121	mg/L	0.001117	92.53%
Be 313.042†	41.4	0.00009	mg/L	0.000029	0.00009	mg/L	0.000029	33.32%
Ca 317.933†	4.8	0.00060	mg/L	0.000201	0.00060	mg/L	0.000201	33.24%
Cd 228.802†	6.3	0.00029	mg/L	0.000168	0.00029	mg/L	0.000168	57.98%
Co 228.616†	1.5	0.00005	mg/L	0.000105	0.00005	mg/L	0.000105	217.29%
Cr 267.716†	4.2	0.00064	mg/L	0.000621	0.00064	mg/L	0.000621	97.50%
Cu 324.752†	136.9	0.00050	mg/L	0.000083	0.00050	mg/L	0.000083	16.60%
Fe 273.955†	-1.1	-0.00113	mg/L	0.001231	-0.00113	mg/L	0.001231	108.88%
K 766.490†	23.4	0.00900	mg/L	0.014500	0.00900	mg/L	0.014500	161.15%
Mg 279.077†	0.2	0.00026	mg/L	0.002933	0.00026	mg/L	0.002933	>999.9%
Mn 257.610†	4.7	0.00011	mg/L	0.000079	0.00011	mg/L	0.000079	73.03%
Mo 202.031†	28.0	0.00157	mg/L	0.000583	0.00157	mg/L	0.000583	37.21%
Na 589.592†	-5.7	-0.00036	mg/L	0.002961	-0.00036	mg/L	0.002961	812.37%
Na 330.237†	-0.7	-0.02752	mg/L	0.328106	-0.02752	mg/L	0.328106	>999.9%
Ni 231.604†	-0.1	-0.00002	mg/L	0.000846	-0.00002	mg/L	0.000846	>999.9%
Pb 220.353†	6.3	0.00078	mg/L	0.000207	0.00078	mg/L	0.000207	26.57%
Sb 206.836†	9.5	0.00353	mg/L	0.000930	0.00353	mg/L	0.000930	26.36%
Se 196.026†	0.3	0.00020	mg/L	0.002360	0.00020	mg/L	0.002360	>999.9%
Si 288.158†	0.1	0.00009	mg/L	0.003204	0.00009	mg/L	0.003204	>999.9%
Sn 189.927†	-1.3	-0.00028	mg/L	0.000354	-0.00028	mg/L	0.000354	124.75%
Sr 421.552†	31.5	0.00004	mg/L	0.000045	0.00004	mg/L	0.000045	121.04%
Ti 334.903†	4.8	0.00022	mg/L	0.000314	0.00022	mg/L	0.000314	141.82%
Tl 190.801†	-3.0	-0.00188	mg/L	0.001636	-0.00188	mg/L	0.001636	87.24%
V 292.402†	22.6	0.00015	mg/L	0.000144	0.00015	mg/L	0.000144	95.92%
Zn 206.200†	-1.1	-0.00034	mg/L	0.000312	-0.00034	mg/L	0.000312	91.69%

Sequence No.: 18
Sample ID: APH4 I TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 317
Date Collected: 6/18/2015 10:18:02 AM
Data Type: Original

Nebulizer Parameters: APH4 I TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: APH4 I TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2729160.3	100.1	%	0.64				0.64%
ScR 361.383	289358.2	101.2	%	0.99				0.98%
Ag 328.068†	-60.9	-0.00026	mg/L	0.000125	-0.00026	mg/L	0.000125	48.55%
Al 308.215†	18.0	0.01850	mg/L	0.002994	0.01850	mg/L	0.002994	16.18%
As 188.979†	12.4	0.00787	mg/L	0.001644	0.00787	mg/L	0.001644	20.88%
B 249.677†	23.2	0.00456	mg/L	0.000747	0.00456	mg/L	0.000747	16.37%
Ba 233.527†	33.4	0.00681	mg/L	0.000461	0.00681	mg/L	0.000461	6.77%
Be 313.042†	13.5	0.00003	mg/L	0.000025	0.00003	mg/L	0.000025	86.81%
Ca 317.933†	87741.5	11.03	mg/L	0.006	11.03	mg/L	0.006	0.05%
Cd 228.802†	-4.0	-0.00019	mg/L	0.000159	-0.00019	mg/L	0.000159	81.67%
Co 228.616†	8.7	0.00028	mg/L	0.000137	0.00028	mg/L	0.000137	49.00%
Cr 267.716†	1.6	0.00010	mg/L	0.000639	0.00010	mg/L	0.000639	652.19%
Cu 324.752†	240.2	0.00087	mg/L	0.000078	0.00087	mg/L	0.000078	8.89%
Fe 273.955†	16.0	0.01629	mg/L	0.001340	0.01629	mg/L	0.001340	8.23%
K 766.490†	2867.9	1.105	mg/L	0.0109	1.105	mg/L	0.0109	0.99%
Mg 279.077†	1144.8	1.583	mg/L	0.0276	1.583	mg/L	0.0276	1.74%
Mn 257.610†	18.2	0.00037	mg/L	0.000077	0.00037	mg/L	0.000077	20.53%
Mo 202.031†	39.9	0.00202	mg/L	0.000361	0.00202	mg/L	0.000361	17.85%
Na 589.592†	22602.9	1.437	mg/L	0.0065	1.437	mg/L	0.0065	0.45%
Na 330.237†	36.2	1.482	mg/L	0.1031	1.482	mg/L	0.1031	6.96%
Ni 231.604†	1.3	0.00042	mg/L	0.000589	0.00042	mg/L	0.000589	140.11%
Pb 220.353†	-0.3	-0.00004	mg/L	0.000720	-0.00004	mg/L	0.000720	>999.9%
Sb 206.836†	8.2	0.00300	mg/L	0.001773	0.00300	mg/L	0.001773	59.09%
Se 196.026†	5.1	0.00346	mg/L	0.001662	0.00346	mg/L	0.001662	48.03%
Si 288.158†	6933.7	5.891	mg/L	0.0784	5.891	mg/L	0.0784	1.33%
Sn 189.927†	-18.1	-0.00247	mg/L	0.000339	-0.00247	mg/L	0.000339	13.75%
Sr 421.552†	41142.8	0.04888	mg/L	0.000081	0.04888	mg/L	0.000081	0.17%
Ti 334.903†	40.6	0.00084	mg/L	0.000095	0.00084	mg/L	0.000095	11.25%
Tl 190.801†	7.1	0.00436	mg/L	0.000768	0.00436	mg/L	0.000768	17.62%
V 292.402†	108.8	0.00071	mg/L	0.000105	0.00071	mg/L	0.000105	14.81%
Zn 206.200†	29.1	0.00853	mg/L	0.000487	0.00853	mg/L	0.000487	5.71%

APH2 : 00085

Sequence No.: 19
Sample ID: AHP4 J TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 318
Date Collected: 6/18/2015 10:22:18 AM
Data Type: Original

Nebulizer Parameters: AHP4 J TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 J TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2770636.2	101.6	%	0.43				0.42%
ScR 361.383	291395.0	101.9	%	1.11				1.09%
Ag 328.068†	-30.1	-0.00013	mg/L	0.000164	-0.00013	mg/L	0.000164	129.20%
Al 308.215†	11.1	0.01147	mg/L	0.000629	0.01147	mg/L	0.000629	5.48%
As 188.979†	13.0	0.00833	mg/L	0.001116	0.00833	mg/L	0.001116	13.40%
B 249.677†	24.1	0.00473	mg/L	0.000293	0.00473	mg/L	0.000293	6.19%
Ba 233.527†	21.9	0.00447	mg/L	0.000204	0.00447	mg/L	0.000204	4.56%
Be 313.042†	12.1	0.00003	mg/L	0.000013	0.00003	mg/L	0.000013	50.60%
Ca 317.933†	85719.4	10.78	mg/L	0.064	10.78	mg/L	0.064	0.60%
Cd 228.802†	1.4	0.00005	mg/L	0.000058	0.00005	mg/L	0.000058	120.94%
Co 228.616†	13.1	0.00042	mg/L	0.000028	0.00042	mg/L	0.000028	6.71%
Cr 267.716†	6.3	0.00080	mg/L	0.000166	0.00080	mg/L	0.000166	20.64%
Cu 324.752†	71.0	0.00025	mg/L	0.000041	0.00025	mg/L	0.000041	16.19%
Fe 273.955†	7.3	0.00745	mg/L	0.003018	0.00745	mg/L	0.003018	40.51%
K 766.490†	4284.6	1.651	mg/L	0.0101	1.651	mg/L	0.0101	0.61%
Mg 279.077†	1181.9	1.634	mg/L	0.0339	1.634	mg/L	0.0339	2.07%
Mn 257.610†	17.5	0.00036	mg/L	0.000024	0.00036	mg/L	0.000024	6.79%
Mo 202.031†	29.3	0.00144	mg/L	0.000152	0.00144	mg/L	0.000152	10.55%
Na 589.592†	19720.2	1.254	mg/L	0.0049	1.254	mg/L	0.0049	0.39%
Na 330.237†	25.2	1.036	mg/L	0.1778	1.036	mg/L	0.1778	17.17%
Ni 231.604†	2.0	0.00065	mg/L	0.000511	0.00065	mg/L	0.000511	78.91%
Pb 220.353†	-4.9	-0.00059	mg/L	0.000759	-0.00059	mg/L	0.000759	127.85%
Sb 206.836†	2.9	0.00102	mg/L	0.001797	0.00102	mg/L	0.001797	175.63%
Se 196.026†	9.5	0.00647	mg/L	0.002160	0.00647	mg/L	0.002160	33.38%
Si 288.158†	8880.8	7.545	mg/L	0.0713	7.545	mg/L	0.0713	0.95%
Sn 189.927†	-20.6	-0.00303	mg/L	0.000110	-0.00303	mg/L	0.000110	3.64%
Sr 421.552†	44352.7	0.05270	mg/L	0.000286	0.05270	mg/L	0.000286	0.54%
Ti 334.903†	34.5	0.00058	mg/L	0.000246	0.00058	mg/L	0.000246	42.11%
Tl 190.801†	9.7	0.00597	mg/L	0.000402	0.00597	mg/L	0.000402	6.74%
V 292.402†	68.2	0.00045	mg/L	0.000049	0.00045	mg/L	0.000049	10.87%
Zn 206.200†	-1.4	-0.00054	mg/L	0.001134	-0.00054	mg/L	0.001134	210.03%

AHS2 00085

Sequence No.: 20
Sample ID: AHP4 K TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 319
Date Collected: 6/18/2015 10:26:32 AM
Data Type: Original

Nebulizer Parameters: AHP4 K TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 K TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2722990.4	99.84	%	0.456				0.46%
ScR 361.383	293507.7	102.7	%	0.33				0.32%
Ag 328.068†	-130.2	-0.00055	mg/L	0.000112	-0.00055	mg/L	0.000112	20.34%
Al 308.215†	8895.1	9.187	mg/L	0.0181	9.187	mg/L	0.0181	0.20%
As 188.979†	48.3	0.02747	mg/L	0.001917	0.02747	mg/L	0.001917	6.98%
B 249.677†	60.8	0.01192	mg/L	0.000538	0.01192	mg/L	0.000538	4.51%
Ba 233.527†	114.6	0.02251	mg/L	0.000460	0.02251	mg/L	0.000460	2.04%
Be 313.042†	102.7	0.00022	mg/L	0.000015	0.00022	mg/L	0.000015	7.03%
Ca 317.933†	493117.0	62.02	mg/L	0.233	62.02	mg/L	0.233	0.38%
Cd 228.802†	20.9	0.00088	mg/L	0.000080	0.00088	mg/L	0.000080	9.11%
Co 228.616†	196.5	0.00636	mg/L	0.000170	0.00636	mg/L	0.000170	2.67%
Cr 267.716†	9.4	0.00099	mg/L	0.000575	0.00099	mg/L	0.000575	58.29%
Cu 324.752†	10859.1	0.04010	mg/L	0.000173	0.04010	mg/L	0.000173	0.43%
Fe 273.955†	7958.6	8.116	mg/L	0.0344	8.116	mg/L	0.0344	0.42%
K 766.490†	15835.8	6.101	mg/L	0.0339	6.101	mg/L	0.0339	0.55%
Mg 279.077†	7388.6	10.21	mg/L	0.015	10.21	mg/L	0.015	0.15%
Mn 257.610†	20482.4	0.4677	mg/L	0.00226	0.4677	mg/L	0.00226	0.48%
Mo 202.031†	82.2	0.00344	mg/L	0.000160	0.00344	mg/L	0.000160	4.66%
Na 589.592†	53730.7	3.417	mg/L	0.0091	3.417	mg/L	0.0091	0.27%
Na 330.237†	74.1	2.974	mg/L	0.1027	2.974	mg/L	0.1027	3.45%
Ni 231.604†	39.3	0.01305	mg/L	0.000689	0.01305	mg/L	0.000689	5.28%
Pb 220.353†	-27.7	-0.00121	mg/L	0.000376	-0.00121	mg/L	0.000376	31.05%
Sb 206.836†	13.6	0.00492	mg/L	0.001727	0.00492	mg/L	0.001727	35.08%
Se 196.026†	21.1	0.01437	mg/L	0.002508	0.01437	mg/L	0.002508	17.45%
Si 288.158†	15382.4	13.07	mg/L	0.046	13.07	mg/L	0.046	0.35%
Sn 189.927†	-49.9	-0.00260	mg/L	0.001034	-0.00260	mg/L	0.001034	39.75%
Sr 421.552†	114476.6	0.1360	mg/L	0.00044	0.1360	mg/L	0.00044	0.32%
Ti 334.903†	192.4	0.00308	mg/L	0.000532	0.00308	mg/L	0.000532	17.27%
Tl 190.801†	29.0	0.01902	mg/L	0.001227	0.01902	mg/L	0.001227	6.45%
V 292.402†	85.8	0.00033	mg/L	0.000210	0.00033	mg/L	0.000210	63.45%
Zn 206.200†	730.7	0.2170	mg/L	0.00139	0.2170	mg/L	0.00139	0.64%

Sequence No.: 21
Sample ID: AHP4 L TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 320
Date Collected: 6/18/2015 10:30:32 AM
Data Type: Original

Nebulizer Parameters: AHP4 L TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 L TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2732350.0	100.2	%	0.15				0.15%
ScR 361.383	291136.3	101.8	%	0.50				0.49%
Ag 328.068†	-162.8	-0.00069	mg/L	0.000217	-0.00069	mg/L	0.000217	31.56%
Al 308.215†	137.7	0.1421	mg/L	0.00564	0.1421	mg/L	0.00564	3.97%
As 188.979†	60.1	0.02896	mg/L	0.001760	0.02896	mg/L	0.001760	6.08%
B 249.677†	71.3	0.01400	mg/L	0.000599	0.01400	mg/L	0.000599	4.28%
Ba 233.527†	94.8	0.01934	mg/L	0.000459	0.01934	mg/L	0.000459	2.37%
Be 313.042†	24.9	0.00005	mg/L	0.000006	0.00005	mg/L	0.000006	11.96%
Ca 317.933†	860717.1	108.2	mg/L	0.29	108.2	mg/L	0.29	0.27%
Cd 228.802†	146.4	0.00684	mg/L	0.000165	0.00684	mg/L	0.000165	2.42%
Co 228.616†	205.5	0.00664	mg/L	0.000175	0.00664	mg/L	0.000175	2.64%
Cr 267.716†	11.8	0.00088	mg/L	0.001095	0.00088	mg/L	0.001095	124.07%
Cu 324.752†	3604.6	0.01317	mg/L	0.000174	0.01317	mg/L	0.000174	1.32%
Fe 273.955†	6.4	0.00656	mg/L	0.003948	0.00656	mg/L	0.003948	60.19%
K 766.490†	24184.5	9.318	mg/L	0.0360	9.318	mg/L	0.0360	0.39%
Mg 279.077†	7380.7	10.20	mg/L	0.014	10.20	mg/L	0.014	0.14%
Mn 257.610†	130275.6	2.976	mg/L	0.0074	2.976	mg/L	0.0074	0.25%
Mo 202.031†	95.0	0.00329	mg/L	0.000250	0.00329	mg/L	0.000250	7.58%
Na 589.592†	62366.0	3.966	mg/L	0.0154	3.966	mg/L	0.0154	0.39%
Na 330.237†	81.5	3.250	mg/L	0.1104	3.250	mg/L	0.1104	3.40%
Ni 231.604†	176.6	0.05876	mg/L	0.001718	0.05876	mg/L	0.001718	2.92%
Pb 220.353†	-17.2	-0.00207	mg/L	0.000285	-0.00207	mg/L	0.000285	13.76%
Sb 206.836†	19.2	0.00697	mg/L	0.002002	0.00697	mg/L	0.002002	28.74%
Se 196.026†	21.4	0.01458	mg/L	0.004192	0.01458	mg/L	0.004192	28.74%
Si 288.158†	13499.6	11.47	mg/L	0.073	11.47	mg/L	0.073	0.64%
Sn 189.927†	-54.9	0.00248	mg/L	0.001084	0.00248	mg/L	0.001084	43.76%
Sr 421.552†	182284.5	0.2166	mg/L	0.00058	0.2166	mg/L	0.00058	0.27%
Ti 334.903†	314.3	0.00438	mg/L	0.000036	0.00438	mg/L	0.000036	0.83%
Tl 190.801†	34.3	0.02115	mg/L	0.005761	0.02115	mg/L	0.005761	27.23%
V 292.402†	-55.2	0.00009	mg/L	0.000110	0.00009	mg/L	0.000110	117.50%
Zn 206.200†	1053.2	0.3126	mg/L	0.00142	0.3126	mg/L	0.00142	0.45%

Sequence No.: 22
Sample ID: AHP4 M TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 321
Date Collected: 6/18/2015 10:34:47 AM
Data Type: Original

Nebulizer Parameters: AHP4 M TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 M TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2787556.1	102.2	%	0.65				0.64%
ScR 361.383	295221.6	103.3	%	1.30				1.26%
Ag 328.068†	-38.7	-0.00016	mg/L	0.000200	-0.00016	mg/L	0.000200	122.64%
Al 308.215†	7.7	0.00785	mg/L	0.003427	0.00785	mg/L	0.003427	43.64%
As 188.979†	15.8	0.00986	mg/L	0.000333	0.00986	mg/L	0.000333	3.38%
B 249.677†	41.4	0.00812	mg/L	0.000610	0.00812	mg/L	0.000610	7.51%
Ba 233.527†	42.0	0.00858	mg/L	0.000337	0.00858	mg/L	0.000337	3.93%
Be 313.042†	-5.1	-0.00001	mg/L	0.000027	-0.00001	mg/L	0.000027	245.47%
Ca 317.933†	120016.9	15.09	mg/L	0.034	15.09	mg/L	0.034	0.22%
Cd 228.802†	-5.4	-0.00026	mg/L	0.000073	-0.00026	mg/L	0.000073	28.66%
Co 228.616†	19.1	0.00062	mg/L	0.000117	0.00062	mg/L	0.000117	18.95%
Cr 267.716†	-0.3	-0.00018	mg/L	0.000427	-0.00018	mg/L	0.000427	235.63%
Cu 324.752†	107.2	0.00039	mg/L	0.000019	0.00039	mg/L	0.000019	4.92%
Fe 273.955†	14.0	0.01424	mg/L	0.001200	0.01424	mg/L	0.001200	8.43%
K 766.490†	1781.2	0.6863	mg/L	0.01933	0.6863	mg/L	0.01933	2.82%
Mg 279.077†	1106.2	1.529	mg/L	0.0134	1.529	mg/L	0.0134	0.88%
Mn 257.610†	26.9	0.00056	mg/L	0.000016	0.00056	mg/L	0.000016	2.76%
Mo 202.031†	53.6	0.00271	mg/L	0.000175	0.00271	mg/L	0.000175	6.45%
Na 589.592†	21382.0	1.360	mg/L	0.0047	1.360	mg/L	0.0047	0.35%
Na 330.237†	30.1	1.236	mg/L	0.0885	1.236	mg/L	0.0885	7.16%
Ni 231.604†	0.7	0.00024	mg/L	0.000898	0.00024	mg/L	0.000898	377.49%
Pb 220.353†	-5.7	-0.00069	mg/L	0.000323	-0.00069	mg/L	0.000323	46.51%
Sb 206.836†	2.3	0.00081	mg/L	0.000113	0.00081	mg/L	0.000113	13.98%
Se 196.026†	9.6	0.00652	mg/L	0.001204	0.00652	mg/L	0.001204	18.48%
Si 288.158†	5711.0	4.852	mg/L	0.1068	4.852	mg/L	0.1068	2.20%
Sn 189.927†	-23.7	-0.00314	mg/L	0.000313	-0.00314	mg/L	0.000313	9.95%
Sr 421.552†	39092.6	0.04645	mg/L	0.000178	0.04645	mg/L	0.000178	0.38%
Ti 334.903†	45.2	0.00067	mg/L	0.000118	0.00067	mg/L	0.000118	17.61%
Tl 190.801†	8.8	0.00546	mg/L	0.000594	0.00546	mg/L	0.000594	10.88%
V 292.402†	72.9	0.00047	mg/L	0.000062	0.00047	mg/L	0.000062	13.00%
Zn 206.200†	3.0	0.00069	mg/L	0.000295	0.00069	mg/L	0.000295	42.84%

AHP2 · 88088

Sequence No.: 23
Sample ID: AHP4 N TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 322
Date Collected: 6/18/2015 10:39:01 AM
Data Type: Original

Nebulizer Parameters: AHP4 N TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 N TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2653006.2	97.28	%	0.930				0.96%
ScR 361.383	278151.5	97.30	%	1.755				1.80%
Ag 328.068†	-41.3	-0.00017	mg/L	0.000030	-0.00017	mg/L	0.000030	17.00%
Al 308.215†	11.1	0.01137	mg/L	0.004134	0.01137	mg/L	0.004134	36.36%
As 188.979†	14.2	0.00880	mg/L	0.000912	0.00880	mg/L	0.000912	10.37%
B 249.677†	29.5	0.00580	mg/L	0.000523	0.00580	mg/L	0.000523	9.01%
Ba 233.527†	46.8	0.00955	mg/L	0.000477	0.00955	mg/L	0.000477	4.99%
Be 313.042†	28.7	0.00006	mg/L	0.000024	0.00006	mg/L	0.000024	39.89%
Ca 317.933†	109234.8	13.74	mg/L	0.101	13.74	mg/L	0.101	0.74%
Cd 228.802†	-2.7	-0.00013	mg/L	0.000185	-0.00013	mg/L	0.000185	137.96%
Co 228.616†	10.3	0.00033	mg/L	0.000095	0.00033	mg/L	0.000095	28.67%
Cr 267.716†	4.4	0.00055	mg/L	0.000559	0.00055	mg/L	0.000559	102.02%
Cu 324.752†	300.3	0.00109	mg/L	0.000125	0.00109	mg/L	0.000125	11.40%
Fe 273.955†	1.7	0.00173	mg/L	0.001680	0.00173	mg/L	0.001680	97.21%
K 766.490†	1577.4	0.6078	mg/L	0.01719	0.6078	mg/L	0.01719	2.83%
Mg 279.077†	981.0	1.356	mg/L	0.0305	1.356	mg/L	0.0305	2.25%
Mn 257.610†	11.0	0.00020	mg/L	0.000036	0.00020	mg/L	0.000036	17.65%
Mo 202.031†	68.4	0.00356	mg/L	0.000037	0.00356	mg/L	0.000037	1.05%
Na 589.592†	20878.5	1.328	mg/L	0.0061	1.328	mg/L	0.0061	0.46%
Na 330.237†	30.6	1.255	mg/L	0.0385	1.255	mg/L	0.0385	3.07%
Ni 231.604†	1.6	0.00052	mg/L	0.000973	0.00052	mg/L	0.000973	185.49%
Pb 220.353†	-2.5	-0.00030	mg/L	0.000777	-0.00030	mg/L	0.000777	258.25%
Sb 206.836†	5.5	0.00198	mg/L	0.001269	0.00198	mg/L	0.001269	64.05%
Se 196.026†	8.4	0.00575	mg/L	0.002304	0.00575	mg/L	0.002304	40.06%
Si 288.158†	5732.1	4.870	mg/L	0.0910	4.870	mg/L	0.0910	1.87%
Sn 189.927†	-23.5	-0.00327	mg/L	0.000641	-0.00327	mg/L	0.000641	19.58%
Sr 421.552†	33099.9	0.03933	mg/L	0.000706	0.03933	mg/L	0.000706	1.80%
Ti 334.903†	45.6	0.00082	mg/L	0.000225	0.00082	mg/L	0.000225	27.56%
Tl 190.801†	7.2	0.00444	mg/L	0.000287	0.00444	mg/L	0.000287	6.45%
V 292.402†	64.9	0.00042	mg/L	0.000020	0.00042	mg/L	0.000020	4.63%
Zn 206.200†	-2.2	-0.00083	mg/L	0.000982	-0.00083	mg/L	0.000982	118.87%

Sequence No.: 24
Sample ID: AHP4 ODUP TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 323
Date Collected: 6/18/2015 10:43:15 AM
Data Type: Original

Nebulizer Parameters: AHP4 ODUP TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 ODUP TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2720833.8	99.76	%	0.311				0.31%
ScR 361.383	282340.0	98.77	%	1.557				1.58%
Ag 328.068†	-38.2	-0.00016	mg/L	0.000166	-0.00016	mg/L	0.000166	102.65%
Al 308.215†	16.2	0.01676	mg/L	0.004291	0.01676	mg/L	0.004291	25.61%
As 188.979†	6.5	0.00445	mg/L	0.000926	0.00445	mg/L	0.000926	20.81%
B 249.677†	50.2	0.00986	mg/L	0.000158	0.00986	mg/L	0.000158	1.60%
Ba 233.527†	25.3	0.00516	mg/L	0.000254	0.00516	mg/L	0.000254	4.92%
Be 313.042†	20.4	0.00004	mg/L	0.000038	0.00004	mg/L	0.000038	89.01%
Ca 317.933†	31002.6	3.899	mg/L	0.0559	3.899	mg/L	0.0559	1.43%
Cd 228.802†	1.6	0.00006	mg/L	0.000064	0.00006	mg/L	0.000064	115.16%
Co 228.616†	6.0	0.00019	mg/L	0.000026	0.00019	mg/L	0.000026	13.38%
Cr 267.716†	6.0	0.00087	mg/L	0.000491	0.00087	mg/L	0.000491	56.22%
Cu 324.752†	198.0	0.00072	mg/L	0.000054	0.00072	mg/L	0.000054	7.45%
Fe 273.955†	6.8	0.00697	mg/L	0.001771	0.00697	mg/L	0.001771	25.41%
K 766.490†	936.1	0.3607	mg/L	0.01389	0.3607	mg/L	0.01389	3.85%
Mg 279.077†	248.2	0.3432	mg/L	0.00436	0.3432	mg/L	0.00436	1.27%
Mn 257.610†	10.9	0.00023	mg/L	0.000018	0.00023	mg/L	0.000018	7.78%
Mo 202.031†	20.6	0.00108	mg/L	0.000109	0.00108	mg/L	0.000109	10.13%
Na 589.592†	8457.9	0.5379	mg/L	0.00774	0.5379	mg/L	0.00774	1.44%
Na 330.237†	10.4	0.4030	mg/L	0.15562	0.4030	mg/L	0.15562	38.61%
Ni 231.604†	1.0	0.00035	mg/L	0.000752	0.00035	mg/L	0.000752	215.75%
Pb 220.353†	1.4	0.00017	mg/L	0.000343	0.00017	mg/L	0.000343	196.58%
Sb 206.836†	3.2	0.00117	mg/L	0.002485	0.00117	mg/L	0.002485	212.23%
Se 196.026†	2.2	0.00150	mg/L	0.000598	0.00150	mg/L	0.000598	39.99%
Si 288.158†	2848.9	2.420	mg/L	0.0296	2.420	mg/L	0.0296	1.22%
Sn 189.927†	-7.0	-0.00101	mg/L	0.000297	-0.00101	mg/L	0.000297	29.46%
Sr 421.552†	12837.2	0.01525	mg/L	0.000201	0.01525	mg/L	0.000201	1.32%
Ti 334.903†	12.4	0.00021	mg/L	0.000419	0.00021	mg/L	0.000419	203.63%
Tl 190.801†	3.9	0.00241	mg/L	0.000762	0.00241	mg/L	0.000762	31.56%
V 292.402†	55.7	0.00037	mg/L	0.000018	0.00037	mg/L	0.000018	4.91%
Zn 206.200†	250.4	0.07459	mg/L	0.000454	0.07459	mg/L	0.000454	0.61%

Sequence No.: 25
Sample ID: AHP4 O TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 324
Date Collected: 6/18/2015 10:47:29 AM
Data Type: Original

Nebulizer Parameters: AHP4 O TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 O TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2706483.3	99.24	%	0.777				0.78%
ScR 361.383	283315.6	99.11	%	0.373				0.38%
Ag 328.068†	-36.0	-0.00015	mg/L	0.000127	-0.00015	mg/L	0.000127	83.59%
Al 308.215†	16.1	0.01662	mg/L	0.007885	0.01662	mg/L	0.007885	47.44%
As 188.979†	2.7	0.00144	mg/L	0.001561	0.00144	mg/L	0.001561	108.20%
B 249.677†	53.0	0.01040	mg/L	0.000761	0.01040	mg/L	0.000761	7.32%
Ba 233.527†	26.5	0.00542	mg/L	0.000253	0.00542	mg/L	0.000253	4.67%
Be 313.042†	20.3	0.00004	mg/L	0.000021	0.00004	mg/L	0.000021	47.88%
Ca 317.933†	30307.4	3.812	mg/L	0.0262	3.812	mg/L	0.0262	0.69%
Cd 228.802†	2.8	0.00013	mg/L	0.000111	0.00013	mg/L	0.000111	85.25%
Co 228.616†	5.6	0.00018	mg/L	0.000021	0.00018	mg/L	0.000021	11.55%
Cr 267.716†	-1.2	-0.00021	mg/L	0.000234	-0.00021	mg/L	0.000234	111.41%
Cu 324.752†	531.2	0.00195	mg/L	0.000147	0.00195	mg/L	0.000147	7.56%
Fe 273.955†	5.9	0.00597	mg/L	0.002856	0.00597	mg/L	0.002856	47.85%
K 766.490†	898.5	0.3462	mg/L	0.00453	0.3462	mg/L	0.00453	1.31%
Mg 279.077†	245.5	0.3394	mg/L	0.00460	0.3394	mg/L	0.00460	1.35%
Mn 257.610†	13.4	0.00029	mg/L	0.000104	0.00029	mg/L	0.000104	35.57%
Mo 202.031†	19.4	0.00101	mg/L	0.000328	0.00101	mg/L	0.000328	32.32%
Na 589.592†	8314.2	0.5288	mg/L	0.00572	0.5288	mg/L	0.00572	1.08%
Na 330.237†	14.6	0.5743	mg/L	0.14812	0.5743	mg/L	0.14812	25.79%
Ni 231.604†	0.3	0.00011	mg/L	0.000176	0.00011	mg/L	0.000176	156.44%
Pb 220.353†	5.5	0.00068	mg/L	0.000178	0.00068	mg/L	0.000178	26.30%
Sb 206.836†	0.1	0.00001	mg/L	0.000328	0.00001	mg/L	0.000328	>999.9%
Se 196.026†	2.9	0.00198	mg/L	0.000891	0.00198	mg/L	0.000891	45.02%
Si 288.158†	2786.2	2.367	mg/L	0.0260	2.367	mg/L	0.0260	1.10%
Sn 189.927†	-6.8	-0.00097	mg/L	0.000276	-0.00097	mg/L	0.000276	28.38%
Sr 421.552†	12681.1	0.01507	mg/L	0.000155	0.01507	mg/L	0.000155	1.03%
Ti 334.903†	8.3	0.00002	mg/L	0.000046	0.00002	mg/L	0.000046	185.88%
Tl 190.801†	0.7	0.00043	mg/L	0.001732	0.00043	mg/L	0.001732	404.68%
V 292.402†	59.6	0.00039	mg/L	0.000048	0.00039	mg/L	0.000048	12.40%
Zn 206.200†	251.7	0.07498	mg/L	0.001288	0.07498	mg/L	0.001288	1.72%

AHS2 : 88852

Sequence No.: 26
Sample ID: AHP4 OSPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 325
Date Collected: 6/18/2015 10:51:43 AM
Data Type: Original

Nebulizer Parameters: AHP4 OSPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 OSPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2698054.9	98.93	%	0.495				0.50%
ScR 361.383	286099.5	100.1	%	0.98				0.98%
Ag 328.068†	126397.2	0.5339	mg/L	0.00259	0.5339	mg/L	0.00259	0.49%
Al 308.215†	1974.5	2.032	mg/L	0.0197	2.032	mg/L	0.0197	0.97%
As 188.979†	2657.8	2.073	mg/L	0.0053	2.073	mg/L	0.0053	0.26%
B 249.677†	55.8	0.00993	mg/L	0.001020	0.00993	mg/L	0.001020	10.27%
Ba 233.527†	10164.7	2.074	mg/L	0.0091	2.074	mg/L	0.0091	0.44%
Be 313.042†	230961.8	0.4912	mg/L	0.00245	0.4912	mg/L	0.00245	0.50%
Ca 317.933†	109382.7	13.76	mg/L	0.055	13.76	mg/L	0.055	0.40%
Cd 228.802†	11399.0	0.5022	mg/L	0.00120	0.5022	mg/L	0.00120	0.24%
Co 228.616†	15528.9	0.5041	mg/L	0.00258	0.5041	mg/L	0.00258	0.51%
Cr 267.716†	3397.2	0.5123	mg/L	0.00417	0.5123	mg/L	0.00417	0.81%
Cu 324.752†	140046.4	0.5135	mg/L	0.00121	0.5135	mg/L	0.00121	0.24%
Fe 273.955†	2010.6	2.045	mg/L	0.0208	2.045	mg/L	0.0208	1.02%
K 766.490†	26889.1	10.36	mg/L	0.045	10.36	mg/L	0.045	0.43%
Mg 279.077†	7696.6	10.64	mg/L	0.080	10.64	mg/L	0.080	0.75%
Mn 257.610†	21160.6	0.4838	mg/L	0.00198	0.4838	mg/L	0.00198	0.41%
Mo 202.031†	49.5	0.00251	mg/L	0.000320	0.00251	mg/L	0.000320	12.77%
Na 589.592†	164435.1	10.46	mg/L	0.025	10.46	mg/L	0.025	0.24%
Na 330.237†	267.4	10.80	mg/L	0.209	10.80	mg/L	0.209	1.94%
Ni 231.604†	1505.0	0.4998	mg/L	0.00451	0.4998	mg/L	0.00451	0.90%
Pb 220.353†	16093.5	1.976	mg/L	0.0034	1.976	mg/L	0.0034	0.17%
Sb 206.836†	12.7	0.00018	mg/L	0.000872	0.00018	mg/L	0.000872	484.43%
Se 196.026†	3006.2	2.049	mg/L	0.0047	2.049	mg/L	0.0047	0.23%
Si 288.158†	2868.6	2.439	mg/L	0.0127	2.439	mg/L	0.0127	0.52%
Sn 189.927†	-25.0	-0.00350	mg/L	0.000515	-0.00350	mg/L	0.000515	14.73%
Sr 421.552†	426817.9	0.5071	mg/L	0.00090	0.5071	mg/L	0.00090	0.18%
Ti 334.903†	36.8	0.00027	mg/L	0.000077	0.00027	mg/L	0.000077	28.51%
Tl 190.801†	3327.9	2.051	mg/L	0.0034	2.051	mg/L	0.0034	0.17%
V 292.402†	78741.3	0.5135	mg/L	0.00174	0.5135	mg/L	0.00174	0.34%
Zn 206.200†	1852.9	0.5525	mg/L	0.00447	0.5525	mg/L	0.00447	0.81%

AHSP 000953

Sequence No.: 27
Sample ID: AHP4 MB1SPD TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 326
Date Collected: 6/18/2015 10:55:43 AM
Data Type: Original

Nebulizer Parameters: AHP4 MB1SPD TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 MB1SPD TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2720323.7	99.74	%	0.198				0.20%
ScR 361.383	280828.3	98.24	%	1.023				1.04%
Ag 328.068†	123730.5	0.5227	mg/L	0.00389	0.5227	mg/L	0.00389	0.74%
Al 308.215†	1978.3	2.036	mg/L	0.0164	2.036	mg/L	0.0164	0.81%
As 188.979†	2595.2	2.025	mg/L	0.0166	2.025	mg/L	0.0166	0.82%
B 249.677†	8.4	0.00065	mg/L	0.000869	0.00065	mg/L	0.000869	133.02%
Ba 233.527†	10155.6	2.073	mg/L	0.0218	2.073	mg/L	0.0218	1.05%
Be 313.042†	226251.2	0.4811	mg/L	0.00392	0.4811	mg/L	0.00392	0.81%
Ca 317.933†	77994.1	9.809	mg/L	0.0157	9.809	mg/L	0.0157	0.16%
Cd 228.802†	11211.3	0.4941	mg/L	0.00263	0.4941	mg/L	0.00263	0.53%
Co 228.616†	15254.0	0.4952	mg/L	0.00401	0.4952	mg/L	0.00401	0.81%
Cr 267.716†	3422.8	0.5162	mg/L	0.00266	0.5162	mg/L	0.00266	0.52%
Cu 324.752†	136735.4	0.5014	mg/L	0.00471	0.5014	mg/L	0.00471	0.94%
Fe 273.955†	2025.9	2.061	mg/L	0.0127	2.061	mg/L	0.0127	0.62%
K 766.490†	25811.9	9.945	mg/L	0.0314	9.945	mg/L	0.0314	0.32%
Mg 279.077†	7527.2	10.41	mg/L	0.064	10.41	mg/L	0.064	0.62%
Mn 257.610†	21069.6	0.4817	mg/L	0.00290	0.4817	mg/L	0.00290	0.60%
Mo 202.031†	29.2	0.00145	mg/L	0.000227	0.00145	mg/L	0.000227	15.68%
Na 589.592†	153864.1	9.785	mg/L	0.0167	9.785	mg/L	0.0167	0.17%
Na 330.237†	257.1	10.41	mg/L	0.080	10.41	mg/L	0.080	0.77%
Ni 231.604†	1523.5	0.5060	mg/L	0.00260	0.5060	mg/L	0.00260	0.51%
Pb 220.353†	15854.6	1.947	mg/L	0.0169	1.947	mg/L	0.0169	0.87%
Sb 206.836†	13.0	0.00018	mg/L	0.002941	0.00018	mg/L	0.002941	>999.9%
Se 196.026†	2953.5	2.013	mg/L	0.0174	2.013	mg/L	0.0174	0.86%
Si 288.158†	27.7	0.02533	mg/L	0.004130	0.02533	mg/L	0.004130	16.30%
Sn 189.927†	-19.3	-0.00279	mg/L	0.000601	-0.00279	mg/L	0.000601	21.55%
Sr 421.552†	409559.1	0.4866	mg/L	0.00172	0.4866	mg/L	0.00172	0.35%
Ti 334.903†	30.2	0.00034	mg/L	0.000294	0.00034	mg/L	0.000294	87.37%
Tl 190.801†	3285.3	2.025	mg/L	0.0124	2.025	mg/L	0.0124	0.61%
V 292.402†	77156.5	0.5032	mg/L	0.00424	0.5032	mg/L	0.00424	0.84%
Zn 206.200†	1629.4	0.4860	mg/L	0.00280	0.4860	mg/L	0.00280	0.58%

Sequence No.: 28
Sample ID: CV 4
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 10:59:43 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2752801.0	100.9	%	1.25				1.23%
ScR 361.383	287221.8	100.5	%	0.98				0.98%
Ag 328.068†	242729.6	1.025	mg/L	0.0084	1.025	mg/L	0.0084	0.82%
Al 308.215†	1971.2	2.003	mg/L	0.0211	2.003	mg/L	0.0211	1.05%
As 188.979†	2473.8	1.960	mg/L	0.0433	1.960	mg/L	0.0433	2.21%
B 249.677†	5011.1	0.9827	mg/L	0.01208	0.9827	mg/L	0.01208	1.23%
Ba 233.527†	5076.0	1.036	mg/L	0.0088	1.036	mg/L	0.0088	0.85%
Be 313.042†	448298.0	0.9533	mg/L	0.00594	0.9533	mg/L	0.00594	0.62%
Ca 317.933†	16546.5	2.081	mg/L	0.0215	2.081	mg/L	0.0215	1.03%
Cd 228.802†	23107.2	1.032	mg/L	0.0214	1.032	mg/L	0.0214	2.07%
Co 228.616†	31144.8	1.010	mg/L	0.0224	1.010	mg/L	0.0224	2.21%
Cr 267.716†	6851.0	1.035	mg/L	0.0107	1.035	mg/L	0.0107	1.03%
Cu 324.752†	276139.1	1.012	mg/L	0.0053	1.012	mg/L	0.0053	0.52%
Fe 273.955†	2003.3	2.034	mg/L	0.0303	2.034	mg/L	0.0303	1.49%
K 766.490†	51985.2	20.03	mg/L	0.139	20.03	mg/L	0.139	0.70%
Mg 279.077†	1457.2	2.023	mg/L	0.0226	2.023	mg/L	0.0226	1.12%
Mn 257.610†	41958.8	0.9590	mg/L	0.00517	0.9590	mg/L	0.00517	0.54%
Mo 202.031†	17973.1	1.004	mg/L	0.0219	1.004	mg/L	0.0219	2.18%
Na 589.592†	776033.0	49.35	mg/L	0.350	49.35	mg/L	0.350	0.71%
Na 330.237†	1263.4	51.76	mg/L	0.549	51.76	mg/L	0.549	1.06%
Ni 231.604†	3016.5	1.004	mg/L	0.0144	1.004	mg/L	0.0144	1.44%
Pb 220.353†	15992.2	1.964	mg/L	0.0431	1.964	mg/L	0.0431	2.19%
Sb 206.836†	5464.0	2.028	mg/L	0.0454	2.028	mg/L	0.0454	2.24%
Se 196.026†	2918.0	1.988	mg/L	0.0424	1.988	mg/L	0.0424	2.13%
Si 288.158†	2389.4	2.004	mg/L	0.0204	2.004	mg/L	0.0204	1.02%
Sn 189.927†	4629.9	1.008	mg/L	0.0231	1.008	mg/L	0.0231	2.29%
Sr 421.552†	826678.4	0.9822	mg/L	0.00628	0.9822	mg/L	0.00628	0.64%
Ti 334.903†	21340.9	0.9935	mg/L	0.00434	0.9935	mg/L	0.00434	0.44%
Tl 190.801†	3198.6	1.968	mg/L	0.0412	1.968	mg/L	0.0412	2.10%
V 292.402†	152592.6	0.9953	mg/L	0.00876	0.9953	mg/L	0.00876	0.88%
Zn 206.200†	3307.2	0.9862	mg/L	0.01119	0.9862	mg/L	0.01119	1.13%

AIGH 28025

Sequence No.: 29
Sample ID: CB4
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 11:03:46 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2768387.9	101.5	%	1.17				1.15%
ScR 361.383	291225.7	101.9	%	0.35				0.34%
Ag 328.068†	-14.0	-0.00006	mg/L	0.000121	-0.00006	mg/L	0.000121	203.39%
Al 308.215†	8.1	0.00837	mg/L	0.003653	0.00837	mg/L	0.003653	43.62%
As 188.979†	0.7	0.00058	mg/L	0.000180	0.00058	mg/L	0.000180	31.17%
B 249.677†	9.9	0.00195	mg/L	0.000988	0.00195	mg/L	0.000988	50.69%
Ba 233.527†	5.0	0.00102	mg/L	0.000659	0.00102	mg/L	0.000659	64.27%
Be 313.042†	36.4	0.00008	mg/L	0.000012	0.00008	mg/L	0.000012	15.25%
Ca 317.933†	6.7	0.00084	mg/L	0.000277	0.00084	mg/L	0.000277	32.99%
Cd 228.802†	7.9	0.00035	mg/L	0.000200	0.00035	mg/L	0.000200	56.91%
Co 228.616†	3.1	0.00010	mg/L	0.000072	0.00010	mg/L	0.000072	70.36%
Cr 267.716†	-2.2	-0.00034	mg/L	0.000257	-0.00034	mg/L	0.000257	75.80%
Cu 324.752†	40.9	0.00015	mg/L	0.000176	0.00015	mg/L	0.000176	118.01%
Fe 273.955†	0.2	0.00021	mg/L	0.001094	0.00021	mg/L	0.001094	521.34%
K 766.490†	9.9	0.00381	mg/L	0.008690	0.00381	mg/L	0.008690	227.88%
Mg 279.077†	2.7	0.00378	mg/L	0.004502	0.00378	mg/L	0.004502	118.97%
Mn 257.610†	-3.3	-0.00008	mg/L	0.000036	-0.00008	mg/L	0.000036	47.77%
Mo 202.031†	32.3	0.00181	mg/L	0.000668	0.00181	mg/L	0.000668	36.99%
Na 589.592†	-12.0	-0.00076	mg/L	0.004520	-0.00076	mg/L	0.004520	590.91%
Na 330.237†	-3.2	-0.1313	mg/L	0.03063	-0.1313	mg/L	0.03063	23.32%
Ni 231.604†	-0.6	-0.00019	mg/L	0.000164	-0.00019	mg/L	0.000164	85.91%
Pb 220.353†	-0.1	-0.00001	mg/L	0.000282	-0.00001	mg/L	0.000282	>999.9%
Sb 206.836†	6.8	0.00253	mg/L	0.001008	0.00253	mg/L	0.001008	39.83%
Se 196.026†	4.2	0.00283	mg/L	0.002420	0.00283	mg/L	0.002420	85.37%
Si 288.158†	3.5	0.00294	mg/L	0.004776	0.00294	mg/L	0.004776	162.45%
Sn 189.927†	3.9	0.00085	mg/L	0.000383	0.00085	mg/L	0.000383	44.92%
Sr 421.552†	42.1	0.00005	mg/L	0.000019	0.00005	mg/L	0.000019	38.96%
Ti 334.903†	-1.7	-0.00008	mg/L	0.000441	-0.00008	mg/L	0.000441	542.34%
Tl 190.801†	3.2	0.00196	mg/L	0.000963	0.00196	mg/L	0.000963	49.03%
V 292.402†	-8.0	-0.00005	mg/L	0.000054	-0.00005	mg/L	0.000054	103.64%
Zn 206.200†	0.2	0.00007	mg/L	0.000258	0.00007	mg/L	0.000258	367.89%

Sequence No.: 30
Sample ID: AHP4 MB2 TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 327
Date Collected: 6/18/2015 11:08:01 AM
Data Type: Original

Nebulizer Parameters: AHP4 MB2 TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 MB2 TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2767066.1	101.5	%	1.26				1.25%
ScR 361.383	294846.9	103.1	%	1.49				1.44%
Ag 328.068†	-0.3	-0.00000	mg/L	0.000061	-0.00000	mg/L	0.000061	>999.9%
Al 308.215†	4.1	0.00424	mg/L	0.002510	0.00424	mg/L	0.002510	59.17%
As 188.979†	0.7	0.00057	mg/L	0.003444	0.00057	mg/L	0.003444	601.01%
B 249.677†	5.9	0.00115	mg/L	0.000977	0.00115	mg/L	0.000977	84.80%
Ba 233.527†	4.2	0.00086	mg/L	0.000212	0.00086	mg/L	0.000212	24.65%
Be 313.042†	16.4	0.00003	mg/L	0.000005	0.00003	mg/L	0.000005	13.11%
Ca 317.933†	51.5	0.00647	mg/L	0.000363	0.00647	mg/L	0.000363	5.61%
Cd 228.802†	6.1	0.00027	mg/L	0.000282	0.00027	mg/L	0.000282	104.02%
Co 228.616†	2.2	0.00007	mg/L	0.000110	0.00007	mg/L	0.000110	155.89%
Cr 267.716†	-2.0	-0.00030	mg/L	0.000347	-0.00030	mg/L	0.000347	113.99%
Cu 324.752†	69.6	0.00026	mg/L	0.000197	0.00026	mg/L	0.000197	77.24%
Fe 273.955†	2.5	0.00257	mg/L	0.001481	0.00257	mg/L	0.001481	57.66%
K 766.490†	13.5	0.00521	mg/L	0.005543	0.00521	mg/L	0.005543	106.44%
Mg 279.077†	0.1	0.00013	mg/L	0.003863	0.00013	mg/L	0.003863	>999.9%
Mn 257.610†	-1.9	-0.00004	mg/L	0.000025	-0.00004	mg/L	0.000025	58.51%
Mo 202.031†	2.1	0.00012	mg/L	0.000159	0.00012	mg/L	0.000159	137.29%
Na 589.592†	-54.5	-0.00346	mg/L	0.003862	-0.00346	mg/L	0.003862	111.48%
Na 330.237†	-2.4	-0.1003	mg/L	0.24596	-0.1003	mg/L	0.24596	245.17%
Ni 231.604†	-1.6	-0.00055	mg/L	0.000628	-0.00055	mg/L	0.000628	114.44%
Pb 220.353†	4.2	0.00052	mg/L	0.001192	0.00052	mg/L	0.001192	230.49%
Sb 206.836†	-1.1	-0.00040	mg/L	0.000621	-0.00040	mg/L	0.000621	155.18%
Se 196.026†	0.2	0.00013	mg/L	0.002203	0.00013	mg/L	0.002203	>999.9%
Si 288.158†	21.4	0.01815	mg/L	0.002957	0.01815	mg/L	0.002957	16.29%
Sn 189.927†	1.8	0.00040	mg/L	0.000178	0.00040	mg/L	0.000178	44.84%
Sr 421.552†	18.7	0.00002	mg/L	0.000037	0.00002	mg/L	0.000037	168.16%
Ti 334.903†	-3.8	-0.00018	mg/L	0.000086	-0.00018	mg/L	0.000086	48.12%
Tl 190.801†	0.4	0.00023	mg/L	0.001123	0.00023	mg/L	0.001123	484.08%
V 292.402†	16.8	0.00011	mg/L	0.000111	0.00011	mg/L	0.000111	102.32%
Zn 206.200†	2.1	0.00061	mg/L	0.000555	0.00061	mg/L	0.000555	90.29%

Sequence No.: 31
Sample ID: AHP4 P TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 328
Date Collected: 6/18/2015 11:12:17 AM
Data Type: Original

Nebulizer Parameters: AHP4 P TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 P TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2788741.8	102.3	%	0.68				0.67%
ScR 361.383	292044.3	102.2	%	1.10				1.08%
Ag 328.068†	-81.3	-0.00034	mg/L	0.000064	-0.00034	mg/L	0.000064	18.75%
Al 308.215†	6.9	0.00703	mg/L	0.001325	0.00703	mg/L	0.001325	18.85%
As 188.979†	22.3	0.01377	mg/L	0.000143	0.01377	mg/L	0.000143	1.04%
B 249.677†	124.6	0.02446	mg/L	0.001212	0.02446	mg/L	0.001212	4.96%
Ba 233.527†	38.1	0.00777	mg/L	0.000275	0.00777	mg/L	0.000275	3.54%
Be 313.042†	7.2	0.00001	mg/L	0.000003	0.00001	mg/L	0.000003	20.38%
Ca 317.933†	172830.0	21.74	mg/L	0.055	21.74	mg/L	0.055	0.25%
Cd 228.802†	-7.3	-0.00035	mg/L	0.000025	-0.00035	mg/L	0.000025	7.10%
Co 228.616†	23.7	0.00076	mg/L	0.000106	0.00076	mg/L	0.000106	13.86%
Cr 267.716†	1.6	0.00006	mg/L	0.000600	0.00006	mg/L	0.000600	948.29%
Cu 324.752†	47.3	0.00016	mg/L	0.000070	0.00016	mg/L	0.000070	43.00%
Fe 273.955†	5.0	0.00509	mg/L	0.001638	0.00509	mg/L	0.001638	32.16%
K 766.490†	3144.9	1.212	mg/L	0.0198	1.212	mg/L	0.0198	1.64%
Mg 279.077†	1451.0	2.006	mg/L	0.0256	2.006	mg/L	0.0256	1.28%
Mn 257.610†	12.9	0.00022	mg/L	0.000136	0.00022	mg/L	0.000136	62.25%
Mo 202.031†	72.0	0.00362	mg/L	0.000197	0.00362	mg/L	0.000197	5.44%
Na 589.592†	53728.9	3.417	mg/L	0.0086	3.417	mg/L	0.0086	0.25%
Na 330.237†	83.2	3.417	mg/L	0.1759	3.417	mg/L	0.1759	5.15%
Ni 231.604†	3.5	0.00118	mg/L	0.000771	0.00118	mg/L	0.000771	65.52%
Pb 220.353†	-1.1	-0.00014	mg/L	0.000362	-0.00014	mg/L	0.000362	267.70%
Sb 206.836†	3.3	0.00116	mg/L	0.001468	0.00116	mg/L	0.001468	126.27%
Se 196.026†	11.1	0.00754	mg/L	0.000674	0.00754	mg/L	0.000674	8.94%
Si 288.158†	6943.0	5.899	mg/L	0.0319	5.899	mg/L	0.0319	0.54%
Sn 189.927†	-32.5	-0.00417	mg/L	0.001325	-0.00417	mg/L	0.001325	31.81%
Sr 421.552†	63555.8	0.07551	mg/L	0.000174	0.07551	mg/L	0.000174	0.23%
Ti 334.903†	62.2	0.00084	mg/L	0.000431	0.00084	mg/L	0.000431	51.59%
Tl 190.801†	15.6	0.00964	mg/L	0.001485	0.00964	mg/L	0.001485	15.40%
V 292.402†	230.5	0.00150	mg/L	0.000030	0.00150	mg/L	0.000030	2.01%
Zn 206.200†	2.3	0.00041	mg/L	0.000540	0.00041	mg/L	0.000540	130.21%

Sequence No.: 32
Sample ID: AHP4 Q TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 329
Date Collected: 6/18/2015 11:16:31 AM
Data Type: Original

Nebulizer Parameters: AHP4 Q TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 Q TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Calib. Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
ScA 357.253	2778665.0	101.9	%	0.30				0.29%
ScR 361.383	290841.6	101.7	%	0.27				0.27%
Ag 328.068†	-38.6	-0.00016	mg/L	0.000096	-0.00016	mg/L	0.000096	58.65%
Al 308.215†	14.8	0.01531	mg/L	0.005075	0.01531	mg/L	0.005075	33.16%
As 188.979†	3.6	0.00216	mg/L	0.001827	0.00216	mg/L	0.001827	84.62%
B 249.677†	50.9	0.00999	mg/L	0.000879	0.00999	mg/L	0.000879	8.80%
Ba 233.527†	23.7	0.00485	mg/L	0.000394	0.00485	mg/L	0.000394	8.13%
Be 313.042†	4.4	0.00001	mg/L	0.000024	0.00001	mg/L	0.000024	260.54%
Ca 317.933†	29725.3	3.738	mg/L	0.0259	3.738	mg/L	0.0259	0.69%
Cd 228.802†	4.9	0.00022	mg/L	0.000048	0.00022	mg/L	0.000048	21.86%
Co 228.616†	11.5	0.00037	mg/L	0.000107	0.00037	mg/L	0.000107	28.73%
Cr 267.716†	0.4	0.00004	mg/L	0.000631	0.00004	mg/L	0.000631	>999.9%
Cu 324.752†	197.6	0.00072	mg/L	0.000137	0.00072	mg/L	0.000137	18.91%
Fe 273.955†	11.8	0.01198	mg/L	0.000663	0.01198	mg/L	0.000663	5.53%
K 766.490†	854.3	0.3292	mg/L	0.00282	0.3292	mg/L	0.00282	0.86%
Mg 279.077†	230.2	0.3182	mg/L	0.00284	0.3182	mg/L	0.00284	0.89%
Mn 257.610†	7.2	0.00015	mg/L	0.000098	0.00015	mg/L	0.000098	64.85%
Mo 202.031†	20.7	0.00109	mg/L	0.000260	0.00109	mg/L	0.000260	23.94%
Na 589.592†	8189.5	0.5208	mg/L	0.00402	0.5208	mg/L	0.00402	0.77%
Na 330.237†	10.4	0.4205	mg/L	0.04100	0.4205	mg/L	0.04100	9.75%
Ni 231.604†	-3.7	-0.00124	mg/L	0.000523	-0.00124	mg/L	0.000523	42.24%
Pb 220.353†	0.2	0.00003	mg/L	0.000588	0.00003	mg/L	0.000588	>999.9%
Sb 206.836†	5.9	0.00215	mg/L	0.000473	0.00215	mg/L	0.000473	21.97%
Se 196.026†	3.1	0.00209	mg/L	0.001816	0.00209	mg/L	0.001816	86.71%
Si 288.158†	2726.5	2.316	mg/L	0.0249	2.316	mg/L	0.0249	1.08%
Sn 189.927†	-7.4	-0.00110	mg/L	0.000332	-0.00110	mg/L	0.000332	30.15%
Sr 421.552†	12317.0	0.01463	mg/L	0.000128	0.01463	mg/L	0.000128	0.88%
Ti 334.903†	12.3	0.00022	mg/L	0.000404	0.00022	mg/L	0.000404	183.96%
Tl 190.801†	3.3	0.00206	mg/L	0.001532	0.00206	mg/L	0.001532	74.43%
V 292.402†	43.4	0.00028	mg/L	0.000111	0.00028	mg/L	0.000111	39.37%
Zn 206.200†	48.7	0.01445	mg/L	0.000026	0.01445	mg/L	0.000026	0.18%

Sequence No.: 33
Sample ID: AHP4 R TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 330
Date Collected: 6/18/2015 11:20:45 AM
Data Type: Original

Nebulizer Parameters: AHP4 R TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 R TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2787147.2	102.2	%	0.37				0.36%
ScR 361.383	293362.9	102.6	%	0.10				0.10%
Ag 328.068†	-18.9	-0.00008	mg/L	0.000188	-0.00008	mg/L	0.000188	234.90%
Al 308.215†	13.9	0.01436	mg/L	0.002365	0.01436	mg/L	0.002365	16.48%
As 188.979†	2.6	0.00142	mg/L	0.001232	0.00142	mg/L	0.001232	86.77%
B 249.677†	52.2	0.01025	mg/L	0.000281	0.01025	mg/L	0.000281	2.74%
Ba 233.527†	22.9	0.00467	mg/L	0.000781	0.00467	mg/L	0.000781	16.73%
Be 313.042†	10.2	0.00002	mg/L	0.000003	0.00002	mg/L	0.000003	13.19%
Ca 317.933†	29122.4	3.663	mg/L	0.0107	3.663	mg/L	0.0107	0.29%
Cd 228.802†	1.0	0.00005	mg/L	0.000107	0.00005	mg/L	0.000107	236.65%
Co 228.616†	4.8	0.00015	mg/L	0.000087	0.00015	mg/L	0.000087	56.24%
Cr 267.716†	1.1	0.00013	mg/L	0.000504	0.00013	mg/L	0.000504	377.54%
Cu 324.752†	120.3	0.00044	mg/L	0.000063	0.00044	mg/L	0.000063	14.25%
Fe 273.955†	9.8	0.01000	mg/L	0.001041	0.01000	mg/L	0.001041	10.41%
K 766.490†	865.8	0.3336	mg/L	0.00705	0.3336	mg/L	0.00705	2.11%
Mg 279.077†	228.9	0.3165	mg/L	0.00668	0.3165	mg/L	0.00668	2.11%
Mn 257.610†	3.5	0.00007	mg/L	0.000104	0.00007	mg/L	0.000104	156.58%
Mo 202.031†	15.4	0.00079	mg/L	0.000304	0.00079	mg/L	0.000304	38.39%
Na 589.592†	8015.1	0.5097	mg/L	0.00144	0.5097	mg/L	0.00144	0.28%
Na 330.237†	10.7	0.4338	mg/L	0.15951	0.4338	mg/L	0.15951	36.77%
Ni 231.604†	-1.7	-0.00057	mg/L	0.000476	-0.00057	mg/L	0.000476	83.31%
Pb 220.353†	-6.6	-0.00081	mg/L	0.000714	-0.00081	mg/L	0.000714	88.63%
Sb 206.836†	0.3	0.00010	mg/L	0.002525	0.00010	mg/L	0.002525	>999.9%
Se 196.026†	6.3	0.00431	mg/L	0.001206	0.00431	mg/L	0.001206	28.00%
Si 288.158†	2682.1	2.279	mg/L	0.0109	2.279	mg/L	0.0109	0.48%
Sn 189.927†	-9.2	-0.00151	mg/L	0.000235	-0.00151	mg/L	0.000235	15.51%
Sr 421.552†	12151.3	0.01444	mg/L	0.000031	0.01444	mg/L	0.000031	0.21%
Ti 334.903†	5.5	-0.00009	mg/L	0.000095	-0.00009	mg/L	0.000095	102.25%
Tl 190.801†	3.9	0.00241	mg/L	0.001671	0.00241	mg/L	0.001671	69.25%
V 292.402†	60.4	0.00039	mg/L	0.000129	0.00039	mg/L	0.000129	32.86%
Zn 206.200†	44.5	0.01323	mg/L	0.000682	0.01323	mg/L	0.000682	5.15%

Sequence No.: 34
Sample ID: AHP4 S TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 331
Date Collected: 6/18/2015 11:24:59 AM
Data Type: Original

Nebulizer Parameters: AHP4 S TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 S TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2743659.1	100.6	%	1.04				1.03%
ScR 361.383	287208.5	100.5	%	1.37				1.36%
Ag 328.068†	-41.8	-0.00018	mg/L	0.000112	-0.00018	mg/L	0.000112	63.69%
Al 308.215†	18.0	0.01854	mg/L	0.003153	0.01854	mg/L	0.003153	17.01%
As 188.979†	4.0	0.00252	mg/L	0.002747	0.00252	mg/L	0.002747	109.08%
B 249.677†	51.3	0.01007	mg/L	0.000700	0.01007	mg/L	0.000700	6.95%
Ba 233.527†	24.1	0.00493	mg/L	0.000071	0.00493	mg/L	0.000071	1.44%
Be 313.042†	18.3	0.00004	mg/L	0.000009	0.00004	mg/L	0.000009	22.80%
Ca 317.933†	29896.3	3.760	mg/L	0.0368	3.760	mg/L	0.0368	0.98%
Cd 228.802†	6.4	0.00029	mg/L	0.000192	0.00029	mg/L	0.000192	66.94%
Co 228.616†	4.1	0.00013	mg/L	0.000118	0.00013	mg/L	0.000118	89.89%
Cr 267.716†	3.1	0.00044	mg/L	0.000311	0.00044	mg/L	0.000311	70.58%
Cu 324.752†	170.3	0.00062	mg/L	0.000033	0.00062	mg/L	0.000033	5.30%
Fe 273.955†	8.1	0.00829	mg/L	0.002656	0.00829	mg/L	0.002656	32.06%
K 766.490†	988.6	0.3809	mg/L	0.01728	0.3809	mg/L	0.01728	4.54%
Mg 279.077†	240.7	0.3328	mg/L	0.00769	0.3328	mg/L	0.00769	2.31%
Mn 257.610†	20.0	0.00044	mg/L	0.000063	0.00044	mg/L	0.000063	14.33%
Mo 202.031†	22.9	0.00121	mg/L	0.000242	0.00121	mg/L	0.000242	20.02%
Na 589.592†	8423.9	0.5357	mg/L	0.00150	0.5357	mg/L	0.00150	0.28%
Na 330.237†	13.3	0.5229	mg/L	0.16804	0.5229	mg/L	0.16804	32.14%
Ni 231.604†	-0.9	-0.00032	mg/L	0.000695	-0.00032	mg/L	0.000695	219.71%
Pb 220.353†	-7.4	-0.00090	mg/L	0.000305	-0.00090	mg/L	0.000305	33.81%
Sb 206.836†	2.7	0.00098	mg/L	0.001485	0.00098	mg/L	0.001485	151.25%
Se 196.026†	2.4	0.00162	mg/L	0.001426	0.00162	mg/L	0.001426	88.03%
Si 288.158†	2860.4	2.430	mg/L	0.0339	2.430	mg/L	0.0339	1.40%
Sn 189.927†	-7.0	-0.00103	mg/L	0.000437	-0.00103	mg/L	0.000437	42.60%
Sr 421.552†	12475.6	0.01482	mg/L	0.000061	0.01482	mg/L	0.000061	0.41%
Ti 334.903†	5.8	-0.00009	mg/L	0.000366	-0.00009	mg/L	0.000366	420.11%
Tl 190.801†	5.6	0.00346	mg/L	0.002133	0.00346	mg/L	0.002133	61.66%
V 292.402†	61.2	0.00040	mg/L	0.000173	0.00040	mg/L	0.000173	43.28%
Zn 206.200†	233.3	0.06950	mg/L	0.001408	0.06950	mg/L	0.001408	2.03%

Sequence No.: 35
Sample ID: AHP4 T TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 332
Date Collected: 6/18/2015 11:29:14 AM
Data Type: Original

Nebulizer Parameters: AHP4 T TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 T TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2709467.6	99.35	%	0.443				0.45%
ScR 361.383	288065.5	100.8	%	1.24				1.23%
Ag 328.068†	-68.9	-0.00029	mg/L	0.000074	-0.00029	mg/L	0.000074	25.32%
Al 308.215†	8.5	0.00874	mg/L	0.002429	0.00874	mg/L	0.002429	27.79%
As 188.979†	29.4	0.01795	mg/L	0.001768	0.01795	mg/L	0.001768	9.85%
B 249.677†	40.3	0.00791	mg/L	0.000453	0.00791	mg/L	0.000453	5.73%
Ba 233.527†	41.3	0.00843	mg/L	0.000173	0.00843	mg/L	0.000173	2.05%
Be 313.042†	23.0	0.00005	mg/L	0.000005	0.00005	mg/L	0.000005	10.80%
Ca 317.933†	240779.4	30.28	mg/L	0.047	30.28	mg/L	0.047	0.16%
Cd 228.802†	-11.9	-0.00055	mg/L	0.000119	-0.00055	mg/L	0.000119	21.60%
Co 228.616†	29.4	0.00095	mg/L	0.000098	0.00095	mg/L	0.000098	10.30%
Cr 267.716†	7.2	0.00066	mg/L	0.000749	0.00066	mg/L	0.000749	113.99%
Cu 324.752†	123.0	0.00043	mg/L	0.000141	0.00043	mg/L	0.000141	32.93%
Fe 273.955†	4.0	0.00404	mg/L	0.001253	0.00404	mg/L	0.001253	31.05%
K 766.490†	4623.8	1.782	mg/L	0.0107	1.782	mg/L	0.0107	0.60%
Mg 279.077†	3571.7	4.938	mg/L	0.0289	4.938	mg/L	0.0289	0.59%
Mn 257.610†	11.2	0.00014	mg/L	0.000061	0.00014	mg/L	0.000061	42.29%
Mo 202.031†	67.7	0.00322	mg/L	0.000137	0.00322	mg/L	0.000137	4.25%
Na 589.592†	45233.4	2.877	mg/L	0.0033	2.877	mg/L	0.0033	0.12%
Na 330.237†	69.3	2.846	mg/L	0.2052	2.846	mg/L	0.2052	7.21%
Ni 231.604†	-2.3	-0.00076	mg/L	0.000920	-0.00076	mg/L	0.000920	120.84%
Pb 220.353†	-5.5	-0.00067	mg/L	0.000897	-0.00067	mg/L	0.000897	134.09%
Sb 206.836†	6.9	0.00246	mg/L	0.001917	0.00246	mg/L	0.001917	77.90%
Se 196.026†	14.3	0.00977	mg/L	0.005537	0.00977	mg/L	0.005537	56.67%
Si 288.158†	9461.9	8.039	mg/L	0.0360	8.039	mg/L	0.0360	0.45%
Sn 189.927†	-35.6	-0.00370	mg/L	0.000491	-0.00370	mg/L	0.000491	13.27%
Sr 421.552†	102585.8	0.1219	mg/L	0.00015	0.1219	mg/L	0.00015	0.12%
Ti 334.903†	85.4	0.00111	mg/L	0.000470	0.00111	mg/L	0.000470	42.54%
Tl 190.801†	15.8	0.00974	mg/L	0.001303	0.00974	mg/L	0.001303	13.37%
V 292.402†	184.4	0.00120	mg/L	0.000093	0.00120	mg/L	0.000093	7.76%
Zn 206.200†	-0.1	-0.00042	mg/L	0.000655	-0.00042	mg/L	0.000655	154.14%

Sequence No.: 36
Sample ID: AHP4 UDUP TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 333
Date Collected: 6/18/2015 11:33:28 AM
Data Type: Original

Nebulizer Parameters: AHP4 UDUP TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 UDUP TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2766152.3	101.4	%	1.04				1.03%
ScR 361.383	292540.1	102.3	%	0.76				0.74%
Ag 328.068†	-67.2	-0.00028	mg/L	0.000044	-0.00028	mg/L	0.000044	15.36%
Al 308.215†	11.0	0.01131	mg/L	0.004127	0.01131	mg/L	0.004127	36.48%
As 188.979†	4.2	0.00262	mg/L	0.001630	0.00262	mg/L	0.001630	62.23%
B 249.677†	50.3	0.00988	mg/L	0.000885	0.00988	mg/L	0.000885	8.96%
Ba 233.527†	24.6	0.00502	mg/L	0.000363	0.00502	mg/L	0.000363	7.23%
Be 313.042†	17.7	0.00004	mg/L	0.000025	0.00004	mg/L	0.000025	66.62%
Ca 317.933†	29954.7	3.767	mg/L	0.0098	3.767	mg/L	0.0098	0.26%
Cd 228.802†	0.4	0.00001	mg/L	0.000168	0.00001	mg/L	0.000168	>999.9%
Co 228.616†	7.2	0.00023	mg/L	0.000067	0.00023	mg/L	0.000067	28.70%
Cr 267.716†	-0.0	-0.00003	mg/L	0.001082	-0.00003	mg/L	0.001082	>999.9%
Cu 324.752†	211.9	0.00078	mg/L	0.000040	0.00078	mg/L	0.000040	5.15%
Fe 273.955†	5.9	0.00600	mg/L	0.003598	0.00600	mg/L	0.003598	59.98%
K 766.490†	943.1	0.3633	mg/L	0.00710	0.3633	mg/L	0.00710	1.95%
Mg 279.077†	237.3	0.3281	mg/L	0.01389	0.3281	mg/L	0.01389	4.23%
Mn 257.610†	31.7	0.00071	mg/L	0.000060	0.00071	mg/L	0.000060	8.44%
Mo 202.031†	19.8	0.00103	mg/L	0.000170	0.00103	mg/L	0.000170	16.45%
Na 589.592†	8273.5	0.5262	mg/L	0.00428	0.5262	mg/L	0.00428	0.81%
Na 330.237†	12.7	0.5022	mg/L	0.19299	0.5022	mg/L	0.19299	38.43%
Ni 231.604†	-2.2	-0.00073	mg/L	0.000680	-0.00073	mg/L	0.000680	93.39%
Pb 220.353†	0.6	0.00008	mg/L	0.000289	0.00008	mg/L	0.000289	362.16%
Sb 206.836†	1.3	0.00047	mg/L	0.001726	0.00047	mg/L	0.001726	370.31%
Se 196.026†	0.6	0.00040	mg/L	0.003729	0.00040	mg/L	0.003729	927.52%
Si 288.158†	2721.1	2.312	mg/L	0.0301	2.312	mg/L	0.0301	1.30%
Sn 189.927†	-9.8	-0.00163	mg/L	0.000635	-0.00163	mg/L	0.000635	38.87%
Sr 421.552†	12453.4	0.01480	mg/L	0.000001	0.01480	mg/L	0.000001	0.00%
Ti 334.903†	5.8	-0.00009	mg/L	0.000153	-0.00009	mg/L	0.000153	178.10%
Tl 190.801†	4.8	0.00295	mg/L	0.001813	0.00295	mg/L	0.001813	61.40%
V 292.402†	45.3	0.00029	mg/L	0.000042	0.00029	mg/L	0.000042	14.34%
Zn 206.200†	218.9	0.06520	mg/L	0.000691	0.06520	mg/L	0.000691	1.06%

Sequence No.: 37
Sample ID: AHP4 U TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 334
Date Collected: 6/18/2015 11:37:42 AM
Data Type: Original

Nebulizer Parameters: AHP4 U TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 U TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2753492.0	101.0	%	0.57				0.56%
ScR 361.383	288969.0	101.1	%	1.77				1.75%
Ag 328.068†	-39.6	-0.00017	mg/L	0.000242	-0.00017	mg/L	0.000242	145.09%
Al 308.215†	12.8	0.01315	mg/L	0.005572	0.01315	mg/L	0.005572	42.37%
As 188.979†	5.5	0.00362	mg/L	0.001055	0.00362	mg/L	0.001055	29.13%
B 249.677†	51.7	0.01015	mg/L	0.000335	0.01015	mg/L	0.000335	3.30%
Ba 233.527†	24.1	0.00491	mg/L	0.000685	0.00491	mg/L	0.000685	13.94%
Be 313.042†	20.0	0.00004	mg/L	0.000017	0.00004	mg/L	0.000017	39.81%
Ca 317.933†	30439.1	3.828	mg/L	0.0457	3.828	mg/L	0.0457	1.19%
Cd 228.802†	4.0	0.00017	mg/L	0.000211	0.00017	mg/L	0.000211	126.27%
Co 228.616†	8.7	0.00028	mg/L	0.000151	0.00028	mg/L	0.000151	53.69%
Cr 267.716†	3.1	0.00044	mg/L	0.000793	0.00044	mg/L	0.000793	180.18%
Cu 324.752†	202.5	0.00074	mg/L	0.000060	0.00074	mg/L	0.000060	8.15%
Fe 273.955†	10.9	0.01115	mg/L	0.001929	0.01115	mg/L	0.001929	17.31%
K 766.490†	948.3	0.3654	mg/L	0.00844	0.3654	mg/L	0.00844	2.31%
Mg 279.077†	242.6	0.3354	mg/L	0.00289	0.3354	mg/L	0.00289	0.86%
Mn 257.610†	38.0	0.00085	mg/L	0.000031	0.00085	mg/L	0.000031	3.62%
Mo 202.031†	18.5	0.00096	mg/L	0.000240	0.00096	mg/L	0.000240	24.99%
Na 589.592†	8305.2	0.5282	mg/L	0.00864	0.5282	mg/L	0.00864	1.64%
Na 330.237†	11.3	0.4443	mg/L	0.15840	0.4443	mg/L	0.15840	35.65%
Ni 231.604†	-4.6	-0.00153	mg/L	0.001072	-0.00153	mg/L	0.001072	70.26%
Pb 220.353†	-0.7	-0.00008	mg/L	0.000712	-0.00008	mg/L	0.000712	913.09%
Sb 206.836†	-1.7	-0.00064	mg/L	0.001560	-0.00064	mg/L	0.001560	245.60%
Se 196.026†	-0.1	-0.00005	mg/L	0.004025	-0.00005	mg/L	0.004025	>999.9%
Si 288.158†	2737.0	2.325	mg/L	0.0343	2.325	mg/L	0.0343	1.47%
Sn 189.927†	-7.3	-0.00108	mg/L	0.000496	-0.00108	mg/L	0.000496	45.71%
Sr 421.552†	12600.8	0.01497	mg/L	0.000176	0.01497	mg/L	0.000176	1.18%
Ti 334.903†	9.3	0.00007	mg/L	0.000135	0.00007	mg/L	0.000135	194.52%
Tl 190.801†	3.3	0.00201	mg/L	0.000809	0.00201	mg/L	0.000809	40.29%
V 292.402†	50.0	0.00033	mg/L	0.000171	0.00033	mg/L	0.000171	52.38%
Zn 206.200†	226.1	0.06733	mg/L	0.000897	0.06733	mg/L	0.000897	1.33%

AHS2 00104

Sequence No.: 38
Sample ID: AHP4 USPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 335
Date Collected: 6/18/2015 11:41:56 AM
Data Type: Original

Nebulizer Parameters: AHP4 USPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 USPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2696205.8	98.86	%	1.145				1.16%
ScR 361.383	290185.8	101.5	%	0.68				0.67%
Ag 328.068†	126588.3	0.5347	mg/L	0.00307	0.5347	mg/L	0.00307	0.57%
Al 308.215†	1978.3	2.036	mg/L	0.0163	2.036	mg/L	0.0163	0.80%
As 188.979†	2660.4	2.075	mg/L	0.0187	2.075	mg/L	0.0187	0.90%
B 249.677†	50.0	0.00880	mg/L	0.000937	0.00880	mg/L	0.000937	10.65%
Ba 233.527†	10038.3	2.049	mg/L	0.0176	2.049	mg/L	0.0176	0.86%
Be 313.042†	229969.6	0.4891	mg/L	0.00170	0.4891	mg/L	0.00170	0.35%
Ca 317.933†	108606.9	13.66	mg/L	0.020	13.66	mg/L	0.020	0.15%
Cd 228.802†	11509.8	0.5072	mg/L	0.00483	0.5072	mg/L	0.00483	0.95%
Co 228.616†	15634.4	0.5076	mg/L	0.00352	0.5076	mg/L	0.00352	0.69%
Cr 267.716†	3382.5	0.5101	mg/L	0.00591	0.5101	mg/L	0.00591	1.16%
Cu 324.752†	139909.5	0.5130	mg/L	0.00555	0.5130	mg/L	0.00555	1.08%
Fe 273.955†	2015.8	2.051	mg/L	0.0199	2.051	mg/L	0.0199	0.97%
K 766.490†	27019.9	10.41	mg/L	0.016	10.41	mg/L	0.016	0.16%
Mg 279.077†	7672.7	10.61	mg/L	0.093	10.61	mg/L	0.093	0.87%
Mn 257.610†	21238.1	0.4856	mg/L	0.00137	0.4856	mg/L	0.00137	0.28%
Mo 202.031†	46.8	0.00236	mg/L	0.000230	0.00236	mg/L	0.000230	9.73%
Na 589.592†	163778.8	10.42	mg/L	0.007	10.42	mg/L	0.007	0.06%
Na 330.237†	265.9	10.75	mg/L	0.105	10.75	mg/L	0.105	0.98%
Ni 231.604†	1495.5	0.4967	mg/L	0.00604	0.4967	mg/L	0.00604	1.22%
Pb 220.353†	16255.2	1.996	mg/L	0.0221	1.996	mg/L	0.0221	1.11%
Sb 206.836†	9.9	-0.00084	mg/L	0.001222	-0.00084	mg/L	0.001222	145.08%
Se 196.026†	3023.7	2.061	mg/L	0.0118	2.061	mg/L	0.0118	0.57%
Si 288.158†	2729.2	2.321	mg/L	0.0182	2.321	mg/L	0.0182	0.78%
Sn 189.927†	-24.2	-0.00334	mg/L	0.000604	-0.00334	mg/L	0.000604	18.09%
Sr 421.552†	425842.5	0.5060	mg/L	0.00035	0.5060	mg/L	0.00035	0.07%
Ti 334.903†	38.4	0.00035	mg/L	0.000198	0.00035	mg/L	0.000198	56.62%
Tl 190.801†	3314.5	2.043	mg/L	0.0155	2.043	mg/L	0.0155	0.76%
V 292.402†	78618.6	0.5127	mg/L	0.00444	0.5127	mg/L	0.00444	0.87%
Zn 206.200†	1834.5	0.5470	mg/L	0.00446	0.5470	mg/L	0.00446	0.81%

Sequence No.: 39
Sample ID: AHP4 MB2SPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 336
Date Collected: 6/18/2015 11:45:56 AM
Data Type: Original

Nebulizer Parameters: AHP4 MB2SPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 MB2SPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2611971.2	95.77	%	0.916				0.96%
ScR 361.383	281975.9	98.64	%	1.321				1.34%
Ag 328.068†	127056.1	0.5367	mg/L	0.00617	0.5367	mg/L	0.00617	1.15%
Al 308.215†	1984.0	2.042	mg/L	0.0428	2.042	mg/L	0.0428	2.09%
As 188.979†	2644.0	2.063	mg/L	0.0086	2.063	mg/L	0.0086	0.42%
B 249.677†	4.6	-0.00013	mg/L	0.001050	-0.00013	mg/L	0.001050	817.59%
Ba 233.527†	10094.7	2.060	mg/L	0.0386	2.060	mg/L	0.0386	1.87%
Be 313.042†	231267.8	0.4918	mg/L	0.00223	0.4918	mg/L	0.00223	0.45%
Ca 317.933†	78701.4	9.898	mg/L	0.0376	9.898	mg/L	0.0376	0.38%
Cd 228.802†	11556.9	0.5094	mg/L	0.00609	0.5094	mg/L	0.00609	1.19%
Co 228.616†	15665.1	0.5086	mg/L	0.00850	0.5086	mg/L	0.00850	1.67%
Cr 267.716†	3407.1	0.5139	mg/L	0.00909	0.5139	mg/L	0.00909	1.77%
Cu 324.752†	140471.8	0.5151	mg/L	0.00635	0.5151	mg/L	0.00635	1.23%
Fe 273.955†	2023.6	2.059	mg/L	0.0332	2.059	mg/L	0.0332	1.61%
K 766.490†	26194.9	10.09	mg/L	0.045	10.09	mg/L	0.045	0.44%
Mg 279.077†	7497.9	10.37	mg/L	0.189	10.37	mg/L	0.189	1.82%
Mn 257.610†	21432.9	0.4900	mg/L	0.00429	0.4900	mg/L	0.00429	0.88%
Mo 202.031†	31.4	0.00157	mg/L	0.000389	0.00157	mg/L	0.000389	24.79%
Na 589.592†	156508.8	9.953	mg/L	0.0426	9.953	mg/L	0.0426	0.43%
Na 330.237†	253.5	10.26	mg/L	0.221	10.26	mg/L	0.221	2.15%
Ni 231.604†	1515.2	0.5032	mg/L	0.01000	0.5032	mg/L	0.01000	1.99%
Pb 220.353†	16260.4	1.996	mg/L	0.0239	1.996	mg/L	0.0239	1.20%
Sb 206.836†	11.1	-0.00046	mg/L	0.001686	-0.00046	mg/L	0.001686	367.32%
Se 196.026†	3027.6	2.064	mg/L	0.0170	2.064	mg/L	0.0170	0.82%
Si 288.158†	33.1	0.03001	mg/L	0.006764	0.03001	mg/L	0.006764	22.54%
Sn 189.927†	-22.4	-0.00344	mg/L	0.000313	-0.00344	mg/L	0.000313	9.09%
Sr 421.552†	416793.8	0.4952	mg/L	0.00250	0.4952	mg/L	0.00250	0.50%
Ti 334.903†	19.4	-0.00018	mg/L	0.000654	-0.00018	mg/L	0.000654	366.38%
Tl 190.801†	3342.1	2.060	mg/L	0.0091	2.060	mg/L	0.0091	0.44%
V 292.402†	78877.7	0.5144	mg/L	0.00619	0.5144	mg/L	0.00619	1.20%
Zn 206.200†	1623.5	0.4842	mg/L	0.00876	0.4842	mg/L	0.00876	1.81%

Sequence No.: 40
Sample ID: CV 5
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 11:49:56 AM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2628858.8	96.39	%	0.775				0.80%
ScR 361.383	275216.8	96.27	%	1.013				1.05%
Ag 328.068†	237553.2	1.003	mg/L	0.0020	1.003	mg/L	0.0020	0.20%
Al 308.215†	2006.3	2.039	mg/L	0.0212	2.039	mg/L	0.0212	1.04%
As 188.979†	2545.0	2.016	mg/L	0.0064	2.016	mg/L	0.0064	0.32%
B 249.677†	5093.6	0.9988	mg/L	0.00613	0.9988	mg/L	0.00613	0.61%
Ba 233.527†	5085.4	1.038	mg/L	0.0086	1.038	mg/L	0.0086	0.83%
Be 313.042†	458139.1	0.9743	mg/L	0.00504	0.9743	mg/L	0.00504	0.52%
Ca 317.933†	16726.5	2.104	mg/L	0.0129	2.104	mg/L	0.0129	0.62%
Cd 228.802†	23812.9	1.064	mg/L	0.0014	1.064	mg/L	0.0014	0.13%
Co 228.616†	31928.5	1.035	mg/L	0.0021	1.035	mg/L	0.0021	0.21%
Cr 267.716†	6936.4	1.048	mg/L	0.0091	1.048	mg/L	0.0091	0.86%
Cu 324.752†	272645.8	0.9992	mg/L	0.00069	0.9992	mg/L	0.00069	0.07%
Fe 273.955†	2038.7	2.070	mg/L	0.0127	2.070	mg/L	0.0127	0.61%
K 766.490†	53391.4	20.57	mg/L	0.084	20.57	mg/L	0.084	0.41%
Mg 279.077†	1466.3	2.035	mg/L	0.0103	2.035	mg/L	0.0103	0.51%
Mn 257.610†	42950.0	0.9817	mg/L	0.00097	0.9817	mg/L	0.00097	0.10%
Mo 202.031†	18498.9	1.033	mg/L	0.0024	1.033	mg/L	0.0024	0.23%
Na 589.592†	794054.4	50.50	mg/L	0.070	50.50	mg/L	0.070	0.14%
Na 330.237†	1282.9	52.56	mg/L	0.264	52.56	mg/L	0.264	0.50%
Ni 231.604†	3050.8	1.015	mg/L	0.0107	1.015	mg/L	0.0107	1.05%
Pb 220.353†	16428.9	2.017	mg/L	0.0024	2.017	mg/L	0.0024	0.12%
Sb 206.836†	5614.0	2.084	mg/L	0.0013	2.084	mg/L	0.0013	0.06%
Se 196.026†	2998.8	2.044	mg/L	0.0087	2.044	mg/L	0.0087	0.42%
Si 288.158†	2434.4	2.042	mg/L	0.0125	2.042	mg/L	0.0125	0.61%
Sn 189.927†	4771.7	1.038	mg/L	0.0032	1.038	mg/L	0.0032	0.30%
Sr 421.552†	844689.7	1.004	mg/L	0.0008	1.004	mg/L	0.0008	0.08%
Ti 334.903†	21753.2	1.013	mg/L	0.0019	1.013	mg/L	0.0019	0.19%
Tl 190.801†	3276.7	2.016	mg/L	0.0016	2.016	mg/L	0.0016	0.08%
V 292.402†	150770.5	0.9835	mg/L	0.00242	0.9835	mg/L	0.00242	0.25%
Zn 206.200†	3334.5	0.9943	mg/L	0.00813	0.9943	mg/L	0.00813	0.82%

AHS2 : 00107

Sequence No.: 41
Sample ID: CB6
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 11:53:45 AM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2701613.4	99.06	%	0.593				0.60%
ScR 361.383	284395.5	99.48	%	0.415				0.42%
Ag 328.068†	9.9	0.00004	mg/L	0.000052	0.00004	mg/L	0.000052	125.30%
Al 308.215†	8.4	0.00865	mg/L	0.001583	0.00865	mg/L	0.001583	18.31%
As 188.979†	-0.6	-0.00047	mg/L	0.002196	-0.00047	mg/L	0.002196	471.59%
B 249.677†	7.0	0.00138	mg/L	0.000243	0.00138	mg/L	0.000243	17.64%
Ba 233.527†	5.7	0.00115	mg/L	0.000471	0.00115	mg/L	0.000471	40.85%
Be 313.042†	55.6	0.00012	mg/L	0.000033	0.00012	mg/L	0.000033	27.73%
Ca 317.933†	8.5	0.00107	mg/L	0.000543	0.00107	mg/L	0.000543	50.73%
Cd 228.802†	10.4	0.00047	mg/L	0.000111	0.00047	mg/L	0.000111	23.50%
Co 228.616†	3.1	0.00010	mg/L	0.000095	0.00010	mg/L	0.000095	96.31%
Cr 267.716†	0.7	0.00011	mg/L	0.000221	0.00011	mg/L	0.000221	194.16%
Cu 324.752†	141.4	0.00052	mg/L	0.000139	0.00052	mg/L	0.000139	26.92%
Fe 273.955†	0.7	0.00068	mg/L	0.000639	0.00068	mg/L	0.000639	93.47%
K 766.490†	25.7	0.00989	mg/L	0.014224	0.00989	mg/L	0.014224	143.75%
Mg 279.077†	-2.9	-0.00395	mg/L	0.005563	-0.00395	mg/L	0.005563	140.98%
Mn 257.610†	0.9	0.00002	mg/L	0.000037	0.00002	mg/L	0.000037	181.01%
Mo 202.031†	31.7	0.00177	mg/L	0.000797	0.00177	mg/L	0.000797	45.04%
Na 589.592†	21.9	0.00139	mg/L	0.003170	0.00139	mg/L	0.003170	227.87%
Na 330.237†	0.4	0.01505	mg/L	0.115071	0.01505	mg/L	0.115071	764.35%
Ni 231.604†	-2.6	-0.00085	mg/L	0.000905	-0.00085	mg/L	0.000905	106.70%
Pb 220.353†	1.9	0.00024	mg/L	0.000560	0.00024	mg/L	0.000560	234.12%
Sb 206.836†	9.1	0.00337	mg/L	0.000597	0.00337	mg/L	0.000597	17.70%
Se 196.026†	-2.9	-0.00195	mg/L	0.002103	-0.00195	mg/L	0.002103	107.56%
Si 288.158†	0.5	0.00039	mg/L	0.007747	0.00039	mg/L	0.007747	>999.9%
Sn 189.927†	0.6	0.00014	mg/L	0.000679	0.00014	mg/L	0.000679	481.82%
Sr 421.552†	82.8	0.00010	mg/L	0.000052	0.00010	mg/L	0.000052	52.69%
Ti 334.903†	4.7	0.00022	mg/L	0.000389	0.00022	mg/L	0.000389	177.79%
Tl 190.801†	0.6	0.00035	mg/L	0.000285	0.00035	mg/L	0.000285	80.30%
V 292.402†	-0.1	0.00000	mg/L	0.000152	0.00000	mg/L	0.000152	>999.9%
Zn 206.200†	0.3	0.00010	mg/L	0.000589	0.00010	mg/L	0.000589	581.82%

Sequence No.: 42
Sample ID: AHP8 MB1 TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 337
Date Collected: 6/18/2015 11:58:00 AM
Data Type: Original

Nebulizer Parameters: AHP8 MB1 TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB1 TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2726262.0	99.96	%	1.388				1.39%
ScR 361.383	286253.7	100.1	%	0.32				0.32%
Ag 328.068†	3.6	0.00002	mg/L	0.000053	0.00002	mg/L	0.000053	348.67%
Al 308.215†	5.5	0.00564	mg/L	0.000527	0.00564	mg/L	0.000527	9.34%
As 188.979†	0.1	0.00007	mg/L	0.002273	0.00007	mg/L	0.002273	>999.9%
B 249.677†	6.3	0.00124	mg/L	0.000848	0.00124	mg/L	0.000848	68.44%
Ba 233.527†	6.1	0.00124	mg/L	0.000780	0.00124	mg/L	0.000780	62.75%
Be 313.042†	23.6	0.00005	mg/L	0.000008	0.00005	mg/L	0.000008	16.09%
Ca 317.933†	34.4	0.00432	mg/L	0.000256	0.00432	mg/L	0.000256	5.91%
Cd 228.802†	8.4	0.00038	mg/L	0.000253	0.00038	mg/L	0.000253	66.90%
Co 228.616†	-3.0	-0.00010	mg/L	0.000097	-0.00010	mg/L	0.000097	100.54%
Cr 267.716†	-0.2	-0.00004	mg/L	0.000399	-0.00004	mg/L	0.000399	>999.9%
Cu 324.752†	76.0	0.00028	mg/L	0.000283	0.00028	mg/L	0.000283	101.45%
Fe 273.955†	1.8	0.00188	mg/L	0.001694	0.00188	mg/L	0.001694	90.32%
K 766.490†	26.5	0.01019	mg/L	0.011887	0.01019	mg/L	0.011887	116.60%
Mg 279.077†	-3.8	-0.00525	mg/L	0.002510	-0.00525	mg/L	0.002510	47.80%
Mn 257.610†	-0.4	-0.00001	mg/L	0.000076	-0.00001	mg/L	0.000076	753.54%
Mo 202.031†	2.3	0.00013	mg/L	0.000054	0.00013	mg/L	0.000054	40.93%
Na 589.592†	-66.3	-0.00422	mg/L	0.002432	-0.00422	mg/L	0.002432	57.64%
Na 330.237†	-1.4	-0.05887	mg/L	0.077982	-0.05887	mg/L	0.077982	132.47%
Ni 231.604†	-3.6	-0.00120	mg/L	0.000691	-0.00120	mg/L	0.000691	57.60%
Pb 220.353†	-0.4	-0.00004	mg/L	0.000674	-0.00004	mg/L	0.000674	>999.9%
Sb 206.836†	-0.4	-0.00013	mg/L	0.001642	-0.00013	mg/L	0.001642	>999.9%
Se 196.026†	-1.0	-0.00068	mg/L	0.003181	-0.00068	mg/L	0.003181	469.06%
Si 288.158†	29.5	0.02505	mg/L	0.005707	0.02505	mg/L	0.005707	22.78%
Sn 189.927†	2.9	0.00064	mg/L	0.000717	0.00064	mg/L	0.000717	111.97%
Sr 421.552†	-4.6	-0.00001	mg/L	0.000005	-0.00001	mg/L	0.000005	100.70%
Ti 334.903†	-10.8	-0.00051	mg/L	0.000208	-0.00051	mg/L	0.000208	41.09%
Tl 190.801†	2.3	0.00143	mg/L	0.002194	0.00143	mg/L	0.002194	153.61%
V 292.402†	-1.9	-0.00001	mg/L	0.000134	-0.00001	mg/L	0.000134	>999.9%
Zn 206.200†	-0.0	-0.00001	mg/L	0.000421	-0.00001	mg/L	0.000421	>999.9%

ANSP-001985

Sequence No.: 43
Sample ID: AHP4 V TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 338
Date Collected: 6/18/2015 12:02:16 PM
Data Type: Original

Nebulizer Parameters: AHP4 V TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 V TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2733082.0	100.2	%	0.47				0.47%
ScR 361.383	290281.6	101.5	%	0.45				0.44%
Ag 328.068†	-22.3	-0.00009	mg/L	0.000107	-0.00009	mg/L	0.000107	113.83%
Al 308.215†	14.4	0.01481	mg/L	0.005493	0.01481	mg/L	0.005493	37.08%
As 188.979†	3.8	0.00237	mg/L	0.000705	0.00237	mg/L	0.000705	29.74%
B 249.677†	55.2	0.01084	mg/L	0.000101	0.01084	mg/L	0.000101	0.93%
Ba 233.527†	24.0	0.00491	mg/L	0.000530	0.00491	mg/L	0.000530	10.80%
Be 313.042†	15.7	0.00003	mg/L	0.000015	0.00003	mg/L	0.000015	45.83%
Ca 317.933†	29759.9	3.743	mg/L	0.0322	3.743	mg/L	0.0322	0.86%
Cd 228.802†	5.5	0.00025	mg/L	0.000088	0.00025	mg/L	0.000088	35.55%
Co 228.616†	8.1	0.00026	mg/L	0.000195	0.00026	mg/L	0.000195	74.62%
Cr 267.716†	-4.4	-0.00070	mg/L	0.000517	-0.00070	mg/L	0.000517	74.42%
Cu 324.752†	170.3	0.00062	mg/L	0.000159	0.00062	mg/L	0.000159	25.44%
Fe 273.955†	12.0	0.01223	mg/L	0.002437	0.01223	mg/L	0.002437	19.93%
K 766.490†	884.8	0.3409	mg/L	0.01380	0.3409	mg/L	0.01380	4.05%
Mg 279.077†	238.9	0.3303	mg/L	0.00427	0.3303	mg/L	0.00427	1.29%
Mn 257.610†	15.3	0.00034	mg/L	0.000111	0.00034	mg/L	0.000111	32.92%
Mo 202.031†	19.6	0.00102	mg/L	0.000161	0.00102	mg/L	0.000161	15.80%
Na 589.592†	8157.5	0.5188	mg/L	0.00552	0.5188	mg/L	0.00552	1.06%
Na 330.237†	5.8	0.2326	mg/L	0.12555	0.2326	mg/L	0.12555	53.98%
Ni 231.604†	-0.4	-0.00012	mg/L	0.000471	-0.00012	mg/L	0.000471	401.91%
Pb 220.353†	0.3	0.00004	mg/L	0.000788	0.00004	mg/L	0.000788	>999.9%
Sb 206.836†	1.9	0.00070	mg/L	0.001151	0.00070	mg/L	0.001151	165.38%
Se 196.026†	2.3	0.00158	mg/L	0.001430	0.00158	mg/L	0.001430	90.51%
Si 288.158†	2573.2	2.186	mg/L	0.0291	2.186	mg/L	0.0291	1.33%
Sn 189.927†	-8.9	-0.00144	mg/L	0.000278	-0.00144	mg/L	0.000278	19.34%
Sr 421.552†	12230.0	0.01453	mg/L	0.000166	0.01453	mg/L	0.000166	1.14%
Ti 334.903†	11.6	0.00018	mg/L	0.000322	0.00018	mg/L	0.000322	175.81%
Tl 190.801†	3.0	0.00185	mg/L	0.000683	0.00185	mg/L	0.000683	36.84%
V 292.402†	51.8	0.00033	mg/L	0.000059	0.00033	mg/L	0.000059	17.74%
Zn 206.200†	50.9	0.01512	mg/L	0.000220	0.01512	mg/L	0.000220	1.45%

Sequence No.: 44
Sample ID: AHP4 W TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 339
Date Collected: 6/18/2015 12:06:30 PM
Data Type: Original

Nebulizer Parameters: AHP4 W TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP4 W TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2740366.6	100.5	%	1.09				1.08%
ScR 361.383	289496.4	101.3	%	1.64				1.62%
Ag 328.068†	9.9	0.00004	mg/L	0.000133	0.00004	mg/L	0.000133	318.84%
Al 308.215†	10.7	0.01099	mg/L	0.005985	0.01099	mg/L	0.005985	54.47%
As 188.979†	4.4	0.00280	mg/L	0.000993	0.00280	mg/L	0.000993	35.51%
B 249.677†	52.2	0.01025	mg/L	0.000826	0.01025	mg/L	0.000826	8.05%
Ba 233.527†	22.4	0.00458	mg/L	0.000103	0.00458	mg/L	0.000103	2.26%
Be 313.042†	20.2	0.00004	mg/L	0.000016	0.00004	mg/L	0.000016	36.35%
Ca 317.933†	29700.6	3.735	mg/L	0.0865	3.735	mg/L	0.0865	2.32%
Cd 228.802†	2.4	0.00010	mg/L	0.000057	0.00010	mg/L	0.000057	54.81%
Co 228.616†	5.5	0.00018	mg/L	0.000043	0.00018	mg/L	0.000043	24.37%
Cr 267.716†	4.4	0.00064	mg/L	0.000686	0.00064	mg/L	0.000686	107.77%
Cu 324.752†	190.6	0.00070	mg/L	0.000061	0.00070	mg/L	0.000061	8.82%
Fe 273.955†	7.6	0.00773	mg/L	0.001656	0.00773	mg/L	0.001656	21.44%
K 766.490†	898.3	0.3461	mg/L	0.01982	0.3461	mg/L	0.01982	5.73%
Mg 279.077†	236.5	0.3269	mg/L	0.01388	0.3269	mg/L	0.01388	4.24%
Mn 257.610†	3.9	0.00008	mg/L	0.000099	0.00008	mg/L	0.000099	130.03%
Mo 202.031†	18.8	0.00098	mg/L	0.000330	0.00098	mg/L	0.000330	33.61%
Na 589.592†	8112.8	0.5159	mg/L	0.01501	0.5159	mg/L	0.01501	2.91%
Na 330.237†	14.9	0.6059	mg/L	0.01948	0.6059	mg/L	0.01948	3.22%
Ni 231.604†	1.5	0.00050	mg/L	0.000826	0.00050	mg/L	0.000826	165.22%
Pb 220.353†	-3.9	-0.00047	mg/L	0.000366	-0.00047	mg/L	0.000366	77.60%
Sb 206.836†	1.3	0.00047	mg/L	0.000454	0.00047	mg/L	0.000454	96.34%
Se 196.026†	1.5	0.00099	mg/L	0.002027	0.00099	mg/L	0.002027	203.90%
Si 288.158†	2746.5	2.333	mg/L	0.0391	2.333	mg/L	0.0391	1.68%
Sn 189.927†	-6.2	-0.00084	mg/L	0.000689	-0.00084	mg/L	0.000689	82.07%
Sr 421.552†	12264.7	0.01457	mg/L	0.000375	0.01457	mg/L	0.000375	2.57%
Ti 334.903†	10.7	0.00015	mg/L	0.000266	0.00015	mg/L	0.000266	182.94%
Tl 190.801†	1.5	0.00092	mg/L	0.002251	0.00092	mg/L	0.002251	245.26%
V 292.402†	61.6	0.00040	mg/L	0.000210	0.00040	mg/L	0.000210	52.23%
Zn 206.200†	54.9	0.01633	mg/L	0.000430	0.01633	mg/L	0.000430	2.63%

Sequence No.: 45
Sample ID: AHP4 X TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 340
Date Collected: 6/18/2015 12:10:45 PM
Data Type: Original

Nebulizer Parameters: AHP4 X TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 X TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2750437.5	100.8	%	0.31				0.31%
ScR 361.383	293009.5	102.5	%	0.75				0.73%
Ag 328.068†	-30.4	-0.00013	mg/L	0.000046	-0.00013	mg/L	0.000046	35.53%
Al 308.215†	6.6	0.00674	mg/L	0.004924	0.00674	mg/L	0.004924	73.01%
As 188.979†	3.2	0.00186	mg/L	0.002063	0.00186	mg/L	0.002063	110.64%
B 249.677†	52.1	0.01022	mg/L	0.001005	0.01022	mg/L	0.001005	9.83%
Ba 233.527†	25.5	0.00520	mg/L	0.000242	0.00520	mg/L	0.000242	4.65%
Be 313.042†	10.3	0.00002	mg/L	0.000014	0.00002	mg/L	0.000014	61.80%
Ca 317.933†	30008.2	3.774	mg/L	0.0106	3.774	mg/L	0.0106	0.28%
Cd 228.802†	5.6	0.00025	mg/L	0.000152	0.00025	mg/L	0.000152	60.07%
Co 228.616†	8.0	0.00026	mg/L	0.000260	0.00026	mg/L	0.000260	100.98%
Cr 267.716†	2.4	0.00033	mg/L	0.000185	0.00033	mg/L	0.000185	55.43%
Cu 324.752†	389.4	0.00143	mg/L	0.000032	0.00143	mg/L	0.000032	2.24%
Fe 273.955†	3.6	0.00365	mg/L	0.002436	0.00365	mg/L	0.002436	66.81%
K 766.490†	938.9	0.3617	mg/L	0.01015	0.3617	mg/L	0.01015	2.81%
Mg 279.077†	238.6	0.3299	mg/L	0.00264	0.3299	mg/L	0.00264	0.80%
Mn 257.610†	14.4	0.00032	mg/L	0.000060	0.00032	mg/L	0.000060	19.11%
Mo 202.031†	20.2	0.00106	mg/L	0.000168	0.00106	mg/L	0.000168	15.84%
Na 589.592†	8353.1	0.5312	mg/L	0.00163	0.5312	mg/L	0.00163	0.31%
Na 330.237†	9.6	0.3669	mg/L	0.09591	0.3669	mg/L	0.09591	26.14%
Ni 231.604†	-2.7	-0.00089	mg/L	0.000337	-0.00089	mg/L	0.000337	37.71%
Pb 220.353†	-1.6	-0.00019	mg/L	0.000837	-0.00019	mg/L	0.000837	431.02%
Sb 206.836†	1.4	0.00048	mg/L	0.001693	0.00048	mg/L	0.001693	351.73%
Se 196.026†	0.7	0.00051	mg/L	0.001490	0.00051	mg/L	0.001490	293.45%
Si 288.158†	2812.6	2.390	mg/L	0.0205	2.390	mg/L	0.0205	0.86%
Sn 189.927†	-7.6	-0.00116	mg/L	0.000550	-0.00116	mg/L	0.000550	47.57%
Sr 421.552†	12535.3	0.01489	mg/L	0.000057	0.01489	mg/L	0.000057	0.38%
Ti 334.903†	5.5	-0.00010	mg/L	0.000015	-0.00010	mg/L	0.000015	14.58%
Tl 190.801†	1.4	0.00089	mg/L	0.001286	0.00089	mg/L	0.001286	145.04%
V 292.402†	66.4	0.00043	mg/L	0.000064	0.00043	mg/L	0.000064	14.85%
Zn 206.200†	289.0	0.08608	mg/L	0.001177	0.08608	mg/L	0.001177	1.37%

Sequence No.: 46
Sample ID: AHP8 ADUP TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 341
Date Collected: 6/18/2015 12:14:59 PM
Data Type: Original

Nebulizer Parameters: AHP8 ADUP TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP8 ADUP TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2721068.4	99.77	%	0.568				0.57%
ScR 361.383	287856.0	100.7	%	0.53				0.52%
Ag 328.068†	-43.6	-0.00018	mg/L	0.000058	-0.00018	mg/L	0.000058	31.69%
Al 308.215†	173.5	0.1792	mg/L	0.00048	0.1792	mg/L	0.00048	0.27%
As 188.979†	2.5	0.00151	mg/L	0.000631	0.00151	mg/L	0.000631	41.75%
B 249.677†	45.1	0.00885	mg/L	0.000835	0.00885	mg/L	0.000835	9.43%
Ba 233.527†	31.7	0.00645	mg/L	0.000279	0.00645	mg/L	0.000279	4.32%
Be 313.042†	24.1	0.00005	mg/L	0.000012	0.00005	mg/L	0.000012	22.73%
Ca 317.933†	30860.6	3.881	mg/L	0.0211	3.881	mg/L	0.0211	0.54%
Cd 228.802†	6.9	0.00031	mg/L	0.000146	0.00031	mg/L	0.000146	46.39%
Co 228.616†	9.7	0.00030	mg/L	0.000086	0.00030	mg/L	0.000086	28.17%
Cr 267.716†	2.7	0.00038	mg/L	0.000295	0.00038	mg/L	0.000295	77.61%
Cu 324.752†	706.9	0.00260	mg/L	0.000097	0.00260	mg/L	0.000097	3.72%
Fe 273.955†	240.0	0.2447	mg/L	0.00228	0.2447	mg/L	0.00228	0.93%
K 766.490†	1031.9	0.3976	mg/L	0.01168	0.3976	mg/L	0.01168	2.94%
Mg 279.077†	297.4	0.4109	mg/L	0.00594	0.4109	mg/L	0.00594	1.45%
Mn 257.610†	354.5	0.00808	mg/L	0.000086	0.00808	mg/L	0.000086	1.07%
Mo 202.031†	20.1	0.00105	mg/L	0.000011	0.00105	mg/L	0.000011	1.06%
Na 589.592†	8478.9	0.5392	mg/L	0.00339	0.5392	mg/L	0.00339	0.63%
Na 330.237†	13.1	0.5359	mg/L	0.20827	0.5359	mg/L	0.20827	38.86%
Ni 231.604†	3.7	0.00122	mg/L	0.001122	0.00122	mg/L	0.001122	92.26%
Pb 220.353†	-1.3	-0.00012	mg/L	0.000729	-0.00012	mg/L	0.000729	594.88%
Sb 206.836†	-0.8	-0.00033	mg/L	0.001552	-0.00033	mg/L	0.001552	467.83%
Se 196.026†	1.9	0.00128	mg/L	0.000552	0.00128	mg/L	0.000552	43.20%
Si 288.158†	2855.3	2.426	mg/L	0.0110	2.426	mg/L	0.0110	0.45%
Sn 189.927†	-8.5	-0.00134	mg/L	0.000805	-0.00134	mg/L	0.000805	60.11%
Sr 421.552†	13218.0	0.01570	mg/L	0.000070	0.01570	mg/L	0.000070	0.44%
Ti 334.903†	132.4	0.00580	mg/L	0.000327	0.00580	mg/L	0.000327	5.63%
Tl 190.801†	1.9	0.00120	mg/L	0.002680	0.00120	mg/L	0.002680	223.59%
V 292.402†	105.4	0.00068	mg/L	0.000053	0.00068	mg/L	0.000053	7.83%
Zn 206.200†	36.4	0.01079	mg/L	0.000566	0.01079	mg/L	0.000566	5.24%

Sequence No.: 47
Sample ID: AHP8 A TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 342
Date Collected: 6/18/2015 12:19:13 PM
Data Type: Original

Nebulizer Parameters: AHP8 A TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 A TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2737150.0	100.4	%	1.11				1.10%
ScR 361.383	291473.0	102.0	%	0.18				0.18%
Ag 328.068†	-15.8	-0.00007	mg/L	0.000142	-0.00007	mg/L	0.000142	212.98%
Al 308.215†	175.7	0.1814	mg/L	0.00108	0.1814	mg/L	0.00108	0.59%
As 188.979†	4.4	0.00299	mg/L	0.000982	0.00299	mg/L	0.000982	32.81%
B 249.677†	47.2	0.00926	mg/L	0.000300	0.00926	mg/L	0.000300	3.23%
Ba 233.527†	31.8	0.00647	mg/L	0.000549	0.00647	mg/L	0.000549	8.50%
Be 313.042†	14.7	0.00003	mg/L	0.000017	0.00003	mg/L	0.000017	56.06%
Ca 317.933†	30784.7	3.872	mg/L	0.0080	3.872	mg/L	0.0080	0.21%
Cd 228.802†	4.8	0.00021	mg/L	0.000233	0.00021	mg/L	0.000233	111.54%
Co 228.616†	9.7	0.00030	mg/L	0.000098	0.00030	mg/L	0.000098	32.21%
Cr 267.716†	2.1	0.00030	mg/L	0.000444	0.00030	mg/L	0.000444	147.66%
Cu 324.752†	706.1	0.00260	mg/L	0.000145	0.00260	mg/L	0.000145	5.58%
Fe 273.955†	248.5	0.2534	mg/L	0.00178	0.2534	mg/L	0.00178	0.70%
K 766.490†	1011.9	0.3899	mg/L	0.01042	0.3899	mg/L	0.01042	2.67%
Mg 279.077†	303.1	0.4188	mg/L	0.00534	0.4188	mg/L	0.00534	1.27%
Mn 257.610†	368.2	0.00840	mg/L	0.000071	0.00840	mg/L	0.000071	0.85%
Mo 202.031†	20.7	0.00108	mg/L	0.000007	0.00108	mg/L	0.000007	0.69%
Na 589.592†	8662.7	0.5509	mg/L	0.00220	0.5509	mg/L	0.00220	0.40%
Na 330.237†	11.8	0.4804	mg/L	0.08744	0.4804	mg/L	0.08744	18.20%
Ni 231.604†	-2.4	-0.00080	mg/L	0.001699	-0.00080	mg/L	0.001699	212.98%
Pb 220.353†	4.3	0.00056	mg/L	0.000770	0.00056	mg/L	0.000770	136.76%
Sb 206.836†	0.2	0.00006	mg/L	0.000054	0.00006	mg/L	0.000054	94.19%
Se 196.026†	5.5	0.00374	mg/L	0.002413	0.00374	mg/L	0.002413	64.46%
Si 288.158†	2844.4	2.416	mg/L	0.0066	2.416	mg/L	0.0066	0.27%
Sn 189.927†	-7.5	-0.00111	mg/L	0.000532	-0.00111	mg/L	0.000532	47.81%
Sr 421.552†	13029.6	0.01548	mg/L	0.000045	0.01548	mg/L	0.000045	0.29%
Ti 334.903†	142.5	0.00627	mg/L	0.000085	0.00627	mg/L	0.000085	1.36%
Tl 190.801†	-0.9	-0.00051	mg/L	0.002505	-0.00051	mg/L	0.002505	495.69%
V 292.402†	91.5	0.00058	mg/L	0.000050	0.00058	mg/L	0.000050	8.54%
Zn 206.200†	36.5	0.01083	mg/L	0.000754	0.01083	mg/L	0.000754	6.96%

Sequence No.: 48
Sample ID: AHP8 ASPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 343
Date Collected: 6/18/2015 12:23:27 PM
Data Type: Original

Nebulizer Parameters: AHP8 ASPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP8 ASPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2747226.1	100.7	%	0.19				0.19%
ScR 361.383	292561.0	102.3	%	0.18				0.17%
Ag 328.068†	126220.6	0.5332	mg/L	0.00350	0.5332	mg/L	0.00350	0.66%
Al 308.215†	2128.0	2.190	mg/L	0.0086	2.190	mg/L	0.0086	0.39%
As 188.979†	2658.6	2.074	mg/L	0.0090	2.074	mg/L	0.0090	0.44%
B 249.677†	48.8	0.00856	mg/L	0.000535	0.00856	mg/L	0.000535	6.25%
Ba 233.527†	10145.8	2.071	mg/L	0.0020	2.071	mg/L	0.0020	0.10%
Be 313.042†	230996.4	0.4912	mg/L	0.00138	0.4912	mg/L	0.00138	0.28%
Ca 317.933†	110000.9	13.83	mg/L	0.038	13.83	mg/L	0.038	0.28%
Cd 228.802†	11434.7	0.5038	mg/L	0.00105	0.5038	mg/L	0.00105	0.21%
Co 228.616†	15706.9	0.5099	mg/L	0.00111	0.5099	mg/L	0.00111	0.22%
Cr 267.716†	3423.2	0.5163	mg/L	0.00268	0.5163	mg/L	0.00268	0.52%
Cu 324.752†	140983.8	0.5169	mg/L	0.00170	0.5169	mg/L	0.00170	0.33%
Fe 273.955†	2262.8	2.303	mg/L	0.0134	2.303	mg/L	0.0134	0.58%
K 766.490†	27172.5	10.47	mg/L	0.022	10.47	mg/L	0.022	0.21%
Mg 279.077†	7784.2	10.76	mg/L	0.040	10.76	mg/L	0.040	0.37%
Mn 257.610†	21583.3	0.4934	mg/L	0.00043	0.4934	mg/L	0.00043	0.09%
Mo 202.031†	43.7	0.00218	mg/L	0.000362	0.00218	mg/L	0.000362	16.55%
Na 589.592†	164057.9	10.43	mg/L	0.008	10.43	mg/L	0.008	0.07%
Na 330.237†	268.7	10.88	mg/L	0.098	10.88	mg/L	0.098	0.90%
Ni 231.604†	1512.6	0.5024	mg/L	0.00412	0.5024	mg/L	0.00412	0.82%
Pb 220.353†	16188.3	1.988	mg/L	0.0044	1.988	mg/L	0.0044	0.22%
Sb 206.836†	15.1	0.00102	mg/L	0.000767	0.00102	mg/L	0.000767	75.07%
Se 196.026†	3002.2	2.046	mg/L	0.0109	2.046	mg/L	0.0109	0.53%
Si 288.158†	2866.8	2.437	mg/L	0.0072	2.437	mg/L	0.0072	0.30%
Sn 189.927†	-24.8	-0.00344	mg/L	0.000950	-0.00344	mg/L	0.000950	27.62%
Sr 421.552†	427329.8	0.5077	mg/L	0.00060	0.5077	mg/L	0.00060	0.12%
Ti 334.903†	164.1	0.00619	mg/L	0.000608	0.00619	mg/L	0.000608	9.81%
Tl 190.801†	3331.1	2.053	mg/L	0.0081	2.053	mg/L	0.0081	0.39%
V 292.402†	78938.5	0.5148	mg/L	0.00312	0.5148	mg/L	0.00312	0.61%
Zn 206.200†	1656.5	0.4940	mg/L	0.00138	0.4940	mg/L	0.00138	0.28%

Sequence No.: 49
Sample ID: AHP8 B TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 344
Date Collected: 6/18/2015 12:27:27 PM
Data Type: Original

Nebulizer Parameters: AHP8 B TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 B TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2750706.9	100.9	%	0.43				0.42%
ScR 361.383	291839.4	102.1	%	0.77				0.75%
Ag 328.068†	-19.7	-0.00008	mg/L	0.000197	-0.00008	mg/L	0.000197	236.66%
Al 308.215†	151.5	0.1565	mg/L	0.00155	0.1565	mg/L	0.00155	0.99%
As 188.979†	6.0	0.00432	mg/L	0.002472	0.00432	mg/L	0.002472	57.19%
B 249.677†	46.2	0.00907	mg/L	0.001074	0.00907	mg/L	0.001074	11.85%
Ba 233.527†	31.5	0.00642	mg/L	0.000136	0.00642	mg/L	0.000136	2.12%
Be 313.042†	43.6	0.00009	mg/L	0.000016	0.00009	mg/L	0.000016	17.73%
Ca 317.933†	28160.1	3.542	mg/L	0.0147	3.542	mg/L	0.0147	0.42%
Cd 228.802†	7.6	0.00033	mg/L	0.000118	0.00033	mg/L	0.000118	36.32%
Co 228.616†	9.8	0.00031	mg/L	0.000108	0.00031	mg/L	0.000108	34.99%
Cr 267.716†	-0.7	-0.00012	mg/L	0.000905	-0.00012	mg/L	0.000905	728.17%
Cu 324.752†	616.0	0.00226	mg/L	0.000108	0.00226	mg/L	0.000108	4.77%
Fe 273.955†	207.7	0.2118	mg/L	0.00198	0.2118	mg/L	0.00198	0.93%
K 766.490†	894.6	0.3447	mg/L	0.00251	0.3447	mg/L	0.00251	0.73%
Mg 279.077†	268.7	0.3713	mg/L	0.00339	0.3713	mg/L	0.00339	0.91%
Mn 257.610†	281.4	0.00642	mg/L	0.000119	0.00642	mg/L	0.000119	1.85%
Mo 202.031†	16.2	0.00084	mg/L	0.000024	0.00084	mg/L	0.000024	2.92%
Na 589.592†	8074.6	0.5135	mg/L	0.00383	0.5135	mg/L	0.00383	0.75%
Na 330.237†	9.9	0.4060	mg/L	0.22685	0.4060	mg/L	0.22685	55.88%
Ni 231.604†	-2.2	-0.00074	mg/L	0.000541	-0.00074	mg/L	0.000541	73.44%
Pb 220.353†	4.5	0.00058	mg/L	0.000379	0.00058	mg/L	0.000379	65.56%
Sb 206.836†	-3.0	-0.00113	mg/L	0.001345	-0.00113	mg/L	0.001345	119.19%
Se 196.026†	7.3	0.00498	mg/L	0.001555	0.00498	mg/L	0.001555	31.22%
Si 288.158†	2736.7	2.325	mg/L	0.0221	2.325	mg/L	0.0221	0.95%
Sn 189.927†	-8.6	-0.00139	mg/L	0.000209	-0.00139	mg/L	0.000209	15.06%
Sr 421.552†	12317.3	0.01463	mg/L	0.000040	0.01463	mg/L	0.000040	0.27%
Ti 334.903†	135.2	0.00596	mg/L	0.000381	0.00596	mg/L	0.000381	6.39%
Tl 190.801†	-1.2	-0.00074	mg/L	0.000667	-0.00074	mg/L	0.000667	89.55%
V 292.402†	104.4	0.00067	mg/L	0.000103	0.00067	mg/L	0.000103	15.35%
Zn 206.200†	26.9	0.00798	mg/L	0.000330	0.00798	mg/L	0.000330	4.14%

AUG 2015

Sequence No.: 50
Sample ID: AHP8 MB1SPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 345
Date Collected: 6/18/2015 12:31:41 PM
Data Type: Original

Nebulizer Parameters: AHP8 MB1SPK TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB1SPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2699223.1	98.97	%	0.367				0.37%
ScR 361.383	288852.2	101.0	%	0.65				0.64%
Ag 328.068†	125782.8	0.5313	mg/L	0.00367	0.5313	mg/L	0.00367	0.69%
Al 308.215†	1966.1	2.023	mg/L	0.0217	2.023	mg/L	0.0217	1.07%
As 188.979†	2605.7	2.033	mg/L	0.0165	2.033	mg/L	0.0165	0.81%
B 249.677†	6.4	0.00025	mg/L	0.000528	0.00025	mg/L	0.000528	213.44%
Ba 233.527†	10080.4	2.057	mg/L	0.0189	2.057	mg/L	0.0189	0.92%
Be 313.042†	227273.0	0.4833	mg/L	0.00104	0.4833	mg/L	0.00104	0.22%
Ca 317.933†	77971.2	9.806	mg/L	0.0231	9.806	mg/L	0.0231	0.24%
Cd 228.802†	11346.6	0.5001	mg/L	0.00265	0.5001	mg/L	0.00265	0.53%
Co 228.616†	15494.8	0.5030	mg/L	0.00239	0.5030	mg/L	0.00239	0.47%
Cr 267.716†	3404.0	0.5134	mg/L	0.00357	0.5134	mg/L	0.00357	0.70%
Cu 324.752†	139737.0	0.5124	mg/L	0.00242	0.5124	mg/L	0.00242	0.47%
Fe 273.955†	1998.3	2.033	mg/L	0.0152	2.033	mg/L	0.0152	0.75%
K 766.490†	26197.8	10.09	mg/L	0.040	10.09	mg/L	0.040	0.40%
Mg 279.077†	7410.0	10.24	mg/L	0.086	10.24	mg/L	0.086	0.84%
Mn 257.610†	21010.4	0.4804	mg/L	0.00138	0.4804	mg/L	0.00138	0.29%
Mo 202.031†	28.2	0.00139	mg/L	0.000236	0.00139	mg/L	0.000236	16.96%
Na 589.592†	156075.0	9.926	mg/L	0.0301	9.926	mg/L	0.0301	0.30%
Na 330.237†	257.3	10.42	mg/L	0.080	10.42	mg/L	0.080	0.77%
Ni 231.604†	1506.4	0.5003	mg/L	0.00300	0.5003	mg/L	0.00300	0.60%
Pb 220.353†	16042.5	1.970	mg/L	0.0093	1.970	mg/L	0.0093	0.47%
Sb 206.836†	16.0	0.00139	mg/L	0.001348	0.00139	mg/L	0.001348	97.15%
Se 196.026†	2985.9	2.035	mg/L	0.0107	2.035	mg/L	0.0107	0.53%
Si 288.158†	18.5	0.01756	mg/L	0.000305	0.01756	mg/L	0.000305	1.74%
Sn 189.927†	-18.0	-0.00249	mg/L	0.000846	-0.00249	mg/L	0.000846	33.93%
Sr 421.552†	415610.2	0.4938	mg/L	0.00127	0.4938	mg/L	0.00127	0.26%
Ti 334.903†	24.1	0.00005	mg/L	0.000073	0.00005	mg/L	0.000073	138.43%
Tl 190.801†	3314.2	2.043	mg/L	0.0132	2.043	mg/L	0.0132	0.65%
V 292.402†	78295.2	0.5106	mg/L	0.00319	0.5106	mg/L	0.00319	0.62%
Zn 206.200†	1602.6	0.4780	mg/L	0.00513	0.4780	mg/L	0.00513	1.07%

Sequence No.: 51
Sample ID: AHP4 MB2MSD TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 346
Date Collected: 6/18/2015 12:35:41 PM
Data Type: Original

Nebulizer Parameters: AHP4 MB2MSD TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP4 MB2MSD TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2731808.4	100.2	%	1.07				1.07%
ScR 361.383	289845.7	101.4	%	0.73				0.72%
Ag 328.068†	124641.6	0.5265	mg/L	0.00662	0.5265	mg/L	0.00662	1.26%
Al 308.215†	1939.8	1.996	mg/L	0.0211	1.996	mg/L	0.0211	1.06%
As 188.979†	2596.4	2.026	mg/L	0.0268	2.026	mg/L	0.0268	1.32%
B 249.677†	11.4	0.00123	mg/L	0.000289	0.00123	mg/L	0.000289	23.44%
Ba 233.527†	9963.3	2.033	mg/L	0.0190	2.033	mg/L	0.0190	0.93%
Be 313.042†	223543.8	0.4754	mg/L	0.00075	0.4754	mg/L	0.00075	0.16%
Ca 317.933†	76695.7	9.646	mg/L	0.0505	9.646	mg/L	0.0505	0.52%
Cd 228.802†	11213.2	0.4941	mg/L	0.00620	0.4941	mg/L	0.00620	1.25%
Co 228.616†	15291.6	0.4964	mg/L	0.00556	0.4964	mg/L	0.00556	1.12%
Cr 267.716†	3352.8	0.5057	mg/L	0.00497	0.5057	mg/L	0.00497	0.98%
Cu 324.752†	136976.5	0.5022	mg/L	0.00585	0.5022	mg/L	0.00585	1.16%
Fe 273.955†	1972.4	2.007	mg/L	0.0209	2.007	mg/L	0.0209	1.04%
K 766.490†	25588.0	9.859	mg/L	0.0656	9.859	mg/L	0.0656	0.67%
Mg 279.077†	7333.8	10.14	mg/L	0.104	10.14	mg/L	0.104	1.02%
Mn 257.610†	20636.6	0.4718	mg/L	0.00283	0.4718	mg/L	0.00283	0.60%
Mo 202.031†	26.2	0.00128	mg/L	0.000274	0.00128	mg/L	0.000274	21.36%
Na 589.592†	152328.8	9.688	mg/L	0.0304	9.688	mg/L	0.0304	0.31%
Na 330.237†	252.1	10.20	mg/L	0.235	10.20	mg/L	0.235	2.31%
Ni 231.604†	1490.7	0.4951	mg/L	0.00341	0.4951	mg/L	0.00341	0.69%
Pb 220.353†	15862.8	1.948	mg/L	0.0242	1.948	mg/L	0.0242	1.24%
Sb 206.836†	9.7	-0.00089	mg/L	0.000921	-0.00089	mg/L	0.000921	103.39%
Se 196.026†	2963.3	2.020	mg/L	0.0281	2.020	mg/L	0.0281	1.39%
Si 288.158†	21.4	0.01999	mg/L	0.007213	0.01999	mg/L	0.007213	36.08%
Sn 189.927†	-19.5	-0.00284	mg/L	0.000431	-0.00284	mg/L	0.000431	15.16%
Sr 421.552†	404975.8	0.4812	mg/L	0.00098	0.4812	mg/L	0.00098	0.20%
Ti 334.903†	24.1	0.00007	mg/L	0.000547	0.00007	mg/L	0.000547	807.69%
Tl 190.801†	3277.9	2.020	mg/L	0.0360	2.020	mg/L	0.0360	1.78%
V 292.402†	77154.7	0.5031	mg/L	0.00718	0.5031	mg/L	0.00718	1.43%
Zn 206.200†	1593.2	0.4752	mg/L	0.00491	0.4752	mg/L	0.00491	1.03%

Sequence No.: 52
Sample ID: CV @
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 12:39:41 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2737360.6	100.4	%	0.57				0.57%
ScR 361.383	287126.4	100.4	%	0.66				0.66%
Ag 328.068†	246204.8	1.040	mg/L	0.0002	1.040	mg/L	0.0002	0.02%
Al 308.215†	1969.0	2.000	mg/L	0.0181	2.000	mg/L	0.0181	0.90%
As 188.979†	2511.2	1.990	mg/L	0.0083	1.990	mg/L	0.0083	0.42%
B 249.677†	5005.6	0.9816	mg/L	0.00732	0.9816	mg/L	0.00732	0.75%
Ba 233.527†	5083.8	1.037	mg/L	0.0088	1.037	mg/L	0.0088	0.85%
Be 313.042†	453346.2	0.9641	mg/L	0.00565	0.9641	mg/L	0.00565	0.59%
Ca 317.933†	16534.5	2.079	mg/L	0.0140	2.079	mg/L	0.0140	0.67%
Cd 228.802†	23353.7	1.043	mg/L	0.0037	1.043	mg/L	0.0037	0.36%
Co 228.616†	31599.6	1.024	mg/L	0.0034	1.024	mg/L	0.0034	0.33%
Cr 267.716†	6847.7	1.034	mg/L	0.0086	1.034	mg/L	0.0086	0.83%
Cu 324.752†	278684.1	1.021	mg/L	0.0035	1.021	mg/L	0.0035	0.34%
Fe 273.955†	1991.0	2.021	mg/L	0.0172	2.021	mg/L	0.0172	0.85%
K 766.490†	52618.4	20.27	mg/L	0.050	20.27	mg/L	0.050	0.24%
Mg 279.077†	1452.8	2.017	mg/L	0.0180	2.017	mg/L	0.0180	0.89%
Mn 257.610†	42298.3	0.9668	mg/L	0.00335	0.9668	mg/L	0.00335	0.35%
Mo 202.031†	18186.9	1.016	mg/L	0.0051	1.016	mg/L	0.0051	0.50%
Na 589.592†	782982.6	49.80	mg/L	0.063	49.80	mg/L	0.063	0.13%
Na 330.237†	1259.6	51.61	mg/L	0.629	51.61	mg/L	0.629	1.22%
Ni 231.604†	3017.9	1.004	mg/L	0.0069	1.004	mg/L	0.0069	0.69%
Pb 220.353†	16214.6	1.991	mg/L	0.0089	1.991	mg/L	0.0089	0.45%
Sb 206.836†	5535.0	2.055	mg/L	0.0120	2.055	mg/L	0.0120	0.58%
Se 196.026†	2953.2	2.012	mg/L	0.0139	2.012	mg/L	0.0139	0.69%
Si 288.158†	2379.3	1.995	mg/L	0.0145	1.995	mg/L	0.0145	0.72%
Sn 189.927†	4680.2	1.019	mg/L	0.0066	1.019	mg/L	0.0066	0.65%
Sr 421.552†	834483.0	0.9915	mg/L	0.00221	0.9915	mg/L	0.00221	0.22%
Ti 334.903†	21571.8	1.004	mg/L	0.0027	1.004	mg/L	0.0027	0.27%
Tl 190.801†	3243.3	1.995	mg/L	0.0081	1.995	mg/L	0.0081	0.40%
V 292.402†	154148.0	1.005	mg/L	0.0014	1.005	mg/L	0.0014	0.14%
Zn 206.200†	3316.9	0.9891	mg/L	0.00629	0.9891	mg/L	0.00629	0.64%

Sequence No.: 53
Sample ID: CB6
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 12:43:44 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2734329.9	100.3	%	0.89				0.89%
ScR 361.383	289865.3	101.4	%	0.65				0.64%
Ag 328.068†	-14.1	-0.00006	mg/L	0.000150	-0.00006	mg/L	0.000150	250.68%
Al 308.215†	5.6	0.00579	mg/L	0.006395	0.00579	mg/L	0.006395	110.38%
As 188.979†	1.0	0.00080	mg/L	0.000647	0.00080	mg/L	0.000647	80.37%
B 249.677†	9.8	0.00192	mg/L	0.000336	0.00192	mg/L	0.000336	17.51%
Ba 233.527†	4.1	0.00083	mg/L	0.000542	0.00083	mg/L	0.000542	65.15%
Be 313.042†	56.3	0.00012	mg/L	0.000031	0.00012	mg/L	0.000031	26.26%
Ca 317.933†	10.3	0.00129	mg/L	0.000132	0.00129	mg/L	0.000132	10.22%
Cd 228.802†	6.5	0.00029	mg/L	0.000158	0.00029	mg/L	0.000158	54.41%
Co 228.616†	3.1	0.00010	mg/L	0.000085	0.00010	mg/L	0.000085	83.94%
Cr 267.716†	-2.5	-0.00037	mg/L	0.000488	-0.00037	mg/L	0.000488	130.66%
Cu 324.752†	108.4	0.00040	mg/L	0.000051	0.00040	mg/L	0.000051	12.87%
Fe 273.955†	2.5	0.00254	mg/L	0.002467	0.00254	mg/L	0.002467	97.14%
K 766.490†	10.3	0.00396	mg/L	0.007120	0.00396	mg/L	0.007120	179.68%
Mg 279.077†	2.9	0.00396	mg/L	0.002891	0.00396	mg/L	0.002891	73.00%
Mn 257.610†	1.9	0.00004	mg/L	0.000073	0.00004	mg/L	0.000073	170.25%
Mo 202.031†	30.5	0.00171	mg/L	0.000602	0.00171	mg/L	0.000602	35.31%
Na 589.592†	4.0	0.00025	mg/L	0.002476	0.00025	mg/L	0.002476	972.29%
Na 330.237†	-3.5	-0.1425	mg/L	0.19029	-0.1425	mg/L	0.19029	133.57%
Ni 231.604†	1.9	0.00064	mg/L	0.001650	0.00064	mg/L	0.001650	256.56%
Pb 220.353†	3.3	0.00040	mg/L	0.000475	0.00040	mg/L	0.000475	117.93%
Sb 206.836†	10.3	0.00385	mg/L	0.002931	0.00385	mg/L	0.002931	76.14%
Se 196.026†	-1.0	-0.00070	mg/L	0.004453	-0.00070	mg/L	0.004453	639.43%
Si 288.158†	-7.0	-0.00599	mg/L	0.003051	-0.00599	mg/L	0.003051	50.98%
Sn 189.927†	3.3	0.00072	mg/L	0.000146	0.00072	mg/L	0.000146	20.31%
Sr 421.552†	57.0	0.00007	mg/L	0.000041	0.00007	mg/L	0.000041	60.11%
Ti 334.903†	4.1	0.00019	mg/L	0.000251	0.00019	mg/L	0.000251	132.68%
Tl 190.801†	0.9	0.00058	mg/L	0.001494	0.00058	mg/L	0.001494	257.00%
V 292.402†	22.2	0.00014	mg/L	0.000137	0.00014	mg/L	0.000137	95.30%
Zn 206.200†	-1.7	-0.00049	mg/L	0.000611	-0.00049	mg/L	0.000611	124.11%

Sequence No.: 54
Sample ID: AHP8 C TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 347
Date Collected: 6/18/2015 12:47:59 PM
Data Type: Original

Nebulizer Parameters: AHP8 C TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 C TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2736683.1	100.3	%	0.20				0.20%
ScR 361.383	286814.1	100.3	%	0.31				0.31%
Ag 328.068†	-40.4	-0.00017	mg/L	0.000092	-0.00017	mg/L	0.000092	53.68%
Al 308.215†	103.5	0.1068	mg/L	0.00557	0.1068	mg/L	0.00557	5.21%
As 188.979†	4.8	0.00330	mg/L	0.002193	0.00330	mg/L	0.002193	66.45%
B 249.677†	48.8	0.00957	mg/L	0.001239	0.00957	mg/L	0.001239	12.94%
Ba 233.527†	26.6	0.00541	mg/L	0.000509	0.00541	mg/L	0.000509	9.40%
Be 313.042†	26.3	0.00006	mg/L	0.000015	0.00006	mg/L	0.000015	27.68%
Ca 317.933†	27390.6	3.445	mg/L	0.0314	3.445	mg/L	0.0314	0.91%
Cd 228.802†	3.5	0.00015	mg/L	0.000152	0.00015	mg/L	0.000152	104.71%
Co 228.616†	7.0	0.00022	mg/L	0.000064	0.00022	mg/L	0.000064	29.30%
Cr 267.716†	-0.7	-0.00013	mg/L	0.000915	-0.00013	mg/L	0.000915	728.96%
Cu 324.752†	393.8	0.00145	mg/L	0.000020	0.00145	mg/L	0.000020	1.36%
Fe 273.955†	94.0	0.09586	mg/L	0.002506	0.09586	mg/L	0.002506	2.61%
K 766.490†	847.0	0.3263	mg/L	0.00984	0.3263	mg/L	0.00984	3.02%
Mg 279.077†	229.5	0.3172	mg/L	0.00658	0.3172	mg/L	0.00658	2.07%
Mn 257.610†	172.0	0.00392	mg/L	0.000030	0.00392	mg/L	0.000030	0.77%
Mo 202.031†	19.1	0.00100	mg/L	0.000146	0.00100	mg/L	0.000146	14.57%
Na 589.592†	7760.5	0.4935	mg/L	0.00378	0.4935	mg/L	0.00378	0.77%
Na 330.237†	10.9	0.4488	mg/L	0.15076	0.4488	mg/L	0.15076	33.60%
Ni 231.604†	-3.0	-0.00098	mg/L	0.001225	-0.00098	mg/L	0.001225	124.46%
Pb 220.353†	3.7	0.00048	mg/L	0.000301	0.00048	mg/L	0.000301	62.44%
Sb 206.836†	-2.3	-0.00085	mg/L	0.000731	-0.00085	mg/L	0.000731	85.69%
Se 196.026†	3.9	0.00268	mg/L	0.003558	0.00268	mg/L	0.003558	132.79%
Si 288.158†	2562.8	2.177	mg/L	0.0146	2.177	mg/L	0.0146	0.67%
Sn 189.927†	-7.5	-0.00117	mg/L	0.000570	-0.00117	mg/L	0.000570	48.64%
Sr 421.552†	12254.5	0.01456	mg/L	0.000126	0.01456	mg/L	0.000126	0.86%
Ti 334.903†	102.0	0.00443	mg/L	0.000331	0.00443	mg/L	0.000331	7.48%
Tl 190.801†	2.8	0.00176	mg/L	0.001363	0.00176	mg/L	0.001363	77.45%
V 292.402†	71.9	0.00046	mg/L	0.000075	0.00046	mg/L	0.000075	16.20%
Zn 206.200†	9.6	0.00280	mg/L	0.000354	0.00280	mg/L	0.000354	12.64%

Sequence No.: 55
Sample ID: AHP8 D TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 348
Date Collected: 6/18/2015 12:52:15 PM
Data Type: Original

Nebulizer Parameters: AHP8 D TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 D TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2721672.4	99.79	%	1.581				1.58%
ScR 361.383	290120.9	101.5	%	0.71				0.70%
Ag 328.068†	-39.6	-0.00017	mg/L	0.000029	-0.00017	mg/L	0.000029	17.46%
Al 308.215†	93.8	0.09688	mg/L	0.002806	0.09688	mg/L	0.002806	2.90%
As 188.979†	4.8	0.00327	mg/L	0.001058	0.00327	mg/L	0.001058	32.34%
B 249.677†	53.3	0.01047	mg/L	0.000792	0.01047	mg/L	0.000792	7.57%
Ba 233.527†	28.4	0.00579	mg/L	0.000809	0.00579	mg/L	0.000809	13.97%
Be 313.042†	21.1	0.00004	mg/L	0.000013	0.00004	mg/L	0.000013	29.33%
Ca 317.933†	27372.8	3.443	mg/L	0.0094	3.443	mg/L	0.0094	0.27%
Cd 228.802†	3.0	0.00012	mg/L	0.000215	0.00012	mg/L	0.000215	172.16%
Co 228.616†	10.9	0.00035	mg/L	0.000154	0.00035	mg/L	0.000154	44.51%
Cr 267.716†	2.2	0.00031	mg/L	0.001204	0.00031	mg/L	0.001204	385.25%
Cu 324.752†	321.1	0.00118	mg/L	0.000167	0.00118	mg/L	0.000167	14.21%
Fe 273.955†	89.6	0.09131	mg/L	0.001561	0.09131	mg/L	0.001561	1.71%
K 766.490†	820.4	0.3161	mg/L	0.01167	0.3161	mg/L	0.01167	3.69%
Mg 279.077†	233.1	0.3222	mg/L	0.00486	0.3222	mg/L	0.00486	1.51%
Mn 257.610†	135.7	0.00309	mg/L	0.000094	0.00309	mg/L	0.000094	3.04%
Mo 202.031†	21.4	0.00113	mg/L	0.000218	0.00113	mg/L	0.000218	19.26%
Na 589.592†	7644.7	0.4862	mg/L	0.00360	0.4862	mg/L	0.00360	0.74%
Na 330.237†	9.6	0.3948	mg/L	0.18115	0.3948	mg/L	0.18115	45.89%
Ni 231.604†	0.6	0.00021	mg/L	0.002068	0.00021	mg/L	0.002068	>999.9%
Pb 220.353†	-1.1	-0.00011	mg/L	0.000219	-0.00011	mg/L	0.000219	200.48%
Sb 206.836†	1.3	0.00048	mg/L	0.001715	0.00048	mg/L	0.001715	359.40%
Se 196.026†	0.0	0.00001	mg/L	0.002319	0.00001	mg/L	0.002319	>999.9%
Si 288.158†	2571.8	2.185	mg/L	0.0126	2.185	mg/L	0.0126	0.58%
Sn 189.927†	-7.2	-0.00111	mg/L	0.000290	-0.00111	mg/L	0.000290	26.20%
Sr 421.552†	12160.2	0.01445	mg/L	0.000082	0.01445	mg/L	0.000082	0.57%
Ti 334.903†	90.9	0.00391	mg/L	0.000185	0.00391	mg/L	0.000185	4.72%
Tl 190.801†	2.0	0.00127	mg/L	0.000949	0.00127	mg/L	0.000949	74.87%
V 292.402†	85.1	0.00055	mg/L	0.000063	0.00055	mg/L	0.000063	11.45%
Zn 206.200†	3.5	0.00099	mg/L	0.000438	0.00099	mg/L	0.000438	44.09%

Sequence No.: 56
Sample ID: AHP8 E TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 349
Date Collected: 6/18/2015 12:56:29 PM
Data Type: Original

Nebulizer Parameters: AHP8 E TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 E TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2724947.0	99.91	%	0.455				0.46%
ScR 361.383	286406.2	100.2	%	0.76				0.76%
Ag 328.068†	-26.6	-0.00011	mg/L	0.000141	-0.00011	mg/L	0.000141	125.85%
Al 308.215†	96.3	0.09946	mg/L	0.004324	0.09946	mg/L	0.004324	4.35%
As 188.979†	5.0	0.00345	mg/L	0.002539	0.00345	mg/L	0.002539	73.62%
B 249.677†	47.6	0.00935	mg/L	0.000736	0.00935	mg/L	0.000736	7.87%
Ba 233.527†	29.9	0.00609	mg/L	0.000198	0.00609	mg/L	0.000198	3.25%
Be 313.042†	22.2	0.00005	mg/L	0.000008	0.00005	mg/L	0.000008	17.24%
Ca 317.933†	28401.8	3.572	mg/L	0.0226	3.572	mg/L	0.0226	0.63%
Cd 228.802†	6.0	0.00026	mg/L	0.000157	0.00026	mg/L	0.000157	59.96%
Co 228.616†	8.8	0.00028	mg/L	0.000102	0.00028	mg/L	0.000102	37.14%
Cr 267.716†	0.8	0.00010	mg/L	0.000960	0.00010	mg/L	0.000960	950.80%
Cu 324.752†	446.7	0.00164	mg/L	0.000036	0.00164	mg/L	0.000036	2.19%
Fe 273.955†	93.9	0.09575	mg/L	0.001363	0.09575	mg/L	0.001363	1.42%
K 766.490†	845.2	0.3256	mg/L	0.00205	0.3256	mg/L	0.00205	0.63%
Mg 279.077†	252.1	0.3484	mg/L	0.00274	0.3484	mg/L	0.00274	0.79%
Mn 257.610†	159.8	0.00364	mg/L	0.000106	0.00364	mg/L	0.000106	2.93%
Mo 202.031†	20.7	0.00109	mg/L	0.000261	0.00109	mg/L	0.000261	23.86%
Na 589.592†	7737.9	0.4921	mg/L	0.00251	0.4921	mg/L	0.00251	0.51%
Na 330.237†	15.3	0.6289	mg/L	0.18454	0.6289	mg/L	0.18454	29.34%
Ni 231.604†	2.1	0.00069	mg/L	0.001171	0.00069	mg/L	0.001171	169.22%
Pb 220.353†	-4.6	-0.00054	mg/L	0.000377	-0.00054	mg/L	0.000377	69.67%
Sb 206.836†	-0.0	-0.00002	mg/L	0.000986	-0.00002	mg/L	0.000986	>999.9%
Se 196.026†	-1.6	-0.00110	mg/L	0.002821	-0.00110	mg/L	0.002821	256.29%
Si 288.158†	2597.2	2.206	mg/L	0.0258	2.206	mg/L	0.0258	1.17%
Sn 189.927†	-6.2	-0.00087	mg/L	0.000547	-0.00087	mg/L	0.000547	62.57%
Sr 421.552†	12385.9	0.01472	mg/L	0.000043	0.01472	mg/L	0.000043	0.29%
Ti 334.903†	107.4	0.00466	mg/L	0.000211	0.00466	mg/L	0.000211	4.53%
Tl 190.801†	2.3	0.00141	mg/L	0.001019	0.00141	mg/L	0.001019	72.22%
V 292.402†	90.2	0.00058	mg/L	0.000143	0.00058	mg/L	0.000143	24.52%
Zn 206.200†	7.5	0.00218	mg/L	0.000542	0.00218	mg/L	0.000542	24.87%

Sequence No.: 57
Sample ID: AHP8 F TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 350
Date Collected: 6/18/2015 1:00:43 PM
Data Type: Original

Nebulizer Parameters: AHP8 F TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 F TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2771966.3	101.6	%	0.79				0.77%
ScR 361.383	291703.7	102.0	%	0.84				0.82%
Ag 328.068†	-42.2	-0.00018	mg/L	0.000030	-0.00018	mg/L	0.000030	16.65%
Al 308.215†	99.3	0.1025	mg/L	0.00350	0.1025	mg/L	0.00350	3.41%
As 188.979†	6.2	0.00436	mg/L	0.000935	0.00436	mg/L	0.000935	21.43%
B 249.677†	42.7	0.00839	mg/L	0.000561	0.00839	mg/L	0.000561	6.69%
Ba 233.527†	30.1	0.00612	mg/L	0.000439	0.00612	mg/L	0.000439	7.17%
Be 313.042†	18.5	0.00004	mg/L	0.000016	0.00004	mg/L	0.000016	41.61%
Ca 317.933†	28705.5	3.610	mg/L	0.0360	3.610	mg/L	0.0360	1.00%
Cd 228.802†	4.9	0.00020	mg/L	0.000169	0.00020	mg/L	0.000169	83.62%
Co 228.616†	9.4	0.00030	mg/L	0.000182	0.00030	mg/L	0.000182	60.75%
Cr 267.716†	-2.3	-0.00036	mg/L	0.001215	-0.00036	mg/L	0.001215	336.32%
Cu 324.752†	503.3	0.00185	mg/L	0.000148	0.00185	mg/L	0.000148	7.98%
Fe 273.955†	191.1	0.1949	mg/L	0.00211	0.1949	mg/L	0.00211	1.08%
K 766.490†	925.2	0.3565	mg/L	0.01236	0.3565	mg/L	0.01236	3.47%
Mg 279.077†	264.0	0.3648	mg/L	0.00479	0.3648	mg/L	0.00479	1.31%
Mn 257.610†	293.9	0.00670	mg/L	0.000108	0.00670	mg/L	0.000108	1.61%
Mo 202.031†	14.7	0.00076	mg/L	0.000150	0.00076	mg/L	0.000150	19.88%
Na 589.592†	8216.3	0.5225	mg/L	0.00783	0.5225	mg/L	0.00783	1.50%
Na 330.237†	14.2	0.5815	mg/L	0.21156	0.5815	mg/L	0.21156	36.38%
Ni 231.604†	-1.3	-0.00042	mg/L	0.001173	-0.00042	mg/L	0.001173	279.03%
Pb 220.353†	1.8	0.00024	mg/L	0.000330	0.00024	mg/L	0.000330	139.56%
Sb 206.836†	0.9	0.00033	mg/L	0.000749	0.00033	mg/L	0.000749	224.42%
Se 196.026†	1.7	0.00113	mg/L	0.002242	0.00113	mg/L	0.002242	198.46%
Si 288.158†	2642.7	2.245	mg/L	0.0180	2.245	mg/L	0.0180	0.80%
Sn 189.927†	-6.1	-0.00085	mg/L	0.000292	-0.00085	mg/L	0.000292	34.58%
Sr 421.552†	12506.6	0.01486	mg/L	0.000132	0.01486	mg/L	0.000132	0.89%
Ti 334.903†	78.2	0.00330	mg/L	0.000296	0.00330	mg/L	0.000296	8.97%
Tl 190.801†	0.4	0.00026	mg/L	0.004153	0.00026	mg/L	0.004153	>999.9%
V 292.402†	84.6	0.00054	mg/L	0.000103	0.00054	mg/L	0.000103	18.97%
Zn 206.200†	26.9	0.00797	mg/L	0.000207	0.00797	mg/L	0.000207	2.60%

Sequence No.: 58
Sample ID: AHP8 G TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 351
Date Collected: 6/18/2015 1:04:57 PM
Data Type: Original

Nebulizer Parameters: AHP8 G TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP8 G TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2741807.1	100.5	%	0.86				0.86%
ScR 361.383	289935.0	101.4	%	0.95				0.94%
Ag 328.068†	-28.6	-0.00012	mg/L	0.000125	-0.00012	mg/L	0.000125	103.80%
Al 308.215†	45.5	0.04698	mg/L	0.006035	0.04698	mg/L	0.006035	12.85%
As 188.979†	3.9	0.00262	mg/L	0.004040	0.00262	mg/L	0.004040	154.42%
B 249.677†	4.5	0.00088	mg/L	0.000441	0.00088	mg/L	0.000441	50.15%
Ba 233.527†	30.9	0.00631	mg/L	0.000564	0.00631	mg/L	0.000564	8.94%
Be 313.042†	17.0	0.00004	mg/L	0.000015	0.00004	mg/L	0.000015	41.46%
Ca 317.933†	24250.4	3.050	mg/L	0.0126	3.050	mg/L	0.0126	0.41%
Cd 228.802†	2.9	0.00012	mg/L	0.000077	0.00012	mg/L	0.000077	62.00%
Co 228.616†	4.8	0.00015	mg/L	0.000163	0.00015	mg/L	0.000163	106.74%
Cr 267.716†	3.5	0.00050	mg/L	0.000347	0.00050	mg/L	0.000347	68.91%
Cu 324.752†	186.8	0.00068	mg/L	0.000078	0.00068	mg/L	0.000078	11.45%
Fe 273.955†	37.6	0.03834	mg/L	0.002252	0.03834	mg/L	0.002252	5.87%
K 766.490†	1204.1	0.4639	mg/L	0.00197	0.4639	mg/L	0.00197	0.42%
Mg 279.077†	278.1	0.3845	mg/L	0.00771	0.3845	mg/L	0.00771	2.01%
Mn 257.610†	52.9	0.00120	mg/L	0.000031	0.00120	mg/L	0.000031	2.55%
Mo 202.031†	19.7	0.00104	mg/L	0.000149	0.00104	mg/L	0.000149	14.31%
Na 589.592†	7476.7	0.4755	mg/L	0.00259	0.4755	mg/L	0.00259	0.55%
Na 330.237†	11.6	0.4775	mg/L	0.07128	0.4775	mg/L	0.07128	14.93%
Ni 231.604†	-1.7	-0.00056	mg/L	0.001159	-0.00056	mg/L	0.001159	206.23%
Pb 220.353†	1.4	0.00018	mg/L	0.000438	0.00018	mg/L	0.000438	243.68%
Sb 206.836†	2.8	0.00101	mg/L	0.000838	0.00101	mg/L	0.000838	83.21%
Se 196.026†	1.0	0.00070	mg/L	0.003834	0.00070	mg/L	0.003834	549.72%
Si 288.158†	2759.5	2.344	mg/L	0.0255	2.344	mg/L	0.0255	1.09%
Sn 189.927†	-5.9	-0.00088	mg/L	0.000551	-0.00088	mg/L	0.000551	62.35%
Sr 421.552†	9108.7	0.01082	mg/L	0.000082	0.01082	mg/L	0.000082	0.76%
Ti 334.903†	38.9	0.00152	mg/L	0.000281	0.00152	mg/L	0.000281	18.46%
Tl 190.801†	1.4	0.00086	mg/L	0.001494	0.00086	mg/L	0.001494	173.60%
V 292.402†	77.8	0.00051	mg/L	0.000077	0.00051	mg/L	0.000077	15.31%
Zn 206.200†	1.3	0.00036	mg/L	0.000565	0.00036	mg/L	0.000565	155.79%

Sequence No.: 59
Sample ID: AHP8 H TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 352
Date Collected: 6/18/2015 1:09:11 PM
Data Type: Original

Nebulizer Parameters: AHP8 H TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 H TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2755522.5	101.0	%	0.74				0.73%
ScR 361.383	293186.2	102.6	%	0.79				0.77%
Ag 328.068†	-78.2	-0.00033	mg/L	0.000133	-0.00033	mg/L	0.000133	40.28%
Al 308.215†	83.3	0.08597	mg/L	0.004831	0.08597	mg/L	0.004831	5.62%
As 188.979†	3.9	0.00254	mg/L	0.003318	0.00254	mg/L	0.003318	130.74%
B 249.677†	48.0	0.00942	mg/L	0.000926	0.00942	mg/L	0.000926	9.83%
Ba 233.527†	30.0	0.00611	mg/L	0.000766	0.00611	mg/L	0.000766	12.53%
Be 313.042†	19.6	0.00004	mg/L	0.000010	0.00004	mg/L	0.000010	23.08%
Ca 317.933†	28233.1	3.551	mg/L	0.0204	3.551	mg/L	0.0204	0.57%
Cd 228.802†	5.2	0.00023	mg/L	0.000153	0.00023	mg/L	0.000153	66.11%
Co 228.616†	8.6	0.00027	mg/L	0.000092	0.00027	mg/L	0.000092	33.78%
Cr 267.716†	0.6	0.00006	mg/L	0.000803	0.00006	mg/L	0.000803	>999.9%
Cu 324.752†	517.4	0.00190	mg/L	0.000025	0.00190	mg/L	0.000025	1.30%
Fe 273.955†	82.5	0.08413	mg/L	0.001083	0.08413	mg/L	0.001083	1.29%
K 766.490†	838.8	0.3232	mg/L	0.00323	0.3232	mg/L	0.00323	1.00%
Mg 279.077†	237.1	0.3278	mg/L	0.00557	0.3278	mg/L	0.00557	1.70%
Mn 257.610†	154.1	0.00351	mg/L	0.000066	0.00351	mg/L	0.000066	1.88%
Mo 202.031†	19.1	0.00100	mg/L	0.000169	0.00100	mg/L	0.000169	16.91%
Na 589.592†	7810.7	0.4967	mg/L	0.00579	0.4967	mg/L	0.00579	1.16%
Na 330.237†	11.0	0.4519	mg/L	0.03889	0.4519	mg/L	0.03889	8.61%
Ni 231.604†	0.6	0.00020	mg/L	0.000241	0.00020	mg/L	0.000241	119.18%
Pb 220.353†	0.7	0.00010	mg/L	0.000705	0.00010	mg/L	0.000705	695.61%
Sb 206.836†	2.6	0.00095	mg/L	0.001151	0.00095	mg/L	0.001151	121.58%
Se 196.026†	1.3	0.00091	mg/L	0.002263	0.00091	mg/L	0.002263	249.97%
Si 288.158†	2584.0	2.195	mg/L	0.0157	2.195	mg/L	0.0157	0.72%
Sn 189.927†	-1.5	0.00015	mg/L	0.000457	0.00015	mg/L	0.000457	307.36%
Sr 421.552†	12405.0	0.01474	mg/L	0.000129	0.01474	mg/L	0.000129	0.88%
Ti 334.903†	80.8	0.00343	mg/L	0.000142	0.00343	mg/L	0.000142	4.15%
Tl 190.801†	0.5	0.00034	mg/L	0.004971	0.00034	mg/L	0.004971	>999.9%
V 292.402†	85.1	0.00055	mg/L	0.000093	0.00055	mg/L	0.000093	16.95%
Zn 206.200†	9.1	0.00267	mg/L	0.000225	0.00267	mg/L	0.000225	8.43%

AHS2 : 00125

Sequence No.: 60
Sample ID: AHP8 I TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 353
Date Collected: 6/18/2015 1:13:25 PM
Data Type: Original

Nebulizer Parameters: AHP8 I TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 I TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2721286.3	99.78	%	1.161				1.16%
ScR 361.383	289740.0	101.4	%	1.18				1.17%
Ag 328.068†	-37.3	-0.00016	mg/L	0.000119	-0.00016	mg/L	0.000119	75.54%
Al 308.215†	99.9	0.1031	mg/L	0.00090	0.1031	mg/L	0.00090	0.88%
As 188.979†	5.2	0.00361	mg/L	0.001581	0.00361	mg/L	0.001581	43.85%
B 249.677†	47.1	0.00924	mg/L	0.001233	0.00924	mg/L	0.001233	13.34%
Ba 233.527†	27.5	0.00561	mg/L	0.000180	0.00561	mg/L	0.000180	3.21%
Be 313.042†	23.5	0.00005	mg/L	0.000027	0.00005	mg/L	0.000027	54.98%
Ca 317.933†	28522.1	3.587	mg/L	0.0568	3.587	mg/L	0.0568	1.58%
Cd 228.802†	5.0	0.00021	mg/L	0.000234	0.00021	mg/L	0.000234	108.74%
Co 228.616†	8.9	0.00028	mg/L	0.000143	0.00028	mg/L	0.000143	50.78%
Cr 267.716†	-0.7	-0.00014	mg/L	0.000934	-0.00014	mg/L	0.000934	681.14%
Cu 324.752†	559.9	0.00205	mg/L	0.000079	0.00205	mg/L	0.000079	3.85%
Fe 273.955†	92.5	0.09432	mg/L	0.001982	0.09432	mg/L	0.001982	2.10%
K 766.490†	847.3	0.3265	mg/L	0.01369	0.3265	mg/L	0.01369	4.19%
Mg 279.077†	239.8	0.3315	mg/L	0.00254	0.3315	mg/L	0.00254	0.77%
Mn 257.610†	176.2	0.00401	mg/L	0.000150	0.00401	mg/L	0.000150	3.74%
Mo 202.031†	18.4	0.00096	mg/L	0.000069	0.00096	mg/L	0.000069	7.22%
Na 589.592†	7922.3	0.5038	mg/L	0.00886	0.5038	mg/L	0.00886	1.76%
Na 330.237†	9.1	0.3739	mg/L	0.35156	0.3739	mg/L	0.35156	94.02%
Ni 231.604†	-0.9	-0.00030	mg/L	0.001765	-0.00030	mg/L	0.001765	597.57%
Pb 220.353†	4.3	0.00055	mg/L	0.000808	0.00055	mg/L	0.000808	146.91%
Sb 206.836†	-0.9	-0.00032	mg/L	0.001976	-0.00032	mg/L	0.001976	614.84%
Se 196.026†	0.2	0.00017	mg/L	0.001562	0.00017	mg/L	0.001562	940.36%
Si 288.158†	2611.6	2.219	mg/L	0.0341	2.219	mg/L	0.0341	1.54%
Sn 189.927†	-2.8	-0.00012	mg/L	0.000291	-0.00012	mg/L	0.000291	235.24%
Sr 421.552†	12525.2	0.01488	mg/L	0.000199	0.01488	mg/L	0.000199	1.33%
Ti 334.903†	96.5	0.00416	mg/L	0.000141	0.00416	mg/L	0.000141	3.40%
Tl 190.801†	3.6	0.00225	mg/L	0.001253	0.00225	mg/L	0.001253	55.59%
V 292.402†	89.2	0.00057	mg/L	0.000099	0.00057	mg/L	0.000099	17.27%
Zn 206.200†	8.3	0.00243	mg/L	0.000295	0.00243	mg/L	0.000295	12.13%

Sequence No.: 61
Sample ID: AHP8 J TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 354
Date Collected: 6/18/2015 1:17:39 PM
Data Type: Original

Nebulizer Parameters: AHP8 J TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 J TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2736921.0	100.4	%	1.06				1.06%
ScR 361.383	283076.9	99.02	%	0.034				0.03%
Ag 328.068†	-9.0	-0.00004	mg/L	0.000169	-0.00004	mg/L	0.000169	442.95%
Al 308.215†	8.1	0.00834	mg/L	0.007246	0.00834	mg/L	0.007246	86.86%
As 188.979†	-0.7	-0.00054	mg/L	0.001972	-0.00054	mg/L	0.001972	364.68%
B 249.677†	22.4	0.00440	mg/L	0.000712	0.00440	mg/L	0.000712	16.19%
Ba 233.527†	3.9	0.00079	mg/L	0.000527	0.00079	mg/L	0.000527	66.78%
Be 313.042†	22.1	0.00005	mg/L	0.000017	0.00005	mg/L	0.000017	36.12%
Ca 317.933†	64.3	0.00808	mg/L	0.000458	0.00808	mg/L	0.000458	5.66%
Cd 228.802†	3.1	0.00014	mg/L	0.000172	0.00014	mg/L	0.000172	120.96%
Co 228.616†	1.6	0.00005	mg/L	0.000137	0.00005	mg/L	0.000137	263.81%
Cr 267.716†	-0.9	-0.00014	mg/L	0.000259	-0.00014	mg/L	0.000259	189.87%
Cu 324.752†	88.1	0.00032	mg/L	0.000099	0.00032	mg/L	0.000099	30.63%
Fe 273.955†	6.1	0.00626	mg/L	0.000376	0.00626	mg/L	0.000376	6.00%
K 766.490†	63.8	0.02457	mg/L	0.007480	0.02457	mg/L	0.007480	30.44%
Mg 279.077†	1.5	0.00201	mg/L	0.007899	0.00201	mg/L	0.007899	392.74%
Mn 257.610†	11.7	0.00027	mg/L	0.000057	0.00027	mg/L	0.000057	21.42%
Mo 202.031†	0.2	0.00001	mg/L	0.000351	0.00001	mg/L	0.000351	>999.9%
Na 589.592†	7493.1	0.4765	mg/L	0.00399	0.4765	mg/L	0.00399	0.84%
Na 330.237†	11.7	0.4796	mg/L	0.09624	0.4796	mg/L	0.09624	20.07%
Ni 231.604†	-1.6	-0.00053	mg/L	0.000910	-0.00053	mg/L	0.000910	171.50%
Pb 220.353†	4.2	0.00052	mg/L	0.000390	0.00052	mg/L	0.000390	75.04%
Sb 206.836†	-6.4	-0.00237	mg/L	0.001080	-0.00237	mg/L	0.001080	45.56%
Se 196.026†	0.3	0.00018	mg/L	0.003498	0.00018	mg/L	0.003498	>999.9%
Si 288.158†	140.4	0.1193	mg/L	0.00538	0.1193	mg/L	0.00538	4.51%
Sn 189.927†	2.4	0.00052	mg/L	0.000292	0.00052	mg/L	0.000292	56.72%
Sr 421.552†	12.2	0.00001	mg/L	0.000025	0.00001	mg/L	0.000025	172.26%
Ti 334.903†	-2.3	-0.00011	mg/L	0.000312	-0.00011	mg/L	0.000312	284.08%
Tl 190.801†	-3.6	-0.00221	mg/L	0.001611	-0.00221	mg/L	0.001611	72.78%
V 292.402†	6.9	0.00004	mg/L	0.000081	0.00004	mg/L	0.000081	183.29%
Zn 206.200†	2.0	0.00061	mg/L	0.000387	0.00061	mg/L	0.000387	63.61%

Sequence No.: 62
Sample ID: AHP8 K TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 355
Date Collected: 6/18/2015 1:21:53 PM
Data Type: Original

Nebulizer Parameters: AHP8 K TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 K TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2748177.5	100.8	%	0.58				0.57%
ScR 361.383	292052.1	102.2	%	0.03				0.02%
Ag 328.068†	-22.8	-0.00010	mg/L	0.000140	-0.00010	mg/L	0.000140	145.33%
Al 308.215†	98.7	0.1019	mg/L	0.00159	0.1019	mg/L	0.00159	1.56%
As 188.979†	0.5	-0.00010	mg/L	0.002525	-0.00010	mg/L	0.002525	>999.9%
B 249.677†	44.8	0.00880	mg/L	0.000668	0.00880	mg/L	0.000668	7.59%
Ba 233.527†	26.5	0.00539	mg/L	0.000183	0.00539	mg/L	0.000183	3.39%
Be 313.042†	13.7	0.00003	mg/L	0.000006	0.00003	mg/L	0.000006	20.55%
Ca 317.933†	28457.2	3.579	mg/L	0.0356	3.579	mg/L	0.0356	0.99%
Cd 228.802†	3.3	0.00016	mg/L	0.000041	0.00016	mg/L	0.000041	26.10%
Co 228.616†	6.3	0.00020	mg/L	0.000085	0.00020	mg/L	0.000085	42.82%
Cr 267.716†	-2.7	-0.00043	mg/L	0.000570	-0.00043	mg/L	0.000570	131.75%
Cu 324.752†	562.3	0.00207	mg/L	0.000165	0.00207	mg/L	0.000165	8.00%
Fe 273.955†	163.6	0.1668	mg/L	0.00265	0.1668	mg/L	0.00265	1.59%
K 766.490†	853.9	0.3290	mg/L	0.00461	0.3290	mg/L	0.00461	1.40%
Mg 279.077†	254.2	0.3513	mg/L	0.00245	0.3513	mg/L	0.00245	0.70%
Mn 257.610†	239.3	0.00545	mg/L	0.000102	0.00545	mg/L	0.000102	1.87%
Mo 202.031†	13.9	0.00071	mg/L	0.000131	0.00071	mg/L	0.000131	18.48%
Na 589.592†	7886.7	0.5016	mg/L	0.00581	0.5016	mg/L	0.00581	1.16%
Na 330.237†	9.9	0.4052	mg/L	0.11517	0.4052	mg/L	0.11517	28.42%
Ni 231.604†	-3.6	-0.00120	mg/L	0.000352	-0.00120	mg/L	0.000352	29.29%
Pb 220.353†	-0.5	-0.00004	mg/L	0.000261	-0.00004	mg/L	0.000261	654.84%
Sb 206.836†	-0.2	-0.00008	mg/L	0.000817	-0.00008	mg/L	0.000817	>999.9%
Se 196.026†	3.1	0.00212	mg/L	0.002681	0.00212	mg/L	0.002681	126.50%
Si 288.158†	2607.0	2.215	mg/L	0.0067	2.215	mg/L	0.0067	0.30%
Sn 189.927†	-6.0	-0.00082	mg/L	0.000380	-0.00082	mg/L	0.000380	46.37%
Sr 421.552†	12382.6	0.01471	mg/L	0.000166	0.01471	mg/L	0.000166	1.13%
Ti 334.903†	79.4	0.00336	mg/L	0.000061	0.00336	mg/L	0.000061	1.81%
Tl 190.801†	4.8	0.00301	mg/L	0.001514	0.00301	mg/L	0.001514	50.37%
V 292.402†	84.6	0.00054	mg/L	0.000070	0.00054	mg/L	0.000070	12.88%
Zn 206.200†	21.5	0.00635	mg/L	0.000299	0.00635	mg/L	0.000299	4.71%

Sequence No.: 63
Sample ID: AHP8 MB1SPD TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 356
Date Collected: 6/18/2015 1:26:07 PM
Data Type: Original

Nebulizer Parameters: AHP8 MB1SPD TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB1SPD TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2735503.0	100.3	%	0.67				0.67%
ScR 361.383	290978.9	101.8	%	0.81				0.80%
Ag 328.068†	125952.9	0.5321	mg/L	0.00431	0.5321	mg/L	0.00431	0.81%
Al 308.215†	1975.2	2.033	mg/L	0.0198	2.033	mg/L	0.0198	0.97%
As 188.979†	2641.2	2.061	mg/L	0.0136	2.061	mg/L	0.0136	0.66%
B 249.677†	6.2	0.00020	mg/L	0.000941	0.00020	mg/L	0.000941	466.69%
Ba 233.527†	10130.7	2.068	mg/L	0.0239	2.068	mg/L	0.0239	1.16%
Be 313.042†	230568.9	0.4903	mg/L	0.00177	0.4903	mg/L	0.00177	0.36%
Ca 317.933†	78749.1	9.904	mg/L	0.0248	9.904	mg/L	0.0248	0.25%
Cd 228.802†	11369.3	0.5010	mg/L	0.00386	0.5010	mg/L	0.00386	0.77%
Co 228.616†	15604.1	0.5066	mg/L	0.00311	0.5066	mg/L	0.00311	0.61%
Cr 267.716†	3418.0	0.5155	mg/L	0.00399	0.5155	mg/L	0.00399	0.77%
Cu 324.752†	140045.8	0.5135	mg/L	0.00344	0.5135	mg/L	0.00344	0.67%
Fe 273.955†	2006.3	2.041	mg/L	0.0127	2.041	mg/L	0.0127	0.62%
K 766.490†	26256.1	10.12	mg/L	0.029	10.12	mg/L	0.029	0.28%
Mg 279.077†	7459.0	10.31	mg/L	0.086	10.31	mg/L	0.086	0.83%
Mn 257.610†	21200.0	0.4847	mg/L	0.00146	0.4847	mg/L	0.00146	0.30%
Mo 202.031†	28.5	0.00141	mg/L	0.000345	0.00141	mg/L	0.000345	24.51%
Na 589.592†	156427.0	9.948	mg/L	0.0077	9.948	mg/L	0.0077	0.08%
Na 330.237†	255.0	10.32	mg/L	0.068	10.32	mg/L	0.068	0.66%
Ni 231.604†	1515.5	0.5033	mg/L	0.00263	0.5033	mg/L	0.00263	0.52%
Pb 220.353†	16082.0	1.974	mg/L	0.0133	1.974	mg/L	0.0133	0.67%
Sb 206.836†	12.3	-0.00002	mg/L	0.000617	-0.00002	mg/L	0.000617	>999.9%
Se 196.026†	3008.1	2.051	mg/L	0.0142	2.051	mg/L	0.0142	0.69%
Si 288.158†	20.9	0.01959	mg/L	0.002372	0.01959	mg/L	0.002372	12.11%
Sn 189.927†	-19.5	-0.00282	mg/L	0.000960	-0.00282	mg/L	0.000960	34.03%
Sr 421.552†	416257.5	0.4946	mg/L	0.00053	0.4946	mg/L	0.00053	0.11%
Ti 334.903†	22.6	-0.00003	mg/L	0.000143	-0.00003	mg/L	0.000143	500.04%
Tl 190.801†	3341.5	2.060	mg/L	0.0166	2.060	mg/L	0.0166	0.80%
V 292.402†	78517.6	0.5120	mg/L	0.00481	0.5120	mg/L	0.00481	0.94%
Zn 206.200†	1623.0	0.4840	mg/L	0.00387	0.4840	mg/L	0.00387	0.80%

Sequence No.: 64
Sample ID: CV-7
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 1:30:07 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2722585.3	99.83	%	0.256				0.26%
ScR 361.383	285194.6	99.76	%	0.467				0.47%
Ag 328.068†	247731.4	1.046	mg/L	0.0046	1.046	mg/L	0.0046	0.44%
Al 308.215†	1975.5	2.007	mg/L	0.0178	2.007	mg/L	0.0178	0.89%
As 188.979†	2546.4	2.017	mg/L	0.0058	2.017	mg/L	0.0058	0.29%
B 249.677†	5013.4	0.9831	mg/L	0.00924	0.9831	mg/L	0.00924	0.94%
Ba 233.527†	5089.7	1.038	mg/L	0.0079	1.038	mg/L	0.0079	0.76%
Be 313.042†	452988.5	0.9633	mg/L	0.00484	0.9633	mg/L	0.00484	0.50%
Ca 317.933†	16554.2	2.082	mg/L	0.0180	2.082	mg/L	0.0180	0.86%
Cd 228.802†	23589.9	1.054	mg/L	0.0030	1.054	mg/L	0.0030	0.28%
Co 228.616†	31913.5	1.035	mg/L	0.0022	1.035	mg/L	0.0022	0.21%
Cr 267.716†	6863.3	1.037	mg/L	0.0098	1.037	mg/L	0.0098	0.95%
Cu 324.752†	281009.4	1.030	mg/L	0.0023	1.030	mg/L	0.0023	0.22%
Fe 273.955†	1992.3	2.022	mg/L	0.0207	2.022	mg/L	0.0207	1.03%
K 766.490†	52660.0	20.29	mg/L	0.105	20.29	mg/L	0.105	0.52%
Mg 279.077†	1453.0	2.017	mg/L	0.0180	2.017	mg/L	0.0180	0.89%
Mn 257.610†	41996.1	0.9599	mg/L	0.00423	0.9599	mg/L	0.00423	0.44%
Mo 202.031†	18389.4	1.027	mg/L	0.0034	1.027	mg/L	0.0034	0.33%
Na 589.592†	787523.4	50.08	mg/L	0.106	50.08	mg/L	0.106	0.21%
Na 330.237†	1268.9	51.99	mg/L	0.372	51.99	mg/L	0.372	0.72%
Ni 231.604†	3026.6	1.007	mg/L	0.0106	1.007	mg/L	0.0106	1.05%
Pb 220.353†	16383.8	2.012	mg/L	0.0055	2.012	mg/L	0.0055	0.28%
Sb 206.836†	5599.2	2.079	mg/L	0.0072	2.079	mg/L	0.0072	0.35%
Se 196.026†	2989.6	2.037	mg/L	0.0135	2.037	mg/L	0.0135	0.66%
Si 288.158†	2386.1	2.001	mg/L	0.0123	2.001	mg/L	0.0123	0.61%
Sn 189.927†	4738.6	1.031	mg/L	0.0041	1.031	mg/L	0.0041	0.40%
Sr 421.552†	837849.4	0.9955	mg/L	0.00224	0.9955	mg/L	0.00224	0.22%
Ti 334.903†	21516.1	1.002	mg/L	0.0034	1.002	mg/L	0.0034	0.34%
Tl 190.801†	3282.6	2.020	mg/L	0.0040	2.020	mg/L	0.0040	0.20%
V 292.402†	155190.8	1.012	mg/L	0.0040	1.012	mg/L	0.0040	0.39%
Zn 206.200†	3313.5	0.9881	mg/L	0.00870	0.9881	mg/L	0.00870	0.88%

Sequence No.: 65
Sample ID: CB 7
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 1:34:10 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2715497.0	99.57	%	1.151				1.16%
ScR 361.383	290982.4	101.8	%	1.60				1.57%
Ag 328.068†	-13.2	-0.00006	mg/L	0.000157	-0.00006	mg/L	0.000157	281.81%
Al 308.215†	5.9	0.00606	mg/L	0.005321	0.00606	mg/L	0.005321	87.74%
As 188.979†	-1.1	-0.00086	mg/L	0.000295	-0.00086	mg/L	0.000295	34.20%
B 249.677†	5.0	0.00099	mg/L	0.000225	0.00099	mg/L	0.000225	22.71%
Ba 233.527†	4.1	0.00083	mg/L	0.000544	0.00083	mg/L	0.000544	65.55%
Be 313.042†	62.5	0.00013	mg/L	0.000025	0.00013	mg/L	0.000025	18.74%
Ca 317.933†	12.9	0.00162	mg/L	0.000482	0.00162	mg/L	0.000482	29.77%
Cd 228.802†	9.2	0.00042	mg/L	0.000127	0.00042	mg/L	0.000127	30.10%
Co 228.616†	0.3	0.00001	mg/L	0.000090	0.00001	mg/L	0.000090	790.52%
Cr 267.716†	-1.6	-0.00025	mg/L	0.000511	-0.00025	mg/L	0.000511	205.20%
Cu 324.752†	107.6	0.00039	mg/L	0.000116	0.00039	mg/L	0.000116	29.52%
Fe 273.955†	0.5	0.00054	mg/L	0.000881	0.00054	mg/L	0.000881	163.57%
K 766.490†	13.7	0.00530	mg/L	0.009973	0.00530	mg/L	0.009973	188.26%
Mg 279.077†	1.0	0.00134	mg/L	0.007838	0.00134	mg/L	0.007838	583.60%
Mn 257.610†	-0.4	-0.00001	mg/L	0.000063	-0.00001	mg/L	0.000063	663.06%
Mo 202.031†	30.8	0.00172	mg/L	0.000553	0.00172	mg/L	0.000553	32.11%
Na 589.592†	-17.9	-0.00114	mg/L	0.001750	-0.00114	mg/L	0.001750	153.62%
Na 330.237†	-2.4	-0.09733	mg/L	0.146326	-0.09733	mg/L	0.146326	150.35%
Ni 231.604†	1.2	0.00041	mg/L	0.000307	0.00041	mg/L	0.000307	74.40%
Pb 220.353†	-0.9	-0.00011	mg/L	0.000493	-0.00011	mg/L	0.000493	440.69%
Sb 206.836†	9.6	0.00355	mg/L	0.000760	0.00355	mg/L	0.000760	21.42%
Se 196.026†	-2.4	-0.00165	mg/L	0.000754	-0.00165	mg/L	0.000754	45.69%
Si 288.158†	-4.1	-0.00348	mg/L	0.004752	-0.00348	mg/L	0.004752	136.58%
Sn 189.927†	-1.1	-0.00023	mg/L	0.000154	-0.00023	mg/L	0.000154	67.81%
Sr 421.552†	86.6	0.00010	mg/L	0.000007	0.00010	mg/L	0.000007	7.19%
Ti 334.903†	-6.1	-0.00029	mg/L	0.000316	-0.00029	mg/L	0.000316	110.52%
Tl 190.801†	0.8	0.00049	mg/L	0.001301	0.00049	mg/L	0.001301	265.36%
V 292.402†	-0.7	-0.00000	mg/L	0.000131	-0.00000	mg/L	0.000131	>999.9%
Zn 206.200†	0.0	0.00001	mg/L	0.000344	0.00001	mg/L	0.000344	>999.9%

ANSP 00132

Sequence No.: 66
Sample ID: AHP8 MB2 TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 357
Date Collected: 6/18/2015 1:38:25 PM
Data Type: Original

Nebulizer Parameters: AHP8 MB2 TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB2 TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2746408.3	100.7	%	0.73				0.72%
ScR 361.383	294655.5	103.1	%	0.66				0.64%
Ag 328.068†	-2.2	-0.00001	mg/L	0.000150	-0.00001	mg/L	0.000150	>999.9%
Al 308.215†	4.1	0.00427	mg/L	0.005309	0.00427	mg/L	0.005309	124.31%
As 188.979†	-0.8	-0.00063	mg/L	0.001400	-0.00063	mg/L	0.001400	221.40%
B 249.677†	7.0	0.00137	mg/L	0.001025	0.00137	mg/L	0.001025	75.00%
Ba 233.527†	3.4	0.00068	mg/L	0.000828	0.00068	mg/L	0.000828	120.87%
Be 313.042†	31.2	0.00007	mg/L	0.000010	0.00007	mg/L	0.000010	14.55%
Ca 317.933†	37.8	0.00475	mg/L	0.000353	0.00475	mg/L	0.000353	7.43%
Cd 228.802†	9.8	0.00045	mg/L	0.000013	0.00045	mg/L	0.000013	2.86%
Co 228.616†	0.8	0.00003	mg/L	0.000083	0.00003	mg/L	0.000083	317.54%
Cr 267.716†	1.2	0.00018	mg/L	0.000189	0.00018	mg/L	0.000189	106.91%
Cu 324.752†	123.2	0.00045	mg/L	0.000097	0.00045	mg/L	0.000097	21.58%
Fe 273.955†	1.5	0.00149	mg/L	0.001285	0.00149	mg/L	0.001285	86.42%
K 766.490†	38.5	0.01483	mg/L	0.009309	0.01483	mg/L	0.009309	62.78%
Mg 279.077†	0.6	0.00083	mg/L	0.005892	0.00083	mg/L	0.005892	711.79%
Mn 257.610†	0.9	0.00002	mg/L	0.000044	0.00002	mg/L	0.000044	218.87%
Mo 202.031†	-1.6	-0.00009	mg/L	0.000317	-0.00009	mg/L	0.000317	355.46%
Na 589.592†	-59.1	-0.00376	mg/L	0.001191	-0.00376	mg/L	0.001191	31.67%
Na 330.237†	-2.0	-0.08278	mg/L	0.216289	-0.08278	mg/L	0.216289	261.27%
Ni 231.604†	1.7	0.00057	mg/L	0.001166	0.00057	mg/L	0.001166	203.12%
Pb 220.353†	7.4	0.00091	mg/L	0.000158	0.00091	mg/L	0.000158	17.29%
Sb 206.836†	2.8	0.00104	mg/L	0.001160	0.00104	mg/L	0.001160	111.88%
Se 196.026†	2.0	0.00136	mg/L	0.001374	0.00136	mg/L	0.001374	101.13%
Si 288.158†	21.2	0.01803	mg/L	0.002602	0.01803	mg/L	0.002602	14.43%
Sn 189.927†	-0.3	-0.00006	mg/L	0.000834	-0.00006	mg/L	0.000834	>999.9%
Sr 421.552†	49.2	0.00006	mg/L	0.000011	0.00006	mg/L	0.000011	18.90%
Ti 334.903†	-13.8	-0.00064	mg/L	0.000408	-0.00064	mg/L	0.000408	63.23%
Tl 190.801†	0.3	0.00018	mg/L	0.002727	0.00018	mg/L	0.002727	>999.9%
V 292.402†	25.3	0.00017	mg/L	0.000032	0.00017	mg/L	0.000032	19.58%
Zn 206.200†	-0.1	-0.00003	mg/L	0.000868	-0.00003	mg/L	0.000868	>999.9%

AHS2:00139

Sequence No.: 67
Sample ID: AHP8 L TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 358
Date Collected: 6/18/2015 1:42:41 PM
Data Type: Original

Nebulizer Parameters: AHP8 L TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 L TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2738700.7	100.4	%	0.16				0.16%
ScR 361.383	292106.4	102.2	%	0.82				0.80%
Ag 328.068†	-96.7	-0.00041	mg/L	0.000280	-0.00041	mg/L	0.000280	68.58%
Al 308.215†	81.7	0.08429	mg/L	0.002430	0.08429	mg/L	0.002430	2.88%
As 188.979†	43.7	0.02591	mg/L	0.001099	0.02591	mg/L	0.001099	4.24%
B 249.677†	78.2	0.01535	mg/L	0.000595	0.01535	mg/L	0.000595	3.88%
Ba 233.527†	150.9	0.02968	mg/L	0.000317	0.02968	mg/L	0.000317	1.07%
Be 313.042†	21.7	0.00005	mg/L	0.000003	0.00005	mg/L	0.000003	5.93%
Ca 317.933†	395086.9	49.69	mg/L	0.088	49.69	mg/L	0.088	0.18%
Cd 228.802†	137.1	0.00607	mg/L	0.000043	0.00607	mg/L	0.000043	0.71%
Co 228.616†	191.4	0.00620	mg/L	0.000059	0.00620	mg/L	0.000059	0.96%
Cr 267.716†	4.7	0.00064	mg/L	0.000543	0.00064	mg/L	0.000543	84.34%
Cu 324.752†	91376.5	0.3353	mg/L	0.00154	0.3353	mg/L	0.00154	0.46%
Fe 273.955†	9911.0	10.11	mg/L	0.068	10.11	mg/L	0.068	0.67%
K 766.490†	10641.3	4.100	mg/L	0.0011	4.100	mg/L	0.0011	0.03%
Mg 279.077†	5327.2	7.358	mg/L	0.0327	7.358	mg/L	0.0327	0.44%
Mn 257.610†	12464.0	0.2846	mg/L	0.00135	0.2846	mg/L	0.00135	0.48%
Mo 202.031†	72.2	0.00311	mg/L	0.000360	0.00311	mg/L	0.000360	11.57%
Na 589.592†	92624.2	5.891	mg/L	0.0134	5.891	mg/L	0.0134	0.23%
Na 330.237†	152.2	5.739	mg/L	0.1502	5.739	mg/L	0.1502	2.62%
Ni 231.604†	22.6	0.00753	mg/L	0.000243	0.00753	mg/L	0.000243	3.23%
Pb 220.353†	2.4	-0.00074	mg/L	0.000344	-0.00074	mg/L	0.000344	46.57%
Sb 206.836†	12.5	0.00455	mg/L	0.001570	0.00455	mg/L	0.001570	34.51%
Se 196.026†	16.4	0.01115	mg/L	0.003511	0.01115	mg/L	0.003511	31.47%
Si 288.158†	11766.0	9.996	mg/L	0.0262	9.996	mg/L	0.0262	0.26%
Sn 189.927†	-44.2	-0.00299	mg/L	0.000732	-0.00299	mg/L	0.000732	24.49%
Sr 421.552†	190257.5	0.2261	mg/L	0.00037	0.2261	mg/L	0.00037	0.17%
Ti 334.903†	150.9	0.00232	mg/L	0.000121	0.00232	mg/L	0.000121	5.22%
Tl 190.801†	20.0	0.01373	mg/L	0.001291	0.01373	mg/L	0.001291	9.40%
V 292.402†	107.5	0.00037	mg/L	0.000053	0.00037	mg/L	0.000053	14.37%
Zn 206.200†	5534.3	1.649	mg/L	0.0089	1.649	mg/L	0.0089	0.54%

Sequence No.: 68
Sample ID: AHP8 ODUP TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 359
Date Collected: 6/18/2015 1:46:41 PM
Data Type: Original

Nebulizer Parameters: AHP8 ODUP TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 ODUP TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2790950.7	102.3	%	0.21				0.20%
ScR 361.383	295508.8	103.4	%	0.71				0.68%
Ag 328.068†	-51.3	-0.00022	mg/L	0.000078	-0.00022	mg/L	0.000078	35.98%
Al 308.215†	34.5	0.03563	mg/L	0.004451	0.03563	mg/L	0.004451	12.49%
As 188.979†	4.9	0.00311	mg/L	0.002203	0.00311	mg/L	0.002203	70.91%
B 249.677†	48.8	0.00957	mg/L	0.000587	0.00957	mg/L	0.000587	6.13%
Ba 233.527†	31.9	0.00650	mg/L	0.000359	0.00650	mg/L	0.000359	5.53%
Be 313.042†	10.9	0.00002	mg/L	0.000003	0.00002	mg/L	0.000003	13.14%
Ca 317.933†	33646.7	4.232	mg/L	0.0414	4.232	mg/L	0.0414	0.98%
Cd 228.802†	1.8	0.00007	mg/L	0.000056	0.00007	mg/L	0.000056	75.53%
Co 228.616†	10.8	0.00035	mg/L	0.000112	0.00035	mg/L	0.000112	32.09%
Cr 267.716†	1.0	0.00012	mg/L	0.000752	0.00012	mg/L	0.000752	651.03%
Cu 324.752†	475.0	0.00174	mg/L	0.000112	0.00174	mg/L	0.000112	6.42%
Fe 273.955†	72.6	0.07406	mg/L	0.002357	0.07406	mg/L	0.002357	3.18%
K 766.490†	1088.2	0.4193	mg/L	0.02292	0.4193	mg/L	0.02292	5.47%
Mg 279.077†	321.6	0.4445	mg/L	0.00176	0.4445	mg/L	0.00176	0.40%
Mn 257.610†	306.0	0.00698	mg/L	0.000115	0.00698	mg/L	0.000115	1.66%
Mo 202.031†	17.5	0.00090	mg/L	0.000177	0.00090	mg/L	0.000177	19.70%
Na 589.592†	8536.1	0.5429	mg/L	0.00404	0.5429	mg/L	0.00404	0.74%
Na 330.237†	8.8	0.3564	mg/L	0.09654	0.3564	mg/L	0.09654	27.09%
Ni 231.604†	-3.3	-0.00108	mg/L	0.001446	-0.00108	mg/L	0.001446	133.42%
Pb 220.353†	1.0	0.00012	mg/L	0.001032	0.00012	mg/L	0.001032	825.58%
Sb 206.836†	-2.9	-0.00112	mg/L	0.000602	-0.00112	mg/L	0.000602	53.69%
Se 196.026†	4.0	0.00274	mg/L	0.002485	0.00274	mg/L	0.002485	90.64%
Si 288.158†	2710.2	2.302	mg/L	0.0376	2.302	mg/L	0.0376	1.63%
Sn 189.927†	-11.4	-0.00191	mg/L	0.000586	-0.00191	mg/L	0.000586	30.76%
Sr 421.552†	13614.8	0.01618	mg/L	0.000160	0.01618	mg/L	0.000160	0.99%
Ti 334.903†	3.9	-0.00022	mg/L	0.000251	-0.00022	mg/L	0.000251	113.68%
Tl 190.801†	3.8	0.00237	mg/L	0.001211	0.00237	mg/L	0.001211	51.00%
V 292.402†	41.7	0.00027	mg/L	0.000112	0.00027	mg/L	0.000112	41.41%
Zn 206.200†	38.6	0.01144	mg/L	0.000462	0.01144	mg/L	0.000462	4.04%

Sequence No.: 69
Sample ID: AHP8 O TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 360
Date Collected: 6/18/2015 1:50:55 PM
Data Type: Original

Nebulizer Parameters: AHP8 O TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 O TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2789693.6	102.3	%	0.81				0.79%
ScR 361.383	294641.9	103.1	%	0.34				0.33%
Ag 328.068†	-46.3	-0.00020	mg/L	0.000135	-0.00020	mg/L	0.000135	68.76%
Al 308.215†	40.5	0.04184	mg/L	0.002741	0.04184	mg/L	0.002741	6.55%
As 188.979†	3.6	0.00206	mg/L	0.000959	0.00206	mg/L	0.000959	46.55%
B 249.677†	46.9	0.00921	mg/L	0.000462	0.00921	mg/L	0.000462	5.01%
Ba 233.527†	26.1	0.00532	mg/L	0.000643	0.00532	mg/L	0.000643	12.09%
Be 313.042†	15.5	0.00003	mg/L	0.000016	0.00003	mg/L	0.000016	48.46%
Ca 317.933†	34308.8	4.315	mg/L	0.0274	4.315	mg/L	0.0274	0.63%
Cd 228.802†	4.1	0.00018	mg/L	0.000189	0.00018	mg/L	0.000189	103.14%
Co 228.616†	11.4	0.00037	mg/L	0.000086	0.00037	mg/L	0.000086	23.34%
Cr 267.716†	0.3	0.00001	mg/L	0.000825	0.00001	mg/L	0.000825	>999.9%
Cu 324.752†	550.9	0.00202	mg/L	0.000113	0.00202	mg/L	0.000113	5.60%
Fe 273.955†	69.0	0.07041	mg/L	0.002207	0.07041	mg/L	0.002207	3.13%
K 766.490†	1120.9	0.4319	mg/L	0.01034	0.4319	mg/L	0.01034	2.39%
Mg 279.077†	324.1	0.4481	mg/L	0.00332	0.4481	mg/L	0.00332	0.74%
Mn 257.610†	316.2	0.00721	mg/L	0.000040	0.00721	mg/L	0.000040	0.55%
Mo 202.031†	16.3	0.00083	mg/L	0.000218	0.00083	mg/L	0.000218	26.28%
Na 589.592†	8640.8	0.5495	mg/L	0.00463	0.5495	mg/L	0.00463	0.84%
Na 330.237†	11.2	0.4559	mg/L	0.09793	0.4559	mg/L	0.09793	21.48%
Ni 231.604†	-0.1	-0.00004	mg/L	0.000560	-0.00004	mg/L	0.000560	>999.9%
Pb 220.353†	-1.4	-0.00017	mg/L	0.000567	-0.00017	mg/L	0.000567	340.65%
Sb 206.836†	0.8	0.00026	mg/L	0.003518	0.00026	mg/L	0.003518	>999.9%
Se 196.026†	2.3	0.00159	mg/L	0.002296	0.00159	mg/L	0.002296	144.04%
Si 288.158†	2700.2	2.294	mg/L	0.0130	2.294	mg/L	0.0130	0.57%
Sn 189.927†	-11.0	-0.00182	mg/L	0.000502	-0.00182	mg/L	0.000502	27.60%
Sr 421.552†	13846.8	0.01645	mg/L	0.000136	0.01645	mg/L	0.000136	0.83%
Ti 334.903†	3.2	-0.00026	mg/L	0.000413	-0.00026	mg/L	0.000413	158.36%
Tl 190.801†	4.6	0.00283	mg/L	0.001546	0.00283	mg/L	0.001546	54.72%
V 292.402†	33.7	0.00022	mg/L	0.000068	0.00022	mg/L	0.000068	31.09%
Zn 206.200†	38.2	0.01132	mg/L	0.000420	0.01132	mg/L	0.000420	3.71%

Sequence No.: 70
Sample ID: AHP8 OSPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 361
Date Collected: 6/18/2015 1:55:09 PM
Data Type: Original

Nebulizer Parameters: AHP8 OSPK TWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHP8 OSPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2728372.8	100.0	%	2.26				2.26%
ScR 361.383	291788.7	102.1	%	0.80				0.79%
Ag 328.068†	124923.9	0.5277	mg/L	0.00179	0.5277	mg/L	0.00179	0.34%
Al 308.215†	1991.7	2.050	mg/L	0.0160	2.050	mg/L	0.0160	0.78%
As 188.979†	2626.9	2.049	mg/L	0.0099	2.049	mg/L	0.0099	0.48%
B 249.677†	46.8	0.00818	mg/L	0.000125	0.00818	mg/L	0.000125	1.52%
Ba 233.527†	10144.2	2.070	mg/L	0.0114	2.070	mg/L	0.0114	0.55%
Be 313.042†	228910.3	0.4868	mg/L	0.00169	0.4868	mg/L	0.00169	0.35%
Ca 317.933†	112116.3	14.10	mg/L	0.051	14.10	mg/L	0.051	0.36%
Cd 228.802†	11284.9	0.4972	mg/L	0.00145	0.4972	mg/L	0.00145	0.29%
Co 228.616†	15415.5	0.5005	mg/L	0.00108	0.5005	mg/L	0.00108	0.22%
Cr 267.716†	3406.4	0.5137	mg/L	0.00424	0.5137	mg/L	0.00424	0.82%
Cu 324.752†	138449.0	0.5076	mg/L	0.00154	0.5076	mg/L	0.00154	0.30%
Fe 273.955†	2066.8	2.103	mg/L	0.0176	2.103	mg/L	0.0176	0.84%
K 766.490†	27153.4	10.46	mg/L	0.021	10.46	mg/L	0.021	0.20%
Mg 279.077†	7742.3	10.70	mg/L	0.086	10.70	mg/L	0.086	0.81%
Mn 257.610†	21385.5	0.4889	mg/L	0.00097	0.4889	mg/L	0.00097	0.20%
Mo 202.031†	44.2	0.00221	mg/L	0.000309	0.00221	mg/L	0.000309	14.01%
Na 589.592†	164014.4	10.43	mg/L	0.004	10.43	mg/L	0.004	0.04%
Na 330.237†	266.0	10.77	mg/L	0.213	10.77	mg/L	0.213	1.98%
Ni 231.604†	1515.4	0.5033	mg/L	0.00544	0.5033	mg/L	0.00544	1.08%
Pb 220.353†	15936.4	1.957	mg/L	0.0040	1.957	mg/L	0.0040	0.20%
Sb 206.836†	14.6	0.00082	mg/L	0.000064	0.00082	mg/L	0.000064	7.81%
Se 196.026†	2959.0	2.017	mg/L	0.0100	2.017	mg/L	0.0100	0.49%
Si 288.158†	2716.1	2.309	mg/L	0.0184	2.309	mg/L	0.0184	0.79%
Sn 189.927†	-22.9	-0.00301	mg/L	0.000629	-0.00301	mg/L	0.000629	20.92%
Sr 421.552†	429066.1	0.5098	mg/L	0.00072	0.5098	mg/L	0.00072	0.14%
Ti 334.903†	36.4	0.00022	mg/L	0.000432	0.00022	mg/L	0.000432	197.21%
Tl 190.801†	3291.0	2.029	mg/L	0.0166	2.029	mg/L	0.0166	0.82%
V 292.402†	78035.1	0.5089	mg/L	0.00201	0.5089	mg/L	0.00201	0.40%
Zn 206.200†	1659.3	0.4948	mg/L	0.00402	0.4948	mg/L	0.00402	0.81%

Sequence No.: 71
Sample ID: AHP8 P TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 362
Date Collected: 6/18/2015 1:59:10 PM
Data Type: Original

Nebulizer Parameters: AHP8 P TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 P TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2752457.3	100.9	%	0.40				0.40%
ScR 361.383	291533.4	102.0	%	0.59				0.57%
Ag 328.068†	-46.6	-0.00020	mg/L	0.000163	-0.00020	mg/L	0.000163	82.78%
Al 308.215†	20.4	0.02104	mg/L	0.000970	0.02104	mg/L	0.000970	4.61%
As 188.979†	7.5	0.00529	mg/L	0.000613	0.00529	mg/L	0.000613	11.59%
B 249.677†	46.4	0.00911	mg/L	0.000795	0.00911	mg/L	0.000795	8.73%
Ba 233.527†	28.1	0.00574	mg/L	0.000109	0.00574	mg/L	0.000109	1.89%
Be 313.042†	30.0	0.00006	mg/L	0.000013	0.00006	mg/L	0.000013	20.52%
Ca 317.933†	27589.0	3.470	mg/L	0.0233	3.470	mg/L	0.0233	0.67%
Cd 228.802†	4.9	0.00020	mg/L	0.000037	0.00020	mg/L	0.000037	18.43%
Co 228.616†	9.2	0.00030	mg/L	0.000129	0.00030	mg/L	0.000129	43.59%
Cr 267.716†	0.3	0.00001	mg/L	0.000730	0.00001	mg/L	0.000730	>999.9%
Cu 324.752†	386.1	0.00142	mg/L	0.000194	0.00142	mg/L	0.000194	13.70%
Fe 273.955†	58.9	0.06008	mg/L	0.001936	0.06008	mg/L	0.001936	3.22%
K 766.490†	884.5	0.3408	mg/L	0.01669	0.3408	mg/L	0.01669	4.90%
Mg 279.077†	234.4	0.3240	mg/L	0.00646	0.3240	mg/L	0.00646	1.99%
Mn 257.610†	148.9	0.00339	mg/L	0.000081	0.00339	mg/L	0.000081	2.39%
Mo 202.031†	18.5	0.00097	mg/L	0.000182	0.00097	mg/L	0.000182	18.83%
Na 589.592†	7814.3	0.4970	mg/L	0.00291	0.4970	mg/L	0.00291	0.58%
Na 330.237†	15.5	0.6356	mg/L	0.19784	0.6356	mg/L	0.19784	31.13%
Ni 231.604†	2.7	0.00089	mg/L	0.000434	0.00089	mg/L	0.000434	48.78%
Pb 220.353†	0.6	0.00008	mg/L	0.000699	0.00008	mg/L	0.000699	922.83%
Sb 206.836†	2.0	0.00074	mg/L	0.002325	0.00074	mg/L	0.002325	313.65%
Se 196.026†	0.8	0.00053	mg/L	0.002820	0.00053	mg/L	0.002820	528.00%
Si 288.158†	2464.0	2.093	mg/L	0.0084	2.093	mg/L	0.0084	0.40%
Sn 189.927†	-5.4	-0.00070	mg/L	0.000162	-0.00070	mg/L	0.000162	23.04%
Sr 421.552†	11747.5	0.01396	mg/L	0.000110	0.01396	mg/L	0.000110	0.79%
Ti 334.903†	5.8	-0.00006	mg/L	0.000268	-0.00006	mg/L	0.000268	435.58%
Tl 190.801†	5.4	0.00337	mg/L	0.002072	0.00337	mg/L	0.002072	61.53%
V 292.402†	68.0	0.00044	mg/L	0.000116	0.00044	mg/L	0.000116	26.39%
Zn 206.200†	26.3	0.00780	mg/L	0.000552	0.00780	mg/L	0.000552	7.07%

Sequence No.: 72
Sample ID: AHP8 Q TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 363
Date Collected: 6/18/2015 2:03:24 PM
Data Type: Original

Nebulizer Parameters: AHP8 Q TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 Q TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2756756.9	101.1	%	0.97				0.96%
ScR 361.383	286771.2	100.3	%	0.88				0.88%
Ag 328.068†	7.5	0.00003	mg/L	0.000177	0.00003	mg/L	0.000177	554.41%
Al 308.215†	26.4	0.02725	mg/L	0.005766	0.02725	mg/L	0.005766	21.16%
As 188.979†	1.7	0.00078	mg/L	0.001832	0.00078	mg/L	0.001832	234.16%
B 249.677†	50.1	0.00984	mg/L	0.001285	0.00984	mg/L	0.001285	13.06%
Ba 233.527†	26.5	0.00540	mg/L	0.000614	0.00540	mg/L	0.000614	11.37%
Be 313.042†	29.7	0.00006	mg/L	0.000024	0.00006	mg/L	0.000024	37.86%
Ca 317.933†	26794.0	3.370	mg/L	0.0227	3.370	mg/L	0.0227	0.67%
Cd 228.802†	-0.3	-0.00001	mg/L	0.000129	-0.00001	mg/L	0.000129	>999.9%
Co 228.616†	6.5	0.00021	mg/L	0.000168	0.00021	mg/L	0.000168	79.79%
Cr 267.716†	0.2	0.00001	mg/L	0.000504	0.00001	mg/L	0.000504	>999.9%
Cu 324.752†	212.8	0.00078	mg/L	0.000160	0.00078	mg/L	0.000160	20.56%
Fe 273.955†	21.2	0.02158	mg/L	0.001594	0.02158	mg/L	0.001594	7.39%
K 766.490†	830.6	0.3200	mg/L	0.00617	0.3200	mg/L	0.00617	1.93%
Mg 279.077†	213.6	0.2953	mg/L	0.00567	0.2953	mg/L	0.00567	1.92%
Mn 257.610†	52.4	0.00119	mg/L	0.000067	0.00119	mg/L	0.000067	5.68%
Mo 202.031†	14.2	0.00073	mg/L	0.000124	0.00073	mg/L	0.000124	17.03%
Na 589.592†	7299.2	0.4642	mg/L	0.00199	0.4642	mg/L	0.00199	0.43%
Na 330.237†	12.2	0.5017	mg/L	0.25001	0.5017	mg/L	0.25001	49.83%
Ni 231.604†	-0.9	-0.00032	mg/L	0.001472	-0.00032	mg/L	0.001472	465.85%
Pb 220.353†	-2.0	-0.00024	mg/L	0.000752	-0.00024	mg/L	0.000752	308.41%
Sb 206.836†	1.4	0.00049	mg/L	0.001281	0.00049	mg/L	0.001281	262.46%
Se 196.026†	-1.0	-0.00066	mg/L	0.003185	-0.00066	mg/L	0.003185	480.11%
Si 288.158†	2399.3	2.038	mg/L	0.0333	2.038	mg/L	0.0333	1.63%
Sn 189.927†	-8.7	-0.00143	mg/L	0.000720	-0.00143	mg/L	0.000720	50.28%
Sr 421.552†	11756.0	0.01397	mg/L	0.000035	0.01397	mg/L	0.000035	0.25%
Ti 334.903†	11.7	0.00022	mg/L	0.000089	0.00022	mg/L	0.000089	39.80%
Tl 190.801†	2.3	0.00140	mg/L	0.001851	0.00140	mg/L	0.001851	131.79%
V 292.402†	70.4	0.00046	mg/L	0.000125	0.00046	mg/L	0.000125	27.31%
Zn 206.200†	5.2	0.00151	mg/L	0.000698	0.00151	mg/L	0.000698	46.19%

Sequence No.: 73
Sample ID: AHP8 R TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 364
Date Collected: 6/18/2015 2:07:38 PM
Data Type: Original

Nebulizer Parameters: AHP8 R TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 R TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2745000.3	100.6	%	0.60				0.59%
ScR 361.383	290012.2	101.4	%	0.43				0.42%
Ag 328.068†	-40.1	-0.00017	mg/L	0.000119	-0.00017	mg/L	0.000119	70.57%
Al 308.215†	24.8	0.02559	mg/L	0.001228	0.02559	mg/L	0.001228	4.80%
As 188.979†	6.3	0.00431	mg/L	0.001622	0.00431	mg/L	0.001622	37.62%
B 249.677†	50.9	0.00999	mg/L	0.000947	0.00999	mg/L	0.000947	9.48%
Ba 233.527†	24.7	0.00505	mg/L	0.000334	0.00505	mg/L	0.000334	6.62%
Be 313.042†	21.5	0.00005	mg/L	0.000017	0.00005	mg/L	0.000017	38.08%
Ca 317.933†	27432.2	3.450	mg/L	0.0119	3.450	mg/L	0.0119	0.35%
Cd 228.802†	5.3	0.00022	mg/L	0.000102	0.00022	mg/L	0.000102	45.59%
Co 228.616†	7.5	0.00024	mg/L	0.000135	0.00024	mg/L	0.000135	55.45%
Cr 267.716†	-0.3	-0.00007	mg/L	0.001027	-0.00007	mg/L	0.001027	>999.9%
Cu 324.752†	248.4	0.00091	mg/L	0.000094	0.00091	mg/L	0.000094	10.33%
Fe 273.955†	12.0	0.01227	mg/L	0.001075	0.01227	mg/L	0.001075	8.76%
K 766.490†	791.9	0.3051	mg/L	0.00240	0.3051	mg/L	0.00240	0.79%
Mg 279.077†	212.8	0.2941	mg/L	0.00575	0.2941	mg/L	0.00575	1.95%
Mn 257.610†	45.4	0.00102	mg/L	0.000051	0.00102	mg/L	0.000051	4.98%
Mo 202.031†	20.8	0.00110	mg/L	0.000154	0.00110	mg/L	0.000154	13.99%
Na 589.592†	7623.1	0.4848	mg/L	0.00151	0.4848	mg/L	0.00151	0.31%
Na 330.237†	10.5	0.4317	mg/L	0.12319	0.4317	mg/L	0.12319	28.53%
Ni 231.604†	-1.6	-0.00053	mg/L	0.001661	-0.00053	mg/L	0.001661	312.24%
Pb 220.353†	-2.6	-0.00032	mg/L	0.000283	-0.00032	mg/L	0.000283	89.07%
Sb 206.836†	-0.3	-0.00012	mg/L	0.001565	-0.00012	mg/L	0.001565	>999.9%
Se 196.026†	-0.2	-0.00012	mg/L	0.001954	-0.00012	mg/L	0.001954	>999.9%
Si 288.158†	2434.3	2.068	mg/L	0.0136	2.068	mg/L	0.0136	0.66%
Sn 189.927†	-4.4	-0.00049	mg/L	0.000387	-0.00049	mg/L	0.000387	79.33%
Sr 421.552†	11970.0	0.01422	mg/L	0.000017	0.01422	mg/L	0.000017	0.12%
Ti 334.903†	7.4	0.00002	mg/L	0.000436	0.00002	mg/L	0.000436	>999.9%
Tl 190.801†	1.9	0.00116	mg/L	0.001023	0.00116	mg/L	0.001023	88.12%
V 292.402†	48.6	0.00032	mg/L	0.000122	0.00032	mg/L	0.000122	38.59%
Zn 206.200†	3.0	0.00085	mg/L	0.000437	0.00085	mg/L	0.000437	51.20%

Sequence No.: 74
Sample ID: AHP8 S TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 365
Date Collected: 6/18/2015 2:11:52 PM
Data Type: Original

Nebulizer Parameters: AHP8 S TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 S TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2737700.0	100.4	%	0.35				0.35%
ScR 361.383	294505.4	103.0	%	0.61				0.59%
Ag 328.068†	-61.9	-0.00026	mg/L	0.000149	-0.00026	mg/L	0.000149	56.91%
Al 308.215†	26.7	0.02753	mg/L	0.003585	0.02753	mg/L	0.003585	13.02%
As 188.979†	2.2	0.00114	mg/L	0.001520	0.00114	mg/L	0.001520	133.13%
B 249.677†	49.9	0.00979	mg/L	0.000911	0.00979	mg/L	0.000911	9.31%
Ba 233.527†	25.3	0.00515	mg/L	0.000316	0.00515	mg/L	0.000316	6.13%
Be 313.042†	10.0	0.00002	mg/L	0.000023	0.00002	mg/L	0.000023	110.18%
Ca 317.933†	28383.3	3.570	mg/L	0.0244	3.570	mg/L	0.0244	0.68%
Cd 228.802†	7.7	0.00035	mg/L	0.000154	0.00035	mg/L	0.000154	44.03%
Co 228.616†	7.4	0.00024	mg/L	0.000129	0.00024	mg/L	0.000129	53.91%
Cr 267.716†	0.8	0.00009	mg/L	0.000639	0.00009	mg/L	0.000639	715.53%
Cu 324.752†	389.8	0.00143	mg/L	0.000080	0.00143	mg/L	0.000080	5.62%
Fe 273.955†	26.2	0.02676	mg/L	0.000943	0.02676	mg/L	0.000943	3.52%
K 766.490†	804.4	0.3099	mg/L	0.01965	0.3099	mg/L	0.01965	6.34%
Mg 279.077†	230.0	0.3180	mg/L	0.00423	0.3180	mg/L	0.00423	1.33%
Mn 257.610†	63.0	0.00143	mg/L	0.000057	0.00143	mg/L	0.000057	4.00%
Mo 202.031†	17.5	0.00091	mg/L	0.000024	0.00091	mg/L	0.000024	2.66%
Na 589.592†	7758.1	0.4934	mg/L	0.00145	0.4934	mg/L	0.00145	0.29%
Na 330.237†	12.6	0.5155	mg/L	0.03855	0.5155	mg/L	0.03855	7.48%
Ni 231.604†	-3.3	-0.00109	mg/L	0.000999	-0.00109	mg/L	0.000999	91.59%
Pb 220.353†	1.0	0.00013	mg/L	0.000488	0.00013	mg/L	0.000488	373.67%
Sb 206.836†	1.8	0.00064	mg/L	0.001309	0.00064	mg/L	0.001309	203.81%
Se 196.026†	4.8	0.00325	mg/L	0.001565	0.00325	mg/L	0.001565	48.12%
Si 288.158†	2482.4	2.109	mg/L	0.0178	2.109	mg/L	0.0178	0.85%
Sn 189.927†	-9.2	-0.00152	mg/L	0.000475	-0.00152	mg/L	0.000475	31.14%
Sr 421.552†	12239.9	0.01454	mg/L	0.000109	0.01454	mg/L	0.000109	0.75%
Ti 334.903†	23.4	0.00075	mg/L	0.000099	0.00075	mg/L	0.000099	13.16%
Tl 190.801†	2.5	0.00154	mg/L	0.000813	0.00154	mg/L	0.000813	52.84%
V 292.402†	38.0	0.00025	mg/L	0.000129	0.00025	mg/L	0.000129	52.10%
Zn 206.200†	10.1	0.00298	mg/L	0.000316	0.00298	mg/L	0.000316	10.62%

Sequence No.: 75
Sample ID: AHP8 MB2SPK TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 366
Date Collected: 6/18/2015 2:16:06 PM
Data Type: Original

Nebulizer Parameters: AHP8 MB2SPK TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB2SPK TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2707600.9	99.28	%	1.738				1.75%
ScR 361.383	286398.0	100.2	%	0.34				0.34%
Ag 328.068†	125675.3	0.5309	mg/L	0.00400	0.5309	mg/L	0.00400	0.75%
Al 308.215†	1965.5	2.023	mg/L	0.0211	2.023	mg/L	0.0211	1.04%
As 188.979†	2619.7	2.044	mg/L	0.0439	2.044	mg/L	0.0439	2.15%
B 249.677†	8.1	0.00057	mg/L	0.000410	0.00057	mg/L	0.000410	71.46%
Ba 233.527†	10106.7	2.063	mg/L	0.0207	2.063	mg/L	0.0207	1.00%
Be 313.042†	229444.9	0.4879	mg/L	0.00032	0.4879	mg/L	0.00032	0.06%
Ca 317.933†	78811.9	9.912	mg/L	0.0186	9.912	mg/L	0.0186	0.19%
Cd 228.802†	11378.3	0.5015	mg/L	0.00557	0.5015	mg/L	0.00557	1.11%
Co 228.616†	15492.2	0.5029	mg/L	0.00590	0.5029	mg/L	0.00590	1.17%
Cr 267.716†	3395.5	0.5121	mg/L	0.00531	0.5121	mg/L	0.00531	1.04%
Cu 324.752†	139338.4	0.5109	mg/L	0.00523	0.5109	mg/L	0.00523	1.02%
Fe 273.955†	2003.1	2.038	mg/L	0.0276	2.038	mg/L	0.0276	1.35%
K 766.490†	26142.9	10.07	mg/L	0.017	10.07	mg/L	0.017	0.17%
Mg 279.077†	7435.2	10.28	mg/L	0.087	10.28	mg/L	0.087	0.84%
Mn 257.610†	21150.1	0.4836	mg/L	0.00063	0.4836	mg/L	0.00063	0.13%
Mo 202.031†	30.8	0.00153	mg/L	0.000257	0.00153	mg/L	0.000257	16.75%
Na 589.592†	155808.5	9.909	mg/L	0.0079	9.909	mg/L	0.0079	0.08%
Na 330.237†	256.2	10.37	mg/L	0.142	10.37	mg/L	0.142	1.37%
Ni 231.604†	1512.8	0.5024	mg/L	0.00474	0.5024	mg/L	0.00474	0.94%
Pb 220.353†	16081.9	1.974	mg/L	0.0172	1.974	mg/L	0.0172	0.87%
Sb 206.836†	13.1	0.00032	mg/L	0.000921	0.00032	mg/L	0.000921	291.34%
Se 196.026†	2976.6	2.029	mg/L	0.0426	2.029	mg/L	0.0426	2.10%
Si 288.158†	21.3	0.01995	mg/L	0.005095	0.01995	mg/L	0.005095	25.54%
Sn 189.927†	-19.0	-0.00271	mg/L	0.000400	-0.00271	mg/L	0.000400	14.75%
Sr 421.552†	413860.0	0.4917	mg/L	0.00025	0.4917	mg/L	0.00025	0.05%
Ti 334.903†	28.7	0.00026	mg/L	0.000044	0.00026	mg/L	0.000044	17.06%
Tl 190.801†	3310.8	2.041	mg/L	0.0451	2.041	mg/L	0.0451	2.21%
V 292.402†	78428.2	0.5114	mg/L	0.00382	0.5114	mg/L	0.00382	0.75%
Zn 206.200†	1618.3	0.4827	mg/L	0.00676	0.4827	mg/L	0.00676	1.40%

AHSP : 0012

Sequence No.: 76
Sample ID: CV
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 2:20:06 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2703091.1	99.11	%	0.378				0.38%
ScR 361.383	284174.7	99.41	%	0.580				0.58%
Ag 328.068†	249753.4	1.055	mg/L	0.0055	1.055	mg/L	0.0055	0.52%
Al 308.215†	1975.8	2.007	mg/L	0.0086	2.007	mg/L	0.0086	0.43%
As 188.979†	2558.1	2.026	mg/L	0.0014	2.026	mg/L	0.0014	0.07%
B 249.677†	5016.7	0.9838	mg/L	0.00361	0.9838	mg/L	0.00361	0.37%
Ba 233.527†	5063.8	1.033	mg/L	0.0039	1.033	mg/L	0.0039	0.38%
Be 313.042†	451881.7	0.9610	mg/L	0.00861	0.9610	mg/L	0.00861	0.90%
Ca 317.933†	16510.8	2.077	mg/L	0.0115	2.077	mg/L	0.0115	0.56%
Cd 228.802†	23111.0	1.032	mg/L	0.0064	1.032	mg/L	0.0064	0.62%
Co 228.616†	31239.4	1.013	mg/L	0.0048	1.013	mg/L	0.0048	0.47%
Cr 267.716†	6862.1	1.036	mg/L	0.0047	1.036	mg/L	0.0047	0.46%
Cu 324.752†	272755.1	0.9996	mg/L	0.00221	0.9996	mg/L	0.00221	0.22%
Fe 273.955†	1994.7	2.025	mg/L	0.0078	2.025	mg/L	0.0078	0.39%
K 766.490†	52908.1	20.38	mg/L	0.064	20.38	mg/L	0.064	0.31%
Mg 279.077†	1452.1	2.016	mg/L	0.0067	2.016	mg/L	0.0067	0.33%
Mn 257.610†	42135.0	0.9631	mg/L	0.00200	0.9631	mg/L	0.00200	0.21%
Mo 202.031†	18023.7	1.006	mg/L	0.0098	1.006	mg/L	0.0098	0.98%
Na 589.592†	787905.3	50.11	mg/L	0.128	50.11	mg/L	0.128	0.25%
Na 330.237†	1264.8	51.82	mg/L	0.126	51.82	mg/L	0.126	0.24%
Ni 231.604†	3028.3	1.008	mg/L	0.0056	1.008	mg/L	0.0056	0.55%
Pb 220.353†	16004.8	1.965	mg/L	0.0168	1.965	mg/L	0.0168	0.85%
Sb 206.836†	5667.1	2.104	mg/L	0.0036	2.104	mg/L	0.0036	0.17%
Se 196.026†	3000.6	2.045	mg/L	0.0079	2.045	mg/L	0.0079	0.38%
Si 288.158†	2379.5	1.995	mg/L	0.0143	1.995	mg/L	0.0143	0.72%
Sn 189.927†	4771.9	1.039	mg/L	0.0054	1.039	mg/L	0.0054	0.52%
Sr 421.552†	836472.2	0.9938	mg/L	0.00363	0.9938	mg/L	0.00363	0.37%
Ti 334.903†	21567.2	1.004	mg/L	0.0035	1.004	mg/L	0.0035	0.35%
Tl 190.801†	3292.1	2.025	mg/L	0.0039	2.025	mg/L	0.0039	0.19%
V 292.402†	156476.2	1.020	mg/L	0.0063	1.020	mg/L	0.0063	0.62%
Zn 206.200†	3312.6	0.9878	mg/L	0.00476	0.9878	mg/L	0.00476	0.48%

Sequence No.: 77
Sample ID: CB5
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 2:24:10 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2708583.6	99.31	%	0.843				0.85%
ScR 361.383	287102.6	100.4	%	0.91				0.90%
Ag 328.068†	-19.1	-0.00008	mg/L	0.000023	-0.00008	mg/L	0.000023	28.34%
Al 308.215†	5.5	0.00568	mg/L	0.002268	0.00568	mg/L	0.002268	39.91%
As 188.979†	-1.0	-0.00080	mg/L	0.000756	-0.00080	mg/L	0.000756	94.26%
B 249.677†	9.1	0.00178	mg/L	0.000650	0.00178	mg/L	0.000650	36.52%
Ba 233.527†	4.3	0.00088	mg/L	0.000567	0.00088	mg/L	0.000567	64.43%
Be 313.042†	55.9	0.00012	mg/L	0.000018	0.00012	mg/L	0.000018	15.18%
Ca 317.933†	10.0	0.00126	mg/L	0.000383	0.00126	mg/L	0.000383	30.48%
Cd 228.802†	9.9	0.00045	mg/L	0.000174	0.00045	mg/L	0.000174	38.60%
Co 228.616†	0.6	0.00002	mg/L	0.000230	0.00002	mg/L	0.000230	>999.9%
Cr 267.716†	-4.0	-0.00061	mg/L	0.000695	-0.00061	mg/L	0.000695	114.32%
Cu 324.752†	121.2	0.00044	mg/L	0.000063	0.00044	mg/L	0.000063	14.17%
Fe 273.955†	0.9	0.00093	mg/L	0.001664	0.00093	mg/L	0.001664	178.23%
K 766.490†	38.2	0.01474	mg/L	0.004608	0.01474	mg/L	0.004608	31.27%
Mg 279.077†	-1.8	-0.00245	mg/L	0.004767	-0.00245	mg/L	0.004767	194.34%
Mn 257.610†	0.1	0.00000	mg/L	0.000015	0.00000	mg/L	0.000015	481.25%
Mo 202.031†	30.3	0.00169	mg/L	0.000472	0.00169	mg/L	0.000472	27.87%
Na 589.592†	-52.5	-0.00334	mg/L	0.001529	-0.00334	mg/L	0.001529	45.78%
Na 330.237†	-4.5	-0.1859	mg/L	0.14584	-0.1859	mg/L	0.14584	78.45%
Ni 231.604†	-0.3	-0.00008	mg/L	0.002097	-0.00008	mg/L	0.002097	>999.9%
Pb 220.353†	-2.9	-0.00035	mg/L	0.000038	-0.00035	mg/L	0.000038	10.72%
Sb 206.836†	7.6	0.00282	mg/L	0.000736	0.00282	mg/L	0.000736	26.14%
Se 196.026†	1.5	0.00099	mg/L	0.002586	0.00099	mg/L	0.002586	260.66%
Si 288.158†	-4.8	-0.00407	mg/L	0.005538	-0.00407	mg/L	0.005538	136.22%
Sn 189.927†	1.2	0.00026	mg/L	0.000315	0.00026	mg/L	0.000315	123.46%
Sr 421.552†	96.8	0.00012	mg/L	0.000009	0.00012	mg/L	0.000009	8.07%
Ti 334.903†	-0.5	-0.00002	mg/L	0.000459	-0.00002	mg/L	0.000459	>999.9%
Tl 190.801†	1.3	0.00079	mg/L	0.001885	0.00079	mg/L	0.001885	237.20%
V 292.402†	21.4	0.00014	mg/L	0.000063	0.00014	mg/L	0.000063	46.11%
Zn 206.200†	-1.9	-0.00058	mg/L	0.000331	-0.00058	mg/L	0.000331	57.33%

Sequence No.: 78
Sample ID: AHP8 T TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 367
Date Collected: 6/18/2015 2:28:25 PM
Data Type: Original

Nebulizer Parameters: AHP8 T TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 T TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2713785.0	99.50	%	1.272				1.28%
ScR 361.383	285995.6	100.0	%	0.84				0.84%
Ag 328.068†	-16.5	-0.00007	mg/L	0.000132	-0.00007	mg/L	0.000132	189.49%
Al 308.215†	40.0	0.04132	mg/L	0.002803	0.04132	mg/L	0.002803	6.78%
As 188.979†	6.8	0.00475	mg/L	0.001031	0.00475	mg/L	0.001031	21.73%
B 249.677†	49.2	0.00966	mg/L	0.000591	0.00966	mg/L	0.000591	6.12%
Ba 233.527†	23.8	0.00485	mg/L	0.000314	0.00485	mg/L	0.000314	6.48%
Be 313.042†	35.4	0.00008	mg/L	0.000030	0.00008	mg/L	0.000030	40.55%
Ca 317.933†	29064.9	3.655	mg/L	0.0404	3.655	mg/L	0.0404	1.10%
Cd 228.802†	6.0	0.00025	mg/L	0.000063	0.00025	mg/L	0.000063	25.23%
Co 228.616†	11.9	0.00038	mg/L	0.000050	0.00038	mg/L	0.000050	13.01%
Cr 267.716†	-1.4	-0.00023	mg/L	0.000219	-0.00023	mg/L	0.000219	95.66%
Cu 324.752†	473.2	0.00174	mg/L	0.000092	0.00174	mg/L	0.000092	5.29%
Fe 273.955†	118.6	0.1209	mg/L	0.00293	0.1209	mg/L	0.00293	2.42%
K 766.490†	959.6	0.3697	mg/L	0.00184	0.3697	mg/L	0.00184	0.50%
Mg 279.077†	252.3	0.3487	mg/L	0.00485	0.3487	mg/L	0.00485	1.39%
Mn 257.610†	192.5	0.00439	mg/L	0.000051	0.00439	mg/L	0.000051	1.16%
Mo 202.031†	18.3	0.00095	mg/L	0.000102	0.00095	mg/L	0.000102	10.69%
Na 589.592†	8279.2	0.5265	mg/L	0.00725	0.5265	mg/L	0.00725	1.38%
Na 330.237†	15.3	0.6267	mg/L	0.26736	0.6267	mg/L	0.26736	42.66%
Ni 231.604†	-0.2	-0.00006	mg/L	0.000643	-0.00006	mg/L	0.000643	998.30%
Pb 220.353†	1.5	0.00019	mg/L	0.000575	0.00019	mg/L	0.000575	301.48%
Sb 206.836†	2.0	0.00073	mg/L	0.001433	0.00073	mg/L	0.001433	197.42%
Se 196.026†	2.5	0.00169	mg/L	0.000303	0.00169	mg/L	0.000303	17.87%
Si 288.158†	2580.3	2.192	mg/L	0.0186	2.192	mg/L	0.0186	0.85%
Sn 189.927†	-6.6	-0.00094	mg/L	0.000231	-0.00094	mg/L	0.000231	24.55%
Sr 421.552†	12482.4	0.01483	mg/L	0.000225	0.01483	mg/L	0.000225	1.52%
Ti 334.903†	29.7	0.00104	mg/L	0.000375	0.00104	mg/L	0.000375	36.11%
Tl 190.801†	3.6	0.00221	mg/L	0.002019	0.00221	mg/L	0.002019	91.31%
V 292.402†	43.0	0.00027	mg/L	0.000034	0.00027	mg/L	0.000034	12.52%
Zn 206.200†	29.9	0.00885	mg/L	0.000454	0.00885	mg/L	0.000454	5.13%

AHS2-0815

Sequence No.: 79
Sample ID: AHP8 U TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 368
Date Collected: 6/18/2015 2:32:41 PM
Data Type: Original

Nebulizer Parameters: AHP8 U TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 U TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2760605.3	101.2	%	0.70				0.69%
ScR 361.383	292767.4	102.4	%	1.19				1.16%
Ag 328.068†	-18.9	-0.00008	mg/L	0.000106	-0.00008	mg/L	0.000106	132.36%
Al 308.215†	13.6	0.01404	mg/L	0.005177	0.01404	mg/L	0.005177	36.87%
As 188.979†	4.5	0.00301	mg/L	0.002471	0.00301	mg/L	0.002471	82.16%
B 249.677†	15.5	0.00304	mg/L	0.000316	0.00304	mg/L	0.000316	10.39%
Ba 233.527†	27.4	0.00560	mg/L	0.000296	0.00560	mg/L	0.000296	5.28%
Be 313.042†	15.0	0.00003	mg/L	0.000008	0.00003	mg/L	0.000008	26.28%
Ca 317.933†	24350.0	3.062	mg/L	0.0143	3.062	mg/L	0.0143	0.47%
Cd 228.802†	5.5	0.00024	mg/L	0.000123	0.00024	mg/L	0.000123	51.23%
Co 228.616†	4.6	0.00015	mg/L	0.000075	0.00015	mg/L	0.000075	50.41%
Cr 267.716†	-1.6	-0.00027	mg/L	0.000248	-0.00027	mg/L	0.000248	91.24%
Cu 324.752†	127.4	0.00047	mg/L	0.000039	0.00047	mg/L	0.000039	8.28%
Fe 273.955†	9.1	0.00923	mg/L	0.002410	0.00923	mg/L	0.002410	26.11%
K 766.490†	1284.4	0.4949	mg/L	0.01076	0.4949	mg/L	0.01076	2.17%
Mg 279.077†	265.3	0.3668	mg/L	0.00449	0.3668	mg/L	0.00449	1.22%
Mn 257.610†	13.4	0.00029	mg/L	0.000025	0.00029	mg/L	0.000025	8.34%
Mo 202.031†	17.9	0.00094	mg/L	0.000112	0.00094	mg/L	0.000112	11.86%
Na 589.592†	7741.2	0.4923	mg/L	0.00639	0.4923	mg/L	0.00639	1.30%
Na 330.237†	10.6	0.4341	mg/L	0.08754	0.4341	mg/L	0.08754	20.16%
Ni 231.604†	-2.1	-0.00071	mg/L	0.000521	-0.00071	mg/L	0.000521	73.74%
Pb 220.353†	-2.0	-0.00025	mg/L	0.001253	-0.00025	mg/L	0.001253	505.37%
Sb 206.836†	1.9	0.00071	mg/L	0.001629	0.00071	mg/L	0.001629	230.32%
Se 196.026†	3.8	0.00257	mg/L	0.002478	0.00257	mg/L	0.002478	96.45%
Si 288.158†	2695.4	2.290	mg/L	0.0198	2.290	mg/L	0.0198	0.87%
Sn 189.927†	-8.6	-0.00146	mg/L	0.000476	-0.00146	mg/L	0.000476	32.63%
Sr 421.552†	9068.1	0.01077	mg/L	0.000059	0.01077	mg/L	0.000059	0.55%
Ti 334.903†	7.2	0.00004	mg/L	0.000215	0.00004	mg/L	0.000215	508.66%
Tl 190.801†	4.2	0.00258	mg/L	0.001928	0.00258	mg/L	0.001928	74.67%
V 292.402†	36.6	0.00024	mg/L	0.000132	0.00024	mg/L	0.000132	55.92%
Zn 206.200†	1.3	0.00035	mg/L	0.000745	0.00035	mg/L	0.000745	213.99%

Sequence No.: 80
Sample ID: AHP8 V TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 369
Date Collected: 6/18/2015 2:36:55 PM
Data Type: Original

Nebulizer Parameters: AHP8 V TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 V TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2768793.1	101.5	%	0.40				0.39%
ScR 361.383	293094.0	102.5	%	0.17				0.16%
Ag 328.068†	-67.8	-0.00029	mg/L	0.000078	-0.00029	mg/L	0.000078	27.38%
Al 308.215†	81.2	0.08380	mg/L	0.003305	0.08380	mg/L	0.003305	3.94%
As 188.979†	2.7	0.00163	mg/L	0.001052	0.00163	mg/L	0.001052	64.50%
B 249.677†	47.7	0.00936	mg/L	0.000668	0.00936	mg/L	0.000668	7.13%
Ba 233.527†	28.4	0.00578	mg/L	0.000174	0.00578	mg/L	0.000174	3.00%
Be 313.042†	15.8	0.00003	mg/L	0.000015	0.00003	mg/L	0.000015	44.87%
Ca 317.933†	27933.1	3.513	mg/L	0.0239	3.513	mg/L	0.0239	0.68%
Cd 228.802†	4.7	0.00021	mg/L	0.000159	0.00021	mg/L	0.000159	75.65%
Co 228.616†	6.4	0.00020	mg/L	0.000012	0.00020	mg/L	0.000012	6.03%
Cr 267.716†	-1.7	-0.00029	mg/L	0.000521	-0.00029	mg/L	0.000521	180.97%
Cu 324.752†	597.1	0.00219	mg/L	0.000057	0.00219	mg/L	0.000057	2.62%
Fe 273.955†	74.3	0.07577	mg/L	0.002058	0.07577	mg/L	0.002058	2.72%
K 766.490†	832.9	0.3209	mg/L	0.00548	0.3209	mg/L	0.00548	1.71%
Mg 279.077†	226.5	0.3131	mg/L	0.00774	0.3131	mg/L	0.00774	2.47%
Mn 257.610†	101.0	0.00229	mg/L	0.000096	0.00229	mg/L	0.000096	4.19%
Mo 202.031†	15.9	0.00082	mg/L	0.000127	0.00082	mg/L	0.000127	15.42%
Na 589.592†	7917.6	0.5035	mg/L	0.00323	0.5035	mg/L	0.00323	0.64%
Na 330.237†	13.8	0.5679	mg/L	0.18789	0.5679	mg/L	0.18789	33.08%
Ni 231.604†	-2.2	-0.00074	mg/L	0.000655	-0.00074	mg/L	0.000655	88.14%
Pb 220.353†	2.5	0.00032	mg/L	0.000525	0.00032	mg/L	0.000525	164.83%
Sb 206.836†	0.8	0.00029	mg/L	0.000477	0.00029	mg/L	0.000477	163.09%
Se 196.026†	4.3	0.00292	mg/L	0.003922	0.00292	mg/L	0.003922	134.46%
Si 288.158†	2552.7	2.169	mg/L	0.0114	2.169	mg/L	0.0114	0.53%
Sn 189.927†	-5.2	-0.00067	mg/L	0.000715	-0.00067	mg/L	0.000715	106.92%
Sr 421.552†	12329.5	0.01465	mg/L	0.000100	0.01465	mg/L	0.000100	0.68%
Ti 334.903†	72.2	0.00303	mg/L	0.000200	0.00303	mg/L	0.000200	6.59%
Tl 190.801†	0.8	0.00053	mg/L	0.001270	0.00053	mg/L	0.001270	240.11%
V 292.402†	85.8	0.00055	mg/L	0.000032	0.00055	mg/L	0.000032	5.73%
Zn 206.200†	12.2	0.00360	mg/L	0.000555	0.00360	mg/L	0.000555	15.43%

Sequence No.: 81
Sample ID: AHP8 W TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 370
Date Collected: 6/18/2015 2:41:09 PM
Data Type: Original

Nebulizer Parameters: AHP8 W TWC

Analyte	Back Pressure	Flow
All	226.0 kPa	0.75 L/min

Mean Data: AHP8 W TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2857665.3	104.8	%	0.88				0.84%
ScR 361.383	300229.4	105.0	%	0.76				0.72%
Ag 328.068†	-53.0	-0.00022	mg/L	0.000077	-0.00022	mg/L	0.000077	34.54%
Al 308.215†	53.0	0.05469	mg/L	0.004750	0.05469	mg/L	0.004750	8.69%
As 188.979†	3.5	0.00221	mg/L	0.001683	0.00221	mg/L	0.001683	76.20%
B 249.677†	53.7	0.01055	mg/L	0.000529	0.01055	mg/L	0.000529	5.01%
Ba 233.527†	28.4	0.00578	mg/L	0.000320	0.00578	mg/L	0.000320	5.53%
Be 313.042†	7.4	0.00002	mg/L	0.000029	0.00002	mg/L	0.000029	182.55%
Ca 317.933†	27489.4	3.457	mg/L	0.0227	3.457	mg/L	0.0227	0.66%
Cd 228.802†	-1.3	-0.00006	mg/L	0.000147	-0.00006	mg/L	0.000147	240.89%
Co 228.616†	13.6	0.00044	mg/L	0.000125	0.00044	mg/L	0.000125	28.59%
Cr 267.716†	0.4	0.00003	mg/L	0.000655	0.00003	mg/L	0.000655	>999.9%
Cu 324.752†	553.6	0.00203	mg/L	0.000035	0.00203	mg/L	0.000035	1.74%
Fe 273.955†	73.8	0.07528	mg/L	0.002852	0.07528	mg/L	0.002852	3.79%
K 766.490†	824.9	0.3178	mg/L	0.01410	0.3178	mg/L	0.01410	4.44%
Mg 279.077†	220.3	0.3046	mg/L	0.00091	0.3046	mg/L	0.00091	0.30%
Mn 257.610†	98.0	0.00223	mg/L	0.000079	0.00223	mg/L	0.000079	3.53%
Mo 202.031†	15.9	0.00082	mg/L	0.000204	0.00082	mg/L	0.000204	24.78%
Na 589.592†	7732.2	0.4917	mg/L	0.00267	0.4917	mg/L	0.00267	0.54%
Na 330.237†	10.9	0.4457	mg/L	0.11602	0.4457	mg/L	0.11602	26.03%
Ni 231.604†	-0.9	-0.00030	mg/L	0.000499	-0.00030	mg/L	0.000499	164.57%
Pb 220.353†	7.4	0.00092	mg/L	0.000431	0.00092	mg/L	0.000431	47.04%
Sb 206.836†	-4.2	-0.00155	mg/L	0.001225	-0.00155	mg/L	0.001225	79.12%
Se 196.026†	3.7	0.00253	mg/L	0.004565	0.00253	mg/L	0.004565	180.37%
Si 288.158†	2451.4	2.083	mg/L	0.0244	2.083	mg/L	0.0244	1.17%
Sn 189.927†	-3.3	-0.00025	mg/L	0.000257	-0.00025	mg/L	0.000257	101.24%
Sr 421.552†	11984.4	0.01424	mg/L	0.000099	0.01424	mg/L	0.000099	0.70%
Ti 334.903†	47.1	0.00187	mg/L	0.000377	0.00187	mg/L	0.000377	20.16%
Tl 190.801†	4.6	0.00285	mg/L	0.002569	0.00285	mg/L	0.002569	90.15%
V 292.402†	53.5	0.00034	mg/L	0.000109	0.00034	mg/L	0.000109	31.71%
Zn 206.200†	9.4	0.00277	mg/L	0.000684	0.00277	mg/L	0.000684	24.72%

Sequence No.: 82
Sample ID: AHP8 X TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 371
Date Collected: 6/18/2015 2:45:23 PM
Data Type: Original

Nebulizer Parameters: AHP8 X TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 X TWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2866611.0	105.1	%	0.77				0.73%
ScR 361.383	303102.1	106.0	%	0.58				0.55%
Ag 328.068†	-33.4	-0.00014	mg/L	0.000171	-0.00014	mg/L	0.000171	120.84%
Al 308.215†	3.1	0.00322	mg/L	0.000573	0.00322	mg/L	0.000573	17.78%
As 188.979†	-0.0	-0.00002	mg/L	0.000195	-0.00002	mg/L	0.000195	886.97%
B 249.677†	39.0	0.00766	mg/L	0.000958	0.00766	mg/L	0.000958	12.50%
Ba 233.527†	5.3	0.00109	mg/L	0.000482	0.00109	mg/L	0.000482	44.36%
Be 313.042†	-2.2	-0.00000	mg/L	0.000019	-0.00000	mg/L	0.000019	403.99%
Ca 317.933†	109.6	0.01379	mg/L	0.000295	0.01379	mg/L	0.000295	2.14%
Cd 228.802†	5.4	0.00024	mg/L	0.000324	0.00024	mg/L	0.000324	133.65%
Co 228.616†	8.4	0.00028	mg/L	0.000100	0.00028	mg/L	0.000100	36.21%
Cr 267.716†	-1.8	-0.00026	mg/L	0.000344	-0.00026	mg/L	0.000344	130.35%
Cu 324.752†	164.3	0.00060	mg/L	0.000127	0.00060	mg/L	0.000127	21.02%
Fe 273.955†	3.5	0.00362	mg/L	0.000332	0.00362	mg/L	0.000332	9.19%
K 766.490†	76.3	0.02938	mg/L	0.012478	0.02938	mg/L	0.012478	42.47%
Mg 279.077†	-1.6	-0.00226	mg/L	0.001012	-0.00226	mg/L	0.001012	44.86%
Mn 257.610†	4.7	0.00011	mg/L	0.000012	0.00011	mg/L	0.000012	10.96%
Mo 202.031†	-2.8	-0.00016	mg/L	0.000137	-0.00016	mg/L	0.000137	86.50%
Na 589.592†	9158.4	0.5824	mg/L	0.00542	0.5824	mg/L	0.00542	0.93%
Na 330.237†	14.1	0.5764	mg/L	0.11188	0.5764	mg/L	0.11188	19.41%
Ni 231.604†	-2.7	-0.00090	mg/L	0.000741	-0.00090	mg/L	0.000741	82.54%
Pb 220.353†	3.4	0.00041	mg/L	0.000238	0.00041	mg/L	0.000238	57.45%
Sb 206.836†	-6.7	-0.00247	mg/L	0.001077	-0.00247	mg/L	0.001077	43.65%
Se 196.026†	-0.8	-0.00058	mg/L	0.001280	-0.00058	mg/L	0.001280	222.55%
Si 288.158†	209.5	0.1780	mg/L	0.00182	0.1780	mg/L	0.00182	1.02%
Sn 189.927†	0.3	0.00007	mg/L	0.000355	0.00007	mg/L	0.000355	510.16%
Sr 421.552†	20.3	0.00002	mg/L	0.000011	0.00002	mg/L	0.000011	46.05%
Ti 334.903†	-12.8	-0.00060	mg/L	0.000301	-0.00060	mg/L	0.000301	50.32%
Tl 190.801†	1.2	0.00072	mg/L	0.002108	0.00072	mg/L	0.002108	293.20%
V 292.402†	34.0	0.00022	mg/L	0.000084	0.00022	mg/L	0.000084	38.09%
Zn 206.200†	3.5	0.00106	mg/L	0.000254	0.00106	mg/L	0.000254	24.12%

AHS2 - 2015

Sequence No.: 83
Sample ID: AHP8 Y TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 372
Date Collected: 6/18/2015 2:49:37 PM
Data Type: Original

Nebulizer Parameters: AHP8 Y TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 Y TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2740392.2	100.5	%	0.07				0.07%
ScR 361.383	291100.8	101.8	%	0.64				0.63%
Ag 328.068†	-105.1	-0.00044	mg/L	0.000116	-0.00044	mg/L	0.000116	26.26%
Al 308.215†	69.1	0.07131	mg/L	0.002825	0.07131	mg/L	0.002825	3.96%
As 188.979†	41.0	0.02399	mg/L	0.000844	0.02399	mg/L	0.000844	3.52%
B 249.677†	75.1	0.01474	mg/L	0.001303	0.01474	mg/L	0.001303	8.84%
Ba 233.527†	150.1	0.02955	mg/L	0.000614	0.02955	mg/L	0.000614	2.08%
Be 313.042†	19.5	0.00004	mg/L	0.000018	0.00004	mg/L	0.000018	43.07%
Ca 317.933†	383408.1	48.22	mg/L	0.195	48.22	mg/L	0.195	0.40%
Cd 228.802†	134.1	0.00595	mg/L	0.000061	0.00595	mg/L	0.000061	1.02%
Co 228.616†	191.9	0.00622	mg/L	0.000077	0.00622	mg/L	0.000077	1.24%
Cr 267.716†	5.5	0.00076	mg/L	0.000273	0.00076	mg/L	0.000273	35.77%
Cu 324.752†	87898.0	0.3226	mg/L	0.00353	0.3226	mg/L	0.00353	1.10%
Fe 273.955†	9622.0	9.812	mg/L	0.0906	9.812	mg/L	0.0906	0.92%
K 766.490†	10309.0	3.972	mg/L	0.0258	3.972	mg/L	0.0258	0.65%
Mg 279.077†	5197.5	7.179	mg/L	0.0298	7.179	mg/L	0.0298	0.41%
Mn 257.610†	12098.7	0.2762	mg/L	0.00198	0.2762	mg/L	0.00198	0.72%
Mo 202.031†	69.0	0.00296	mg/L	0.000337	0.00296	mg/L	0.000337	11.38%
Na 589.592†	89603.0	5.698	mg/L	0.0173	5.698	mg/L	0.0173	0.30%
Na 330.237†	148.6	5.602	mg/L	0.0460	5.602	mg/L	0.0460	0.82%
Ni 231.604†	21.9	0.00728	mg/L	0.001591	0.00728	mg/L	0.001591	21.87%
Pb 220.353†	-1.3	-0.00116	mg/L	0.000440	-0.00116	mg/L	0.000440	37.88%
Sb 206.836†	8.5	0.00302	mg/L	0.001049	0.00302	mg/L	0.001049	34.71%
Se 196.026†	16.1	0.01098	mg/L	0.001149	0.01098	mg/L	0.001149	10.46%
Si 288.158†	11357.4	9.649	mg/L	0.0683	9.649	mg/L	0.0683	0.71%
Sn 189.927†	-49.2	-0.00427	mg/L	0.000189	-0.00427	mg/L	0.000189	4.43%
Sr 421.552†	183730.5	0.2183	mg/L	0.00095	0.2183	mg/L	0.00095	0.44%
Ti 334.903†	142.6	0.00207	mg/L	0.000260	0.00207	mg/L	0.000260	12.59%
Tl 190.801†	18.4	0.01268	mg/L	0.000902	0.01268	mg/L	0.000902	7.12%
V 292.402†	114.4	0.00042	mg/L	0.000044	0.00042	mg/L	0.000044	10.32%
Zn 206.200†	5406.9	1.611	mg/L	0.0088	1.611	mg/L	0.0088	0.54%

Sequence No.: 84
Sample ID: AHP8 Z TWCC #6 19-15
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 373
Date Collected: 6/18/2015 2:53:37 PM
Data Type: Original

Nebulizer Parameters: AHP8 Z TWCC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 Z TWCC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2820188.8	103.4	%	0.63				0.61%
ScR 361.383	297020.2	103.9	%	1.13				1.09%
Ag 328.068†	-50.8	-0.00021	mg/L	0.000173	-0.00021	mg/L	0.000173	80.64%
Al 308.215†	14.4	0.01485	mg/L	0.002554	0.01485	mg/L	0.002554	17.19%
As 188.979†	4.3	0.00279	mg/L	0.001590	0.00279	mg/L	0.001590	57.06%
B 249.677†	47.0	0.00923	mg/L	0.000899	0.00923	mg/L	0.000899	9.73%
Ba 233.527†	24.2	0.00494	mg/L	0.000274	0.00494	mg/L	0.000274	5.54%
Be 313.042†	6.0	0.00001	mg/L	0.000027	0.00001	mg/L	0.000027	213.66%
Ca 317.933†	27635.5	3.476	mg/L	0.0329	3.476	mg/L	0.0329	0.95%
Cd 228.802†	4.2	0.00018	mg/L	0.000062	0.00018	mg/L	0.000062	34.31%
Co 228.616†	9.3	0.00030	mg/L	0.000167	0.00030	mg/L	0.000167	55.39%
Cr 267.716†	-4.0	-0.00062	mg/L	0.000606	-0.00062	mg/L	0.000606	97.21%
Cu 324.752†	340.5	0.00125	mg/L	0.000108	0.00125	mg/L	0.000108	8.67%
Fe 273.955†	82.8	0.08441	mg/L	0.002634	0.08441	mg/L	0.002634	3.12%
K 766.490†	863.9	0.3329	mg/L	0.01422	0.3329	mg/L	0.01422	4.27%
Mg 279.077†	231.4	0.3198	mg/L	0.00685	0.3198	mg/L	0.00685	2.14%
Mn 257.610†	120.1	0.00273	mg/L	0.000113	0.00273	mg/L	0.000113	4.13%
Mo 202.031†	12.7	0.00065	mg/L	0.000265	0.00065	mg/L	0.000265	41.11%
Na 589.592†	7691.3	0.4891	mg/L	0.00467	0.4891	mg/L	0.00467	0.96%
Na 330.237†	8.2	0.3347	mg/L	0.10866	0.3347	mg/L	0.10866	32.47%
Ni 231.604†	0.1	0.00003	mg/L	0.000379	0.00003	mg/L	0.000379	>999.9%
Pb 220.353†	5.1	0.00063	mg/L	0.000514	0.00063	mg/L	0.000514	81.96%
Sb 206.836†	-1.0	-0.00039	mg/L	0.001277	-0.00039	mg/L	0.001277	328.74%
Se 196.026†	3.9	0.00264	mg/L	0.000466	0.00264	mg/L	0.000466	17.62%
Si 288.158†	2443.0	2.075	mg/L	0.0304	2.075	mg/L	0.0304	1.47%
Sn 189.927†	-4.3	-0.00047	mg/L	0.000335	-0.00047	mg/L	0.000335	70.89%
Sr 421.552†	11888.0	0.01412	mg/L	0.000201	0.01412	mg/L	0.000201	1.42%
Ti 334.903†	0.6	-0.00030	mg/L	0.000445	-0.00030	mg/L	0.000445	147.33%
Tl 190.801†	2.1	0.00132	mg/L	0.002026	0.00132	mg/L	0.002026	153.62%
V 292.402†	57.3	0.00037	mg/L	0.000015	0.00037	mg/L	0.000015	4.00%
Zn 206.200†	24.8	0.00735	mg/L	0.000389	0.00735	mg/L	0.000389	5.29%

Sequence No.: 85
Sample ID: AHS8 A SWC
Analyst: ALA
Dilution: ~~1.000000~~X 2Y 6-19-15

Autosampler Location: 374
Date Collected: 6/18/2015 2:57:51 PM
Data Type: Original

Nebulizer Parameters: AHS8 A SWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS8 A SWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2808178.0	103.0	%	0.79				0.77%
ScR 361.383	300386.5	105.1	%	0.16				0.16%
Ag 328.068†	-192.5	-0.00076	mg/L	0.000104	-0.00076	mg/L	0.000104	13.78%
Al 308.215†	63510.2	65.58	mg/L	0.193	65.58	mg/L	0.193	0.29%
As 188.979†	-74.1	0.04618	mg/L	0.004525	0.04618	mg/L	0.004525	9.80%
B 249.677†	55.2	0.01075	mg/L	0.001245	0.01075	mg/L	0.001245	11.58%
Ba 233.527†	1615.8	0.3195	mg/L	0.00091	0.3195	mg/L	0.00091	0.29%
Be 313.042†	241.9	0.00043	mg/L	0.000014	0.00043	mg/L	0.000014	3.33%
Ca 317.933†	426149.6	53.60	mg/L	0.166	53.60	mg/L	0.166	0.31%
Cd 228.802†	27.5	0.00078	mg/L	0.000118	0.00078	mg/L	0.000118	15.01%
Co 228.616†	1547.3	0.04402	mg/L	0.000406	0.04402	mg/L	0.000406	0.92%
Cr 267.716†	703.2	0.1081	mg/L	0.00086	0.1081	mg/L	0.00086	0.79%
Cu 324.752†	55035.0	0.2049	mg/L	0.00188	0.2049	mg/L	0.00188	0.92%
Fe 273.955†	91978.8	93.79	mg/L	0.630	93.79	mg/L	0.630	0.67%
K 766.490†	10397.3	4.006	mg/L	0.0097	4.006	mg/L	0.0097	0.24%
Mg 279.077†	28197.2	38.92	mg/L	0.087	38.92	mg/L	0.087	0.22%
Mn 257.610†	53315.7	1.217	mg/L	0.0047	1.217	mg/L	0.0047	0.38%
Mo 202.031†	171.3	0.00857	mg/L	0.000476	0.00857	mg/L	0.000476	5.56%
Na 589.592†	68805.7	4.376	mg/L	0.0151	4.376	mg/L	0.0151	0.34%
Na 330.237†	78.9	3.709	mg/L	0.0853	3.709	mg/L	0.0853	2.30%
Ni 231.604†	407.3	0.1355	mg/L	0.00104	0.1355	mg/L	0.00104	0.77%
Pb 220.353†	442.2	0.06828	mg/L	0.000568	0.06828	mg/L	0.000568	0.83%
Sb 206.836†	-1.4	0.00075	mg/L	0.000964	0.00075	mg/L	0.000964	127.83%
Se 196.026†	24.2	0.01629	mg/L	0.005364	0.01629	mg/L	0.005364	32.92%
Si 288.158†	1785.6	1.432	mg/L	0.0045	1.432	mg/L	0.0045	0.32%
Sn 189.927†	-10.3	0.00490	mg/L	0.000128	0.00490	mg/L	0.000128	2.61%
Sr 421.552†	155296.9	0.1845	mg/L	0.00061	0.1845	mg/L	0.00061	0.33%
Ti 334.903†	73520.3	3.422	mg/L	0.0168	3.422	mg/L	0.0168	0.49%
Tl 190.801†	3.4	0.01384	mg/L	0.001641	0.01384	mg/L	0.001641	11.85%
V 292.402†	35360.2	0.2251	mg/L	0.00172	0.2251	mg/L	0.00172	0.77%
Zn 206.200†	2667.9	0.7946	mg/L	0.00239	0.7946	mg/L	0.00239	0.30%

Sequence No.: 86
Sample ID: AHS8 B SWC
Analyst: ALA
Dilution: ~~1.000000~~X 24 ✱ 6-19-15

Autosampler Location: 375
Date Collected: 6/18/2015 3:01:51 PM
Data Type: Original

Nebulizer Parameters: AHS8 B SWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS8 B SWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2814855.5	103.2	%	0.49				0.48%
ScR 361.383	300285.2	105.0	%	0.87				0.83%
Ag 328.068†	-119.2	-0.00046	mg/L	0.000023	-0.00046	mg/L	0.000023	5.07%
Al 308.215†	49555.7	51.17	mg/L	0.196	51.17	mg/L	0.196	0.38%
As 188.979†	-57.9	0.05167	mg/L	0.002532	0.05167	mg/L	0.002532	4.90%
B 249.677†	100.2	0.01961	mg/L	0.001270	0.01961	mg/L	0.001270	6.48%
Ba 233.527†	2171.0	0.4338	mg/L	0.00410	0.4338	mg/L	0.00410	0.94%
Be 313.042†	389.0	0.00075	mg/L	0.000016	0.00075	mg/L	0.000016	2.08%
Ca 317.933†	469687.7	59.07	mg/L	0.352	59.07	mg/L	0.352	0.60%
Cd 228.802†	51.1	0.00189	mg/L	0.000117	0.00189	mg/L	0.000117	6.20%
Co 228.616†	1183.9	0.03254	mg/L	0.000302	0.03254	mg/L	0.000302	0.93%
Cr 267.716†	2084.3	0.3178	mg/L	0.00274	0.3178	mg/L	0.00274	0.86%
Cu 324.752†	108102.4	0.3992	mg/L	0.00168	0.3992	mg/L	0.00168	0.42%
Fe 273.955†	83525.2	85.17	mg/L	0.440	85.17	mg/L	0.440	0.52%
K 766.490†	8306.3	3.200	mg/L	0.0133	3.200	mg/L	0.0133	0.42%
Mg 279.077†	16040.7	22.12	mg/L	0.063	22.12	mg/L	0.063	0.29%
Mn 257.610†	71725.2	1.638	mg/L	0.0095	1.638	mg/L	0.0095	0.58%
Mo 202.031†	303.6	0.01586	mg/L	0.000416	0.01586	mg/L	0.000416	2.63%
Na 589.592†	27967.0	1.779	mg/L	0.0078	1.779	mg/L	0.0078	0.44%
Na 330.237†	18.6	0.9051	mg/L	0.07030	0.9051	mg/L	0.07030	7.77%
Ni 231.604†	354.7	0.1180	mg/L	0.00144	0.1180	mg/L	0.00144	1.22%
Pb 220.353†	2170.3	0.2767	mg/L	0.00070	0.2767	mg/L	0.00070	0.25%
Sb 206.836†	11.5	0.00265	mg/L	0.001126	0.00265	mg/L	0.001126	42.52%
Se 196.026†	22.3	0.01509	mg/L	0.005086	0.01509	mg/L	0.005086	33.70%
Si 288.158†	2405.3	1.963	mg/L	0.0190	1.963	mg/L	0.0190	0.97%
Sn 189.927†	9.5	0.00995	mg/L	0.001105	0.00995	mg/L	0.001105	11.11%
Sr 421.552†	124157.7	0.1475	mg/L	0.00054	0.1475	mg/L	0.00054	0.37%
Ti 334.903†	69743.0	3.246	mg/L	0.0124	3.246	mg/L	0.0124	0.38%
Tl 190.801†	9.2	0.01632	mg/L	0.002857	0.01632	mg/L	0.002857	17.50%
V 292.402†	30355.1	0.1938	mg/L	0.00091	0.1938	mg/L	0.00091	0.47%
Zn 206.200†	5836.2	1.739	mg/L	0.0152	1.739	mg/L	0.0152	0.88%

Sequence No.: 87
Sample ID: AHP8 MB2SPD TWC
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 376
Date Collected: 6/18/2015 3:05:51 PM
Data Type: Original

Nebulizer Parameters: AHP8 MB2SPD TWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHP8 MB2SPD TWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2834460.8	103.9	%	0.31				0.30%
ScR 361.383	301360.3	105.4	%	0.37				0.35%
Ag 328.068†	121517.1	0.5133	mg/L	0.00137	0.5133	mg/L	0.00137	0.27%
Al 308.215†	1891.3	1.946	mg/L	0.0144	1.946	mg/L	0.0144	0.74%
As 188.979†	2524.2	1.969	mg/L	0.0090	1.969	mg/L	0.0090	0.46%
B 249.677†	7.4	0.00047	mg/L	0.000708	0.00047	mg/L	0.000708	151.47%
Ba 233.527†	9785.3	1.997	mg/L	0.0123	1.997	mg/L	0.0123	0.62%
Be 313.042†	217733.7	0.4630	mg/L	0.00163	0.4630	mg/L	0.00163	0.35%
Ca 317.933†	75086.8	9.443	mg/L	0.0214	9.443	mg/L	0.0214	0.23%
Cd 228.802†	10934.6	0.4819	mg/L	0.00101	0.4819	mg/L	0.00101	0.21%
Co 228.616†	14962.5	0.4857	mg/L	0.00131	0.4857	mg/L	0.00131	0.27%
Cr 267.716†	3284.5	0.4954	mg/L	0.00240	0.4954	mg/L	0.00240	0.48%
Cu 324.752†	133503.8	0.4895	mg/L	0.00054	0.4895	mg/L	0.00054	0.11%
Fe 273.955†	1932.3	1.966	mg/L	0.0124	1.966	mg/L	0.0124	0.63%
K 766.490†	25121.1	9.679	mg/L	0.0679	9.679	mg/L	0.0679	0.70%
Mg 279.077†	7188.6	9.938	mg/L	0.0351	9.938	mg/L	0.0351	0.35%
Mn 257.610†	20097.1	0.4595	mg/L	0.00077	0.4595	mg/L	0.00077	0.17%
Mo 202.031†	26.0	0.00128	mg/L	0.000108	0.00128	mg/L	0.000108	8.46%
Na 589.592†	148855.7	9.467	mg/L	0.0269	9.467	mg/L	0.0269	0.28%
Na 330.237†	249.3	10.09	mg/L	0.159	10.09	mg/L	0.159	1.58%
Ni 231.604†	1461.1	0.4853	mg/L	0.00059	0.4853	mg/L	0.00059	0.12%
Pb 220.353†	15469.6	1.899	mg/L	0.0055	1.899	mg/L	0.0055	0.29%
Sb 206.836†	11.5	-0.00014	mg/L	0.001077	-0.00014	mg/L	0.001077	784.66%
Se 196.026†	2890.0	1.970	mg/L	0.0164	1.970	mg/L	0.0164	0.83%
Si 288.158†	21.2	0.01974	mg/L	0.005713	0.01974	mg/L	0.005713	28.93%
Sn 189.927†	-18.1	-0.00258	mg/L	0.001241	-0.00258	mg/L	0.001241	48.13%
Sr 421.552†	393976.2	0.4681	mg/L	0.00041	0.4681	mg/L	0.00041	0.09%
Ti 334.903†	50.6	0.00132	mg/L	0.000141	0.00132	mg/L	0.000141	10.64%
Tl 190.801†	3199.8	1.972	mg/L	0.0126	1.972	mg/L	0.0126	0.64%
V 292.402†	75544.6	0.4926	mg/L	0.00131	0.4926	mg/L	0.00131	0.27%
Zn 206.200†	1564.2	0.4665	mg/L	0.00020	0.4665	mg/L	0.00020	0.04%

Sequence No.: 88
Sample ID: CV 9
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 3:09:52 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2832467.4	103.9	%	0.76				0.73%
ScR 361.383	295783.7	103.5	%	0.30				0.29%
Ag 328.068†	236798.7	1.000	mg/L	0.0150	1.000	mg/L	0.0150	1.50%
Al 308.215†	1897.4	1.928	mg/L	0.0061	1.928	mg/L	0.0061	0.31%
As 188.979†	2423.2	1.920	mg/L	0.0167	1.920	mg/L	0.0167	0.87%
B 249.677†	4851.0	0.9512	mg/L	0.00455	0.9512	mg/L	0.00455	0.48%
Ba 233.527†	4920.0	1.004	mg/L	0.0009	1.004	mg/L	0.0009	0.09%
Be 313.042†	433081.6	0.9210	mg/L	0.00712	0.9210	mg/L	0.00712	0.77%
Ca 317.933†	15937.4	2.004	mg/L	0.0084	2.004	mg/L	0.0084	0.42%
Cd 228.802†	22473.9	1.004	mg/L	0.0085	1.004	mg/L	0.0085	0.84%
Co 228.616†	30499.4	0.9888	mg/L	0.00834	0.9888	mg/L	0.00834	0.84%
Cr 267.716†	6618.9	0.9998	mg/L	0.00327	0.9998	mg/L	0.00327	0.33%
Cu 324.752†	267449.4	0.9801	mg/L	0.01642	0.9801	mg/L	0.01642	1.68%
Fe 273.955†	1919.5	1.948	mg/L	0.0134	1.948	mg/L	0.0134	0.69%
K 766.490†	50685.2	19.53	mg/L	0.095	19.53	mg/L	0.095	0.49%
Mg 279.077†	1395.3	1.937	mg/L	0.0026	1.937	mg/L	0.0026	0.13%
Mn 257.610†	40173.3	0.9182	mg/L	0.00148	0.9182	mg/L	0.00148	0.16%
Mo 202.031†	17517.6	0.9782	mg/L	0.00816	0.9782	mg/L	0.00816	0.83%
Na 589.592†	756229.0	48.09	mg/L	0.180	48.09	mg/L	0.180	0.37%
Na 330.237†	1220.8	50.02	mg/L	0.246	50.02	mg/L	0.246	0.49%
Ni 231.604†	2930.0	0.9749	mg/L	0.00621	0.9749	mg/L	0.00621	0.64%
Pb 220.353†	15612.0	1.917	mg/L	0.0156	1.917	mg/L	0.0156	0.81%
Sb 206.836†	5340.1	1.982	mg/L	0.0152	1.982	mg/L	0.0152	0.77%
Se 196.026†	2851.1	1.943	mg/L	0.0140	1.943	mg/L	0.0140	0.72%
Si 288.158†	2295.9	1.926	mg/L	0.0183	1.926	mg/L	0.0183	0.95%
Sn 189.927†	4491.7	0.9776	mg/L	0.00940	0.9776	mg/L	0.00940	0.96%
Sr 421.552†	799496.3	0.9499	mg/L	0.00144	0.9499	mg/L	0.00144	0.15%
Ti 334.903†	20630.5	0.9604	mg/L	0.00111	0.9604	mg/L	0.00111	0.12%
Tl 190.801†	3140.3	1.932	mg/L	0.0170	1.932	mg/L	0.0170	0.88%
V 292.402†	148117.2	0.9661	mg/L	0.01416	0.9661	mg/L	0.01416	1.47%
Zn 206.200†	3200.4	0.9543	mg/L	0.00516	0.9543	mg/L	0.00516	0.54%

Sequence No.: 89
Sample ID: CB 9
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 3:13:55 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2839749.7	104.1	%	0.73				0.70%
ScR 361.383	299916.0	104.9	%	1.66				1.59%
Ag 328.068†	22.8	0.00010	mg/L	0.000276	0.00010	mg/L	0.000276	287.14%
Al 308.215†	4.5	0.00465	mg/L	0.005016	0.00465	mg/L	0.005016	107.89%
As 188.979†	0.3	0.00018	mg/L	0.002315	0.00018	mg/L	0.002315	>999.9%
B 249.677†	6.7	0.00131	mg/L	0.000261	0.00131	mg/L	0.000261	19.91%
Ba 233.527†	5.8	0.00117	mg/L	0.000561	0.00117	mg/L	0.000561	47.75%
Be 313.042†	29.9	0.00006	mg/L	0.000005	0.00006	mg/L	0.000005	7.72%
Ca 317.933†	15.9	0.00200	mg/L	0.000933	0.00200	mg/L	0.000933	46.64%
Cd 228.802†	10.4	0.00047	mg/L	0.000010	0.00047	mg/L	0.000010	2.08%
Co 228.616†	6.2	0.00020	mg/L	0.000197	0.00020	mg/L	0.000197	97.51%
Cr 267.716†	1.6	0.00024	mg/L	0.000546	0.00024	mg/L	0.000546	226.89%
Cu 324.752†	103.9	0.00038	mg/L	0.000093	0.00038	mg/L	0.000093	24.40%
Fe 273.955†	2.9	0.00297	mg/L	0.001873	0.00297	mg/L	0.001873	63.13%
K 766.490†	-8.1	-0.00311	mg/L	0.002335	-0.00311	mg/L	0.002335	75.08%
Mg 279.077†	-3.4	-0.00469	mg/L	0.002621	-0.00469	mg/L	0.002621	55.82%
Mn 257.610†	-1.0	-0.00002	mg/L	0.000048	-0.00002	mg/L	0.000048	214.78%
Mo 202.031†	25.8	0.00144	mg/L	0.000577	0.00144	mg/L	0.000577	40.04%
Na 589.592†	-151.7	-0.00964	mg/L	0.002506	-0.00964	mg/L	0.002506	25.98%
Na 330.237†	-0.6	-0.02469	mg/L	0.097135	-0.02469	mg/L	0.097135	393.35%
Ni 231.604†	0.0	0.00001	mg/L	0.001343	0.00001	mg/L	0.001343	>999.9%
Pb 220.353†	4.9	0.00061	mg/L	0.000384	0.00061	mg/L	0.000384	63.35%
Sb 206.836†	10.4	0.00385	mg/L	0.001019	0.00385	mg/L	0.001019	26.47%
Se 196.026†	3.6	0.00243	mg/L	0.000682	0.00243	mg/L	0.000682	28.05%
Si 288.158†	-1.5	-0.00125	mg/L	0.004847	-0.00125	mg/L	0.004847	387.87%
Sn 189.927†	4.3	0.00095	mg/L	0.000596	0.00095	mg/L	0.000596	63.01%
Sr 421.552†	47.7	0.00006	mg/L	0.000030	0.00006	mg/L	0.000030	52.92%
Ti 334.903†	-6.2	-0.00029	mg/L	0.000337	-0.00029	mg/L	0.000337	115.86%
Tl 190.801†	0.4	0.00027	mg/L	0.001161	0.00027	mg/L	0.001161	433.14%
V 292.402†	8.2	0.00006	mg/L	0.000039	0.00006	mg/L	0.000039	70.31%
Zn 206.200†	-0.3	-0.00008	mg/L	0.000351	-0.00008	mg/L	0.000351	444.04%

Sequence No.: 90
Sample ID: AHS8 MB1 SWC
Analyst: ALA
Dilution: 2.000000X

Autosampler Location: 377
Date Collected: 6/18/2015 3:18:10 PM
Data Type: Original

Nebulizer Parameters: AHS8 MB1 SWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS8 MB1 SWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2848426.1	104.4	%	0.44				0.42%
ScR 361.383	302189.7	105.7	%	0.90				0.85%
Ag 328.068†	-44.6	-0.00019	mg/L	0.000246	-0.00038	mg/L	0.000493	130.95%
Al 308.215†	6.3	0.00655	mg/L	0.002845	0.01311	mg/L	0.005689	43.40%
As 188.979†	1.5	0.00114	mg/L	0.001443	0.00228	mg/L	0.002887	126.65%
B 249.677†	2.1	0.00040	mg/L	0.000558	0.00081	mg/L	0.001116	138.31%
Ba 233.527†	6.3	0.00129	mg/L	0.000554	0.00258	mg/L	0.001108	42.97%
Be 313.042†	0.8	0.00000	mg/L	0.000006	0.00000	mg/L	0.000012	355.16%
Ca 317.933†	79.1	0.00995	mg/L	0.000091	0.01990	mg/L	0.000181	0.91%
Cd 228.802†	5.1	0.00022	mg/L	0.000099	0.00044	mg/L	0.000198	44.82%
Co 228.616†	6.9	0.00022	mg/L	0.000074	0.00045	mg/L	0.000149	33.04%
Cr 267.716†	-2.7	-0.00041	mg/L	0.000842	-0.00082	mg/L	0.001683	206.16%
Cu 324.752†	76.1	0.00028	mg/L	0.000098	0.00056	mg/L	0.000196	35.15%
Fe 273.955†	3.7	0.00375	mg/L	0.000973	0.00751	mg/L	0.001946	25.92%
K 766.490†	-0.7	-0.00029	mg/L	0.010013	-0.00058	mg/L	0.020026	>999.9%
Mg 279.077†	-2.8	-0.00390	mg/L	0.005944	-0.00780	mg/L	0.011888	152.39%
Mn 257.610†	-3.0	-0.00007	mg/L	0.000042	-0.00014	mg/L	0.000084	61.12%
Mo 202.031†	0.3	0.00002	mg/L	0.000143	0.00003	mg/L	0.000287	943.50%
Na 589.592†	-146.0	-0.00928	mg/L	0.001455	-0.01857	mg/L	0.002909	15.67%
Na 330.237†	0.0	0.00042	mg/L	0.138736	0.00084	mg/L	0.277472	>999.9%
Ni 231.604†	-1.3	-0.00042	mg/L	0.000854	-0.00083	mg/L	0.001709	205.15%
Pb 220.353†	5.6	0.00069	mg/L	0.000382	0.00137	mg/L	0.000764	55.61%
Sb 206.836†	0.2	0.00007	mg/L	0.000663	0.00014	mg/L	0.001327	969.47%
Se 196.026†	3.6	0.00246	mg/L	0.002669	0.00491	mg/L	0.005339	108.68%
Si 288.158†	1.0	0.00088	mg/L	0.003102	0.00176	mg/L	0.006203	351.99%
Sn 189.927†	1.3	0.00029	mg/L	0.000777	0.00058	mg/L	0.001553	268.29%
Sr 421.552†	3.4	0.00000	mg/L	0.000005	0.00001	mg/L	0.000011	132.32%
Ti 334.903†	-9.6	-0.00045	mg/L	0.000185	-0.00090	mg/L	0.000371	41.35%
Tl 190.801†	0.7	0.00044	mg/L	0.000789	0.00088	mg/L	0.001579	179.25%
V 292.402†	5.6	0.00003	mg/L	0.000174	0.00007	mg/L	0.000347	496.51%
Zn 206.200†	1.3	0.00038	mg/L	0.000457	0.00076	mg/L	0.000914	120.23%

Sequence No.: 91
Sample ID: AHS2 MB1 LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 378
Date Collected: 6/18/2015 3:22:25 PM
Data Type: Original

Nebulizer Parameters: AHS2 MB1 LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS2 MB1 LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2720978.4	99.77	%	0.085				0.09%
ScR 361.383	297313.5	104.0	%	0.53				0.51%
Ag 328.068†	-45.6	-0.00019	mg/L	0.000079	-0.00096	mg/L	0.000397	41.26%
Al 308.215†	5.3	0.00544	mg/L	0.005401	0.02719	mg/L	0.027007	99.34%
As 188.979†	-0.9	-0.00072	mg/L	0.001030	-0.00359	mg/L	0.005150	143.59%
B 249.677†	132.3	0.02598	mg/L	0.000732	0.1299	mg/L	0.00366	2.82%
Ba 233.527†	20.8	0.00425	mg/L	0.000340	0.02126	mg/L	0.001702	8.01%
Be 313.042†	14.7	0.00003	mg/L	0.000010	0.00016	mg/L	0.000051	32.41%
Ca 317.933†	1764.9	0.2220	mg/L	0.00168	1.110	mg/L	0.0084	0.76%
Cd 228.802†	18.1	0.00082	mg/L	0.000184	0.00412	mg/L	0.000918	22.30%
Co 228.616†	2.3	0.00008	mg/L	0.000190	0.00038	mg/L	0.000951	251.05%
Cr 267.716†	-0.5	-0.00008	mg/L	0.000504	-0.00039	mg/L	0.002519	642.71%
Cu 324.752†	245.6	0.00090	mg/L	0.000083	0.00450	mg/L	0.000413	9.18%
Fe 273.955†	4.2	0.00425	mg/L	0.002704	0.02124	mg/L	0.013519	63.65%
K 766.490†	99.0	0.03815	mg/L	0.003069	0.1908	mg/L	0.01535	8.04%
Mg 279.077†	23.5	0.03248	mg/L	0.006246	0.1624	mg/L	0.03123	19.23%
Mn 257.610†	0.4	0.00001	mg/L	0.000047	0.00004	mg/L	0.000234	609.30%
Mo 202.031†	3.2	0.00017	mg/L	0.000063	0.00086	mg/L	0.000313	36.41%
Na 589.592†	4566548.3	290.4	mg/L	2.49	1452	mg/L	12.47	0.86%
Na 330.237†	7462.7	306.3	mg/L	2.35	1532	mg/L	11.74	0.77%
Ni 231.604†	1.0	0.00033	mg/L	0.000458	0.00166	mg/L	0.002289	138.25%
Pb 220.353†	-2.9	-0.00036	mg/L	0.000463	-0.00180	mg/L	0.002315	128.26%
Sb 206.836†	-5.8	-0.00214	mg/L	0.001725	-0.01071	mg/L	0.008623	80.51%
Se 196.026†	1.3	0.00088	mg/L	0.003637	0.00441	mg/L	0.018183	412.01%
Si 288.158†	17.6	0.01498	mg/L	0.004782	0.07491	mg/L	0.023908	31.92%
Sn 189.927†	1.4	0.00033	mg/L	0.000434	0.00167	mg/L	0.002171	129.72%
Sr 421.552†	154.3	0.00018	mg/L	0.000017	0.00092	mg/L	0.000085	9.32%
Ti 334.903†	-5.5	-0.00028	mg/L	0.000329	-0.00140	mg/L	0.001646	117.75%
Tl 190.801†	0.3	0.00017	mg/L	0.002076	0.00087	mg/L	0.010381	>999.9%
V 292.402†	21.0	0.00014	mg/L	0.000102	0.00068	mg/L	0.000511	74.86%
Zn 206.200†	14.3	0.00426	mg/L	0.000572	0.02129	mg/L	0.002860	13.44%

Sequence No.: 92
Sample ID: AHS2 ADUP LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 379
Date Collected: 6/18/2015 3:26:57 PM
Data Type: Original

Nebulizer Parameters: AHS2 ADUP LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS2 ADUP LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2715831.0	99.58	%	0.344				0.35%
ScR 361.383	289997.9	101.4	%	1.80				1.78%
Ag 328.068†	0.3	0.00000	mg/L	0.000195	0.00001	mg/L	0.000977	>999.9%
Al 308.215†	429.0	0.4430	mg/L	0.00985	2.215	mg/L	0.0492	2.22%
As 188.979†	18.2	0.01161	mg/L	0.001907	0.05804	mg/L	0.009536	16.43%
B 249.677†	354.1	0.06950	mg/L	0.001058	0.3475	mg/L	0.00529	1.52%
Ba 233.527†	97.5	0.01989	mg/L	0.000496	0.09943	mg/L	0.002480	2.49%
Be 313.042†	86.8	0.00018	mg/L	0.000002	0.00092	mg/L	0.000010	1.05%
Ca 317.933†	124158.1	15.61	mg/L	0.009	78.07	mg/L	0.043	0.05%
Cd 228.802†	9.6	0.00041	mg/L	0.000039	0.00207	mg/L	0.000196	9.46%
Co 228.616†	126.7	0.00411	mg/L	0.000139	0.02055	mg/L	0.000697	3.39%
Cr 267.716†	34.0	0.00332	mg/L	0.000251	0.01659	mg/L	0.001256	7.57%
Cu 324.752†	725.4	0.00258	mg/L	0.000077	0.01289	mg/L	0.000385	2.99%
Fe 273.955†	90.1	0.09185	mg/L	0.000954	0.4592	mg/L	0.00477	1.04%
K 766.490†	6913.7	2.664	mg/L	0.0466	13.32	mg/L	0.233	1.75%
Mg 279.077†	15014.6	20.76	mg/L	0.378	103.8	mg/L	1.89	1.82%
Mn 257.610†	78581.8	1.795	mg/L	0.0027	8.976	mg/L	0.0133	0.15%
Mo 202.031†	41.2	0.00201	mg/L	0.000193	0.01004	mg/L	0.000964	9.60%
Na 589.592†	4701375.7	299.0	mg/L	2.86	1495	mg/L	14.31	0.96%
Na 330.237†	7658.6	314.4	mg/L	6.01	1572	mg/L	30.07	1.91%
Ni 231.604†	12.8	0.00426	mg/L	0.001007	0.02132	mg/L	0.005036	23.62%
Pb 220.353†	0.8	0.00023	mg/L	0.000297	0.00117	mg/L	0.001485	127.26%
Sb 206.836†	-2.0	-0.00088	mg/L	0.001018	-0.00441	mg/L	0.005090	115.54%
Se 196.026†	11.5	0.00783	mg/L	0.003775	0.03914	mg/L	0.018874	48.22%
Si 288.158†	2865.8	2.435	mg/L	0.0491	12.17	mg/L	0.246	2.02%
Sn 189.927†	-27.2	-0.00384	mg/L	0.000779	-0.01918	mg/L	0.003895	20.30%
Sr 421.552†	72310.0	0.08591	mg/L	0.000159	0.4296	mg/L	0.00079	0.18%
Ti 334.903†	50.0	0.00084	mg/L	0.000590	0.00422	mg/L	0.002948	69.83%
Tl 190.801†	10.6	0.00656	mg/L	0.001949	0.03282	mg/L	0.009746	29.69%
V 292.402†	-19.3	0.00016	mg/L	0.000009	0.00081	mg/L	0.000043	5.32%
Zn 206.200†	65.6	0.01936	mg/L	0.000643	0.09678	mg/L	0.003216	3.32%

Sequence No.: 93
Sample ID: AHS2 A LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 380
Date Collected: 6/18/2015 3:31:29 PM
Data Type: Original

Nebulizer Parameters: AHS2 A LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS2 A LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2702943.6	99.11	%	0.487				0.49%
ScR 361.383	293050.1	102.5	%	0.35				0.34%
Ag 328.068†	-12.6	-0.00005	mg/L	0.000073	-0.00027	mg/L	0.000366	137.74%
Al 308.215†	412.8	0.4263	mg/L	0.00092	2.132	mg/L	0.0046	0.22%
As 188.979†	19.6	0.01277	mg/L	0.002343	0.06385	mg/L	0.011713	18.34%
B 249.677†	337.7	0.06628	mg/L	0.000796	0.3314	mg/L	0.00398	1.20%
Ba 233.527†	94.5	0.01928	mg/L	0.000300	0.09638	mg/L	0.001502	1.56%
Be 313.042†	64.7	0.00014	mg/L	0.000006	0.00069	mg/L	0.000032	4.68%
Ca 317.933†	121453.8	15.27	mg/L	0.026	76.37	mg/L	0.129	0.17%
Cd 228.802†	7.8	0.00032	mg/L	0.000053	0.00162	mg/L	0.000265	16.36%
Co 228.616†	125.6	0.00407	mg/L	0.000180	0.02037	mg/L	0.000898	4.41%
Cr 267.716†	33.6	0.00331	mg/L	0.001326	0.01653	mg/L	0.006630	40.11%
Cu 324.752†	716.8	0.00255	mg/L	0.000138	0.01275	mg/L	0.000691	5.42%
Fe 273.955†	87.7	0.08944	mg/L	0.002748	0.4472	mg/L	0.01374	3.07%
K 766.490†	6688.5	2.577	mg/L	0.0257	12.88	mg/L	0.128	1.00%
Mg 279.077†	14593.4	20.17	mg/L	0.229	100.9	mg/L	1.14	1.13%
Mn 257.610†	76713.6	1.753	mg/L	0.0044	8.763	mg/L	0.0219	0.25%
Mo 202.031†	42.7	0.00210	mg/L	0.000176	0.01050	mg/L	0.000881	8.39%
Na 589.592†	4587580.5	291.8	mg/L	1.33	1459	mg/L	6.63	0.45%
Na 330.237†	7445.0	305.6	mg/L	3.39	1528	mg/L	16.95	1.11%
Ni 231.604†	15.2	0.00506	mg/L	0.000760	0.02531	mg/L	0.003801	15.02%
Pb 220.353†	-0.3	0.00009	mg/L	0.001008	0.00044	mg/L	0.005040	>999.9%
Sb 206.836†	-5.0	-0.00198	mg/L	0.002742	-0.00989	mg/L	0.013712	138.66%
Se 196.026†	8.6	0.00588	mg/L	0.002070	0.02939	mg/L	0.010351	35.22%
Si 288.158†	2791.4	2.372	mg/L	0.0041	11.86	mg/L	0.021	0.17%
Sn 189.927†	-28.9	-0.00425	mg/L	0.000384	-0.02123	mg/L	0.001922	9.05%
Sr 421.552†	70156.1	0.08335	mg/L	0.000124	0.4168	mg/L	0.00062	0.15%
Ti 334.903†	38.2	0.00033	mg/L	0.000170	0.00163	mg/L	0.000849	51.97%
Tl 190.801†	13.3	0.00823	mg/L	0.000909	0.04114	mg/L	0.004547	11.05%
V 292.402†	-21.7	0.00014	mg/L	0.000124	0.00070	mg/L	0.000618	88.21%
Zn 206.200†	61.6	0.01818	mg/L	0.001446	0.09092	mg/L	0.007231	7.95%

Sequence No.: 94
Sample ID: AHS2 ASPK LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 381
Date Collected: 6/18/2015 3:36:01 PM
Data Type: Original

Nebulizer Parameters: AHS2 ASPK LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS2 ASPK LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2674408.4	98.06	%	1.542				1.57%
ScR 361.383	288547.2	100.9	%	2.53				2.50%
Ag 328.068†	48478.7	0.2048	mg/L	0.00246	1.024	mg/L	0.0123	1.20%
Al 308.215†	1168.7	1.204	mg/L	0.0239	6.021	mg/L	0.1196	1.99%
As 188.979†	1045.8	0.8134	mg/L	0.00777	4.067	mg/L	0.0388	0.95%
B 249.677†	342.8	0.06689	mg/L	0.001168	0.3345	mg/L	0.00584	1.75%
Ba 233.527†	4017.4	0.8199	mg/L	0.01232	4.099	mg/L	0.0616	1.50%
Be 313.042†	85006.8	0.1808	mg/L	0.00031	0.9039	mg/L	0.00154	0.17%
Ca 317.933†	153322.6	19.28	mg/L	0.043	96.41	mg/L	0.216	0.22%
Cd 228.802†	4581.0	0.2020	mg/L	0.00224	1.010	mg/L	0.0112	1.11%
Co 228.616†	6108.6	0.1983	mg/L	0.00163	0.9915	mg/L	0.00817	0.82%
Cr 267.716†	1332.1	0.1992	mg/L	0.00452	0.9960	mg/L	0.02258	2.27%
Cu 324.752†	55042.3	0.2017	mg/L	0.00316	1.009	mg/L	0.0158	1.57%
Fe 273.955†	839.0	0.8537	mg/L	0.01091	4.269	mg/L	0.0545	1.28%
K 766.490†	16733.5	6.447	mg/L	0.0456	32.24	mg/L	0.228	0.71%
Mg 279.077†	17049.7	23.57	mg/L	0.097	117.9	mg/L	0.49	0.41%
Mn 257.610†	85369.0	1.950	mg/L	0.0135	9.752	mg/L	0.0673	0.69%
Mo 202.031†	50.8	0.00248	mg/L	0.000360	0.01239	mg/L	0.001800	14.53%
Na 589.592†	4714037.2	299.8	mg/L	2.49	1499	mg/L	12.46	0.83%
Na 330.237†	7803.7	320.3	mg/L	5.25	1601	mg/L	26.27	1.64%
Ni 231.604†	589.4	0.1958	mg/L	0.00325	0.9788	mg/L	0.01624	1.66%
Pb 220.353†	6181.9	0.7591	mg/L	0.00682	3.795	mg/L	0.0341	0.90%
Sb 206.836†	6.2	0.00044	mg/L	0.001149	0.00220	mg/L	0.005745	261.60%
Se 196.026†	1193.6	0.8137	mg/L	0.00565	4.068	mg/L	0.0283	0.69%
Si 288.158†	2871.7	2.440	mg/L	0.0421	12.20	mg/L	0.210	1.72%
Sn 189.927†	-32.7	-0.00450	mg/L	0.001084	-0.02251	mg/L	0.005420	24.08%
Sr 421.552†	227263.1	0.2700	mg/L	0.00094	1.350	mg/L	0.0047	0.35%
Ti 334.903†	67.7	0.00127	mg/L	0.000090	0.00635	mg/L	0.000448	7.06%
Tl 190.801†	1240.1	0.7643	mg/L	0.01118	3.822	mg/L	0.0559	1.46%
V 292.402†	29789.2	0.1945	mg/L	0.00209	0.9727	mg/L	0.01045	1.07%
Zn 206.200†	697.3	0.2078	mg/L	0.00340	1.039	mg/L	0.0170	1.63%

Sequence No.: 95
Sample ID: AHS2 B LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 382
Date Collected: 6/18/2015 3:40:18 PM
Data Type: Original

Nebulizer Parameters: AHS2 B LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS2 B LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2680087.0	98.27	%	0.383				0.39%
ScR 361.383	286278.6	100.1	%	0.51				0.51%
Ag 328.068†	-222.7	-0.00094	mg/L	0.000084	-0.00469	mg/L	0.000418	8.92%
Al 308.215†	8.6	0.00855	mg/L	0.001330	0.04276	mg/L	0.006650	15.55%
As 188.979†	67.9	0.03388	mg/L	0.002511	0.1694	mg/L	0.01256	7.41%
B 249.677†	379.3	0.07445	mg/L	0.000787	0.3722	mg/L	0.00393	1.06%
Ba 233.527†	508.8	0.1038	mg/L	0.00106	0.5192	mg/L	0.00528	1.02%
Be 313.042†	39.3	0.00008	mg/L	0.000006	0.00040	mg/L	0.000031	7.61%
Ca 317.933†	916278.7	115.2	mg/L	0.23	576.2	mg/L	1.14	0.20%
Cd 228.802†	-25.2	-0.00098	mg/L	0.000061	-0.00490	mg/L	0.000305	6.21%
Co 228.616†	55.8	0.00178	mg/L	0.000098	0.00888	mg/L	0.000488	5.49%
Cr 267.716†	50.5	0.00602	mg/L	0.000254	0.03010	mg/L	0.001269	4.22%
Cu 324.752†	483.4	0.00169	mg/L	0.000081	0.00847	mg/L	0.000405	4.78%
Fe 273.955†	5.1	0.00506	mg/L	0.001269	0.02529	mg/L	0.006346	25.09%
K 766.490†	1016.6	0.3917	mg/L	0.00750	1.958	mg/L	0.0375	1.91%
Mg 279.077†	13138.4	18.16	mg/L	0.221	90.82	mg/L	1.107	1.22%
Mn 257.610†	757.5	0.01689	mg/L	0.000205	0.08443	mg/L	0.001027	1.22%
Mo 202.031†	139.1	0.00562	mg/L	0.000342	0.02812	mg/L	0.001709	6.08%
Na 589.592†	4743433.1	301.7	mg/L	0.93	1508	mg/L	4.64	0.31%
Na 330.237†	7608.9	312.3	mg/L	3.46	1562	mg/L	17.31	1.11%
Ni 231.604†	4.8	0.00158	mg/L	0.000881	0.00792	mg/L	0.004403	55.60%
Pb 220.353†	-13.8	-0.00168	mg/L	0.000501	-0.00842	mg/L	0.002507	29.76%
Sb 206.836†	60.9	0.02244	mg/L	0.001167	0.1122	mg/L	0.00583	5.20%
Se 196.026†	28.2	0.01922	mg/L	0.000719	0.09611	mg/L	0.003593	3.74%
Si 288.158†	6720.1	5.709	mg/L	0.0527	28.54	mg/L	0.264	0.92%
Sn 189.927†	-57.5	0.00286	mg/L	0.000484	0.01428	mg/L	0.002420	16.94%
Sr 421.552†	108910.2	0.1294	mg/L	0.00026	0.6470	mg/L	0.00129	0.20%
Ti 334.903†	341.3	0.00497	mg/L	0.000326	0.02486	mg/L	0.001632	6.56%
Tl 190.801†	36.1	0.02226	mg/L	0.000305	0.1113	mg/L	0.00153	1.37%
V 292.402†	2202.6	0.01434	mg/L	0.000059	0.07168	mg/L	0.000297	0.41%
Zn 206.200†	7.9	0.00089	mg/L	0.000446	0.00446	mg/L	0.002231	49.98%

Sequence No.: 96
Sample ID: AHS2 C LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 383
Date Collected: 6/18/2015 3:44:50 PM
Data Type: Original

Nebulizer Parameters: AHS2 C LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS2 C LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2716948.9	99.62	%	0.301				0.30%
ScR 361.383	292285.7	102.2	%	0.90				0.89%
Ag 328.068†	-179.6	-0.00076	mg/L	0.000170	-0.00379	mg/L	0.000851	22.44%
Al 308.215†	0.5	-0.00007	mg/L	0.004228	-0.00033	mg/L	0.021138	>999.9%
As 188.979†	56.6	0.03021	mg/L	0.000197	0.1511	mg/L	0.00098	0.65%
B 249.677†	860.2	0.1689	mg/L	0.00204	0.8443	mg/L	0.01022	1.21%
Ba 233.527†	182.0	0.03714	mg/L	0.000182	0.1857	mg/L	0.00091	0.49%
Be 313.042†	24.1	0.00005	mg/L	0.000018	0.00025	mg/L	0.000089	34.96%
Ca 317.933†	666577.4	83.83	mg/L	0.140	419.2	mg/L	0.70	0.17%
Cd 228.802†	-21.2	-0.00088	mg/L	0.000059	-0.00439	mg/L	0.000296	6.74%
Co 228.616†	53.7	0.00173	mg/L	0.000121	0.00863	mg/L	0.000605	7.02%
Cr 267.716†	112.1	0.00236	mg/L	0.000339	0.01180	mg/L	0.001697	14.38%
Cu 324.752†	407.8	0.00081	mg/L	0.000037	0.00406	mg/L	0.000185	4.56%
Fe 273.955†	14.2	0.01445	mg/L	0.002729	0.07223	mg/L	0.013647	18.89%
K 766.490†	866.0	0.3337	mg/L	0.01472	1.668	mg/L	0.0736	4.41%
Mg 279.077†	119529.1	165.2	mg/L	0.19	826.2	mg/L	0.95	0.11%
Mn 257.610†	147.7	0.00268	mg/L	0.000093	0.01339	mg/L	0.000467	3.49%
Mo 202.031†	541.0	0.02865	mg/L	0.000234	0.1432	mg/L	0.00117	0.82%
Na 589.592†	95344.0	6.064	mg/L	0.0149	30.32	mg/L	0.074	0.25%
Na 330.237†	134.8	5.534	mg/L	0.1769	27.67	mg/L	0.885	3.20%
Ni 231.604†	4.1	0.00137	mg/L	0.001247	0.00686	mg/L	0.006235	90.95%
Pb 220.353†	-8.9	-0.00106	mg/L	0.001264	-0.00530	mg/L	0.006319	119.25%
Sb 206.836†	8.6	0.00287	mg/L	0.001445	0.01437	mg/L	0.007224	50.27%
Se 196.026†	30.2	0.02062	mg/L	0.006654	0.1031	mg/L	0.03327	32.27%
Si 288.158†	923.6	0.7845	mg/L	0.00357	3.922	mg/L	0.0179	0.46%
Sn 189.927†	-56.1	-0.00103	mg/L	0.000986	-0.00517	mg/L	0.004929	95.30%
Sr 421.552†	119575.4	0.1421	mg/L	0.00025	0.7104	mg/L	0.00125	0.18%
Ti 334.903†	252.3	0.00378	mg/L	0.000503	0.01891	mg/L	0.002517	13.31%
Tl 190.801†	25.9	0.01603	mg/L	0.004141	0.08013	mg/L	0.020707	25.84%
V 292.402†	280.6	0.00189	mg/L	0.000122	0.00947	mg/L	0.000611	6.45%
Zn 206.200†	0.4	-0.00093	mg/L	0.001240	-0.00466	mg/L	0.006198	133.12%

Sequence No.: 97
Sample ID: AHS8 C SWC
Analyst: ALA
Dilution: 2.000000X

Autosampler Location: 384
Date Collected: 6/18/2015 3:49:05 PM
Data Type: Original

Nebulizer Parameters: AHS8 C SWC

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS8 C SWC

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2831721.9	103.8	%	0.58				0.56%
ScR 361.383	303279.8	106.1	%	0.74				0.69%
Ag 328.068†	-125.8	-0.00045	mg/L	0.000107	-0.00090	mg/L	0.000213	23.84%
Al 308.215†	70085.8	72.37	mg/L	0.175	144.7	mg/L	0.35	0.24%
As 188.979†	-76.1	0.06060	mg/L	0.000620	0.1212	mg/L	0.00124	1.02%
B 249.677†	116.7	0.02283	mg/L	0.001210	0.04565	mg/L	0.002420	5.30%
Ba 233.527†	3887.2	0.7759	mg/L	0.00584	1.552	mg/L	0.0117	0.75%
Be 313.042†	436.8	0.00082	mg/L	0.000022	0.00163	mg/L	0.000043	2.66%
Ca 317.933†	287370.3	36.14	mg/L	0.026	72.28	mg/L	0.052	0.07%
Cd 228.802†	160.0	0.00599	mg/L	0.000243	0.01197	mg/L	0.000486	4.06%
Co 228.616†	1746.7	0.04972	mg/L	0.000346	0.09945	mg/L	0.000693	0.70%
Cr 267.716†	2228.9	0.3428	mg/L	0.00160	0.6855	mg/L	0.00320	0.47%
Cu 324.752†	140109.3	0.5195	mg/L	0.00530	1.039	mg/L	0.0106	1.02%
Fe 273.955†	156775.5	159.9	mg/L	0.72	319.7	mg/L	1.44	0.45%
K 766.490†	11988.6	4.619	mg/L	0.0018	9.238	mg/L	0.0036	0.04%
Mg 279.077†	25301.5	34.87	mg/L	0.145	69.74	mg/L	0.290	0.42%
Mn 257.610†	93692.0	2.140	mg/L	0.0078	4.280	mg/L	0.0156	0.36%
Mo 202.031†	443.3	0.02408	mg/L	0.000172	0.04817	mg/L	0.000343	0.71%
Na 589.592†	52034.3	3.309	mg/L	0.0114	6.618	mg/L	0.0228	0.34%
Na 330.237†	62.7	2.527	mg/L	0.2939	5.054	mg/L	0.5879	11.63%
Ni 231.604†	724.8	0.2411	mg/L	0.00143	0.4822	mg/L	0.00286	0.59%
Pb 220.353†	1580.9	0.2064	mg/L	0.00082	0.4128	mg/L	0.00164	0.40%
Sb 206.836†	29.4	0.01009	mg/L	0.001039	0.02018	mg/L	0.002078	10.30%
Se 196.026†	22.0	0.01474	mg/L	0.001991	0.02949	mg/L	0.003981	13.50%
Si 288.158†	1834.8	1.464	mg/L	0.0069	2.927	mg/L	0.0138	0.47%
Sn 189.927†	94.0	0.02524	mg/L	0.001690	0.05048	mg/L	0.003381	6.70%
Sr 421.552†	161081.8	0.1914	mg/L	0.00044	0.3828	mg/L	0.00089	0.23%
Ti 334.903†	82244.7	3.831	mg/L	0.0127	7.661	mg/L	0.0255	0.33%
Tl 190.801†	-16.2	0.01025	mg/L	0.004058	0.02050	mg/L	0.008116	39.58%
V 292.402†	52458.7	0.3346	mg/L	0.00293	0.6691	mg/L	0.00586	0.88%
Zn 206.200†	9199.0	2.742	mg/L	0.0117	5.483	mg/L	0.0235	0.43%

Sequence No.: 98
Sample ID: AHS8 D SWC
Analyst: ALA
Dilution: 2.000000X

Autosampler Location: 385
Date Collected: 6/18/2015 3:53:05 PM
Data Type: Original

Nebulizer Parameters: AHS8 D SWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS8 D SWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2812595.4	103.1	%	0.26				0.25%
ScR 361.383	303877.5	106.3	%	0.77				0.72%
Ag 328.068†	60.4	0.00031	mg/L	0.000109	0.00061	mg/L	0.000217	35.38%
Al 308.215†	53463.9	55.21	mg/L	0.320	110.4	mg/L	0.64	0.58%
As 188.979†	-69.8	0.06787	mg/L	0.001741	0.1357	mg/L	0.00348	2.56%
B 249.677†	169.6	0.03323	mg/L	0.001347	0.06645	mg/L	0.002693	4.05%
Ba 233.527†	5330.9	1.078	mg/L	0.0112	2.155	mg/L	0.0224	1.04%
Be 313.042†	452.5	0.00087	mg/L	0.000025	0.00175	mg/L	0.000050	2.83%
Ca 317.933†	259338.5	32.62	mg/L	0.150	65.23	mg/L	0.300	0.46%
Cd 228.802†	255.1	0.01096	mg/L	0.000146	0.02193	mg/L	0.000292	1.33%
Co 228.616†	1501.6	0.04166	mg/L	0.000139	0.08331	mg/L	0.000278	0.33%
Cr 267.716†	1632.7	0.2501	mg/L	0.00241	0.5002	mg/L	0.00481	0.96%
Cu 324.752†	142985.1	0.5274	mg/L	0.00184	1.055	mg/L	0.0037	0.35%
Fe 273.955†	94549.9	96.41	mg/L	0.913	192.8	mg/L	1.83	0.95%
K 766.490†	10173.1	3.920	mg/L	0.0396	7.839	mg/L	0.0792	1.01%
Mg 279.077†	17061.3	23.52	mg/L	0.151	47.04	mg/L	0.301	0.64%
Mn 257.610†	60687.9	1.386	mg/L	0.0131	2.772	mg/L	0.0263	0.95%
Mo 202.031†	524.8	0.02870	mg/L	0.000252	0.05740	mg/L	0.000504	0.88%
Na 589.592†	36665.6	2.332	mg/L	0.0103	4.664	mg/L	0.0206	0.44%
Na 330.237†	51.0	1.614	mg/L	0.0676	3.228	mg/L	0.1352	4.19%
Ni 231.604†	517.1	0.1720	mg/L	0.00188	0.3440	mg/L	0.00376	1.09%
Pb 220.353†	2735.5	0.3463	mg/L	0.00296	0.6926	mg/L	0.00592	0.86%
Sb 206.836†	23.3	0.00844	mg/L	0.001433	0.01689	mg/L	0.002867	16.98%
Se 196.026†	18.3	0.01228	mg/L	0.000680	0.02456	mg/L	0.001361	5.54%
Si 288.158†	2994.2	2.447	mg/L	0.0085	4.895	mg/L	0.0170	0.35%
Sn 189.927†	78.4	0.02141	mg/L	0.001033	0.04282	mg/L	0.002066	4.82%
Sr 421.552†	172188.7	0.2046	mg/L	0.00126	0.4092	mg/L	0.00251	0.61%
Ti 334.903†	83303.4	3.880	mg/L	0.0256	7.761	mg/L	0.0513	0.66%
Tl 190.801†	-1.0	0.01149	mg/L	0.003678	0.02297	mg/L	0.007356	32.02%
V 292.402†	32544.3	0.2070	mg/L	0.00111	0.4141	mg/L	0.00223	0.54%
Zn 206.200†	14005.4	4.174	mg/L	0.0330	8.349	mg/L	0.0660	0.79%

Sequence No.: 99
Sample ID: AHS8 MB1SPK SWC
Analyst: ALA
Dilution: 2.000000X

Autosampler Location: 386
Date Collected: 6/18/2015 3:57:05 PM
Data Type: Original

Nebulizer Parameters: AHS8 MB1SPK SWC

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHS8 MB1SPK SWC

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2823625.5	103.5	%	0.42				0.40%
ScR 361.383	300504.4	105.1	%	0.38				0.36%
Ag 328.068†	120218.9	0.5078	mg/L	0.00343	1.016	mg/L	0.0069	0.67%
Al 308.215†	1888.8	1.944	mg/L	0.0066	3.887	mg/L	0.0132	0.34%
As 188.979†	2502.2	1.952	mg/L	0.0083	3.905	mg/L	0.0167	0.43%
B 249.677†	2.7	-0.00043	mg/L	0.001094	-0.00086	mg/L	0.002188	253.01%
Ba 233.527†	9751.2	1.990	mg/L	0.0138	3.980	mg/L	0.0276	0.69%
Be 313.042†	216432.6	0.4603	mg/L	0.00325	0.9205	mg/L	0.00650	0.71%
Ca 317.933†	75118.7	9.447	mg/L	0.0386	18.89	mg/L	0.077	0.41%
Cd 228.802†	10807.6	0.4763	mg/L	0.00313	0.9525	mg/L	0.00625	0.66%
Co 228.616†	14850.1	0.4821	mg/L	0.00339	0.9642	mg/L	0.00678	0.70%
Cr 267.716†	3241.5	0.4889	mg/L	0.00205	0.9778	mg/L	0.00410	0.42%
Cu 324.752†	132687.4	0.4865	mg/L	0.00341	0.9730	mg/L	0.00682	0.70%
Fe 273.955†	1943.9	1.978	mg/L	0.0133	3.955	mg/L	0.0266	0.67%
K 766.490†	24910.0	9.598	mg/L	0.0308	19.20	mg/L	0.062	0.32%
Mg 279.077†	7121.2	9.845	mg/L	0.0419	19.69	mg/L	0.084	0.43%
Mn 257.610†	19946.2	0.4560	mg/L	0.00052	0.9121	mg/L	0.00103	0.11%
Mo 202.031†	27.2	0.00135	mg/L	0.000271	0.00269	mg/L	0.000543	20.16%
Na 589.592†	147837.2	9.402	mg/L	0.0259	18.80	mg/L	0.052	0.28%
Na 330.237†	240.8	9.743	mg/L	0.1210	19.49	mg/L	0.242	1.24%
Ni 231.604†	1447.4	0.4817	mg/L	0.00132	0.9634	mg/L	0.00263	0.27%
Pb 220.353†	15324.0	1.881	mg/L	0.0172	3.763	mg/L	0.0344	0.91%
Sb 206.836†	5483.5	2.029	mg/L	0.0085	4.059	mg/L	0.0171	0.42%
Se 196.026†	2845.1	1.939	mg/L	0.0130	3.879	mg/L	0.0259	0.67%
Si 288.158†	-2.3	-0.00031	mg/L	0.003498	-0.00061	mg/L	0.006996	>999.9%
Sn 189.927†	-26.4	-0.00323	mg/L	0.000972	-0.00645	mg/L	0.001943	30.13%
Sr 421.552†	390258.9	0.4637	mg/L	0.00174	0.9274	mg/L	0.00349	0.38%
Ti 334.903†	95.9	0.00344	mg/L	0.000247	0.00688	mg/L	0.000495	7.19%
Tl 190.801†	3174.5	1.957	mg/L	0.0102	3.914	mg/L	0.0205	0.52%
V 292.402†	74498.9	0.4858	mg/L	0.00321	0.9716	mg/L	0.00643	0.66%
Zn 206.200†	1556.8	0.4643	mg/L	0.00102	0.9286	mg/L	0.00204	0.22%

Sequence No.: 100
Sample ID: CV 10
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 4:01:05 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2811807.3	103.1	%	0.47				0.45%
ScR 361.383	287206.9	100.5	%	1.16				1.16%
Ag 328.068†	238529.5	1.008	mg/L	0.0054	1.008	mg/L	0.0054	0.54%
Al 308.215†	1911.2	1.942	mg/L	0.0303	1.942	mg/L	0.0303	1.56%
As 188.979†	2422.1	1.919	mg/L	0.0272	1.919	mg/L	0.0272	1.42%
B 249.677†	4872.0	0.9554	mg/L	0.01673	0.9554	mg/L	0.01673	1.75%
Ba 233.527†	5010.1	1.022	mg/L	0.0149	1.022	mg/L	0.0149	1.46%
Be 313.042†	434824.3	0.9247	mg/L	0.00496	0.9247	mg/L	0.00496	0.54%
Ca 317.933†	16107.2	2.026	mg/L	0.0326	2.026	mg/L	0.0326	1.61%
Cd 228.802†	22471.8	1.004	mg/L	0.0129	1.004	mg/L	0.0129	1.28%
Co 228.616†	30506.2	0.9890	mg/L	0.01329	0.9890	mg/L	0.01329	1.34%
Cr 267.716†	6670.6	1.008	mg/L	0.0184	1.008	mg/L	0.0184	1.82%
Cu 324.752†	269543.6	0.9878	mg/L	0.00221	0.9878	mg/L	0.00221	0.22%
Fe 273.955†	1926.8	1.956	mg/L	0.0378	1.956	mg/L	0.0378	1.93%
K 766.490†	51136.0	19.70	mg/L	0.095	19.70	mg/L	0.095	0.48%
Mg 279.077†	1418.0	1.968	mg/L	0.0248	1.968	mg/L	0.0248	1.26%
Mn 257.610†	40718.3	0.9307	mg/L	0.00341	0.9307	mg/L	0.00341	0.37%
Mo 202.031†	17537.4	0.9793	mg/L	0.01304	0.9793	mg/L	0.01304	1.33%
Na 589.592†	758827.9	48.26	mg/L	0.099	48.26	mg/L	0.099	0.21%
Na 330.237†	1224.8	50.18	mg/L	0.727	50.18	mg/L	0.727	1.45%
Ni 231.604†	2951.1	0.9819	mg/L	0.01755	0.9819	mg/L	0.01755	1.79%
Pb 220.353†	15652.6	1.922	mg/L	0.0252	1.922	mg/L	0.0252	1.31%
Sb 206.836†	5359.2	1.989	mg/L	0.0317	1.989	mg/L	0.0317	1.59%
Se 196.026†	2846.2	1.940	mg/L	0.0272	1.940	mg/L	0.0272	1.40%
Si 288.158†	2315.4	1.942	mg/L	0.0493	1.942	mg/L	0.0493	2.54%
Sn 189.927†	4519.4	0.9836	mg/L	0.01369	0.9836	mg/L	0.01369	1.39%
Sr 421.552†	802466.0	0.9534	mg/L	0.00196	0.9534	mg/L	0.00196	0.21%
Ti 334.903†	20774.9	0.9672	mg/L	0.00182	0.9672	mg/L	0.00182	0.19%
Tl 190.801†	3130.3	1.926	mg/L	0.0269	1.926	mg/L	0.0269	1.40%
V 292.402†	149546.6	0.9754	mg/L	0.00523	0.9754	mg/L	0.00523	0.54%
Zn 206.200†	3256.7	0.9711	mg/L	0.01612	0.9711	mg/L	0.01612	1.66%

AHSE 2015

Sequence No.: 101
Sample ID: CB 1P
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 4:05:09 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2802766.2	102.8	%	1.25				1.22%
ScR 361.383	296190.0	103.6	%	1.21				1.17%
Ag 328.068†	-32.4	-0.00014	mg/L	0.000120	-0.00014	mg/L	0.000120	87.79%
Al 308.215†	3.2	0.00324	mg/L	0.003171	0.00324	mg/L	0.003171	97.80%
As 188.979†	-0.1	-0.00006	mg/L	0.001424	-0.00006	mg/L	0.001424	>999.9%
B 249.677†	9.4	0.00185	mg/L	0.000466	0.00185	mg/L	0.000466	25.16%
Ba 233.527†	5.6	0.00113	mg/L	0.000276	0.00113	mg/L	0.000276	24.38%
Be 313.042†	34.0	0.00007	mg/L	0.000030	0.00007	mg/L	0.000030	41.63%
Ca 317.933†	13.6	0.00171	mg/L	0.000720	0.00171	mg/L	0.000720	42.11%
Cd 228.802†	9.8	0.00044	mg/L	0.000199	0.00044	mg/L	0.000199	45.13%
Co 228.616†	7.5	0.00025	mg/L	0.000153	0.00025	mg/L	0.000153	62.28%
Cr 267.716†	2.8	0.00042	mg/L	0.000730	0.00042	mg/L	0.000730	173.53%
Cu 324.752†	109.8	0.00040	mg/L	0.000154	0.00040	mg/L	0.000154	38.39%
Fe 273.955†	2.0	0.00207	mg/L	0.002001	0.00207	mg/L	0.002001	96.90%
K 766.490†	21.1	0.00814	mg/L	0.012027	0.00814	mg/L	0.012027	147.77%
Mg 279.077†	2.8	0.00383	mg/L	0.003149	0.00383	mg/L	0.003149	82.22%
Mn 257.610†	1.4	0.00003	mg/L	0.000050	0.00003	mg/L	0.000050	161.84%
Mo 202.031†	26.6	0.00148	mg/L	0.000383	0.00148	mg/L	0.000383	25.81%
Na 589.592†	127.2	0.00809	mg/L	0.003505	0.00809	mg/L	0.003505	43.34%
Na 330.237†	-1.1	-0.04600	mg/L	0.145863	-0.04600	mg/L	0.145863	317.08%
Ni 231.604†	-2.3	-0.00078	mg/L	0.000210	-0.00078	mg/L	0.000210	27.11%
Pb 220.353†	1.9	0.00023	mg/L	0.000346	0.00023	mg/L	0.000346	151.27%
Sb 206.836†	15.7	0.00580	mg/L	0.001554	0.00580	mg/L	0.001554	26.78%
Se 196.026†	3.0	0.00203	mg/L	0.003821	0.00203	mg/L	0.003821	187.97%
Si 288.158†	-1.4	-0.00116	mg/L	0.001628	-0.00116	mg/L	0.001628	140.29%
Sn 189.927†	1.5	0.00032	mg/L	0.000267	0.00032	mg/L	0.000267	82.83%
Sr 421.552†	44.7	0.00005	mg/L	0.000053	0.00005	mg/L	0.000053	100.17%
Ti 334.903†	-5.3	-0.00025	mg/L	0.000148	-0.00025	mg/L	0.000148	59.06%
Tl 190.801†	2.6	0.00159	mg/L	0.001547	0.00159	mg/L	0.001547	97.10%
V 292.402†	38.6	0.00025	mg/L	0.000135	0.00025	mg/L	0.000135	53.52%
Zn 206.200†	-1.4	-0.00042	mg/L	0.000793	-0.00042	mg/L	0.000793	186.77%

Sequence No.: 102
Sample ID: AHQ6 MB LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 301
Date Collected: 6/18/2015 4:09:24 PM
Data Type: Original

Nebulizer Parameters: AHQ6 MB LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ6 MB LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2845115.5	104.3	%	0.68				0.65%
ScR 361.383	300491.1	105.1	%	0.23				0.22%
Ag 328.068†	-3.0	-0.00001	mg/L	0.000210	-0.00006	mg/L	0.001048	>999.9%
Al 308.215†	25.0	0.02585	mg/L	0.004863	0.1293	mg/L	0.02431	18.81%
As 188.979†	-1.0	-0.00080	mg/L	0.001310	-0.00401	mg/L	0.006549	163.15%
B 249.677†	80.9	0.01587	mg/L	0.000400	0.07936	mg/L	0.002002	2.52%
Ba 233.527†	15.8	0.00321	mg/L	0.000613	0.01606	mg/L	0.003065	19.08%
Be 313.042†	0.0	-0.00000	mg/L	0.000013	-0.00000	mg/L	0.000063	>999.9%
Ca 317.933†	1621.0	0.2039	mg/L	0.00149	1.019	mg/L	0.0075	0.73%
Cd 228.802†	6.5	0.00030	mg/L	0.000192	0.00151	mg/L	0.000961	63.63%
Co 228.616†	11.9	0.00039	mg/L	0.000097	0.00193	mg/L	0.000487	25.29%
Cr 267.716†	15.8	0.00238	mg/L	0.000241	0.01192	mg/L	0.001207	10.12%
Cu 324.752†	232.5	0.00085	mg/L	0.000091	0.00427	mg/L	0.000456	10.68%
Fe 273.955†	31.9	0.03251	mg/L	0.000992	0.1626	mg/L	0.00496	3.05%
K 766.490†	100.8	0.03883	mg/L	0.007877	0.1941	mg/L	0.03938	20.29%
Mg 279.077†	15.5	0.02142	mg/L	0.003412	0.1071	mg/L	0.01706	15.93%
Mn 257.610†	63.3	0.00144	mg/L	0.000048	0.00722	mg/L	0.000238	3.29%
Mo 202.031†	0.1	0.00000	mg/L	0.000150	0.00002	mg/L	0.000750	>999.9%
Na 589.592†	10987.7	0.6988	mg/L	0.00434	3.494	mg/L	0.0217	0.62%
Na 330.237†	15.6	0.6395	mg/L	0.14497	3.197	mg/L	0.7249	22.67%
Ni 231.604†	11.7	0.00391	mg/L	0.000223	0.01954	mg/L	0.001114	5.70%
Pb 220.353†	-2.0	-0.00023	mg/L	0.000527	-0.00117	mg/L	0.002633	225.52%
Sb 206.836†	-2.8	-0.00105	mg/L	0.000969	-0.00525	mg/L	0.004843	92.21%
Se 196.026†	4.4	0.00298	mg/L	0.002940	0.01489	mg/L	0.014698	98.73%
Si 288.158†	36.0	0.03056	mg/L	0.005184	0.1528	mg/L	0.02592	16.96%
Sn 189.927†	1.6	0.00038	mg/L	0.000281	0.00192	mg/L	0.001404	73.02%
Sr 421.552†	829.3	0.00099	mg/L	0.000039	0.00493	mg/L	0.000193	3.93%
Ti 334.903†	16.3	0.00074	mg/L	0.000090	0.00370	mg/L	0.000448	12.10%
Tl 190.801†	-1.9	-0.00115	mg/L	0.000575	-0.00574	mg/L	0.002877	50.14%
V 292.402†	42.8	0.00029	mg/L	0.000131	0.00143	mg/L	0.000655	45.84%
Zn 206.200†	29.8	0.00888	mg/L	0.000376	0.04442	mg/L	0.001882	4.24%

AHS2 - 00166

Sequence No.: 103
Sample ID: AHQ7 MB LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 302
Date Collected: 6/18/2015 4:13:40 PM
Data Type: Original

Nebulizer Parameters: AHQ7 MB LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ7 MB LEN

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2718204.8	99.67	%	0.974				0.98%
ScR 361.383	300808.5	105.2	%	1.76				1.68%
Ag 328.068†	-3.9	-0.00002	mg/L	0.000151	-0.00008	mg/L	0.000756	926.14%
Al 308.215†	3.7	0.00378	mg/L	0.006384	0.01888	mg/L	0.031921	169.06%
As 188.979†	1.1	0.00083	mg/L	0.003048	0.00417	mg/L	0.015240	365.34%
B 249.677†	131.0	0.02572	mg/L	0.001175	0.1286	mg/L	0.00588	4.57%
Ba 233.527†	22.6	0.00460	mg/L	0.000885	0.02302	mg/L	0.004424	19.22%
Be 313.042†	-4.6	-0.00001	mg/L	0.000022	-0.00005	mg/L	0.000108	222.70%
Ca 317.933†	1716.3	0.2159	mg/L	0.00516	1.079	mg/L	0.0258	2.39%
Cd 228.802†	19.8	0.00089	mg/L	0.000046	0.00446	mg/L	0.000228	5.12%
Co 228.616†	1.6	0.00005	mg/L	0.000088	0.00026	mg/L	0.000442	166.93%
Cr 267.716†	-0.2	-0.00004	mg/L	0.000639	-0.00019	mg/L	0.003193	>999.9%
Cu 324.752†	245.5	0.00090	mg/L	0.000113	0.00450	mg/L	0.000567	12.61%
Fe 273.955†	2.9	0.00294	mg/L	0.002143	0.01469	mg/L	0.010714	72.92%
K 766.490†	128.8	0.04964	mg/L	0.004986	0.2482	mg/L	0.02493	10.05%
Mg 279.077†	25.2	0.03479	mg/L	0.002028	0.1739	mg/L	0.01014	5.83%
Mn 257.610†	0.5	0.00001	mg/L	0.000102	0.00005	mg/L	0.000512	>999.9%
Mo 202.031†	-0.1	-0.00001	mg/L	0.000072	-0.00006	mg/L	0.000359	631.25%
Na 589.592†	4546306.9	289.1	mg/L	4.61	1446	mg/L	23.06	1.60%
Na 330.237†	7452.8	305.9	mg/L	4.71	1530	mg/L	23.54	1.54%
Ni 231.604†	1.9	0.00062	mg/L	0.000467	0.00310	mg/L	0.002334	75.30%
Pb 220.353†	-5.2	-0.00064	mg/L	0.000466	-0.00321	mg/L	0.002330	72.52%
Sb 206.836†	-5.6	-0.00208	mg/L	0.001171	-0.01042	mg/L	0.005855	56.17%
Se 196.026†	3.0	0.00202	mg/L	0.000965	0.01008	mg/L	0.004827	47.87%
Si 288.158†	13.9	0.01182	mg/L	0.006983	0.05908	mg/L	0.034916	59.10%
Sn 189.927†	4.5	0.00101	mg/L	0.000528	0.00505	mg/L	0.002640	52.28%
Sr 421.552†	160.2	0.00019	mg/L	0.000024	0.00095	mg/L	0.000119	12.45%
Ti 334.903†	-10.9	-0.00053	mg/L	0.000653	-0.00265	mg/L	0.003263	123.06%
Tl 190.801†	2.9	0.00180	mg/L	0.000319	0.00899	mg/L	0.001593	17.73%
V 292.402†	-0.6	-0.00000	mg/L	0.000100	-0.00002	mg/L	0.000501	>999.9%
Zn 206.200†	9.7	0.00289	mg/L	0.000262	0.01447	mg/L	0.001310	9.06%

Sequence No.: 104
Sample ID: AHS2 MB2 LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 303
Date Collected: 6/18/2015 4:18:12 PM
Data Type: Original

Nebulizer Parameters: AHS2 MB2 LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS2 MB2 LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2844861.0	104.3	%	0.52				0.50%
ScR 361.383	297605.3	104.1	%	1.90				1.82%
Ag 328.068†	-50.3	-0.00021	mg/L	0.000143	-0.00106	mg/L	0.000717	67.45%
Al 308.215†	7.3	0.00750	mg/L	0.002455	0.03752	mg/L	0.012276	32.72%
As 188.979†	0.3	0.00021	mg/L	0.001355	0.00106	mg/L	0.006774	640.48%
B 249.677†	79.4	0.01558	mg/L	0.000727	0.07790	mg/L	0.003634	4.67%
Ba 233.527†	15.7	0.00320	mg/L	0.000181	0.01598	mg/L	0.000906	5.67%
Be 313.042†	-1.4	-0.00000	mg/L	0.000019	-0.00002	mg/L	0.000097	630.30%
Ca 317.933†	1018.1	0.1280	mg/L	0.00108	0.6402	mg/L	0.00538	0.84%
Cd 228.802†	4.5	0.00020	mg/L	0.000077	0.00100	mg/L	0.000385	38.59%
Co 228.616†	2.9	0.00010	mg/L	0.000189	0.00048	mg/L	0.000946	196.80%
Cr 267.716†	-1.7	-0.00025	mg/L	0.000969	-0.00127	mg/L	0.004847	381.31%
Cu 324.752†	83.1	0.00030	mg/L	0.000213	0.00152	mg/L	0.001063	69.76%
Fe 273.955†	6.3	0.00639	mg/L	0.001414	0.03195	mg/L	0.007068	22.12%
K 766.490†	111.1	0.04279	mg/L	0.019498	0.2139	mg/L	0.09749	45.57%
Mg 279.077†	15.6	0.02154	mg/L	0.003129	0.1077	mg/L	0.01565	14.53%
Mn 257.610†	10.6	0.00024	mg/L	0.000059	0.00121	mg/L	0.000296	24.46%
Mo 202.031†	1.3	0.00007	mg/L	0.000144	0.00034	mg/L	0.000719	212.68%
Na 589.592†	11784.3	0.7494	mg/L	0.01446	3.747	mg/L	0.0723	1.93%
Na 330.237†	16.8	0.6884	mg/L	0.07256	3.442	mg/L	0.3628	10.54%
Ni 231.604†	-2.3	-0.00076	mg/L	0.000174	-0.00380	mg/L	0.000869	22.88%
Pb 220.353†	0.8	0.00010	mg/L	0.001156	0.00049	mg/L	0.005778	>999.9%
Sb 206.836†	-4.7	-0.00175	mg/L	0.001368	-0.00877	mg/L	0.006842	78.05%
Se 196.026†	1.6	0.00106	mg/L	0.001843	0.00532	mg/L	0.009214	173.13%
Si 288.158†	30.2	0.02569	mg/L	0.002873	0.1284	mg/L	0.01437	11.19%
Sn 189.927†	0.2	0.00006	mg/L	0.000212	0.00030	mg/L	0.001058	352.39%
Sr 421.552†	141.4	0.00017	mg/L	0.000044	0.00084	mg/L	0.000219	26.02%
Ti 334.903†	-13.9	-0.00066	mg/L	0.000292	-0.00331	mg/L	0.001461	44.17%
Tl 190.801†	2.4	0.00147	mg/L	0.002128	0.00735	mg/L	0.010638	144.70%
V 292.402†	21.9	0.00014	mg/L	0.000086	0.00071	mg/L	0.000429	60.78%
Zn 206.200†	7.2	0.00216	mg/L	0.000560	0.01080	mg/L	0.002801	25.95%

Sequence No.: 105
Sample ID: AHS2 D LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 304
Date Collected: 6/18/2015 4:22:26 PM
Data Type: Original

Nebulizer Parameters: AHS2 D LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHS2 D LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2700744.5	99.03	%	0.345				0.35%
ScR 361.383	289159.1	101.2	%	0.93				0.92%
Ag 328.068†	-165.9	-0.00070	mg/L	0.000125	-0.00350	mg/L	0.000627	17.89%
Al 308.215†	9.0	0.00900	mg/L	0.003425	0.04499	mg/L	0.017127	38.07%
As 188.979†	60.9	0.03105	mg/L	0.002805	0.1553	mg/L	0.01402	9.03%
B 249.677†	457.6	0.08982	mg/L	0.000240	0.4491	mg/L	0.00120	0.27%
Ba 233.527†	828.6	0.1691	mg/L	0.00138	0.8457	mg/L	0.00688	0.81%
Be 313.042†	18.9	0.00004	mg/L	0.000021	0.00020	mg/L	0.000103	51.86%
Ca 317.933†	792132.3	99.62	mg/L	0.323	498.1	mg/L	1.62	0.32%
Cd 228.802†	-18.8	-0.00071	mg/L	0.000174	-0.00355	mg/L	0.000870	24.49%
Co 228.616†	60.4	0.00192	mg/L	0.000026	0.00961	mg/L	0.000129	1.35%
Cr 267.716†	33.2	0.00121	mg/L	0.000916	0.00605	mg/L	0.004578	75.71%
Cu 324.752†	510.9	0.00169	mg/L	0.000056	0.00846	mg/L	0.000278	3.29%
Fe 273.955†	6.5	0.00664	mg/L	0.001758	0.03318	mg/L	0.008791	26.49%
K 766.490†	2334.9	0.8996	mg/L	0.01503	4.498	mg/L	0.0751	1.67%
Mg 279.077†	31188.5	43.12	mg/L	0.300	215.6	mg/L	1.50	0.70%
Mn 257.610†	17584.6	0.4013	mg/L	0.00223	2.007	mg/L	0.0112	0.56%
Mo 202.031†	259.7	0.01265	mg/L	0.000090	0.06325	mg/L	0.000449	0.71%
Na 589.592†	4694193.8	298.5	mg/L	2.24	1493	mg/L	11.18	0.75%
Na 330.237†	7667.2	314.7	mg/L	2.26	1574	mg/L	11.32	0.72%
Ni 231.604†	46.1	0.01533	mg/L	0.000449	0.07666	mg/L	0.002247	2.93%
Pb 220.353†	-9.7	-0.00118	mg/L	0.000310	-0.00588	mg/L	0.001552	26.41%
Sb 206.836†	16.1	0.00579	mg/L	0.001908	0.02893	mg/L	0.009538	32.97%
Se 196.026†	34.3	0.02338	mg/L	0.003848	0.1169	mg/L	0.01924	16.46%
Si 288.158†	4214.5	3.580	mg/L	0.0185	17.90	mg/L	0.093	0.52%
Sn 189.927†	-59.9	0.00024	mg/L	0.000848	0.00121	mg/L	0.004239	351.31%
Sr 421.552†	113350.6	0.1347	mg/L	0.00043	0.6734	mg/L	0.00214	0.32%
Ti 334.903†	298.4	0.00445	mg/L	0.000096	0.02225	mg/L	0.000478	2.15%
Tl 190.801†	32.3	0.01997	mg/L	0.001312	0.09986	mg/L	0.006561	6.57%
V 292.402†	85.6	0.00064	mg/L	0.000055	0.00318	mg/L	0.000276	8.68%
Zn 206.200†	31.2	0.00805	mg/L	0.000205	0.04026	mg/L	0.001026	2.55%

Sequence No.: 106
Sample ID: AHQ6 ADUP LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 305
Date Collected: 6/18/2015 4:26:58 PM
Data Type: Original

Nebulizer Parameters: AHQ6 ADUP LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ6 ADUP LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2779407.3	101.9	%	0.35				0.34%
ScR 361.383	293204.0	102.6	%	0.79				0.77%
Ag 328.068†	-423.3	-0.00179	mg/L	0.000103	-0.00893	mg/L	0.000516	5.77%
Al 308.215†	191.7	0.1977	mg/L	0.00536	0.9885	mg/L	0.02681	2.71%
As 188.979†	71.5	0.01914	mg/L	0.002109	0.09570	mg/L	0.010547	11.02%
B 249.677†	72.5	0.01421	mg/L	0.000686	0.07105	mg/L	0.003431	4.83%
Ba 233.527†	423.9	0.08202	mg/L	0.001348	0.4101	mg/L	0.00674	1.64%
Be 313.042†	26.4	0.00005	mg/L	0.000011	0.00027	mg/L	0.000055	20.23%
Ca 317.933†	1756677.4	220.9	mg/L	0.50	1105	mg/L	2.51	0.23%
Cd 228.802†	-25.7	-0.00106	mg/L	0.000107	-0.00528	mg/L	0.000534	10.11%
Co 228.616†	352.5	0.01139	mg/L	0.000236	0.05695	mg/L	0.001178	2.07%
Cr 267.716†	32.2	0.00697	mg/L	0.000339	0.03485	mg/L	0.001694	4.86%
Cu 324.752†	-439.0	0.00009	mg/L	0.000203	0.00047	mg/L	0.001015	214.99%
Fe 273.955†	40488.5	41.29	mg/L	0.246	206.4	mg/L	1.23	0.59%
K 766.490†	418.0	0.1611	mg/L	0.01121	0.8053	mg/L	0.05603	6.96%
Mg 279.077†	2126.0	2.911	mg/L	0.0329	14.56	mg/L	0.165	1.13%
Mn 257.610†	18499.1	0.4219	mg/L	0.00272	2.110	mg/L	0.0136	0.65%
Mo 202.031†	113.3	0.00222	mg/L	0.000175	0.01108	mg/L	0.000875	7.89%
Na 589.592†	22342.3	1.421	mg/L	0.0082	7.105	mg/L	0.0409	0.58%
Na 330.237†	3.4	-0.2640	mg/L	0.23562	-1.320	mg/L	1.1781	89.26%
Ni 231.604†	103.4	0.03440	mg/L	0.001258	0.1720	mg/L	0.00629	3.66%
Pb 220.353†	-1.2	-0.00230	mg/L	0.000067	-0.01148	mg/L	0.000337	2.93%
Sb 206.836†	23.6	0.00859	mg/L	0.001895	0.04293	mg/L	0.009473	22.06%
Se 196.026†	36.7	0.02502	mg/L	0.001135	0.1251	mg/L	0.00568	4.54%
Si 288.158†	5715.4	4.855	mg/L	0.0556	24.28	mg/L	0.278	1.14%
Sn 189.927†	-67.0	0.01483	mg/L	0.000683	0.07415	mg/L	0.003415	4.60%
Sr 421.552†	1039124.9	1.235	mg/L	0.0040	6.173	mg/L	0.0201	0.33%
Ti 334.903†	580.7	0.00611	mg/L	0.000306	0.03054	mg/L	0.001532	5.02%
Tl 190.801†	28.2	0.02298	mg/L	0.003478	0.1149	mg/L	0.01739	15.13%
V 292.402†	1292.4	0.00694	mg/L	0.000138	0.03471	mg/L	0.000690	1.99%
Zn 206.200†	4420.6	1.315	mg/L	0.0126	6.574	mg/L	0.0632	0.96%

Sequence No.: 107
Sample ID: AHQ6 A LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 306
Date Collected: 6/18/2015 4:31:13 PM
Data Type: Original

Nebulizer Parameters: AHQ6 A LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ6 A LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2803471.4	102.8	%	0.20				0.20%
ScR 361.383	297904.5	104.2	%	0.45				0.44%
Ag 328.068†	-386.1	-0.00163	mg/L	0.000054	-0.00814	mg/L	0.000268	3.29%
Al 308.215†	189.4	0.1954	mg/L	0.00356	0.9768	mg/L	0.01778	1.82%
As 188.979†	72.0	0.02060	mg/L	0.003547	0.1030	mg/L	0.01773	17.22%
B 249.677†	67.0	0.01313	mg/L	0.002024	0.06563	mg/L	0.010122	15.42%
Ba 233.527†	407.4	0.07879	mg/L	0.000602	0.3939	mg/L	0.00301	0.76%
Be 313.042†	18.5	0.00004	mg/L	0.000009	0.00019	mg/L	0.000043	23.13%
Ca 317.933†	1706782.2	214.7	mg/L	0.46	1073	mg/L	2.28	0.21%
Cd 228.802†	-23.3	-0.00096	mg/L	0.000021	-0.00481	mg/L	0.000107	2.23%
Co 228.616†	351.5	0.01136	mg/L	0.000310	0.05678	mg/L	0.001551	2.73%
Cr 267.716†	31.2	0.00677	mg/L	0.000950	0.03384	mg/L	0.004750	14.04%
Cu 324.752†	-428.4	0.00008	mg/L	0.000066	0.00042	mg/L	0.000332	79.93%
Fe 273.955†	39304.1	40.08	mg/L	0.203	200.4	mg/L	1.01	0.51%
K 766.490†	345.7	0.1332	mg/L	0.00329	0.6660	mg/L	0.01643	2.47%
Mg 279.077†	2045.8	2.801	mg/L	0.0118	14.01	mg/L	0.059	0.42%
Mn 257.610†	17972.7	0.4099	mg/L	0.00251	2.050	mg/L	0.0126	0.61%
Mo 202.031†	111.5	0.00224	mg/L	0.000117	0.01118	mg/L	0.000586	5.25%
Na 589.592†	20930.7	1.331	mg/L	0.0097	6.656	mg/L	0.0483	0.73%
Na 330.237†	2.1	-0.3025	mg/L	0.10744	-1.512	mg/L	0.5372	35.52%
Ni 231.604†	101.3	0.03371	mg/L	0.000823	0.1685	mg/L	0.00411	2.44%
Pb 220.353†	9.0	-0.00098	mg/L	0.000300	-0.00488	mg/L	0.001498	30.70%
Sb 206.836†	25.5	0.00929	mg/L	0.001030	0.04645	mg/L	0.005150	11.09%
Se 196.026†	32.8	0.02236	mg/L	0.001738	0.1118	mg/L	0.00869	7.77%
Si 288.158†	5509.0	4.680	mg/L	0.0207	23.40	mg/L	0.104	0.44%
Sn 189.927†	-72.4	0.01283	mg/L	0.001034	0.06413	mg/L	0.005168	8.06%
Sr 421.552†	1009254.9	1.199	mg/L	0.0034	5.996	mg/L	0.0169	0.28%
Ti 334.903†	571.7	0.00628	mg/L	0.000217	0.03142	mg/L	0.001084	3.45%
Tl 190.801†	28.0	0.02272	mg/L	0.001083	0.1136	mg/L	0.00541	4.76%
V 292.402†	1246.6	0.00669	mg/L	0.000161	0.03344	mg/L	0.000807	2.41%
Zn 206.200†	4266.8	1.269	mg/L	0.0011	6.345	mg/L	0.0053	0.08%

Sequence No.: 108
Sample ID: AHQ6 ASPK LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 307
Date Collected: 6/18/2015 4:35:28 PM
Data Type: Original

Nebulizer Parameters: AHQ6 ASPK LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ6 ASPK LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2788764.9	102.3	%	0.85				0.83%
ScR 361.383	294952.6	103.2	%	1.21				1.18%
Ag 328.068†	46389.5	0.1960	mg/L	0.00114	0.9798	mg/L	0.00568	0.58%
Al 308.215†	941.3	0.9692	mg/L	0.00920	4.846	mg/L	0.0460	0.95%
As 188.979†	1053.6	0.7870	mg/L	0.00292	3.935	mg/L	0.0146	0.37%
B 249.677†	67.1	0.01278	mg/L	0.000657	0.06391	mg/L	0.003283	5.14%
Ba 233.527†	4161.4	0.8451	mg/L	0.01027	4.226	mg/L	0.0514	1.22%
Be 313.042†	82417.7	0.1753	mg/L	0.00092	0.8763	mg/L	0.00460	0.53%
Ca 317.933†	1708226.0	214.8	mg/L	0.34	1074	mg/L	1.72	0.16%
Cd 228.802†	4297.5	0.1895	mg/L	0.00115	0.9477	mg/L	0.00575	0.61%
Co 228.616†	6126.3	0.1988	mg/L	0.00102	0.9942	mg/L	0.00509	0.51%
Cr 267.716†	1277.0	0.1946	mg/L	0.00228	0.9728	mg/L	0.01139	1.17%
Cu 324.752†	52532.5	0.1942	mg/L	0.00038	0.9710	mg/L	0.00188	0.19%
Fe 273.955†	38443.4	39.20	mg/L	0.175	196.0	mg/L	0.87	0.45%
K 766.490†	10429.2	4.018	mg/L	0.0363	20.09	mg/L	0.181	0.90%
Mg 279.077†	4706.5	6.481	mg/L	0.0877	32.40	mg/L	0.439	1.35%
Mn 257.610†	26288.7	0.6001	mg/L	0.00811	3.000	mg/L	0.0405	1.35%
Mo 202.031†	117.0	0.00254	mg/L	0.000290	0.01269	mg/L	0.001448	11.41%
Na 589.592†	80960.2	5.149	mg/L	0.0191	25.74	mg/L	0.095	0.37%
Na 330.237†	97.2	3.550	mg/L	0.1377	17.75	mg/L	0.688	3.88%
Ni 231.604†	668.9	0.2222	mg/L	0.00343	1.111	mg/L	0.0171	1.54%
Pb 220.353†	6017.4	0.7368	mg/L	0.00355	3.684	mg/L	0.0178	0.48%
Sb 206.836†	31.0	0.00969	mg/L	0.001338	0.04843	mg/L	0.006689	13.81%
Se 196.026†	1165.1	0.7942	mg/L	0.00370	3.971	mg/L	0.0185	0.47%
Si 288.158†	5517.5	4.688	mg/L	0.0557	23.44	mg/L	0.278	1.19%
Sn 189.927†	-68.6	0.01371	mg/L	0.001360	0.06855	mg/L	0.006802	9.92%
Sr 421.552†	1159813.2	1.378	mg/L	0.0048	6.890	mg/L	0.0239	0.35%
Ti 334.903†	596.7	0.00738	mg/L	0.000424	0.03690	mg/L	0.002118	5.74%
Tl 190.801†	1228.7	0.7626	mg/L	0.00490	3.813	mg/L	0.0245	0.64%
V 292.402†	29715.5	0.1924	mg/L	0.00080	0.9620	mg/L	0.00401	0.42%
Zn 206.200†	4815.1	1.433	mg/L	0.0174	7.163	mg/L	0.0869	1.21%

Sequence No.: 109
Sample ID: AHQ7 ADUP LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 308
Date Collected: 6/18/2015 4:39:29 PM
Data Type: Original

Nebulizer Parameters: AHQ7 ADUP LEN

Analyte	Back Pressure	Flow
All	224.0 kPa	0.75 L/min

Mean Data: AHQ7 ADUP LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2705325.2	99.19	%	0.548				0.55%
ScR 361.383	282482.8	98.82	%	0.832				0.84%
Ag 328.068†	-245.3	-0.00104	mg/L	0.000056	-0.00518	mg/L	0.000281	5.43%
Al 308.215†	78.4	0.08078	mg/L	0.006586	0.4039	mg/L	0.03293	8.15%
As 188.979†	69.5	0.02809	mg/L	0.002550	0.1405	mg/L	0.01275	9.08%
B 249.677†	83.8	0.01643	mg/L	0.001396	0.08214	mg/L	0.006980	8.50%
Ba 233.527†	78.2	0.01573	mg/L	0.000374	0.07864	mg/L	0.001870	2.38%
Be 313.042†	34.1	0.00007	mg/L	0.000014	0.00036	mg/L	0.000068	18.85%
Ca 317.933†	1258540.2	158.3	mg/L	0.46	791.4	mg/L	2.29	0.29%
Cd 228.802†	-31.6	-0.00107	mg/L	0.000122	-0.00537	mg/L	0.000609	11.33%
Co 228.616†	279.5	0.00903	mg/L	0.000138	0.04515	mg/L	0.000692	1.53%
Cr 267.716†	20.4	0.00285	mg/L	0.000363	0.01424	mg/L	0.001815	12.74%
Cu 324.752†	360.3	0.00139	mg/L	0.000120	0.00693	mg/L	0.000600	8.66%
Fe 273.955†	2005.8	2.045	mg/L	0.0029	10.23	mg/L	0.014	0.14%
K 766.490†	1381.5	0.5323	mg/L	0.00874	2.661	mg/L	0.0437	1.64%
Mg 279.077†	2847.8	3.936	mg/L	0.0481	19.68	mg/L	0.240	1.22%
Mn 257.610†	67427.3	1.540	mg/L	0.0034	7.700	mg/L	0.0171	0.22%
Mo 202.031†	120.8	0.00380	mg/L	0.000152	0.01900	mg/L	0.000759	4.00%
Na 589.592†	4747710.7	301.9	mg/L	1.75	1510	mg/L	8.77	0.58%
Na 330.237†	7584.1	311.3	mg/L	0.82	1557	mg/L	4.10	0.26%
Ni 231.604†	130.6	0.04342	mg/L	0.001732	0.2171	mg/L	0.00866	3.99%
Pb 220.353†	-7.7	-0.00102	mg/L	0.000042	-0.00509	mg/L	0.000212	4.17%
Sb 206.836†	19.9	0.00723	mg/L	0.002534	0.03617	mg/L	0.012669	35.03%
Se 196.026†	33.8	0.02303	mg/L	0.005023	0.1151	mg/L	0.02512	21.82%
Si 288.158†	1567.0	1.331	mg/L	0.0346	6.654	mg/L	0.1732	2.60%
Sn 189.927†	-57.8	0.00849	mg/L	0.001212	0.04245	mg/L	0.006058	14.27%
Sr 421.552†	788291.9	0.9366	mg/L	0.00154	4.683	mg/L	0.0077	0.16%
Ti 334.903†	494.9	0.00805	mg/L	0.000612	0.04024	mg/L	0.003058	7.60%
Tl 190.801†	41.8	0.02607	mg/L	0.000486	0.1304	mg/L	0.00243	1.86%
V 292.402†	66.2	0.00059	mg/L	0.000134	0.00295	mg/L	0.000672	22.75%
Zn 206.200†	113.6	0.03187	mg/L	0.000313	0.1593	mg/L	0.00156	0.98%

Sequence No.: 110
Sample ID: AHQ7 A LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 309
Date Collected: 6/18/2015 4:44:02 PM
Data Type: Original

Nebulizer Parameters: AHQ7 A LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ7 A LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2711441.3	99.42	%	0.250				0.25%
ScR 361.383	286702.5	100.3	%	0.42				0.42%
Ag 328.068†	-238.8	-0.00101	mg/L	0.000090	-0.00504	mg/L	0.000448	8.89%
Al 308.215†	8.2	0.00832	mg/L	0.002973	0.04158	mg/L	0.014864	35.75%
As 188.979†	65.9	0.02659	mg/L	0.004127	0.1330	mg/L	0.02063	15.52%
B 249.677†	77.3	0.01516	mg/L	0.001518	0.07581	mg/L	0.007590	10.01%
Ba 233.527†	69.0	0.01388	mg/L	0.000693	0.06939	mg/L	0.003463	4.99%
Be 313.042†	23.1	0.00005	mg/L	0.000006	0.00024	mg/L	0.000030	12.22%
Ca 317.933†	1192837.3	150.0	mg/L	0.17	750.1	mg/L	0.86	0.11%
Cd 228.802†	-29.7	-0.00101	mg/L	0.000198	-0.00503	mg/L	0.000989	19.67%
Co 228.616†	261.8	0.00846	mg/L	0.000067	0.04232	mg/L	0.000336	0.79%
Cr 267.716†	18.5	0.00257	mg/L	0.000571	0.01286	mg/L	0.002853	22.19%
Cu 324.752†	239.7	0.00094	mg/L	0.000244	0.00469	mg/L	0.001220	26.04%
Fe 273.955†	1826.9	1.863	mg/L	0.0106	9.315	mg/L	0.0528	0.57%
K 766.490†	1286.8	0.4958	mg/L	0.00406	2.479	mg/L	0.0203	0.82%
Mg 279.077†	2666.8	3.686	mg/L	0.0123	18.43	mg/L	0.061	0.33%
Mn 257.610†	63476.2	1.450	mg/L	0.0206	7.249	mg/L	0.1032	1.42%
Mo 202.031†	119.7	0.00389	mg/L	0.000425	0.01947	mg/L	0.002124	10.91%
Na 589.592†	4517075.4	287.3	mg/L	4.23	1436	mg/L	21.15	1.47%
Na 330.237†	7180.8	294.8	mg/L	3.58	1474	mg/L	17.92	1.22%
Ni 231.604†	125.0	0.04158	mg/L	0.000499	0.2079	mg/L	0.00250	1.20%
Pb 220.353†	-14.0	-0.00180	mg/L	0.000518	-0.00900	mg/L	0.002589	28.76%
Sb 206.836†	19.1	0.00693	mg/L	0.002785	0.03467	mg/L	0.013925	40.16%
Se 196.026†	33.8	0.02304	mg/L	0.005806	0.1152	mg/L	0.02903	25.20%
Si 288.158†	804.3	0.6829	mg/L	0.00476	3.415	mg/L	0.0238	0.70%
Sn 189.927†	-60.4	0.00682	mg/L	0.001171	0.03412	mg/L	0.005855	17.16%
Sr 421.552†	748560.4	0.8894	mg/L	0.00109	4.447	mg/L	0.0055	0.12%
Ti 334.903†	410.4	0.00489	mg/L	0.000542	0.02447	mg/L	0.002712	11.08%
Tl 190.801†	37.8	0.02359	mg/L	0.003550	0.1179	mg/L	0.01775	15.05%
V 292.402†	1.8	0.00017	mg/L	0.000149	0.00083	mg/L	0.000745	89.64%
Zn 206.200†	98.1	0.02734	mg/L	0.000464	0.1367	mg/L	0.00232	1.70%

Sequence No.: 111
Sample ID: AHQ7 ASPK LEN
Analyst: ALA
Dilution: 5.000000X

Autosampler Location: 310
Date Collected: 6/18/2015 4:48:35 PM
Data Type: Original

Nebulizer Parameters: AHQ7 ASPK LEN

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: AHQ7 ASPK LEN

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2718582.9	99.68	%	0.500				0.50%
ScR 361.383	292182.8	102.2	%	0.78				0.76%
Ag 328.068†	48291.0	0.2040	mg/L	0.00209	1.020	mg/L	0.0104	1.02%
Al 308.215†	762.0	0.7841	mg/L	0.00602	3.920	mg/L	0.0301	0.77%
As 188.979†	1105.0	0.8375	mg/L	0.00471	4.188	mg/L	0.0235	0.56%
B 249.677†	81.1	0.01553	mg/L	0.001152	0.07763	mg/L	0.005761	7.42%
Ba 233.527†	3927.4	0.8013	mg/L	0.00468	4.007	mg/L	0.0234	0.58%
Be 313.042†	85730.6	0.1823	mg/L	0.00103	0.9116	mg/L	0.00516	0.57%
Ca 317.933†	1212266.3	152.5	mg/L	0.78	762.3	mg/L	3.91	0.51%
Cd 228.802†	4504.0	0.1988	mg/L	0.00130	0.9941	mg/L	0.00650	0.65%
Co 228.616†	6166.0	0.2001	mg/L	0.00119	1.001	mg/L	0.0059	0.59%
Cr 267.716†	1303.5	0.1964	mg/L	0.00038	0.9820	mg/L	0.00189	0.19%
Cu 324.752†	55122.8	0.2022	mg/L	0.00176	1.011	mg/L	0.0088	0.87%
Fe 273.955†	2544.8	2.593	mg/L	0.0065	12.97	mg/L	0.033	0.25%
K 766.490†	11648.5	4.488	mg/L	0.0294	22.44	mg/L	0.147	0.66%
Mg 279.077†	5422.3	7.495	mg/L	0.0212	37.48	mg/L	0.106	0.28%
Mn 257.610†	70821.4	1.618	mg/L	0.0018	8.088	mg/L	0.0091	0.11%
Mo 202.031†	114.5	0.00356	mg/L	0.000248	0.01779	mg/L	0.001242	6.98%
Na 589.592†	4541124.8	288.8	mg/L	3.98	1444	mg/L	19.89	1.38%
Na 330.237†	7404.9	303.9	mg/L	1.04	1520	mg/L	5.20	0.34%
Ni 231.604†	694.9	0.2309	mg/L	0.00395	1.154	mg/L	0.0197	1.71%
Pb 220.353†	6141.9	0.7540	mg/L	0.00459	3.770	mg/L	0.0229	0.61%
Sb 206.836†	19.5	0.00536	mg/L	0.001189	0.02680	mg/L	0.005947	22.19%
Se 196.026†	1211.7	0.8260	mg/L	0.00926	4.130	mg/L	0.0463	1.12%
Si 288.158†	641.8	0.5456	mg/L	0.00101	2.728	mg/L	0.0051	0.19%
Sn 189.927†	-63.9	0.00644	mg/L	0.000634	0.03219	mg/L	0.003171	9.85%
Sr 421.552†	900137.8	1.069	mg/L	0.0086	5.347	mg/L	0.0430	0.80%
Ti 334.903†	431.5	0.00560	mg/L	0.000122	0.02798	mg/L	0.000610	2.18%
Tl 190.801†	1238.4	0.7635	mg/L	0.00487	3.818	mg/L	0.0244	0.64%
V 292.402†	29395.9	0.1919	mg/L	0.00163	0.9593	mg/L	0.00816	0.85%
Zn 206.200†	723.3	0.2138	mg/L	0.00146	1.069	mg/L	0.0073	0.68%

Sequence No.: 112
Sample ID: CV
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 7
Date Collected: 6/18/2015 4:53:08 PM
Data Type: Original

Nebulizer Parameters: CV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2860825.7	104.9	%	0.77				0.73%
ScR 361.383	300790.7	105.2	%	0.77				0.73%
Ag 328.068†	236631.0	0.9996	mg/L	0.01141	0.9996	mg/L	0.01141	1.14%
Al 308.215†	1879.7	1.909	mg/L	0.0106	1.909	mg/L	0.0106	0.56%
As 188.979†	2431.6	1.926	mg/L	0.0199	1.926	mg/L	0.0199	1.03%
B 249.677†	4814.1	0.9440	mg/L	0.00520	0.9440	mg/L	0.00520	0.55%
Ba 233.527†	4922.8	1.004	mg/L	0.0096	1.004	mg/L	0.0096	0.96%
Be 313.042†	434849.5	0.9247	mg/L	0.00340	0.9247	mg/L	0.00340	0.37%
Ca 317.933†	16022.9	2.015	mg/L	0.0186	2.015	mg/L	0.0186	0.92%
Cd 228.802†	22526.5	1.006	mg/L	0.0088	1.006	mg/L	0.0088	0.88%
Co 228.616†	30576.1	0.9913	mg/L	0.00937	0.9913	mg/L	0.00937	0.94%
Cr 267.716†	6594.4	0.9960	mg/L	0.00489	0.9960	mg/L	0.00489	0.49%
Cu 324.752†	267526.3	0.9804	mg/L	0.01049	0.9804	mg/L	0.01049	1.07%
Fe 273.955†	1899.9	1.928	mg/L	0.0092	1.928	mg/L	0.0092	0.48%
K 766.490†	50619.7	19.50	mg/L	0.060	19.50	mg/L	0.060	0.31%
Mg 279.077†	1400.6	1.944	mg/L	0.0177	1.944	mg/L	0.0177	0.91%
Mn 257.610†	40291.6	0.9209	mg/L	0.00367	0.9209	mg/L	0.00367	0.40%
Mo 202.031†	17584.7	0.9819	mg/L	0.00882	0.9819	mg/L	0.00882	0.90%
Na 589.592†	752247.0	47.84	mg/L	0.131	47.84	mg/L	0.131	0.27%
Na 330.237†	1210.8	49.61	mg/L	0.200	49.61	mg/L	0.200	0.40%
Ni 231.604†	2922.1	0.9723	mg/L	0.00734	0.9723	mg/L	0.00734	0.75%
Pb 220.353†	15659.8	1.923	mg/L	0.0170	1.923	mg/L	0.0170	0.89%
Sb 206.836†	5348.0	1.985	mg/L	0.0151	1.985	mg/L	0.0151	0.76%
Se 196.026†	2861.2	1.950	mg/L	0.0192	1.950	mg/L	0.0192	0.98%
Si 288.158†	2280.6	1.913	mg/L	0.0014	1.913	mg/L	0.0014	0.07%
Sn 189.927†	4526.8	0.9852	mg/L	0.00827	0.9852	mg/L	0.00827	0.84%
Sr 421.552†	797552.3	0.9476	mg/L	0.00264	0.9476	mg/L	0.00264	0.28%
Ti 334.903†	20663.2	0.9620	mg/L	0.00350	0.9620	mg/L	0.00350	0.36%
Tl 190.801†	3144.9	1.935	mg/L	0.0201	1.935	mg/L	0.0201	1.04%
V 292.402†	148309.6	0.9673	mg/L	0.01127	0.9673	mg/L	0.01127	1.16%
Zn 206.200†	3208.8	0.9568	mg/L	0.00695	0.9568	mg/L	0.00695	0.73%

Sequence No.: 113
Sample ID: CB
Analyst: ALA
Dilution: 1.000000X

Autosampler Location: 1
Date Collected: 6/18/2015 4:57:11 PM
Data Type: Original

Nebulizer Parameters: CB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.75 L/min

Mean Data: CB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2861526.8	104.9	%	1.03				0.98%
ScR 361.383	300489.5	105.1	%	0.11				0.10%
Ag 328.068†	-12.1	-0.00005	mg/L	0.000095	-0.00005	mg/L	0.000095	184.89%
Al 308.215†	1.3	0.00131	mg/L	0.005964	0.00131	mg/L	0.005964	453.67%
As 188.979†	0.2	0.00018	mg/L	0.001800	0.00018	mg/L	0.001800	>999.9%
B 249.677†	9.3	0.00183	mg/L	0.001130	0.00183	mg/L	0.001130	61.89%
Ba 233.527†	6.3	0.00128	mg/L	0.000134	0.00128	mg/L	0.000134	10.52%
Be 313.042†	15.8	0.00003	mg/L	0.000031	0.00003	mg/L	0.000031	90.84%
Ca 317.933†	23.9	0.00300	mg/L	0.000371	0.00300	mg/L	0.000371	12.36%
Cd 228.802†	6.5	0.00029	mg/L	0.000174	0.00029	mg/L	0.000174	59.24%
Co 228.616†	10.1	0.00033	mg/L	0.000120	0.00033	mg/L	0.000120	36.50%
Cr 267.716†	-2.1	-0.00031	mg/L	0.000455	-0.00031	mg/L	0.000455	145.42%
Cu 324.752†	42.5	0.00016	mg/L	0.000084	0.00016	mg/L	0.000084	53.89%
Fe 273.955†	3.6	0.00367	mg/L	0.001261	0.00367	mg/L	0.001261	34.38%
K 766.490†	16.3	0.00629	mg/L	0.006591	0.00629	mg/L	0.006591	104.84%
Mg 279.077†	-2.4	-0.00333	mg/L	0.002478	-0.00333	mg/L	0.002478	74.50%
Mn 257.610†	-1.7	-0.00004	mg/L	0.000046	-0.00004	mg/L	0.000046	118.72%
Mo 202.031†	27.1	0.00151	mg/L	0.000261	0.00151	mg/L	0.000261	17.24%
Na 589.592†	1181.3	0.07513	mg/L	0.007396	0.07513	mg/L	0.007396	9.84%
Na 330.237†	-1.0	-0.03916	mg/L	0.053338	-0.03916	mg/L	0.053338	136.19%
Ni 231.604†	-2.2	-0.00074	mg/L	0.000663	-0.00074	mg/L	0.000663	90.06%
Pb 220.353†	4.5	0.00056	mg/L	0.000191	0.00056	mg/L	0.000191	34.32%
Sb 206.836†	7.5	0.00278	mg/L	0.002328	0.00278	mg/L	0.002328	83.79%
Se 196.026†	2.3	0.00158	mg/L	0.001782	0.00158	mg/L	0.001782	112.63%
Si 288.158†	-2.3	-0.00195	mg/L	0.003327	-0.00195	mg/L	0.003327	170.50%
Sn 189.927†	1.5	0.00033	mg/L	0.000664	0.00033	mg/L	0.000664	202.05%
Sr 421.552†	64.6	0.00008	mg/L	0.000027	0.00008	mg/L	0.000027	34.67%
Ti 334.903†	-4.3	-0.00020	mg/L	0.000234	-0.00020	mg/L	0.000234	116.91%
Tl 190.801†	-0.2	-0.00013	mg/L	0.002839	-0.00013	mg/L	0.002839	>999.9%
V 292.402†	30.1	0.00019	mg/L	0.000096	0.00019	mg/L	0.000096	49.13%
Zn 206.200†	-1.3	-0.00038	mg/L	0.000389	-0.00038	mg/L	0.000389	101.61%

ANALYTICAL RESOURCES INCORPORATED

Metals Data Review Checklist

Method: ICP ICP-MS GFA (CVA) **Analysis Date:** 6-17-15

	Analyst TH 6-17-15	Peer 6-17-15	Comment
Logbook:			
Analyst, Date, Method info	✓	✓	
Sample ID's	✓	✓	
Standard/QC solution ID's recorded	✓	✓	
Prep codes	✓	✓	
Dilution factors	✓	✓	
Crossouts/Corrections/Deletions	✓	✓	
Calibration:			
Blank & Standard intensities	✓	✓	
Standard deviations	✓	✓	
Curve fit	✓	✓	
Calibration Verification:			
ICV/CCV	✓	✓	
ICB/CCB	✓	✓	
Samples:			
RSD's & SD's	✓	✓	
Internal Standards	—	—	
Carry-over	—	—	
Method QC:			
CRI/CRA	✓	✓	
ICSA/ICSAB TH 6-17-15	✓	—	
Post Spikes/Serial Dilutions	—	—	
Analytic Spikes	—	✓	
Matrix QC:			
SRM/LCS	✓	✓	AHLO, AHL1
Matrix Spikes	✓	✓	
Matrix Duplicates	✓	✓	
Method Blanks	✓	✓	
Data Distribution:			
Requested elements/isotope identified	✓	✓	
Correct samples identified for distribution	✓	✓	
Raw data match distributed data	✓	✓	
Data filename correct	✓	✓	
Necessary Analysts' Notes and CAFs	✓	✓	See CAFs

Mercury Analysis Log

Analyst: TH

Instrument: CETAC

Date: 6-17-15

Page: 1 of 3

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
STD 0.0	Thm	1X		
" 0.1				
" 0.5				
" 1.0				
" 2.0				High X
" 5.0				
" 10.0				
STD 0.0				
" 0.1				
" 0.5				
" 1.0				
" 2.0				
" 5.0				
" 10.0				
ICV			8.16	Test only X
CCV			4.08	↓ X
ICV			7.92	Begin CLP Y.R=99 ✓
ICB			-0.03	✓
CCV1			4.04	Y.R=101 ✓
CCB1			-0.02	✓
CRA	↓		0.07	✓
AHS2 MB1	LEm		-0.01	✓
" A			-0.01	
" ADUP			-0.01	No RPD; undetected ✓
" ASPK			1.19	Y.R=119 ✓
" B				
" D				
" MB2			-0.01	✓
" C	↓			
CCV2	Thm	↓	4.04	Y.R=101 ✓

Chemical/Reagent ID:

10% $SnCl_2$: D2476

14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3063-16

ICV/CCV: D0176

Mercury Analysis Log

Analyst: TH Date: 6-17-15

Instrument: CETAC Page: 2 of 3

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments	
CCB2	TWM	1X	-0.02	End CLP	✓
AHS6 MB2	LEM		-0.02		✓
" A+			-0.01		
"TH 6-17 ~~ISADUP~~ A+DUP			-0.02	No RPD; undetected	✓
" ~~ASPK~~ A+SPK			1.19	%R=119	✓
AHT4 MB			-0.00		✓
" A			0.00		
" ADUP			-0.01	No RPD; undetected	✓
" ASPK			1.13	%R=113	✓
AHT3 MB			-0.02		✓
" A			-0.01		
CCV3	TWM		4.13	%R=103	✓
CCB3			-0.02		✓
AHT3 ADUP	LEM		-0.01	No RPD; undetected	✓
" ASPK			1.20	%R=120	✓
AHT5 A					
" B					
AHM3 MB1	TWM		-0.01		✓
" MB1SPK			2.06	%R=103	✓
" A					
AHO2 MB			-0.00		✓
" MBSPK			2.06	%R=103	✓
" A					
CCV4			4.17	%R=104	✓
CCB4			-0.01		✓
AHO2 B					
" C					
" D					
" E					
" F					

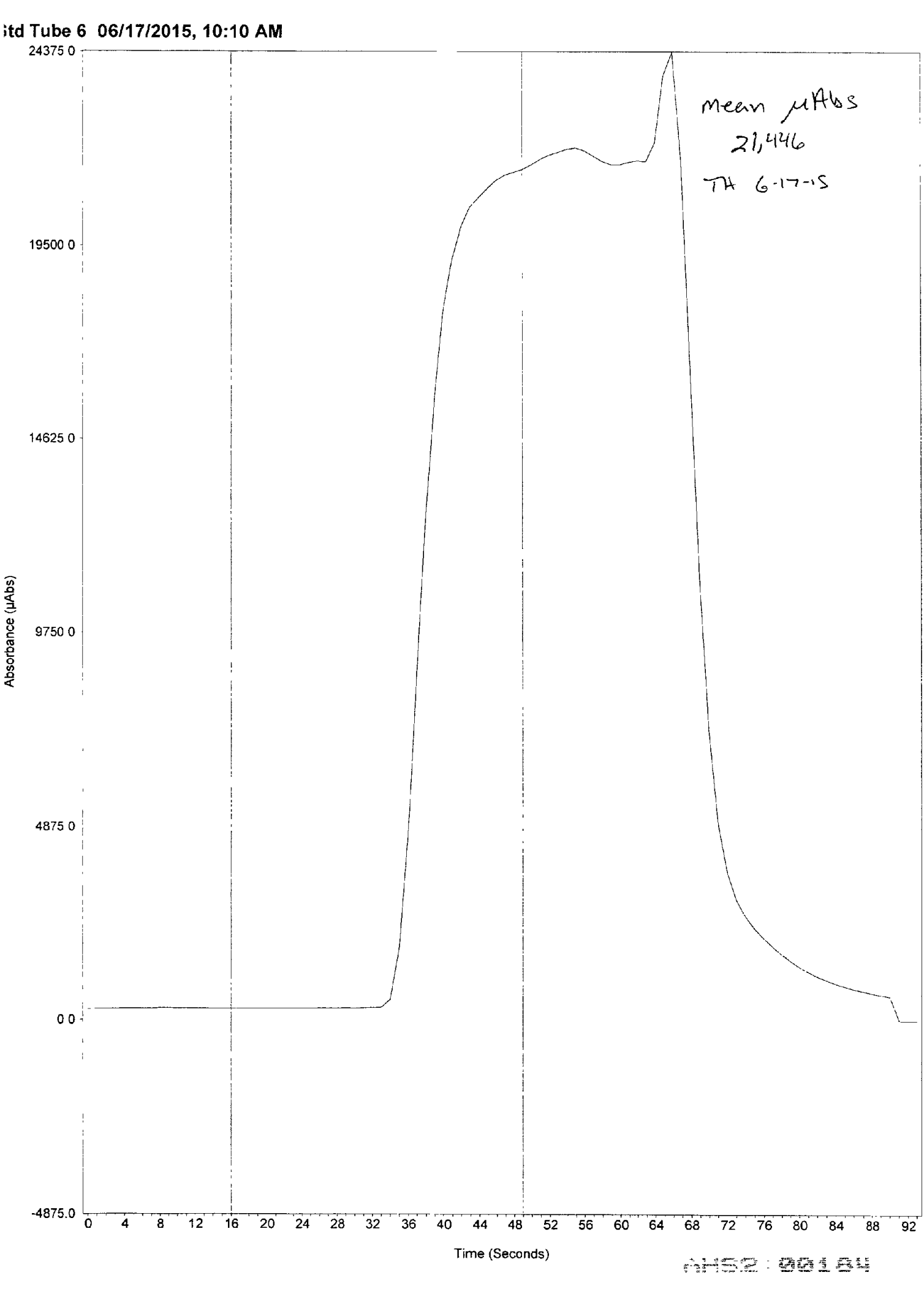
6/17/15

Chemical/Reagent ID:

10% $SnCl_2$: D2476 14% NH_2OH/NaCl: D1433

Standard ID:

Standard: 3063-16 ICV/CCV: D0176


itd Tube 6 06/17/2015, 10:10 AM
mean µAbs
21,446
TH 6-17-15
24375 0
19500 0
14625 0
9750 0
4875 0
0 0
-4875.0
Absorbance (µAbs)
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92
Time (Seconds)

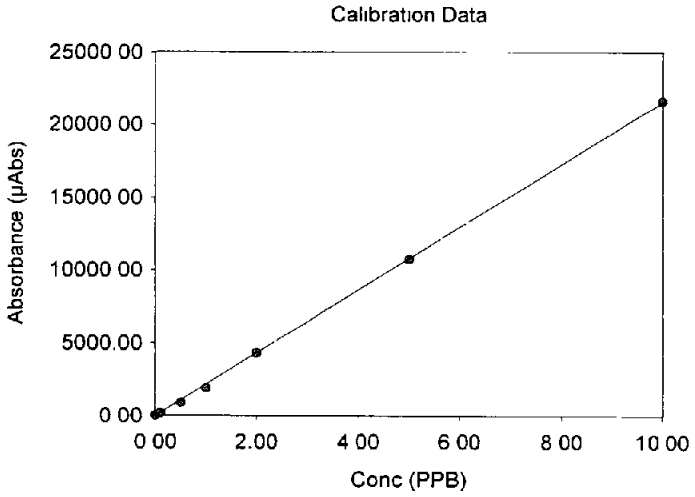
CETAC Hg Analysis Report - 15061700.DB - Wednesday, June 17, 2015, 1:31:53 PM

Analyst
Date Started Wednesday, June 17, 2015, 10 09 56
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Std Tube 6	17-Jun-2015, 10:09	10 00	0 82	21400.00	1 00	

Information about this calibration could not be retrieved from the Master File

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	17-Jun-2015, 10.13	0 00	43 40	12.40	1 00	
Standard #1	17-Jun-2015, 10 16	0 10	1 16	189.00	1 00	
Standard #2	17-Jun-2015, 10:17	0 50	0 32	917.00	1 00	
Standard #3	17-Jun-2015, 10 19	1 00	0 49	1910.00	1 00	
Standard #4	17-Jun-2015, 10:21	2 00	0 30	4310.00	1 00	High x
Standard #5	17-Jun-2015, 10 22	5 00	0 28	10700.00	1 00	
Standard #6	17-Jun-2015, 10 24	10 00	0 39	21700.00	1 00	



Int	0 000
Slope	2160.443
Correlation	0.99987

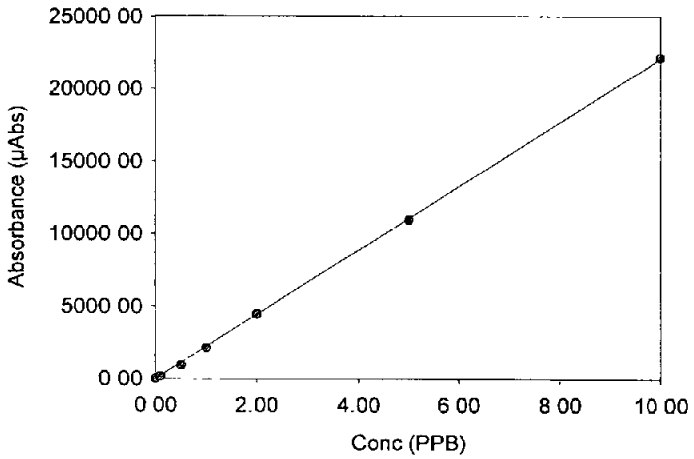
TLM

CETAC Hg Analysis Report - 15061700.DB - Wednesday, June 17, 2015, 1:31:53 PM

Analyst
Date Started Wednesday, June 17, 2015, 10 28:26
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
Calibration Zero	17-Jun-2015, 10:28	0.00	4.19	19 30	1 00	
Standard #1	17-Jun-2015, 10 30	0 10	1.94	195 00	1.00	
Standard #2	17-Jun-2015, 10 31	0.50	0.49	925.00	1 00	
Standard #3	17-Jun-2015, 10.33	1 00	0.25	2130 00	1.00	
Standard #4	17-Jun-2015, 10 35	2.00	0.15	4470 00	1 00	
Standard #5	17-Jun-2015, 10 36	5 00	0.25	11000 00	1 00	
Standard #6	17-Jun-2015, 10:38	10 00	0.27	22200 00	1 00	

Calibration Data



Int	0 000
Slope	2213 453
Correlation	0.99993

TWM

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	17-Jun-2015, 10.40	8 16	0 09	18100 00	1 00	Test only X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	17-Jun-2015, 10 43	4 08	0.07	9030 00	1 00	Test only X

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
ICV	17-Jun-2015, 10 48	7.92	0 37	17500 00	1 00	Begin CUP
ICB	17-Jun-2015, 10 50	-0 03	4 18	-57.20	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	17-Jun-2015, 10.52	4 04	0 20	8940 00	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	17-Jun-2015, 10 54	-0 02	9 88	-48 80	1.00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
CRA	17-Jun-2015, 10 55	0.07	3 18	158 00	1 00	
AHS2 MB1 LEM	17-Jun-2015, 10 57	-0 01	10.70	-28 50	1 00	
AHS2 A LEM	17-Jun-2015, 10 58	-0.01	49 00	-13 70	1 00	
AHS2 ADUP LEM	17-Jun-2015, 11:00	-0 01	18 20	-28 90	1 00	
AHS2 ASPK LEM	17-Jun-2015, 11.02	1 19	0.67	2640 00	1 00	
AHS2 B LEM	17-Jun-2015, 11.03	-0 01	36 80	-14 90	1 00	
AHS2 D LEM	17-Jun-2015, 11.05	-0 01	10.40	-18 00	1 00	
AHS2 MB2 LEM	17-Jun-2015, 11 06	-0 01	3.52	-30 60	1 00	
AHS2 C LEM	17-Jun-2015, 11:08	-0 01	7.91	-19 10	1 00	

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Standard	17-Jun-2015, 11 10	4 04	0 33	8950 00	1.00	

Analyst
Date Started Wednesday, June 17, 2015, 11 11:56
Worksheet ARI 10ppb CALIB
Comment

Sample ID	Analysis Time	Conc (PPB)	%RSD	Avg. µAbs	Dilution	Flags
QC Blank	17-Jun-2015, 11 11	-0 02	4.81	-41 90	1 00	End CLP
AHS6 MB2 LEM	17-Jun-2015, 11 14	-0 02	9.80	-50 80	1 00	
AHS6 A LEM	17-Jun-2015, 11 15	-0 01	6.35	-26 40	1 00	
AHS6 ADUP LEM	17-Jun-2015, 11 17	-0 02	2.24	-48 80	1 00	
AHS6 ASPK LEM	17-Jun-2015, 11 18	1 19	0.87	2620 00	1 00	
AHT4 MB LEM	17-Jun-2015, 11 20	-0 00	88.60	-4 75	1 00	
AHT4 A LEM	17-Jun-2015, 11 22	0 00	93 10	3 02	1 00	
AHT4 ADUP LEM	17-Jun-2015, 11 23	-0 01	15.30	-22 00	1 00	
AHT4 ASPK LEM	17-Jun-2015, 11 25	1 13	0.14	2500 00	1 00	
AHT3 MB LEM	17-Jun-2015, 11 26	-0.02	10.50	-52 40	1 00	
AHT3 A LEM	17-Jun-2015, 11 28	-0 01	6 24	-32 40	1.00	
QC Standard	17-Jun-2015, 11 30	4 13	0 04	9150 00	1 00	
QC Blank	17-Jun-2015, 11 31	-0 02	1 97	-44 50	1 00	
AHT3 ADUP LEM	17-Jun-2015, 11 33	-0 01	18 30	-11 30	1 00	
AHT3 ASPK LEM	17-Jun-2015, 11 35	1 20	0 21	2650 00	1 00	
AHT5 A LEM	17-Jun-2015, 11 36	-0.01	23 90	-18 00	1 00	
AHT5 B LEM	17-Jun-2015, 11 38	-0 01	17.00	-18 70	1 00	
AHM3 MB1 TWM	17-Jun-2015, 11 39	-0.01	8 07	-27 40	1 00	
AHM3 MB1SPK TWM	17-Jun-2015, 11 41	2 06	0 15	4550 00	1.00	
AHM3 A TWM	17-Jun-2015, 11 43	-0 00	15 10	-10 80	1 00	
AHO2 MB TWM	17-Jun-2015, 11 44	-0 00	41 70	-3 14	1 00	
AHO2 MBSPK TWM	17-Jun-2015, 11 46	2.06	0 20	4550 00	1 00	
AHO2 A TWM	17-Jun-2015, 11 47	-0 00	82 00	-7 83	1.00	
QC Standard	17-Jun-2015, 11 49	4.17	0.19	9230.00	1 00	
QC Blank	17-Jun-2015, 11 51	-0 01	8 15	-26 40	1 00	
AHO2 B TWM	17-Jun-2015, 11 52	-0.01	15.30	-11 60	1.00	
AHO2 C TWM	17-Jun-2015, 11.54	-0 01	23 10	-16 80	1.00	
AHO2 D TWM	17-Jun-2015, 11 56	-0 01	50 20	-16.10	1.00	
AHO2 E TWM	17-Jun-2015, 11.57	-0 01	4 61	-29 80	1.00	
AHO2 F TWM	17-Jun-2015, 11 59	-0 01	15 00	-14 30	1.00	
AHO2 G TWM	17-Jun-2015, 12 01	0 00	52 50	6.83	1.00	
AHT9 MB TWM	17-Jun-2015, 12:02	-0 02	9 56	-49 00	1.00	
AHT9 MBSPK TWM	17-Jun-2015, 12 04	2 30	0 22	5080.00	1.00	
AHT9 A TWM	17-Jun-2015, 12 05	-0 00	14 70	-8 27	1.00	
QC Standard	17-Jun-2015, 12 07	4 46	0.25	9870 00	1.00	
QC Blank	17-Jun-2015, 12 09	-0 02	2 61	-43 70	1.00	
AHW0 MB TWM	17-Jun-2015, 12 11	0 00	973 00	0.81	1 00	
AHW0 MBSPK TWM	17-Jun-2015, 12 12	2 47	0 45	5460.00	1 00	Y.R High X
AHW0 A TWM	17-Jun-2015, 12 14	-0 00	15 90	-6 30	1 00	

AHS2 - 80187

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Mercury Standard Prep Log

Prep Code: SWM Instrument: CETAC
Analyst: MB Date: 6/11/15
Bath Temp: 90°C Start Time: 1125 End Time: 1155

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	–	0.00	50.0	0.0	3
STD1	3063-15	0.01	↓	0.1	2
STD2	↓	0.05	↓	0.5	2
STD3	↓	0.10	↓	1.0	2
STD4	↓	0.20	↓	2.0	2
STD5	↓	0.50	↓	5.0	2
STD6	↓	1.00	↓	10.0	2
CRA	↓	0.01	↓	0.1	1
ICB/CCB	–	0.00	↓	0.0	3
ICV/LCS	00176	0.08	↓	8.0	2
CCV	↓	0.04	50.0	4.0	3

Chemical/Reagent ID:

HNO_3: 01439 H_2SO_4: C3708 HCl: –

5% $K_2S_2O_8$: 01432 5% $KMnO_4$: 01835

Prep Code: TWM Digested 200ml Instrument: CETAC
Analyst: MB Date: 6/12/15
Bath Temp: 94°C Start Time: 0940 End Time: 01140

Standard ID	Stock ID	Volume Added (mL)	Final Volume (mL)	Standard Conc. (µg/L)	Number Made
STD0	–	0.00	100.0	0.0	1
STD1	3063-16	0.01	↓	0.1	1
STD2	↓	0.05	↓	0.5	1
STD3	↓	0.10	↓	1.0	1
STD4	↓	0.20	↓	2.0	1
STD5	↓	0.50	↓	5.0	1
STD6	↓	1.00	↓	10.0	1
CRA	↓	0.01	↓	0.1	1
ICB/CCB	–	0.00	↓	0.0	1
ICV/LCS	00176	0.16	↓	8.0	1
CCV	↓	0.08	100.0	4.0	1

Chemical/Reagent ID:

HNO_3: 01439 H_2SO_4: C3708 HCl: –

5% $K_2S_2O_8$: 01432 5% $KMnO_4$: 01835

AHS2-00188

Attachment C

Data Verification Reports

Data Quality Checklist
Environmental Data Review Data Quality SOG

Project Name:	Port of Seattle Sliver Property	**Sampling Event:**	Soil Characterization
Project Number:	1496007.00	**Phase/Task Numbers:**	Task 02
Laboratory:	Analytical Resources, Incorporated (ARI)	**Report Id:**	AGA8
K/J Contact:	Ryan Hultgren	**Reviewer:**	Heather Brunelle
Date Completed:	10 June 2015	**Signature:**	

Sample Inventory

Analysis	Method	Matrix	Total # of Samples	# of Trip Blanks	Date(s) Collected	Total # of Samples Analyzed	# Trip Blanks Analyzed
PAHs	SW8270-SIM	Soil	11	0	5/13/2015	11	0
PCB Aroclors	SW8082	Soil	11	0	5/13/2015	11	0
Lube Oil/Diesel	NWTPH-Dx	Soil	7	0	5/13/2015	7	0
Metals/Mercury	SW6020/7471	Soil	11	0	5/13/2015	11	0
PAHs	SW8270-SIM	Water	1	0	5/13/2015	1	0
PCB Aroclors	SW8082	Water	1	0	5/13/2015	1	0
Lube Oil/Diesel	NWTPH-Dx	Water	1	0	5/13/2015	1	0
Metals/Mercury	SW6020/7471	Water	1	0	5/13/2015	1	0
Notes:	**Samples analyzed by ARI:** SDP-06 (10.0-11.0), SDP-06 (12.5-13.5), SDP-07 (1.5-3.0), SDP-07 (1.5-3.0)-MS, SDP-07 (8.5-9.5), SDP-08 (12.0-13.5), SDP-09 (2.5-4.0), SDP-10 (13.5-15.0), SDP-10 (15.5-16.5), SDP-10 (16.5-17.5), and RB-051315. **Additional samples submitted to (ARI) for hold pending further instruction:** SDP-06 (1.5-3.0), SDP-06 (17.0-18.0), SDP-07 (12.5-13.5), SDP-07 (19.0-20.0), SDP-08 (6.0-7.0), SDP-08 (3.5-5.0), SDP-09 (5.0-6.5), SDP-10 (2.0-3.5), and SDP-10 (7.0-8.0).						

Report Content

	Yes	No	NA
1. Is there a signature and title of the person accepting responsibility for the report?	☒	☐	
2. Has the laboratory submitted an electronic copy of the data? ***100 percent of EDD sample results were checked against values reported in laboratory report.***	☒	☐	

Report Content	Yes	No	NA
3. Was the entire report received (based on total number of pages or indication of last report page)?	☒	☐	
4. Is there a legend or list explaining data qualifiers?	☒	☐	☐
5. Is the original chain-of-custody form included in the report?	☒	☐	
6. Was a laboratory sample receiving/integrity report included in the report? Any noted problems? *Any noted problems?* ***Coolers received at temperatures of 7.4°C and 8.8°C, above 6°C. Coolers delivered to laboratory on same day of sample collection (5/13/15). No corrective action warranted.***	☒	☐	
7. Do receipt dates match the chain-of-custody form?	☒	☐	
8. Have all requested analyses on the chain-of-custody form been conducted?	☒	☐	
9. Have all analyses been conducted by this laboratory? If No, which analyses? *If No, which analyses?* _____	☒	☐	
10. Are all dates (i.e., collection date(s), receipt date(s), extraction date(s) analysis date(s), reporting dates, etc.), listed for all samples and are they consistent throughout the report? Identify omissions and inconsistencies on page(s) *Identify omissions and inconsistencies on page(s)* _____	☒	☐	
11. Were all specified sample holding times met? If no, identify? *If no, identify?* _____	☒	☐	
12. Do sample IDs in the report match the chain-of-custody form and are they consistent throughout the report? *Circle inconsistencies and identify pages* _____	☒	☐	
13. If test methods were specified on the chain-of-custody form, were samples analyzed for the test methods requested?	☒	☐	☐
14. If test methods were specified on the chain-of-custody form, are the test methods listed appropriate for the requested analysis? ***Test methods consistent with methods specified in project QAPP.***	☒	☐	☐

Report Content	Yes	No	NA
15. Is the report complete and all laboratory quality control data included for each analysis?	☒	☐	
16. Are results reported with a consistent and appropriate number of significant figures?	☒	☐	
17. Are results reported using appropriate and consistent concentration units?	☒	☐	
18. Have data below the method detection limit (MDL) or practical quantitation limit (PQL) been correctly qualified? *If not, Identify data with a check mark (✓)*	☒	☐	☐
19. Have data above the MDL or PQL been correctly left unqualified? *Identify data with asterisks (*)*	☒	☐	☐
20. Indicate if the following field QC samples were collected and if so were they collected at the required frequency listed in the sampling plan:			
a. Trip blank sample	☐	☐	☒
b. Field blank sample	☐	☐	☒
c. Field replicate or duplicate sample	☐	☐	☒
d. Equipment (rinsate) blank sample	☒	☐	☐
21. Did the laboratory perform the following QC analysis, where appropriate:			
a. One laboratory method blank sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
b. One matrix spike/matrix spike duplicate (MS/MSD) sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
c. One blank spike sample or laboratory control sample (LCS) per 20 samples or batch, whichever is more frequent if MS analyses were not performed?	☒	☐	☐
d. One laboratory duplicate per 20 samples or batch, whichever is more frequent?	☒	☐	☐
e. Other (Define)	☐		
22. Were any analytes detected in the following:			
a. Method blank samples ***Detected concentrations were below reporting limits:*** ***Chromium (0.17 µg/L) and zinc (0.8 µg/L) detected in water method blank.*** ***Chromium (0.08 mg/kg) and zinc (1.99 mg/kg) detected in soil method blank.***	☒	☐	☐
b. Field blank samples	☐	☐	☒
c. Trip blank samples	☐	☐	☒

Report Content	Yes	No	NA
d. Equipment (rinsate) blank samples ***Arsenic (0.08 µg/L), barium (0.030 µg/L), cadmium (0.02 µg/L), chromium (0.09 µg/L), selenium (0.28 µg/L), and zinc (3.7 µg/L) detected in rinsate blank sample RB-051315. Rinsate blank detections of chromium and zinc less than 5x concentrations detected in method blank.***	☒	☐	☐
23. Do surrogate recoveries meet acceptance criteria (accuracy)? *If no, note exceptions and qualify appropriately* _____	☒	☐	☐
24. Do percent recoveries for MS/MSD meet control limits (accuracy) for the test method/sample matrix? ***Several MS recoveries were outside acceptable limits for metals and PAH soil analysis. Initial sample concentration [SDP-07 (1.5-3.0)-MS] were high relative to spike amount. The LCS recoveries were within acceptable limits. No corrective action is required for MS recovery.***	☐	☒	☐
25. Do the relative percent differences (RPDs) for MS/MSD meet control limits (precision) for the test method/sample matrix?	☒	☐	☐
26. Do percent recoveries for LCS meet control limits (accuracy) for the test method/sample matrix?	☒	☐	☐
27. Do the RPDs for laboratory duplicate analyses meet control limits (precision) for the test method/sample matrix? ***The RPDs for chromium (28.8%) and copper (20.4%) the laboratory duplicate analyzed exceeded the control limit of 20%. The associated results were flagged with a J-qualifier in accordance with EPA (2014) National Functional Guidelines for Inorganic Data Review.***	☐	☒	☐
28. Do the RPDs for field (blind) duplicate pairs meet acceptance criteria (precision) for the test method/sample matrix?	☐	☐	☒
29. If sample reference materials or laboratory check standards were included in the data set, were recoveries within the control limits for the test method/sample matrix? Circle exceptions	☐	☐	☒
30. Is the discussion of any report variance consistent with the data reported?	☒	☐	☐
31. Have all qualified data been completely/correctly identified? *If not, data on which page* _____	☒	☐	☐

Report Content	Yes	No	NA
32. Is the quality of the data package acceptable without revisions by the laboratory?	☒	☐	☐
33. *If no, attach corrective action summary*			

Qualifiers Assigned by Data Reviewers

U: Data qualified with an U indicates that the value reported for the sample is less than 5 times the amount of that analyte detected in the blank. The U qualifier is applied to the data according to USEPA Functional Guidelines for Review of Inorganic and Organic Data as follows:

1. If the level of an analyte reported in the sample is greater than the MDL for that analyte in that sample, a U is placed next to the sample result if it is less than 5 times the level in the blank.

2. If the level reported in the sample is less than the MDL (qualified by the laboratory with a J) and less than 5 times the level in the blank, the sample result and J qualifier are crossed out and replaced with the MDL for that analyte in that sample followed by U.

Sample results that exceed the MDL and are greater than 5 times the level in the blank are not qualified.

J: Data qualified with a J indicates that the analyte was positively identified, but the associated numerical value is an approximate concentration. The J qualifier is applied to results by both the laboratory and data validator.

B: Data qualified with a B indicates that the analyte was detected in the laboratory method blank.

R: Data qualified with a R indicates that the result is rejected. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Corrective Actions

Describe data corrective actions or report revisions required from laboratory:

Corrective actions were not warranted based on data quality review of laboratory report.

Corrective action initiated? ☐ Yes ☒ No By whom? _____ Date: _____

Summary of Resolution:

Not Applicable.

Verified? ☒ Yes ☐ No By whom? Heather Brunelle Date: 10 June 2015

Data Quality Checklist
Environmental Data Review Data Quality SOG

Project Name:	Port of Seattle Sliver Property	**Sampling Event:**	Soil Characterization
Project Number:	1496007.00	**Phase/Task Numbers:**	Task 02
Laboratory:	Analytical Resources, Incorporated (ARI)	**Report Id:**	AGC9
K/J Contact:	Ryan Hultgren	**Reviewer:**	Heather Brunelle
Date Completed:	10 June 2015	**Signature:**	

Sample Inventory

Analysis	Method	Matrix	Total # of Samples	# of Trip Blanks	Date(s) Collected	Total # of Samples Analyzed	# Trip Blanks Analyzed
PAHs	SW8270-SIM	Soil	12	0	5/14/2015	12	0
PCB Aroclors	SW8082	Soil	12	0	5/14/2015	12	0
Lube Oil/Diesel	NWTPH-Dx	Soil	7	0	5/14/2015	7	0
Metals/Mercury	SW6020/7471	Soil	12	0	5/14/2015	12	0
PAHs	SW8270-SIM	Water	1	0	5/14/2015	1	0
PCB Aroclors	SW8082	Water	1	0	5/14/2015	1	0
Lube Oil/Diesel	NWTPH-Dx	Water	1	0	5/14/2015	1	0
Metals/Mercury	SW6020/7471	Water	1	0	5/14/2015	1	0
Notes:	**Samples analyzed by ARI:** SDP-01 (3.0-4.0), SDP-01 (8.0-9.0), SDP-02 (16.0-17.5), SDP-02 (18.5-19.5), SDP-02 (22.0-23.5), SDP-03 (6.5-8.0), SDP-03 (23.5-24.5), SDP-04 (1.5-3.0), SDP-04 (1.5-3.0)-MS, SDP-04 (10.5-12.0), SDP-05 (6.5-7.5), SDP-05 (17.5-19.0), and RB-051415. **Additional samples submitted to (ARI) for hold pending further instruction:** SDP-01 (11.0-12.5), SDP-01 (22.5-24.0), SDP-02 (7.0-8.5), SDP-02 (12.5-13.5), SDP-02 (20.0-21.5), SDP-03 (2.0-3.5), SDP-03 (21.0-22.0), SDP-04 (8.0-9.0), SDP-04 (16.0-17.0), SDP-04 (18.0-19.0), SDP-05 (1.0-2.5), SDP-05(13.0-14.0), and WC-051415.						

Report Content

	Yes	No	NA
1. Is there a signature and title of the person accepting responsibility for the report?	☒	☐	
2. Has the laboratory submitted an electronic copy of the data? ***100 percent of EDD sample results were checked against values reported in laboratory report.***	☒	☐	

Report Content	Yes	No	NA
3. Was the entire report received (based on total number of pages or indication of last report page)?	☒	☐	
4. Is there a legend or list explaining data qualifiers?	☒	☐	☐
5. Is the original chain-of-custody form included in the report?	☒	☐	
6. Was a laboratory sample receiving/integrity report included in the report? Any noted problems? *Any noted problems?* ***Coolers received at temperatures of 6.5°C and 7.9°C, above 6°C. Coolers delivered to laboratory on same day of sample collection (5/14/15). No corrective action warranted.***	☒	☐	
7. Do receipt dates match the chain-of-custody form?	☒	☐	
8. Have all requested analyses on the chain-of-custody form been conducted?	☒	☐	
9. Have all analyses been conducted by this laboratory? If No, which analyses? *If No, which analyses?* _____	☒	☐	
10. Are all dates (i.e., collection date(s), receipt date(s), extraction date(s) analysis date(s), reporting dates, etc.), listed for all samples and are they consistent throughout the report? Identify omissions and inconsistencies on page(s) *Identify omissions and inconsistencies on page(s)* _____	☒	☐	
11. Were all specified sample holding times met? If no, identify? *If no, identify?* _____	☒	☐	
12. Do sample IDs in the report match the chain-of-custody form and are they consistent throughout the report? *Circle inconsistencies and identify pages* _____	☒	☐	
13. If test methods were specified on the chain-of-custody form, were samples analyzed for the test methods requested?	☒	☐	☐
14. If test methods were specified on the chain-of-custody form, are the test methods listed appropriate for the requested analysis? ***Test methods consistent with methods specified in project QAPP.***	☒	☐	☐

Report Content	Yes	No	NA
15. Is the report complete and all laboratory quality control data included for each analysis?	☒	☐	
16. Are results reported with a consistent and appropriate number of significant figures?	☒	☐	
17. Are results reported using appropriate and consistent concentration units?	☒	☐	
18. Have data below the method detection limit (MDL) or practical quantitation limit (PQL) been correctly qualified? *If not, Identify data with a check mark (✓)*	☒	☐	☐
19. Have data above the MDL or PQL been correctly left unqualified? *Identify data with asterisks (*)*	☒	☐	☐
20. Indicate if the following field QC samples were collected and if so were they collected at the required frequency listed in the sampling plan:			
a. Trip blank sample	☐	☐	☒
b. Field blank sample	☐	☐	☒
c. Field replicate or duplicate sample	☐	☐	☒
d. Equipment (rinsate) blank sample	☒	☐	☐
21. Did the laboratory perform the following QC analysis, where appropriate:			
a. One laboratory method blank sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
b. One matrix spike/matrix spike duplicate (MS/MSD) sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
c. One blank spike sample or laboratory control sample (LCS) per 20 samples or batch, whichever is more frequent if MS analyses were not performed?	☒	☐	☐
d. One laboratory duplicate per 20 samples or batch, whichever is more frequent?	☒	☐	☐
e. Other (Define) _____	☐		
22. Were any analytes detected in the following:			
a. Method blank samples ***Detected concentrations were below reporting limits:*** ***Barium (0.17 µg/L), chromium (0.18 µg/L), lead (0.8 µg/L), and zinc (1.1 µg/L) detected in water method blank.*** ***Chromium (0.06 mg/kg) and zinc (0.75 mg/kg) detected in soil method blank.***	☒	☐	☐
b. Field blank samples	☐	☐	☒
c. Trip blank samples	☐	☐	☒

Report Content	Yes	No	NA
d. Equipment (rinsate) blank samples ***Barium (0.05 µg/L), chromium (0.09 µg/L), and zinc (3.2 µg/L) detected in rinsate blank sample RB-051315. Rinsate blank detections of barium, chromium, and zinc less than 5x concentrations detected in method blank.***	☒	☐	☐
23. Do surrogate recoveries meet acceptance criteria (accuracy)? *If no, note exceptions and qualify appropriately* _____	☒	☐	☐
24. Do percent recoveries for MS/MSD meet control limits (accuracy) for the test method/sample matrix? ***Several MS recoveries were outside acceptable limits for metals and PAH soil analysis. Initial sample concentrations in [SDP-04 (1.5-3.0)-MS] were high relative to spike amount. The LCS recoveries were within acceptable limits. No corrective action is required for MS recovery.***	☐	☒	☐
25. Do the relative percent differences (RPDs) for MS/MSD meet control limits (precision) for the test method/sample matrix? ***Several MS/MSD RPDs were outside acceptable limits for PAH soil analysis. No corrective action is required for MS/MSD RPD.***	☐	☒	☐
26. Do percent recoveries for LCS meet control limits (accuracy) for the test method/sample matrix?	☒	☐	☐
27. Do the RPDs for laboratory duplicate analyses meet control limits (precision) for the test method/sample matrix? ***The RPDs for barium (34.3%), cadmium (26.1%), chromium (28.8%), copper (31.5%), and mercury (48.1%) for the laboratory duplicate analyzed exceeded the control limit of 20%. The associated results were flagged with a J-qualifier in accordance with EPA (2014) National Functional Guidelines for Inorganic Data Review.***	☐	☒	☐
28. Do the RPDs for field (blind) duplicate pairs meet acceptance criteria (precision) for the test method/sample matrix?	☐	☐	☒
29. If sample reference materials or laboratory check standards were included in the data set, were recoveries within the control limits for the test method/sample matrix? Circle exceptions	☐	☐	☒
30. Is the discussion of any report variance consistent with the data reported?	☒	☐	☐
31. Have all qualified data been completely/correctly identified? *If not, data on which page* _____	☒	☐	☐

Report Content	Yes	No	NA
32. Is the quality of the data package acceptable without revisions by the laboratory?	☒	☐	☐
33. *If no, attach corrective action summary*			

Qualifiers Assigned by Data Reviewers

U: Data qualified with an U indicates that the value reported for the sample is less than 5 times the amount of that analyte detected in the blank. The U qualifier is applied to the data according to USEPA Functional Guidelines for Review of Inorganic and Organic Data as follows:

1. If the level of an analyte reported in the sample is greater than the MDL for that analyte in that sample, a U is placed next to the sample result if it is less than 5 times the level in the blank.

2. If the level reported in the sample is less than the MDL (qualified by the laboratory with a J) and less than 5 times the level in the blank, the sample result and J qualifier are crossed out and replaced with the MDL for that analyte in that sample followed by U.

Sample results that exceed the MDL and are greater than 5 times the level in the blank are not qualified.

J: Data qualified with a J indicates that the analyte was positively identified, but the associated numerical value is an approximate concentration. The J qualifier is applied to results by both the laboratory and data validator.

B: Data qualified with a B indicates that the analyte was detected in the laboratory method blank.

R: Data qualified with a R indicates that the result is rejected. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Corrective Actions

Describe data corrective actions or report revisions required from laboratory:

Corrective actions were not warranted based on data quality review of laboratory report.

Corrective action initiated? ☐ Yes ☒ No By whom? _____ Date: _____

Summary of Resolution:

Not applicable.

Verified? ☒ Yes ☐ No By whom? Heather Brunelle Date: 10 June 2015

Data Quality Checklist
Environmental Data Review Data Quality SOG

Project Name:	Port of Seattle Sliver Property	**Sampling Event:**	Soil Characterization
Project Number:	1496007.00	**Phase/Task Numbers:**	Task 02
Laboratory:	Analytical Resources, Incorporated (ARI)	**Report Id:**	AGF2
K/J Contact:	Ryan Hultgren	**Reviewer:**	Heather Brunelle
Date Completed:	10 June 2015	**Signature:**	

Sample Inventory

Analysis	Method	Matrix	Total # of Samples	# of Trip Blanks	Date(s) Collected	Total # of Samples Analyzed	# Trip Blanks Analyzed
VOCs	SW8260C	Soil	2	0	5/13/2015, 5/14/2015	2	0
Notes:	**Samples analyzed by ARI:** SDP-02 (16.0-17.5) and SDP-06 (12.5-13.5).						

Report Content

	Yes	No	NA
1. Is there a signature and title of the person accepting responsibility for the report?	☒	☐	
2. Has the laboratory submitted an electronic copy of the data? ***100 percent of EDD sample results were checked against values reported in laboratory report.***	☒	☐	
3. Was the entire report received (based on total number of pages or indication of last report page)?	☒	☐	
4. Is there a legend or list explaining data qualifiers?	☒	☐	☐
5. Is the original chain-of-custody form included in the report?	☒	☐	

Report Content	Yes	No	NA
6. Was a laboratory sample receiving/integrity report included in the report? Any noted problems? *Any noted problems?* ***Coolers received at temperatures of 7.4°C and 8.8°C (5/13/15) and of 6.5°C and 7.9°C (5/14/15), above 6°C. Coolers delivered to laboratory on same day of sample collection (5/13/15, 5/14/15). No corrective action warranted.*** ***Appropriate sample collection and preservation methods for analysis of VOCs were not used. Data may be deemed usable for qualitative purposes only.***	☒	☐	
7. Do receipt dates match the chain-of-custody form?	☒	☐	
8. Have all requested analyses on the chain-of-custody form been conducted? ***VOC analysis not specified on chain-of-custody form. VOC analysis completed based on email communication provided to ARI on 18 May 2015.***	☒	☐	
9. Have all analyses been conducted by this laboratory? If No, which analyses? *If No, which analyses?* _____	☒	☐	
10. Are all dates (i.e., collection date(s), receipt date(s), extraction date(s) analysis date(s), reporting dates, etc.), listed for all samples and are they consistent throughout the report? Identify omissions and inconsistencies on page(s) *Identify omissions and inconsistencies on page(s)* _____	☒	☐	
11. Were all specified sample holding times met? If no, identify? *If no, identify?* _____	☒	☐	
12. Do sample IDs in the report match the chain-of-custody form and are they consistent throughout the report? *Circle inconsistencies and identify pages* _____	☒	☐	
13. If test methods were specified on the chain-of-custody form, were samples analyzed for the test methods requested? ***VOC analysis not specified on chain-of-custody form. VOC analysis completed based on email communication provided to ARI on 18 May 2015.***	☐	☐	☒

Report Content	Yes	No	NA
14. If test methods were specified on the chain-of-custody form, are the test methods listed appropriate for the requested analysis? ***Test method not included in list of methods specified in project QAPP. See above note regarding appropriate sample collection and preservation methods for analysis of VOCs not used. Data may be deemed usable for qualitative purposes only.***	☒	☐	☐
15. Is the report complete and all laboratory quality control data included for each analysis?	☒	☐	
16. Are results reported with a consistent and appropriate number of significant figures?	☒	☐	
17. Are results reported using appropriate and consistent concentration units?	☒	☐	
18. Have data below the method detection limit (MDL) or practical quantitation limit (PQL) been correctly qualified? *If not, Identify data with a check mark (✓)*	☒	☐	☐
19. Have data above the MDL or PQL been correctly left unqualified? *Identify data with asterisks (*)*	☒	☐	☐
20. Indicate if the following field QC samples were collected and if so were they collected at the required frequency listed in the sampling plan:			
a. Trip blank sample	☐	☒	☐
b. Field blank sample	☐	☐	☒
c. Field replicate or duplicate sample	☐	☐	☒
d. Equipment (rinsate) blank sample	☐	☒	☐
21. Did the laboratory perform the following QC analysis, where appropriate:			
a. One laboratory method blank sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
b. One matrix spike/matrix spike duplicate (MS/MSD) sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
c. One blank spike sample or laboratory control sample (LCS) per 20 samples or batch, whichever is more frequent if MS analyses were not performed?	☒	☐	☐
d. One laboratory duplicate per 20 samples or batch, whichever is more frequent?	☒	☐	☐
e. Other (Define) _____	☐		
22. Were any analytes detected in the following:			
a. Method blank samples	☐	☒	☐
b. Field blank samples	☐	☐	☒
c. Trip blank samples	☐	☐	☒

Report Content	Yes	No	NA
d. Equipment (rinsate) blank samples	☐	☐	☒
23. Do surrogate recoveries meet acceptance criteria (accuracy)? *If no, note exceptions and qualify appropriately* _____	☒	☐	☐
24. Do percent recoveries for MS/MSD meet control limits (accuracy) for the test method/sample matrix?	☐	☐	☒
25. Do the relative percent differences (RPDs) for MS/MSD meet control limits (precision) for the test method/sample matrix?	☐	☐	☒
26. Do percent recoveries for LCS meet control limits (accuracy) for the test method/sample matrix? ***2-Butanone percent recovery was outside (higher) than control limits. Associated results are qualified with "J" qualifier as estimated.***	☐	☒	☐
27. Do the RPDs for laboratory duplicate analyses meet control limits (precision) for the test method/sample matrix?	☒	☐	☐
28. Do the RPDs for field (blind) duplicate pairs meet acceptance criteria (precision) for the test method/sample matrix?	☐	☐	☒
29. If sample reference materials or laboratory check standards were included in the data set, were recoveries within the control limits for the test method/sample matrix? Circle exceptions	☐	☐	☒
30. Is the discussion of any report variance consistent with the data reported?	☒	☐	☐
31. Have all qualified data been completely/correctly identified? *If not, data on which page* _____	☒	☐	☐
32. Is the quality of the data package acceptable without revisions by the laboratory?	☒	☐	☐
33. *If no, attach corrective action summary*			

Qualifiers Assigned by Data Reviewers

U: Data qualified with an U indicates that the value reported for the sample is less than 5 times the amount of that analyte detected in the blank. The U qualifier is applied to the data according to USEPA Functional Guidelines for Review of Inorganic and Organic Data as follows:

1. If the level of an analyte reported in the sample is greater than the MDL for that analyte in that sample, a U is placed next to the sample result if it is less than 5 times the level in the blank.

2. If the level reported in the sample is less than the MDL (qualified by the laboratory with a J) and less than 5 times the level in the blank, the sample result and J qualifier are crossed out and replaced with the MDL for that analyte in that sample followed by U.

Sample results that exceed the MDL and are greater than 5 times the level in the blank are not qualified.

J: Data qualified with a J indicates that the analyte was positively identified, but the associated numerical value is an approximate concentration. The J qualifier is applied to results by both the laboratory and data validator.

B: Data qualified with a B indicates that the analyte was detected in the laboratory method blank.

R: Data qualified with a R indicates that the result is rejected. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Corrective Actions

Describe data corrective actions or report revisions required from laboratory:

Corrective actions were not warranted based on data quality review of laboratory report.

Corrective action initiated? ☐ Yes ☒ No By whom? _____ Date: _____

Summary of Resolution:

Not applicable.

Verified? ☒ Yes ☐ No By whom? Heather Brunelle Date: 10 June 2015

Data Quality Checklist
Environmental Data Review Data Quality SOG

Project Name:	Port of Seattle Sliver Property	**Sampling Event:**	Soil Characterization
Project Number:	1496007.00	**Phase/Task Numbers:**	Task 02
Laboratory:	Analytical Resources, Incorporated (ARI)	**Report Id:**	AHS2
K/J Contact:	Ryan Hultgren	**Reviewer:**	Heather Brunelle
Date Completed:	23 June 2015	**Signature:**	

Sample Inventory

Analysis	Method	Matrix	Total # of Samples	# of Trip Blanks	Date(s) Collected	Total # of Samples Analyzed	# Trip Blanks Analyzed
TCLP Metals/Mercury	SW1311/6010 C/7470A	Soil	4	0	5/13/2015, 5/14/2015	4	0
Notes:	**Samples analyzed by ARI:** SDP-01 (8.0-9.0), SDP-04 (10.5-12.0), SDP-07 (1.5-3.0), SDP-10 (15.5-16.5)						

Report Content

	Yes	No	NA
1. Is there a signature and title of the person accepting responsibility for the report?	☒	☐	
2. Has the laboratory submitted an electronic copy of the data? ***100 percent of EDD sample results were checked against values reported in laboratory report.***	☒	☐	
3. Was the entire report received (based on total number of pages or indication of last report page)?	☒	☐	
4. Is there a legend or list explaining data qualifiers?	☒	☐	☐
5. Is the original chain-of-custody form included in the report?	☒	☐	

Report Content	Yes	No	NA
6. Was a laboratory sample receiving/integrity report included in the report? Any noted problems? *Any noted problems?* ***Coolers received at temperatures of 7.4°C and 8.8°C (5/13/15) and of 6.5°C and 7.9°C (5/14/15), above 6°C. Coolers delivered to laboratory on same day of sample collection (5/13/15, 5/14/15). No corrective action warranted.***	☒	☐	
7. Do receipt dates match the chain-of-custody form?	☒	☐	
8. Have all requested analyses on the chain-of-custody form been conducted? ***TCLP was not included on chain-of-custody forms. TCLP analyses requested in an email from Kennedy/Jenks Consultants to ARI dated 11 June 2015.***	☒	☐	
9. Have all analyses been conducted by this laboratory? If No, which analyses? *If No, which analyses?* _____	☒	☐	
10. Are all dates (i.e., collection date(s), receipt date(s), extraction date(s) analysis date(s), reporting dates, etc.), listed for all samples and are they consistent throughout the report? Identify omissions and inconsistencies on page(s) *Identify omissions and inconsistencies on page(s)* _____	☒	☐	
11. Were all specified sample holding times met? If no, identify? *If no, identify?* ***TCLP mercury analysis was analyzed outside the method recommended holding time. The samples were stored in frozen archive prior to removal for sample preparation and digestion using Method SW1311. The sample preparation and digestion was completed several days outside the method recommended holding time. The EPA (2014) National Functional Guidelines for Inorganic Superfund Data Review recommends that non-detect mercury results be qualified as unusable (R) if the 28-day holding time is exceeded and that best professional judgment be used for evaluating soils data. Based on professional judgment, considering that the samples were frozen for archiving prior to the TCLP analysis and that the holding time was exceeded by less than one week, the TCLP mercury non-detect results were qualified as usable. The R qualifier was not applied to the mercury non-detect results. The holding time for Method SW6010C was met.***	☐	☒	
12. Do sample IDs in the report match the chain-of-custody form and are they consistent throughout the report? *Circle inconsistencies and identify pages* _____	☒	☐	

Report Content	Yes	No	NA
13. If test methods were specified on the chain-of-custody form, were samples analyzed for the test methods requested? ***TCLP was not included on chain-of-custody forms. TCLP analyses requested in an email from Kennedy/Jenks Consultants to ARI dated 11 June 2015.***	☒	☐	☐
14. If test methods were specified on the chain-of-custody form, are the test methods listed appropriate for the requested analysis? ***TCLP method not specified in project QAPP.***	☒	☐	☐
15. Is the report complete and all laboratory quality control data included for each analysis?	☒	☐	
16. Are results reported with a consistent and appropriate number of significant figures?	☒	☐	
17. Are results reported using appropriate and consistent concentration units?	☒	☐	
18. Have data below the method detection limit (MDL) or practical quantitation limit (PQL) been correctly qualified? *If not, Identify data with a check mark (✓)*	☒	☐	☐
19. Have data above the MDL or PQL been correctly left unqualified? *Identify data with asterisks (*)*	☒	☐	☐
20. Indicate if the following field QC samples were collected and if so were they collected at the required frequency listed in the sampling plan:			
a. Trip blank sample	☐	☐	☒
b. Field blank sample	☐	☐	☒
c. Field replicate or duplicate sample	☐	☐	☒
d. Equipment (rinsate) blank sample ***(See AGA8 and AGC9 reports for discussion of rinsate blank collected for metals analysis).***	☒	☐	☐
21. Did the laboratory perform the following QC analysis, where appropriate:			
a. One laboratory method blank sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
b. One matrix spike/matrix spike duplicate (MS/MSD) sample per 20 samples or batch, whichever is more frequent?	☒	☐	☐
c. One blank spike sample or laboratory control sample (LCS) per 20 samples or batch, whichever is more frequent if MS analyses were not performed?	☒	☐	☐
d. One laboratory duplicate per 20 samples or batch, whichever is more frequent?	☒	☐	☐
e. Other (Define)	☐		

Report Content	Yes	No	NA
22. Were any analytes detected in the following:			
a. Method blank samples ***Detected concentrations were below reporting limits: Barium detected in both method blank samples at concentration of 0.02 mg/L. The sample results were equal to or greater than 5X the method blank concentration.***	☒	☐	☐
b. Field blank samples	☐	☐	☒
c. Trip blank samples	☐	☐	☒
d. Equipment (rinsate) blank samples***. (See AGA8 and AGC9 reports for discussion of rinsate blank collected for metals analysis).***	☒	☐	☐
23. Do surrogate recoveries meet acceptance criteria (accuracy)? *If no, note exceptions and qualify appropriately* _____	☐	☐	☒
24. Do percent recoveries for MS/MSD meet control limits (accuracy) for the test method/sample matrix?	☒	☐	☐
25. Do the relative percent differences (RPDs) for MS/MSD meet control limits (precision) for the test method/sample matrix?	☒	☐	☐
26. Do percent recoveries for LCS meet control limits (accuracy) for the test method/sample matrix?	☒	☐	☐
27. Do the RPDs for laboratory duplicate analyses meet control limits (precision) for the test method/sample matrix?	☒	☐	☐
28. Do the RPDs for field (blind) duplicate pairs meet acceptance criteria (precision) for the test method/sample matrix?	☐	☐	☒
29. If sample reference materials or laboratory check standards were included in the data set, were recoveries within the control limits for the test method/sample matrix? Circle exceptions	☐	☐	☒
30. Is the discussion of any report variance consistent with the data reported?	☒	☐	☐
31. Have all qualified data been completely/correctly identified? *If not, data on which page* _____	☒	☐	☐

Report Content	Yes	No	NA
32. Is the quality of the data package acceptable without revisions by the laboratory?	☒	☐	☐
33. *If no, attach corrective action summary*			

Qualifiers Assigned by Data Reviewers

U: Data qualified with an U indicates that the value reported for the sample is less than 5 times the amount of that analyte detected in the blank. The U qualifier is applied to the data according to USEPA Functional Guidelines for Review of Inorganic and Organic Data as follows:

1. If the level of an analyte reported in the sample is greater than the MDL for that analyte in that sample, a U is placed next to the sample result if it is less than 5 times the level in the blank.

2. If the level reported in the sample is less than the MDL (qualified by the laboratory with a J) and less than 5 times the level in the blank, the sample result and J qualifier are crossed out and replaced with the MDL for that analyte in that sample followed by U.

Sample results that exceed the MDL and are greater than 5 times the level in the blank are not qualified.

J: Data qualified with a J indicates that the analyte was positively identified, but the associated numerical value is an approximate concentration. The J qualifier is applied to results by both the laboratory and data validator.

B: Data qualified with a B indicates that the analyte was detected in the laboratory method blank.

R: Data qualified with a R indicates that the result is rejected. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Corrective Actions

Describe data corrective actions or report revisions required from laboratory:

Corrective actions were not warranted based on data quality review of laboratory report.

Corrective action initiated? ☐ Yes ☒ No By whom? _____ Date: _____

Summary of Resolution:

Not Applicable.

Verified? ☒ Yes ☐ No By whom? Heather Brunelle Date: 23 June 2015

Attachment D

2012 POS Sliver Characterization Data

ECOLOGY REVIEW DRAFT
Remedial Investigation Report
Boeing Isaacson-Thompson Site
Tukwila, Washington

February 20, 2013

Prepared for

The Boeing Company

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6.0 PORT PROPERTY INVESTIGATION

In August 2012, an investigation was conducted on the Port property located immediately adjacent to the Site (Figure F-1 in Appendix F). The investigation was conducted separately from the Site RI. The purpose of the investigation was to determine if contaminants were present in soil or groundwater on the Port property; therefore, the scope of the investigation was limited to four explorations located on the eastern edge of the Port property, collection of soil and groundwater samples from each boring, and analysis of the samples for metals. A work plan for conducting the investigation was prepared by Landau Associates (Landau Associates 2012) and approved by Ecology.

The four explorations consisted of soil borings (SB-1 through SB-4) advanced using a truck-mounted direct-push drill rig. Each boring extended below the groundwater table (generally encountered between 13 and 15 ft BGS) to a depth of 20 ft BGS; however, at soil boring SB-1, the boring was discontinued at 15 ft BGS due to refusal. A second borehole, SB-1a, was advanced approximately 2 ft south of SB-1. Four soil samples were collected from each borehole from the following depth intervals: 2 to 3 ft BGS, 5 to 6 ft BGS, 8 to 9 ft BGS, and 13 to 14 ft BGS, and submitted for laboratory analysis, except at soil boring SB-2 where a sample was collected from a depth interval of 7.5 to 8.5 ft BGS instead of from 8 to 9 ft BGS.

One groundwater sample was collected from each borehole (SB-1a, SB-2, SB-3, and SB-4). The groundwater samples were collected from temporary well points installed in each borehole. The temporary well points consisted of a 4-ft-long, wire-wrapped, stainless-steel screen (0.010-inch slot size) with a retractable protective steel sheath. Low-flow purging was performed for 10 minutes or until the purge water was clear, using a peristaltic pump. During purging, pH, conductivity, and temperature were measured using a flow-through cell and recorded on a field sample collection form. Groundwater samples were collected directly into the appropriate sample containers using disposable polyethylene tubing and a peristaltic pump. Groundwater samples for dissolved arsenic analyses were collected last and were field-filtered through a 0.45 micron, in-line disposable filter. Following collection of the groundwater samples, the temporary well point was removed and the soil boring was backfilled with bentonite chips.

The soil and groundwater samples were analyzed for priority pollutant metals (antimony, arsenic, beryllium, cadmium, total chromium, chromium VI, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) and barium. The groundwater samples were analyzed for both the total and dissolved fractions of these metals.

A figure showing the sample locations, soil boring logs, and tables summarizing the analytical results are provided in Appendix F.

APPENDIX F

Port Property Investigation Data

Y:\Projects\025190\212.012\RI Report\FigureF1.mxd 2/19/2013 NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet

Legend

- Soil and Groundwater Sampling Locations
- Existing LAI Monitoring Location
- Existing LAI Piezometer Location

0 110 220

Scale in Feet

Data Source: Bing Aerial Image; King County Parcel Data

LANDAU ASSOCIATES

Boeing Isaacson-Thompson
Port Property Investigation
Tukwila, Washington

Soil and Groundwater Sampling Locations

Figure
F-1

TABLE F-1
GROUNDWATER ANALYTICAL RESULTS
PORT OF SEATTLE PROPERTY INVESTIGATION (a)
TUKWILA, WASHINGTON

Sample Identification:		Port Prop-SB1a-GW			Port Prop-SB2-GW			Port Prop-SB3-GW			Port Prop-SB4-GW			Port Prop-SB5-GW/Duplicate of SB-4-GW		
Laboratory Sample Identification:		6769564 / 6769565			6769566 / 6769567			6769568 / 6769569			6769570 / 6769571			6769572 / 6769573		
Laboratory Data Package Identification		1331745			1331745			1331745			1331745			1331745		
Sample Collection Date:		08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012		
		Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit
TOTAL METALS (µg/L)																
Method EPA 200.8/7470A																
Antimony		**0.43** J1	1.0	0.33	**16.3**	1.0	0.33	**0.47** J1	1.0	0.33	**3.7**	1.0	0.33	**3.1**	1.0	0.33
Arsenic		**481**	2.0	0.40	**4770**	20.0	4.0	**637**	2.0	0.40	**6.6** J	2.0	0.40	**3.9** J	2.0	0.40
Barium		**14.0**	2.0	0.41	**9.2**	2.0	0.41	**25.2**	2.0	0.41	**167**	2.0	0.41	**159**	2.0	0.41
Beryllium		**0.032** J1	0.50	0.025	0.025 U	0.50	0.025	**0.071** J1	0.50	0.025	**0.054** J1	0.50	0.025	0.025 U	0.50	0.025
Cadmium		0.082 U	0.50	0.082	0.082 U	0.50	0.082	0.082 U	0.50	0.082	**0.56**	0.50	0.082	**0.27** J1	0.50	0.082
Chromium		**2.9**	2.0	0.50	**0.73** J1	2.0	0.50	**3.4**	2.0	0.50	**40.2** J	2.0	0.50	**16.2** J	2.0	0.50
Copper		**5.0**	2.0	0.40	**10.8**	2.0	0.40	**4.6**	2.0	0.40	**37.2** J	2.0	0.40	**18.5** J	2.0	0.40
Lead		**0.66** J1	1.0	0.034	**0.33** J1	1.0	0.034	**1.4**	1.0	0.034	**83.0** J	1.0	0.034	**42.2** J	1.0	0.034
Mercury		0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070
Nickel		**0.56** J1	2.0	0.35	**1.7** J1	2.0	0.35	**1.2** J1	2.0	0.35	**23.5** J	2.0	0.35	**13.1** J	2.0	0.35
Selenium		0.50 U	2.0	0.50	**3.8**	2.0	0.50	0.50 U	2.0	0.50	0.50 U	2.0	0.50	0.50 U	2.0	0.50
Silver		0.10 U	0.50	0.10	0.10 U	0.50	0.10	0.10 U	0.50	0.10	**0.20** J1	0.50	0.10	0.10 U	0.50	0.10
Thallium		0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15
Zinc		5.6 UJ2	15.0	1.1	**13.2** J1	15.0	1.1	**11.3** J1	15.0	1.1	**104** J	15.0	1.1	**49.1** J	15.0	1.1
DISSOLVED METALS (µg/L)																
Method EPA 200.8/7470A	**PRLC[b]**															
Antimony	150	**0.59** J1	1.0	0.33	**16.0**	1.0	0.33	**0.55** J1	1.0	0.33	**2.5**	1.0	0.33	**3.5**	1.0	0.33
Arsenic	8	**328**	2.0	0.40	**5090**	20.0	4.0	**656**	2.0	0.40	**1.8** J1	2.0	0.40	**1.5** J1	2.0	0.40
Barium	770	**6.5**	2.0	0.41	**7.4**	2.0	0.41	**22.1**	2.0	0.41	**158**	2.0	0.41	**190**	2.0	0.41
Beryllium	12	0.025 U	0.50	0.025	0.025 U	0.50	0.025	**0.033** J1	0.50	0.025	0.025 U	0.50	0.025	0.025 U	0.50	0.025
Cadmium	0.25	0.082 U	0.50	0.082	0.082 U	0.50	0.082	0.082 U	0.50	0.082	0.082 U	0.50	0.082	0.082 U	0.50	0.082
Chromium	57	**0.56** J1	2.0	0.50	0.50 U	2.0	0.50	**1.2** J1	2.0	0.50	**0.88** J1	2.0	0.50	**0.71** J1	2.0	0.50
Copper	8	**1.1** J1	2.0	0.40	**4.5**	2.0	0.40	0.40 U	2.0	0.40	**0.57** J1	2.0	0.40	**0.53** J1	2.0	0.40
Lead	2.5	0.034 U	1.0	0.034	**0.077** J1	1.0	0.034	0.034 U	1.0	0.034	**0.048** J1	1.0	0.034	**0.34** J1	1.0	0.034
Mercury	4.8	0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070	0.070 U	0.20	0.070
Nickel	8.2	**0.35** J1	2.0	0.35	**1.6** J1	2.0	0.35	**0.65** J1	2.0	0.35	**1.8** J1	2.0	0.35	**1.2** J1	2.0	0.35
Selenium	5	0.50 U	2.0	0.50	**4.0**	2.0	0.50	0.50 U	2.0	0.50	0.50 U	2.0	0.50	0.50 U	2.0	0.50
Silver	22	0.10 U	0.50	0.10	0.10 U	0.50	0.10	0.10 U	0.50	0.10	0.10 U	0.50	0.10	0.10 U	0.50	0.10
Thallium	0.032	0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15	0.15 U	0.50	0.15
Zinc	56	2.1 UJ2	15.0	1.1	**9.7** J1	15.0	1.1	4.4 UJ2	15.0	1.1	1.7 UJ2	15.0	1.1	1.8 UJ2	15.0	1.1

TABLE F-1
GROUNDWATER ANALYTICAL RESULTS
PORT OF SEATTLE PROPERTY INVESTIGATION (a)
TUKWILA, WASHINGTON

Sample Identification:	Port Prop-SB1a-GW			Port Prop-SB2-GW			Port Prop-SB3-GW			Port Prop-SB4-GW			Port Prop-SB5-GW/Duplicate of SB-4-GW		
Laboratory Sample Identification:	6769564 / 6769565			6769566 / 6769567			6769568 / 6769569			6769570 / 6769571			6769572 / 6769573		
Laboratory Data Package Identification	1331745			1331745			1331745			1331745			1331745		
Sample Collection Date:	08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012		
FIELD PARAMETERS															
Temperature (°C)	14.17	NA	NA	15.92	NA	NA	15.34	NA	NA	17.48	NA	NA	17.48	NA	NA
Conductivity (uS/cm)	2165	NA	NA	899	NA	NA	901	NA	NA	1225	NA	NA	1225	NA	NA
Dissolved Oxygen (mg/L)	3.50	NA	NA	3.11	NA	NA	2.10	NA	NA	2.28	NA	NA	2.26	NA	NA
pH (SU)	9.24	NA	NA	7.22	NA	NA	7.12	NA	NA	9.59	NA	NA	9.59	NA	NA
ORP (mV)	-82.85	NA	NA	7.73	NA	NA	-129.80	NA	NA	-115.90	NA	NA	-115.90	NA	NA

Bold = Analyte detected at concentration greater than the laboratory reporting limit.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J1 = Laboratory flag indicating the analyte was positively identified at a concentration between the method detection limit and the laboratory reporting limit; the associated numerical value is the approximate concentration of the

UJ2 = The analyted was not detected in the sample at or above the numerical value shown; the numerical value is below the reporting limit, but greater than the detection limit.

(a) Port of Seattle property is located immediately adjacent to the Boeing Isaacson-Thompson site and the Lower Duwamish Waterway.

(b) Target Preliminary Reporting Level Criteria (PRLC) values presented in this table are based on Upland Preliminary Cleanup Levels from Table 5 of Ecology Review Draft Remedial Investigation Report, Boeing Isaacson-Thompson Site, Tukwila, Washington (Landau Associates 2013). PRLC values added to Table F-1 by Kennedy/Jenks Consultants, July 2015.

TABLE F-2
SOIL ANALYTICAL RESULTS
PORT OF SEATTLE PROPERTY INVESTIGATION (a)
TUKWILA, WASHINGTON

Sample Identification:		Port Prop-SB1(2-3)			Port Prop-SB1(5-6)			Port Prop-SB1(7-8)			Port Prop-SB1a(16-17)			Port Prop-SB2(2-3)			Port Prop-SB2(5-6)			Port Prop-SB2(7.5-8.5)		
Laboratory Sample Identification:		6769574			6769575			6769576			6769577			6769578			6769579			6769580		
Laboratory Data Package Identification:		1331745			1331745			1331745			1331745			1331745			1331745			1331745		
Sample Collection Date:		08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012		
		Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit
TOTAL METALS (mg/kg)																						
Method EPA 200.8/7470A	PRLC[b]																					
Antimony	31	**8.35** J	0.226	0.0747	**6.38**	0.233	0.0770	**0.224** J1	0.234	0.0773	0.0847 U	0.257	0.0847	**10.3**	0.221	0.0728	**0.875**	0.215	0.0710	**0.129** J1	0.261	0.0863
Arsenic	20	**8.43** J	0.453	0.0905	**51.2**	0.467	0.0933	**201**	0.468	0.0937	**82.5**	0.513	0.103	**10.3**	0.441	0.0882	**262**	1.08	0.215	**10.6**	0.523	0.105
Barium	640	**993** J	4.53	0.928	**735**	4.67	0.957	**191**	0.468	0.0960	**25.5**	0.513	0.105	**1190**	4.41	0.904	**127**	0.430	0.0882	**105**	0.523	0.107
Beryllium	160	**0.320**	0.113	0.0057	**0.426**	0.117	0.0058	**0.331**	0.117	0.0059	**0.123** J1	0.128	0.0064	**0.395**	0.110	0.0055	**0.264**	0.108	0.0054	**0.403**	0.131	0.0065
Cadmium	4.0	**5.13** J	0.113	0.0186	**2.19**	0.117	0.0191	**0.186**	0.117	0.0192	**0.0259** J1	0.128	0.0211	**5.87**	0.110	0.0181	**0.685**	0.108	0.0176	**0.0683** J1	0.131	0.0214
Chromium	2000	**1430** J	4.53	1.13	**754**	4.67	1.17	**71.7**	0.468	0.117	**12.3**	0.513	0.128	**1810**	4.41	1.10	**85.9**	0.430	0.108	**29.3**	0.523	0.131
Copper	80	**177** J	0.453	0.165	**125**	0.467	0.170	**205**	0.468	0.171	**8.00**	0.513	0.187	**549**	4.41	1.61	**105**	0.430	0.157	**29.2**	0.523	0.191
Lead	250	**528** J	2.26	0.0996	**261**	2.33	0.103	**20.7**	0.234	0.0103	**1.36**	0.257	0.0113	**488**	2.21	0.0970	**62.4**	0.215	0.0095	**5.35**	0.261	0.0115
Mercury	1.5	**0.0884** J, J1	0.111	0.0115	**0.0490** J1	0.111	0.0115	**0.0386** J1	0.113	0.0117	0.0129 U	0.124	0.0129	**0.0983** J1	0.106	0.0110	**0.0341** J1	0.106	0.0109	**0.0536** J1	0.126	0.0130
Nickel	210	**48.9** J	0.453	0.174	**39.4**	0.467	0.180	**19.0**	0.468	0.180	**5.70**	0.513	0.198	**63.3**	0.441	0.170	**18.6**	0.430	0.166	**19.7**	0.523	0.201
Selenium	1.0	**0.449** J1	0.453	0.0407	**0.326** J1	0.467	0.0420	**0.146** J1	0.468	0.0422	0.0462 U	0.513	0.0462	**0.724**	0.441	0.0397	**0.169** J1	0.430	0.0387	**0.219** J1	0.523	0.0471
Silver	170	**0.294**	0.113	0.0226	**0.179**	0.117	0.0233	**0.0643** J1	0.117	0.0234	0.0257 U	0.128	0.0257	**0.560**	0.110	0.0221	**0.0695** J1	0.108	0.0215	**0.0356** J1	0.131	0.0261
Thallium	--	**0.0342** J1	0.113	0.0339	**0.0814** J1	0.117	0.0350	**0.196**	0.117	0.0351	0.0385 U	0.128	0.0385	0.0331 U	0.110	0.0331	**0.153**	0.108	0.0323	**0.148**	0.131	0.0392
Zinc	1400	**1700**	33.9	3.17	**956**	35.0	3.27	**162**	3.51	0.328	**17.9**	3.85	0.359	**2450**	82.7	7.72	**224**	8.07	0.753	**48.8**	3.92	0.366
Method SW7199A																						
Hexavalent Chromium	1.2	**17.0**	2.3	0.47	**6.1**	1.2	0.23	**0.90** J1	1.2	0.25	**0.45** J1	1.3	0.25	**6.0**	1.1	0.22	**1.3**	1.2	0.23	**0.70** J1	1.4	0.28

TABLE F-2
SOIL ANALYTICAL RESULTS
PORT OF SEATTLE PROPERTY INVESTIGATION (a)
TUKWILA, WASHINGTON

Sample Identification:		Port Prop-SB2(16-17)			Port Prop-SB3(2-3)			Port Prop-SB3(5-6)			Port Prop-SB3(8-9)			Port Prop-SB3(17-18)			Port Prop-SB4(2-3)			Port Prop-SB4(5-6)		
Laboratory Sample Identification:		6769581			6769582			6769583			6769584			6769585			6769586			6769587		
Laboratory Data Package Identification:		1331745			1331745			1331745			1331745			1331745			1331745			1331745		
Sample Collection Date:		08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012			08/27/2012		
		Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit
TOTAL METALS (mg/kg)																						
Method EPA 200.8/7470A	PRLC[b]																					
Antimony	31	0.0829 U	0.251	0.0829	**7.91**	0.218	0.0720	**1.88**	0.208	0.0686	**0.146** J1	0.223	0.0736	0.0877 U	0.266	0.0877	**19.2**	0.219	0.0724	**16.5**	0.208	0.0687
Arsenic	20	**95.2**	0.502	0.100	**28.4**	0.436	0.0872	**23.8**	0.416	0.0832	**10.1**	0.446	0.0892	**1.93**	0.531	0.106	**84.6**	0.439	0.0877	**30.7**	0.416	0.0833
Barium	640	**31.4**	0.502	0.103	**593**	2.18	0.447	**243**	2.08	0.426	**72.0**	0.446	0.0914	**46.9**	0.531	0.109	**85.5**	0.439	0.0899	**176**	1.04	0.213
Beryllium	160	**0.115** J1	0.126	0.0063	**0.379**	0.109	0.0055	**0.299**	0.104	0.0052	**0.258**	0.111	0.0056	**0.174**	0.133	0.0066	**0.333**	0.110	0.0055	**0.311**	0.104	0.0052
Cadmium	4.0	**0.0817** J1	0.126	0.0206	**5.28**	0.109	0.0179	**2.19**	0.104	0.0171	**0.0953** J1	0.111	0.0183	**0.0390** J1	0.133	0.0218	**0.395**	0.110	0.0180	**5.62**	0.104	0.0171
Chromium	2000	**11.3**	0.502	0.126	**760**	2.18	0.545	**299**	2.08	0.520	**17.0**	0.446	0.111	**14.0**	0.531	0.133	**37.4**	0.439	0.110	**116**	0.416	0.104
Copper	80	**16.3**	0.502	0.183	**190**	2.18	0.796	**92.2**	0.416	0.152	**17.7**	0.446	0.163	**14.9**	0.531	0.194	**193**	0.439	0.160	**218**	1.04	0.380
Lead	250	**1.58**	0.251	0.0110	**346**	1.09	0.0480	**104**	1.04	0.0458	**3.26**	0.223	0.0098	**1.87**	0.266	0.0117	**262**	1.10	0.0482	**526**	2.08	0.0916
Mercury	1.5	0.0127 U	0.123	0.0127	**0.201**	0.104	0.0108	**0.0508** J1	0.104	0.0108	**0.0169** J1	0.107	0.0110	**0.0236** J1	0.128	0.0132	0.0113 U	0.110	0.0113	**0.589**	0.103	0.0106
Nickel	210	**5.90**	0.502	0.193	**55.0**	0.436	0.168	**29.5**	0.416	0.160	**14.2**	0.446	0.172	**8.32**	0.531	0.205	**69.1**	0.439	0.169	**72.3**	0.416	0.160
Selenium	1.0	0.0452 U	0.502	0.0452	**0.451**	0.436	0.0393	**0.334** J1	0.416	0.0374	**0.0711** J1	0.446	0.0401	**0.0728** J1	0.531	0.0478	**0.0809** J1	0.439	0.0395	**0.147** J1	0.416	0.0375
Silver	170	**0.0271** J1	0.126	0.0251	**0.358**	0.109	0.0218	**0.210**	0.104	0.0208	**0.0266** J1	0.111	0.0223	0.0266 U	0.133	0.0266	**0.230**	0.110	0.0219	**0.330**	0.104	0.0208
Thallium	--	**0.0438** J1	0.126	0.0377	**0.0580** J1	0.109	0.0327	**0.0606** J1	0.104	0.0312	**0.0632** J1	0.111	0.0334	**0.0784** J1	0.133	0.0398	**0.116**	0.110	0.0329	**0.0906** J1	0.104	0.0312
Zinc	1400	**24.8**	3.77	0.351	**1820**	32.7	3.05	**535**	15.6	1.46	**36.2**	3.34	0.312	**24.2**	3.98	0.372	**906**	16.4	1.54	**880**	31.2	2.91
Method SW7199A																						
Hexavalent Chromium	1.2	**0.55** J1	1.3	0.27	**2.9**	1.1	0.22	0.22 U	1.1	0.22	**0.48** J1	1.2	0.24	**0.63** J1	1.4	0.28	**0.48** J1	1.1	0.22	**3.2**	1.0	0.20

TABLE F-2
SOIL ANALYTICAL RESULTS
PORT OF SEATTLE PROPERTY INVESTIGATION (a)
TUKWILA, WASHINGTON

Sample Identification:		Port Prop-SB4(8-9)			Port Prop-SB4(16-17)		
Laboratory Sample Identification:		6769588			6769589		
Laboratory Data Package Identification:		1331745			1331745		
Sample Collection Date:		08/27/2012			08/27/2012		
		Result	Reporting Limit	Detection Limit	Result	Reporting Limit	Detection Limit
TOTAL METALS (mg/kg)							
Method EPA 200.8/7470A	PRLC[(b)]						
Antimony	31	**2.76**	0.214	0.0707	**3.22**	0.243	0.0803
Arsenic	20	**14.3**	0.429	0.0857	**13.5**	0.487	0.0973
Barium	640	**124**	0.429	0.0879	**162**	0.487	0.0997
Beryllium	160	**0.253**	0.107	0.0054	**0.238**	0.122	0.0061
Cadmium	4.0	**1.47**	0.107	0.0176	**1.06**	0.122	0.0199
Chromium	2000	**209**	1.07	0.268	**686**	2.43	0.608
Copper	80	**180**	0.429	0.156	**87.1**	0.487	0.178
Lead	250	**121**	0.536	0.0236	**96.7**	0.608	0.0268
Mercury	1.5	**0.0358** J1	0.103	0.0106	**0.0496** J1	0.117	0.0121
Nickel	210	**455**	1.07	0.413	**68.9**	0.487	0.187
Selenium	1.0	**0.165** J1	0.429	0.0386	**0.0735** J1	0.487	0.0438
Silver	170	**0.365**	0.107	0.0214	**0.393**	0.122	0.0243
Thallium	--	**0.0599** J1	0.107	0.0322	**0.0642** J1	0.122	0.0365
Zinc	1400	**233**	8.04	0.750	**217**	9.12	0.851
Method SW7199A							
Hexavalent Chromium	1.2	**1.1** J1	1.1	0.22	**0.97** J1	1.3	0.25

Bold = Analyte detected at concentration greater than the laboratory reporting limit.

J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J1 = Laboratory flag indicating the analyte was positively identified at a concentration between the method detection limiit and the laboratory reporting limit; the associated numerical value is the approximate concentration of the analyte in the sample.
U = The analyte was not detected in the sample at the indicated laboratory reporting limit.

(a) Port of Seattle property is located immediately adjacent to the Boeing Isaacson-Thompson site and the Lower Duwamish Waterway.

(b) Target Preliminary Reporting Level Criteria (PRLC) values presented in this table are based on Upland Preliminary Cleanup Levels from Table 5 of Ecology Review Draft Remedial Investigation Report, Boeing Isaacson-Thompson Site, Tukwila, Washington (Landau Associates 2013). PRLC values added to Table F-2 by Kennedy/Jenks Consultants, July 2015.